Whipple Consulting Engineers
Spokane, WA

# TRAFFIC IMPACT ANALYSIS
FOR

Latah Glen Residential
Community

Spokane, Washington
March, 2021
2020-2564

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# TRAFFIC IMPACT ANALYSIS

## Latah Glen Residential Community

Spokane, Washington

March 12, 2021

W.O. No. 2020-2564

Prepared by:

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This report has been prepared by Ken Kim, E.I.T. and the staff of Whipple Consulting Engineers, Inc. under the direction of the undersigned professional engineer whose seal and signature appears hereon.


Todd R. Whipple, P.E.

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## EXECUTIVE SUMMARY

Supplemental to the SEPA Process for the proposed Latah Glen Residential Community development within the City of Spokane, the following Traffic Impact Analysis applies:

1. The City of Spokane and Washington Department of Transportation (WSDOT) have established Level of Service D as the minimum acceptable level for signalized intersections and Level of Service E for unsignalized intersections.

2. The project proposes to develop 157 space manufactured home residential development on approximately 42.03 ± acres.

3. The project site has been used for multiple land uses over the years. The most recent was an auto wrecker business. The remainder of the property is undeveloped area with trees, field grass and weeds. The project site is proposed upon portions of two parcels. The project proposes to build five (5) new north-south private roads and two (2) new east-west private roads, for a total of 7 new private roads. The projects main access is proposed at the east end of the project with a connection to Inland Empire Way, and its connection to SR 195. The project also proposes a Fire Access to Marshall Road. The access is proposed to be gated per local fire requirements, thus reducing the potential for cut through traffic on private roads. Please see Figure 2 preliminary site plan.

4. The project site is currently listed on the city land use map and zoned as Residential Single Family (RSF). The subject property is located on a portion of E ½ of Section 36, T 24 N., R 42 E., W.M within the City of Spokane, Washington. The parcel numbers for the project are 25364.0001, and 25361.0004. The surrounding area is residential, commercial and rural land uses.

5. The project study area intersections were identified through conversations with the City of Spokane and WSDOT. The study also includes the level of service analysis of the AM and PM peak hours of the following intersections:

   - SR 195 & 16th Avenue
   - SR 195 & Thorpe Avenue
   - SR 195 & Inland Empire Way
   - Cheney-Spokane Road & SR 195 NB on/off Ramps
   - Cheney-Spokane Road & SR 195 SB on/off Ramps
   - SR 195 & Meadowlane Drive
   - SR 195 & Hatch Road
   - The scope also included an additional analysis of highway segment and queue length at the I-90/SR 195 EB Ramp, as well as the right turn lane warrant at the intersection of Inland Empire Way & SR 195.

6. The proposed land use is anticipated to generate 36 new trips in the AM peak hour with 10 new trips entering the site and 26 new trips exiting the site. In the PM peak hour, the proposed development is anticipated to generate 66 new trips with 42 new trips entering the site and 24 new trips exiting the site. The proposed land use is anticipated to generate

785 average daily trips to/from the project site.

7. **Conclusions**
   This Traffic Impact Analysis (TIA) has reviewed and analyzed the study area per the scope established by the City of Spokane and WSDOT. Based upon the analysis, field observations, assumptions, methodologies and results which are provided in the body of this report, it is concluded that the development of the proposed project will generate new trips on the existing transportation system and that those trips will have an impact on the transportation system. This conclusion was reached and has been documented within the body of this report.

   - Under the **existing** conditions, all intersections are currently operating at an acceptable level of service.

   - For the **year 2026 with background growth rate** scenario, all intersections are anticipated to continue to operate at an acceptable level of service except the intersection of SR 195 & 16th Avenue. With the mitigation provided by the Spangle-Wheatland project (Right Out only on eastbound approach), the intersection of SR 195 & 16th Avenue is anticipated to operate at an acceptable level of service.

   - For the **year 2026 with background growth rate plus background projects and without this project** scenario, all intersections are anticipated to operate at an acceptable level of service except the intersection of SR 195 & 16th Avenue even with the mitigation provided by the Spangle – Wheatland project. The LOS deficiency of the intersection at SR 195 & 16th Avenue is just above the threshold (**53.4** sec vs LOS F threshold - 50.0 sec). As the demand volumes used for the future year are only a projection of future traffic volumes, we recommend that the volumes and operation for the intersection be monitored over time.

   - For the **year 2026 with background growth rate plus background projects and with this project** scenario, all intersections are anticipated to operate at an acceptable level of service except the intersection of SR 195 & 16th Avenue even with the mitigation by the Spangle – Wheatland project (**73.1 sec** vs LOS F threshold – 50.0 sec). At this time no mitigation at the SR 195 & 16th intersection is proposed other than the change proposed by the Spangle – Wheatland project (Please see Wheatland Estates Proposed Traffic/Transportation Conditions of Approval letter in Background Project section of Appendix).

8. As shown in the Additional Analysis - Right Turn Lane Warrant Analysis section, it is concluded that the intersection of Inland Empire Way & SR 195 meets the WSDOT right turn lane warrant. However, the intersection level of service remains at an acceptable level through the buildout period. Additionally, there is also a sight distance concern associated with a dedicated right turn lane, as a vehicle within the turn lane blocks the view of oncoming traffic. We propose additional consultation with the WSDOT that this be reevaluated after the 100th home site has received an occupancy permit.

9. As shown in the additional analysis Highway Segment LOS and Queue Analysis section, based upon the analysis provided it is concluded that the addition of the project trips will have an impact upon the SR 195 & 1-90 Interchange, by adding 6 vehicles with a calculated 167 ft addition in queue for AM and 1 vehicle with a calculated 9 ft addition in queue for PM.

10. As shown in the additional analysis section – SR 195 Corridor Improvement Projects, it was concluded that with the EB Turn Restrictions at 16th Avenue, Flashing Beacon and Sign at Thorpe Road Exit, and Connection to Inland Empire Way at Cheney-Spokane Road Ramp projects (by other projects, yet to be approved but in the pipeline) that a significant number of trips would be redirected away the NB US 195 to EB I-90 ramp, and that the net result would be no additional trips to the I-90 Ramps.

11. ***Recommendations***

    It is recommended that the project be conditioned to participate in the Corridor Improvement projects as described within this document. The proposed conditions are as follows.

    A. *Vehicular traffic from this project is expected to add 13 AM trips and 5 PM trips to the NB US 195 to EB I-90 ramp. WSDOT has commented that no additional peak hour trips may be added to the ramp due to safety concerns. Latah Glen is therefore required to contribute funds to complete an improvement to the US 195 corridor that will reduce the impact of its traffic on NB US 195 to EB I-90 ramp ("Mitigation Project"). Latah Glen may receive certificate(s) of occupancy after a financial commitment is in place (secured by a letter of credit or bond), which has been approved by the City, providing for the funding of the design and the construction for the Mitigation Project(s), which shall be under contract for construction within one year from issuance of the 157th certificate of occupancy. The details of the mitigation project(s) will be agreed upon by the developers, City and WSDOT. The applicant's contributions to funding the design and construction of the mitigation project(s) will qualify for a credit against transportation impact fees per SMC 17D.075.070*
    B. *Latah Glenn may receive certificate(s) of occupancy once a financial commitment is in place (secured by a letter of credit or bond), which has been approved by the City, providing for a.) the construction of the 16th Avenue improvements with SR 195, and b.) Cheney-Spokane Road Ramp – Connection to Inland Empire Way Improvement. This commitment may be defined as an agreement between several developers to fund and construct the 16th Avenue, and the Cheney-Spokane Road Ramp – Connection to Inland Empire Way Improvement projects within a specified time frame, not to exceed six years, as agreed upon by city staff and WSDOT. The applicant's contributions to funding the design and construction of the Improvement projects will qualify for a credit against transportation impact fees per SMC 17D.075.070.*
        i. *The 16th Avenue and SR 195, improvement project participation is at $500.00/PM peak hour trip and will consist of the proportionate share of the following:*

- *Install a raised curb island*
- *Channelize the turn lane*
- *Add a southbound acceleration lane. tmze*

ii. *The Cheney-Spokane Road Ramp – Connection to Inland Empire Way Improvement project participation is at $1,160.64/PM peak hour trip and will consist of the proportionate share of the following:*
- *Extend the northbound ramp to Inland Empire Way,*
- *One or Two-way connection to Inland Empire Way,*
- *Install ramp with acceleration lane*
- *Install ramp meter signal*
- *Relocate existing sign bridge*

iii. *Latah Glen Financial Commitment*
*The financial commitment for Latah Glen development based upon the rate of participation is as follows for the 16th Avenue improvement with 66 PM peak hour trips at $500.00 per unit. The participation percentage is anticipated to total $33,000 (66 trips * $500.00). For the Cheney-Spokane Road Ramp improvement with 66 PM peak hour trips at $1,160.64 per PM peak hour trip. The participation percentage is anticipated to total $76,602.24(66 trips * $1,160.64). In summary the total financial commitment due is $109,602.24 or $698.11 per unit ($109,602.24/157units).*

iv. *The applicant's contributions to funding the design and construction of the Improvement projects will qualify for a credit against transportation impact fees per SMC 17D.075.070.*

12. Based upon the conclusions within this study, the proposed project is recommended to complete all required conditions of approval and should be allowed to move forward without further traffic analysis, or offsite mitigation.

## INTRODUCTION

### *Introduction, Purpose of Report and Study Area*

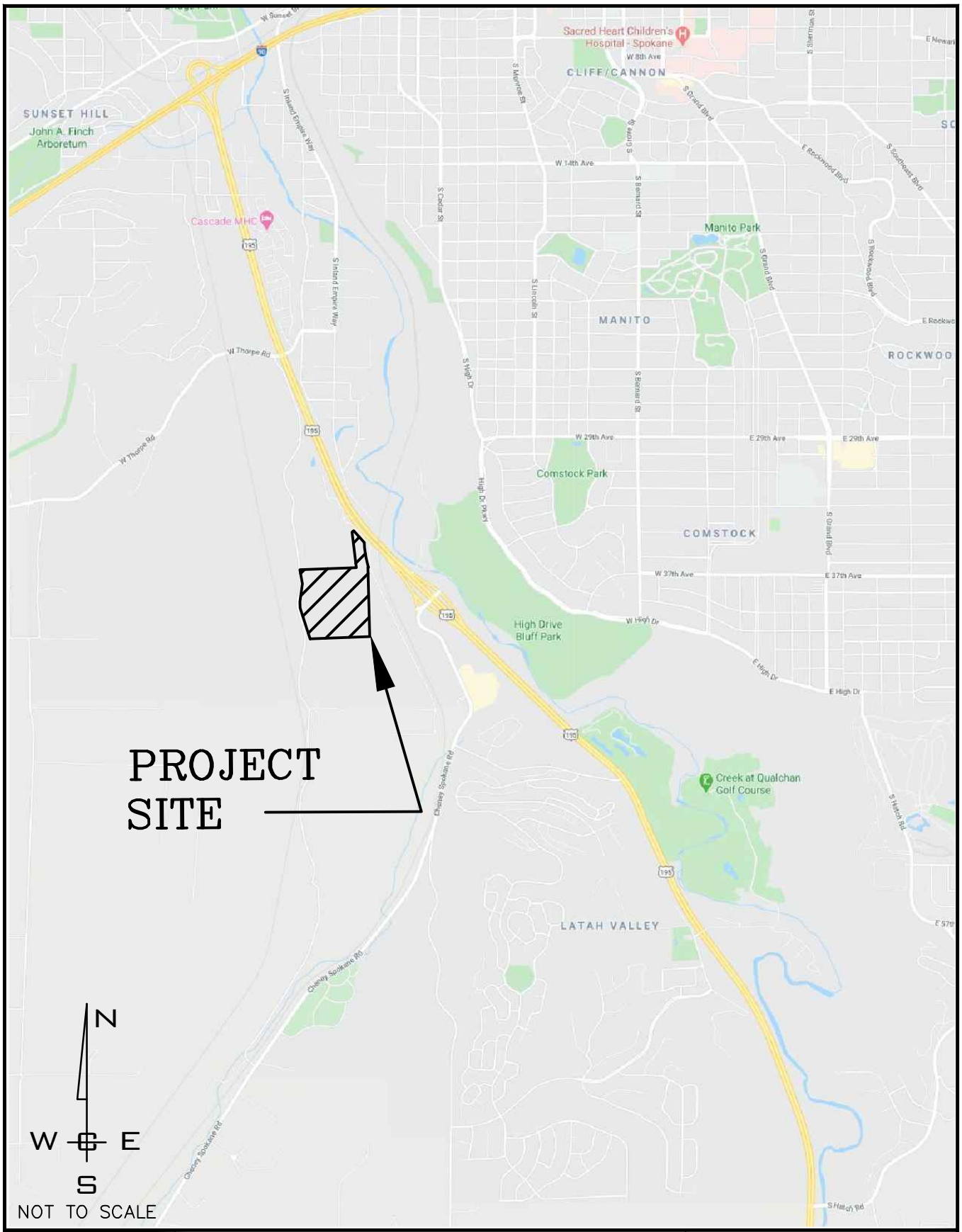
This traffic impact analysis is required by the City of Spokane as part of the SEPA process for the proposed Latah Glen Residential Community. The project proposes to develop 157 space for manufactured homes residential development on approximately 42.03 ± acres. Please see Figure 1 Vicinity Map and Figure 2 Preliminary Site Plan.

The purpose of this analysis is to review, assess, and identify the potential traffic related impacts that the proposed project may have on the transportation network and where possible minimize and/or mitigate any impact. This TIA will be completed in accordance with the current traffic guidelines from the City of Spokane and the Institute of Transportation Engineers (A Recommended Practice – Traffic Access and Impact Studies for Site Development, 2010) as well as their respective requirements.

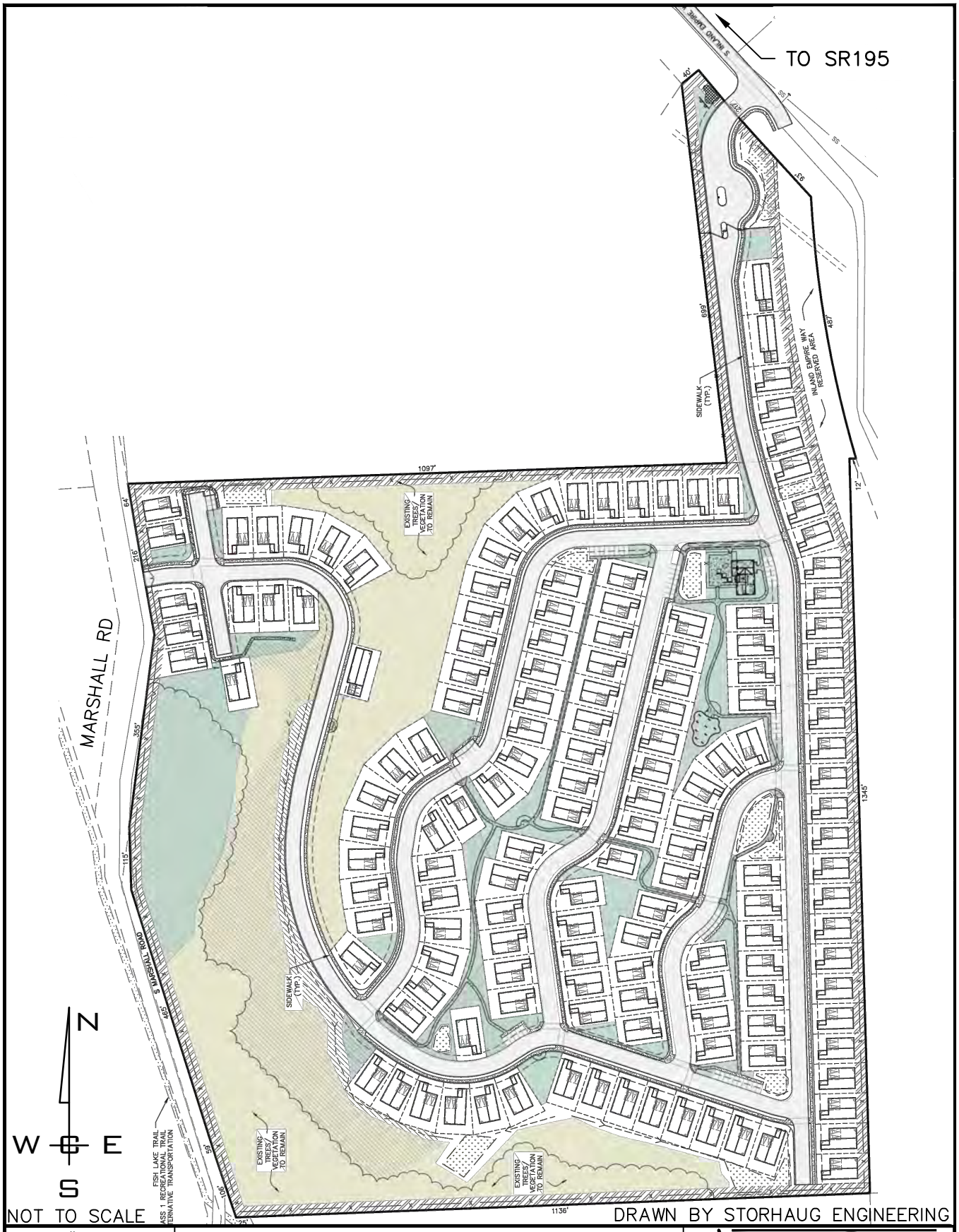
### *Site Location and Development Description*

The subject property is located on a portion of the E ½ of Section 36, T 24 N., R 42 E., W.M. within the City of Spokane, Washington. The project proposes to develop 157 space for manufactured homes residential development on approximately 42.03 ± acres. The project site has been used for multiple land uses over the years. The most recent was an auto wrecker/ auto repair business within the 2,000 sf +/- (2.0 ksf) shop onsite. The remainder of the property is undeveloped area with trees, field grass and weeds.

The project site is proposed upon portions of two parcels. The project proposes to build six (6) new north-south private roads and three (3) new east-west private roads, for a total of 9 new private roads. The projects main access is proposed at the east end of the project with a connection to Inland Empire Way, and its connection to SR 195. The project also proposes a Fire Access to Marshall Road. The access is proposed to be gated per local fire requirements, thus reducing the potential for cut through traffic on private roads. Please see Figure 2 preliminary site plan.




| | | |
|---|---|---|
| PROJ #: 20-2564<br>DATE: 03/08/21<br>DRAWN: KMK<br>APPROVED: TRW | TRAFFIC IMPACT ANALYSIS<br>**LATAH GLEN RESIDENTIAL**<br>3504 S INLAND EMPIRE WAY<br>SPOKANE, WASHINGTON | WCE<br>WHIPPLE CONSULTING ENGINEERS<br>CIVIL AND TRANSPORTATION ENGINEERING<br>21 SOUTH PINES ROAD<br>SPOKANE VALLEY, WASHINGTON 99206<br>PH: 509-893-2617 FAX: 509-926-0227 |
| FIGURE 1 | VICINITY MAP | |




NOT TO SCALE

DRAWN BY STORHAUG ENGINEERING

| | | |
|---|---|---|
| PROJ #: 20-2564<br>DATE: 03/08/21<br>DRAWN: KMK<br>APPROVED: TRW | TRAFFIC IMPACT ANALYSIS<br>**LATAH GLEN RESIDENTIAL**<br>3504 S INLAND EMPIRE WAY<br>SPOKANE, WASHINGTON | WCE<br>WHIPPLE CONSULTING ENGINEERS<br>CIVIL AND TRANSPORTATION ENGINEERING<br>21 SOUTH PINES ROAD<br>SPOKANE VALLEY, WASHINGTON 99206<br>PH: 509-893-2617 FAX: 509-926-0227 |
| FIGURE 2 | **PRELIMINARY SITE PLAN** | |

***Existing and Proposed Conditions within the Study Area***

***Land Use & Zoning***

The project site is currently listed on the City land use map and zoned as Residential Single Family (RSF). The subject property is located on a portion of the E ½ of Section 36, T 24 N., R 42 E., W.M within the City of Spokane, Washington. The parcel numbers for the project are 25364.0001, and 25361.0004. The surrounding area is residential, commercial and rural land uses.

***Existing Roadways***

The overall transportation network in this area consists of a State Route, arterials, and local access roads. The project is proposed to be accessed via Inland Empire Way. The proposed project trips are anticipated to use the following roadways:

**Marshall Road** is generally a two-way, 2-lane north/south, local access road. Marshall Road extends northwest from Cheney-Spokane Road and crosses over the railroad track before turning sharply northeast and passing under Fish Lake Trail. Marshall Road continues through 44th Avenue and along the west side of the project site before terminating at Thorpe Road. Marshall Road primarily serves large lot residential uses. The speed limit on Marshall Road within the study area is 25 MPH.

**Inland Empire Way** is generally a two-way, 2-lane north/south, local access road that extends west from SR 195 and turns sharply south along the railroad track along the east side of the project area before terminating at Victoria Lane. Inland Empire Way primarily serves rural land use. The speed limit on Inland Empire Way within the study area is 25 MPH.

**State Route 195** is generally a north/south, two-way, 4-lane highway. State Route 195 extends south from Interstate 90 at Exit 279 and goes through 16th Avenue, Thorpe Road and the Cities of Spangle, Freedom, Plaza, Rosalia, Thornton, Cashup, Steptoe, Colfax, Pullman, Johnson, Colton, and Uniontown before merging with State Route 95.

***Study Area Intersections (TIA Scope)***

The project study area intersections were identified through public traffic scoping meeting on September 23rd, 2020 and finalized in conversations with the City of Spokane and WSDOT. The study encompasses the AM and PM peak hour analysis of the following intersections:

- SR 195 & 16th Avenue
- SR 195 & Thorpe Avenue
- SR 195 & Inland Empire Way
- Cheney-Spokane Road & SR 195 NB on/off Ramps
- Cheney-Spokane Road & SR 195 SB on/off Ramps
- SR 195 & Meadowlane Drive
- SR 195 & Hatch Road

The scope also included an additional analysis of highway segment and Queue length at the I-90/SR195 EB Ramp, as well as the Right turn lane Warrant at the intersection of Inland Empire Way & SR 195

***Traffic Control and Descriptions***

**SR 195 & 16th Avenue** is an unsignalized 4-leg two-way-stop-controlled intersection with stop control on the east and westbound approaches with the following lane configuration: the east and westbound approaches have one receiving lane and one left-through-right lane. The north and southbound approaches have two receiving lanes, a left turn lane, a through lane, and a through-right lane. With the separated highway there is space for 1 vehicle within the median

**SR 195 & Thorpe Road (J-Turns)** The J-turn design redirects left turns away from the central intersection and reduces conflicts. The central intersection is an unsignalized 4-leg two-way-stop-controlled intersection with stop control on the east and westbound approaches with the following lane configuration: the east and westbound approaches have one receiving lane and a right turn lane. The westbound right turn lane is channelized into an acceleration lane. The northbound approach has two receiving lanes, two through lanes, and a right turn pocket. The southbound approach has one acceleration lane, two receiving lanes, two through lanes, and a right turn lane.

**SR 195 & Inland Empire Way** is an unsignalized stop-controlled intersection with stop control on the eastbound approach of Inland Empire Way, with the following lane configuration: the eastbound approach has one receiving lane and one right turn lane. The northbound approach has two receiving lanes and two through lanes. The southbound approach has two receiving lanes, a through lane, and a through-right lane with a right turn taper.

**Cheney-Spokane Road & SR 195 NB on/off Ramps** is an unsignalized two-way-stop-controlled intersection with stop control on the north and southbound approaches, with the following lane configuration: the eastbound approach has one receiving lane and one left turn lane. The northbound approach has no receiving lane and one left-through lane. The southbound approach has one receiving lane and a right turn lane.

**Cheney-Spokane Road & SR 195 SB on/off Ramps (1)** is an unsignalized -stop-controlled intersection with stop control on the southbound on/off one-way ramps with the following lane configuration: the eastbound approach has one receiving lane and a through-right lane. The westbound approach has one receiving lane and a left-through lane. The northbound approach has one receiving lane. The southbound approach has one left-through-right lane.

**Cheney-Spokane Road & SR 195 SB off Ramp (2)** is an unsignalized -stop-controlled intersection with stop control on the westbound approach with the following lane configuration: The westbound approach has one receiving lane and a left turn lane that stops for the southbound lane. The northbound approach has one receiving lane and a channelized right turn lane. The southbound approach has one through lane.

**SR 195 & Meadow Lane Road** is an unsignalized two-way-stop-controlled intersection with stop control on the east and westbound approaches with the following lane configuration: the east and westbound approaches have one receiving lane and a left-through-right lane. The northbound approach has two receiving lanes, a left turn lane, a through lane, and a through-right lane. The southbound approach has two receiving lanes, a left turn lane, two through lanes and a right turn lane.

**SR 195 & Hatch Road** is an unsignalized one-way-stop-controlled intersection with stop control on the westbound approach with the following lane configuration: the westbound approach has one receiving lane and a left -right turn lane. The northbound approach has two receiving lanes, one through lane, and a through-right lane. The southbound approach has two receiving lanes, a left turn lane, and two through lanes.

***Traffic Safety***

For the intersections within the study area accident report summaries were received from the City of Spokane and WSDOT. Generally, accidents are documented by type of occurrence, such as property damage or injury. No fatalities were reported for the study intersections during the last three years.

**ITE MEV Method**

$$Rate\ per\ MEV = \frac{number\ of\ accidents\ in\ three\ years\ X\ 1\ million}{PM\ Peak\ hour\ volume\ X\ PM\ Peak\ Factor\ \ X\ 365\ X\ 3\ years}$$

Equation 4-2 of ITE manual of traffic engineering studies (fourth edition) (modified given the available data, for 3 years and utilizes PM peak hour volumes ~ 10% of ADT)

In this analysis accidents are measured based on frequency per million entering vehicles (MEV). This ratio is a function of the average daily traffic entering the intersection and the annual frequency of accidents. This method of analysis is also considered as an "exposure" analysis. This method of analysis is used to identify areas that need further review. A typical review threshold for accidents at an intersection is 1.00 accidents per MEV. The accident data for the intersections within the study area are shown in Table 1.

***Table 1 – Accident Data for Intersections within the Study Area***

| ACCIDENT DATA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Intersection** | **2017** | | **2018** | | **2019** | | **INTX** | **Per MEV** |
| | **PDO** | **INJ** | **PDO** | **INJ** | **PDO** | **INJ** | **ADT** | |
| SR 195 & 16th Avenue | 4 | 3 | 2 | 0 | 2 | 2 | 23,100 | 0.514 |
| SR 195 & Thorpe Avenue | 7 | 2 | 3 | 5 | 1 | 2 | 24,150 | 0.756 |
| SR 195 & Inland Empire Way | 1 | 1 | 0 | 0 | 0 | 1 | 14,190 | 0.193 |
| Ch-Spo Road & SR 195 NB Ramps | 0 | 0 | 0 | 0 | 0 | 0 | 4,860 | 0 |
| Ch-Spo Road & SR 195 SB Ramps | 0 | 1 | 0 | 0 | 0 | 0 | 11,430 | 0.080 |
| SR 195 & Meadowlane Road | 0 | 4 | 3 | 0 | 1 | 3 | 17,040 | 0.590 |
| SR 195 & Hatch Road | 1 | 3 | 2 | 1 | 1 | 1 | 14,730 | 0.558 |

As shown in the table above, all intersections within the study area do not meet or exceed the threshold for further review.

**WSDOT HSM Method**

The existing traffic safety assessment at the scoped intersections on State Route 195 were estimated using the methods from the *Safety Analysis Guide* published by WSDOT as implemented in HSM spreadsheet tool, version 9.0 placed at http://safetyperformance.org/tools/.

The term crash frequency refers to the number of crashes per year. Crash frequency is used to describe:

- **Observed (Table 1)** average crash frequency: the historic average of the number of crashes per year. When the HSM predictive method is used with crash history, the expected average crash frequency replaces the observed average crash frequency as a more reliable value of actual average historic performance.

- **Predicted (Based upon; Geometry & Traffic Volume)** average crash frequency is an output from the HSM predictive analysis using only geometry and existing traffic volumes. It is the average safety performance of similar intersections in crashes per year. The predicted analysis provides a base level for the intersection.

- **Expected (Based upon; Geometry, Traffic Volume & Observed Crash Data)** average crash frequency using geometry, existing traffic volumes and reported crash data. This analysis is considered a more reliable metric of existing or actual average crash performance, measured in crashes per year. This analysis uses the predicted average crash frequency, and the observed crash history as input to the empirical Bayes method in the HSM predictive methods. Results from the empirical Bayes method is calculated by weighting the observed crash history against the predicted number of crashes per year. Note that the analysis result values are averages, and should not be interpreted as point values. Values are also rounded to one decimal place.

- **Potential for Improvement (Difference between Predicted & Expected Crash Frequencies)** average crash frequency is strictly a difference between the Predicted and Expected crash frequencies to identify and determine what locations have the highest potential for improvement and the reduction of fatal and serious injury crashes, and return the greatest benefit for the cost of a safety project.

The results of the predictive analysis within the study area are shown in Table 2. The worksheets for the analysis are included in Appendix.

*Table 2 - Accident Analysis for Intersections on SR 195 (Existing Volumes)*

| ACCIDENT ANALYSIS | | | | |
|---|---|---|---|---|
| **Intersection** | | **Crash Frequency (crashes/yr)** | | |
| | | **Predicted** (Geometry/Volume) | **Expected** (Geometry/Volume/ Accident history) | **Potential for Improvement** (Difference) |
| SR 195 & 16th Avenue | FT & INJ | 0.7 | 1.3 | 0.6 |
| | PDO | 1.0 | 1.9 | 0.9 |
| | Total | 1.8 | 3.3 | 1.5 |
| SR 195 & Thorpe Avenue | FT & INJ | 0.7 | 2.0 | 1.2 |
| | PDO | 1.0 | 2.8 | 1.8 |
| | Total | 1.8 | 4.8 | 3.0 |
| SR 195 & Inland Empire Way | FT & INJ | 0.2 | 0.3 | 0.1 |
| | PDO | 0.1 | 0.2 | 0.1 |
| | Total | 0.3 | 0.5 | 0.2 |
| Cheney-Spokane Road & SR 195 NB on/off Ramps | FT & INJ | 0.2 | 0.1 | 0 |
| | PDO | 0.2 | 0.2 | 0 |
| | Total | 0.4 | 0.3 | 0 |
| Cheney-Spokane Road & SR 195 SB on/off Ramps | FT & INJ | 0.6 | 0.3 | 0 |
| | PDO | 1.0 | 0.6 | 0 |
| | Total | 1.6 | 0.9 | 0 |
| SR 195 & Meadowlane Drive | FT & INJ | 1.0 | 1.3 | 0.4 |
| | PDO | 1.5 | 2.0 | 0.6 |
| | Total | 2.4 | 3.4 | 0.9 |
| SR 195 & Hatch Road | FT & INJ | 0.6 | 1.0 | 0.4 |
| | PDO | 1.1 | 1.8 | 0.8 |
| | Total | 1.6 | 2.8 | 1.2 |

**FT & INJ = Fatal and Injury, PDO = Property Damage Only**

As shown on Table 2, based upon the HSM analysis, it is anticipated that the intersections of State Route 195 & 16th Avenue, State Route 195 & Thorpe Avenue, State Route 195 & Meadowlane Drive, and State Route 195 & Hatch Road in the study area may experience more crashes than intersections with similar roadway characteristics and traffic volumes. It is anticipated that the intersections of State Route 195 & Inland Empire Way and Cheney-Spokane Road & State Route 195 NB on/off Ramps will have a safety performance similar to other intersections that have the same roadway characteristics and traffic volumes. It is also anticipated that the intersection of Cheney-Spokane Road & State Route 195 SB on/off Ramps will experience fewer crashes than intersections with similar roadway characteristics and traffic volumes.

Note: There is currently no warrant standard established, that requires that a safety project be implemented by this analysis.

### *Traffic Volumes and Peak Hours of Operation*

Traffic counts were collected in 2018, 2019, 2020, & 2021 under the direction of Whipple Consulting Engineers (WCE) and Idax Data Solutions (IDAX)*, at the following intersection:

- SR 195 & 16th Avenue (August 2019)
- SR 195 & Thorpe Avenue (November 2018)
- SR 195 & Inland Empire Way (January 2021)
- Cheney-Spokane Road & SR 195 NB on/off Ramps (May 2019)
- Cheney-Spokane Road & SR 195 SB on/off Ramps (May 2019)
- SR 195 & Meadowlane Drive (November 2018)
- SR 195 & Hatch Road (February 2020 - IDAX) *

The AM & PM peak hours from these counts are shown on Figures 3 & 4. The raw data for these counts are located in the technical appendix.

### *Traffic Counts Adjustment Factor*

For the effect of the Covid Pandemic, the study area is anticipated to have experienced a decrease in traffic volumes. This effect applies to the year 2021 traffic counts at the intersection of SR 195 & Inland Empire Way. It is the intention of this study to apply a Covid Pandemic Factor to the collected traffic volume, as allowed, to adjust them to the volumes experienced before the effect of the Covid Pandemic, which would be a "normal" baseline year. Based upon the traffic counts on the intersection of SR 195 & Thorpe Avenue before the effect of the Covid Pandemic, the adjustment factors for Covid Pandemic at the intersection of SR 195 & Inland Empire Way have been calculated. The methodology has been summarized below and the calculation and analysis are included in the Traffic Adjustment Calculation of the Appendix.

The method

1. The expected volume for the year 2021 is calculated by taking the southbound traffic volume on SR 195 from a recent pre pandemic count (2018) at the intersection of SR 195 & Thorpe Avenue and multiplying it by the background growth rate for year 2021 (1.03).
2. An adjustment ratio is then calculated by dividing the expected traffic volume on SR 195 of SR 195 & Thorpe Avenue by the actual traffic volume on SR 195 of SR 195 & Inland Empire Way.
3. The adjusted volumes are then calculated by multiplying the actual volume by the adjustment ratio.

## LEVEL OF SERVICE

Level of Service (LOS) is an empirical premise developed by the transportation profession to quantify driver perception for such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles afforded to drivers who utilize the transportation network. It has been defined by the Transportation Research Board in the *Highway Capacity Manual 6th Edition*. This document has quantified level of service into a range from "A" which indicates little, if any, vehicle delay, to "F" which indicates significant vehicle delay and traffic congestion that may lead to system breakdown due to volumes that may exceed capacity.

### *Signalized Intersections*

For signalized intersections, research has determined that average stopped delay per vehicle is the best available measure of Level of Service. The following tables identify the relationships between level of service and average stopped delay per vehicle. The City of Spokane and WSDOT have adopted level of service D as the minimum acceptable level for all signalized intersections.

**Level of Service Criteria and Descriptions - Signalized**

| LOS | Delay Range (sec) | General Description |
|---|---|---|
| A | 10 | • Very low delay at intersection.<br>• All signal cycles clear.<br>• No vehicles wait through more than one signal cycle. |
| B | 10 to 20 | • Operating speeds beginning to be affected by other traffic.<br>• Short traffic delays at intersections.<br>• Higher average intersections delays resulting from more vehicles stopping. |
| C | 20 to 35 | • Operating speeds and maneuverability closely controlled by other traffic.<br>• Higher delays at intersections than for LOS B due to a significant number of vehicles stopping.<br>• Not all signal cycles clear the waiting vehicles. |
| D | 35 to 55 | • Tolerable operating speeds, but long traffic delays occur at intersections<br>• The influence of congestion is noticeable.<br>• Many vehicles stop and the proportion of vehicles not stopping declines.<br>• The number of signal cycle failures, for which vehicles must wait through more than one signal cycle are noticeable. |
| E | 55 to 80 | • Speeds are restricted, very long traffic delays are experienced and traffic volumes are near capacity.<br>• Traffic flow is unstable, any interruption, no matter how minor, will cause queues to form and service to deteriorate.<br>• Traffic signal cycle failures are frequent occurrences. |
| F | 80 | • Extreme delays resulting in long queues which may interfere with other traffic movements<br>• Stoppages of long duration and speeds may drop to zero.<br>• Vehicle arrival rates are greater than capacity.<br>• Considered unacceptable by most drivers. |

***Unsignalized Intersections***

The calculation of Level of Service (LOS) at an unsignalized one/two-way stop-controlled intersection is examined in the Transportation Research Board's *Highway Capacity Manual 6th Edition*. For unsignalized intersections, Level of Service is based on the delay experienced by each movement and approach within the intersection. The concept of delay as presented for unsignalized intersections in the Highway Capacity Manual is based on the amount of time a vehicle must spend at the intersection. Vehicles passing straight through the intersection on the major (uncontrolled) street experience no delay at the intersection. On the other hand, vehicles which are turning left from the minor street, because they must yield the right of way to all right turning vehicles, all left turning vehicles from the major street and all through vehicles on both the minor and major streets, must spend more time at the intersection. Levels of Service are assigned to individual movements within the intersection, and are based upon the delay experienced by each movement or approach.

The Transportation Research Board has determined what Levels of Service for unsignalized intersections should be, by designating Level of Service A through F, where Level of Service A represents a facility where no vehicle in any movement is delayed very long and Level of Service F which represents a facility where there is excessive delay for the average vehicle in at least one movement in the intersection. The City of Spokane and WSDOT have adopted level of service E for all unsignalized intersections within the study area.

**Level of Service Criteria and Descriptions - Unsignalized**

| LOS | Delay Range (sec) | Expected Delay to Minor Street Traffic | General Description |
|---|---|---|---|
| A | 10 | Little to No Delay | • Nearly all drivers find freedom of operation.<br>• Very seldom is there more than one vehicle in the queue. |
| B | 10 to 15 | Short Traffic Delays | • Some drivers begin to consider the delay an inconvenience<br>• Occasionally there is more than one vehicle in the queue. |
| C | 15 to 25 | Average Traffic Delays | • Many times, there is more than one vehicle in the queue.<br>• Most drivers feel restricted, but not objectionably so. |
| D | 25 to 35 | Long Traffic Delays | • Often there is more than one vehicle in the queue.<br>• Drivers feel quite restricted. |
| E | 35 to 50 | Very Long Traffic Delays | • Represents conditions in which, demand is near or equal capacity.<br>• There is almost always more than one vehicle in the queue.<br>• Drivers find the delays approaching intolerable levels. |
| F | 50 | Stop-and-Go Condition Delays Generally Longer than Acceptable | • Forced flow.<br>• Represents an intersection failure condition that is caused by geometric and/or operational constraints external to the intersection |

All Level of Service analyses described in this report were performed in accordance with the procedures described above. As a final note, the Highway Capacity Manual (HCM) analysis and procedures are based upon worst case conditions. Therefore, most of each weekday and the weekends will experience traffic conditions better than those described within this document, which are only for the peak hours of operation

***Existing Level of Service and Traffic Analysis***

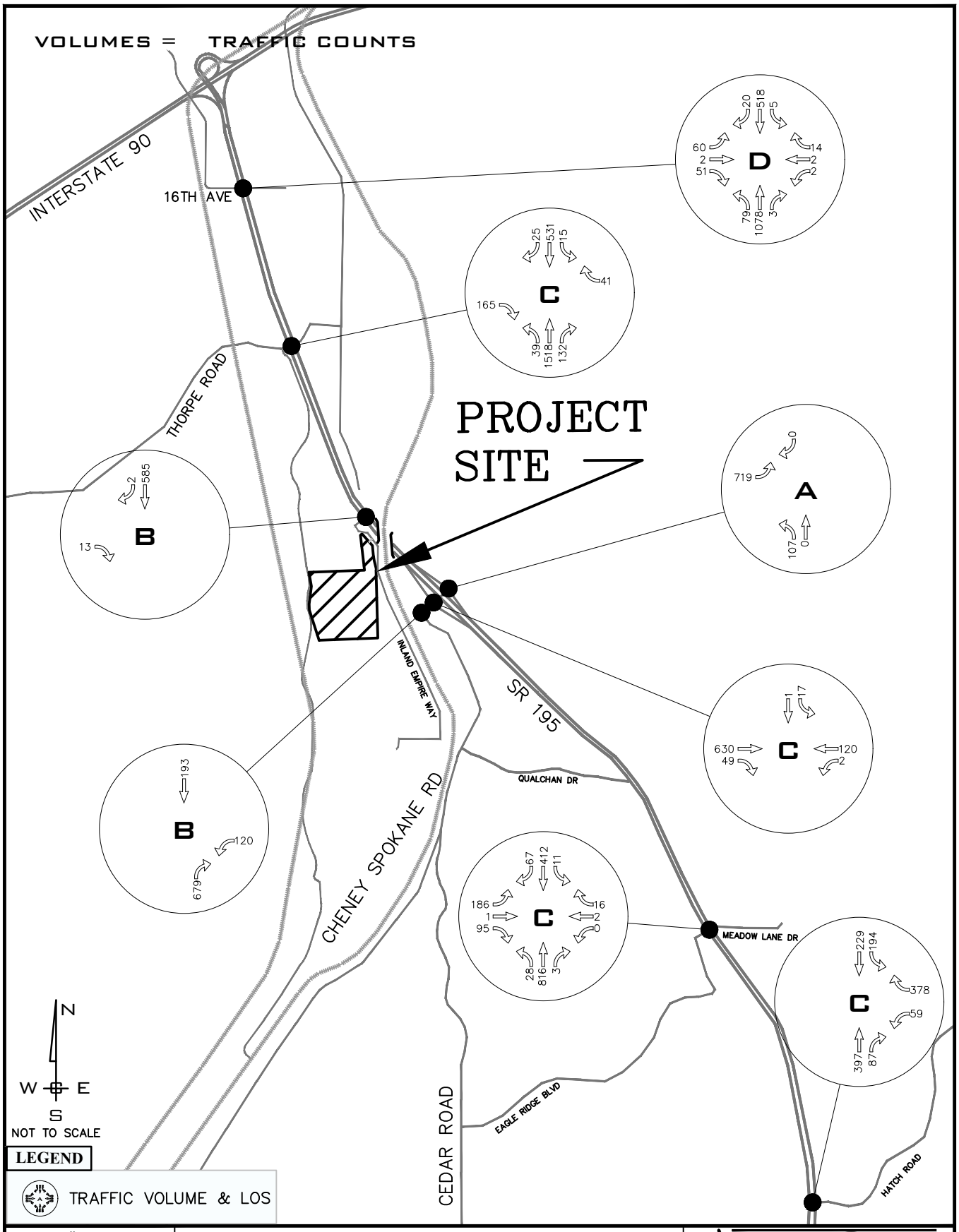
The existing Levels of Service at the scoped intersections were calculated using the methods from the *6th Edition Highway Capacity Manual* as implemented in Synchro, *version 10 - Build 122*. The existing Levels of Service for the intersection within the study area are summarized on the following tables. The existing traffic volumes used for this report are shown on Figures 3 & 4.

***Table 3 – 2021 Existing Intersections Levels of Service (Figure 3&4)***

| **INTERSECTION** | | **AM Peak Hour** | | **PM Peak Hour** | |
|---|---|---|---|---|---|
| **(S)ignalized (U)nsignalized** | | **Delay (sec)** | **LOS** | **Delay (sec)** | **LOS** |
| SR 195 & 16th Avenue | U | 25.5 | D | 42.9 | E |
| SR 195 & Thorpe Avenue | U | 20.6 | C | 18.7 | C |
| SR 195 & Inland Empire Way | U | 10.7 | B | 15.1 | C |
| Ch-Sp Road & SR 195 NB on/off Ramps | U | 9.0 | A | 9.0 | A |
| Ch-Sp Road & SR 195 SB on/off Ramps (1) | U | 21.5 | C | 13.7 | B |
| Ch-Sp Road & SR 195 SB on/off Ramps (2) | U | 10.7 | B | 15.7 | C |
| SR 195 & Meadowlane Drive | U | 24.3 | C | 21.5 | C |
| SR 195 & Hatch Road | U | 16.3 | C | 19.4 | C |

The City of Spokane and WSDOT have adopted level of service D as the minimum acceptable level for signalized intersections and level of service E as the minimum acceptable level for unsignalized intersections.

As shown in Table 3, the intersections are currently operating at an acceptable level of service.

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| FIGURE 3 | 2021 AM EXISTING TRAFFIC VOL. & LOS | |

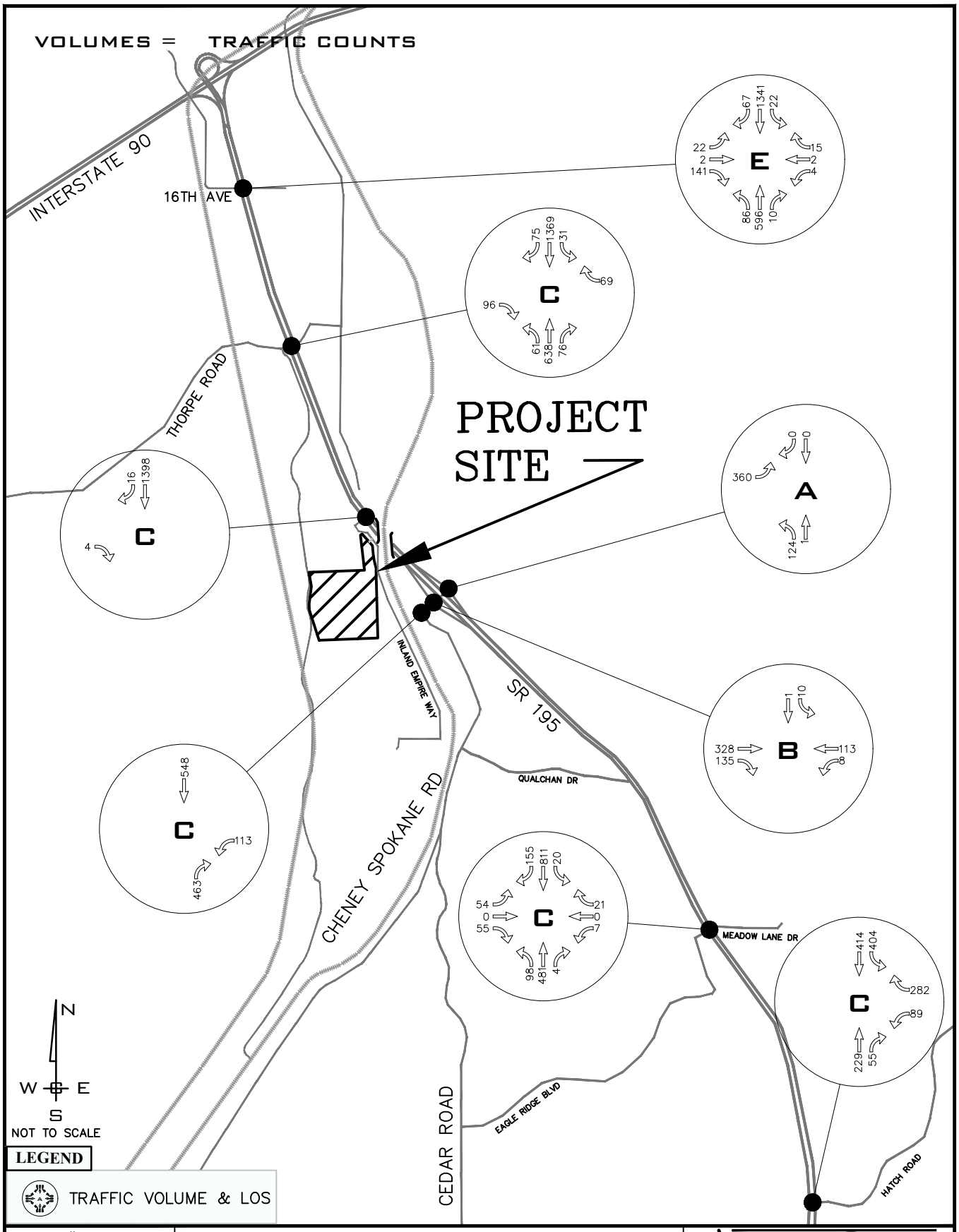


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FIGURE 4

2021 PM EXISTING TRAFFIC VOL. & LOS

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***Future Year Traffic Impact Analysis***

The build out year (2026) analysis are requirement, per the scope of TIA meeting. Three scenarios were examined for the build out year (2026) analysis. The first scenario assumes that the existing traffic volumes as shown on Figures 3 & 4 experience an increase above the existing volumes at the established background rate. The second scenario assumes that the development has not moved forward and analyzes the scoped intersections with the background growth rate and the background project trips as shown on Figures 7 & 8. The third scenario assumes that the development has moved forward and analyzes the scoped intersection with the background growth rate, the background projects, and the project trips as shown on Figures 11 & 12. These scenarios will allow a determination to be made as to what the future conditions may be both with/without the background project trips and with/without the project trips.

***Background Traffic Growth***

Background traffic growth is an anticipated increase in traffic volume from year to year. As the existing land uses that surround a transportation facility mature, an increase in traffic results and may be due to either an increase in drivers per household or a household's purchase of an additional vehicle. Many things can cause an increase in the traffic volumes of a facility. The objective of the background traffic growth rate is to anticipate what the traffic volumes may be in the future. The background traffic growth rate for an area or street is determined by means of physical counts collected by local governmental agencies. The counts are compared on a yearly basis and a rate of increase is calculated from the data.

The background growth rate was determined to be 1.0% per year. Based on a five-year build out, compounded annually, the total increase in traffic rate for the year 2026 is anticipated to be 1.051.

**Public/Private Improvement Projects**

Within the SR 195 Corridor there are multiple improvement projects proposed and conditioned within the decisions of the background projects. These improvements are anticipated to maintain acceptable level of service, promote the redirection of trips from the 1-90/SR 195 Eastbound ramp and also repair a bridge which will have the result of widening the roadway, which will allow for a separation of lanes. These improvement projects are listed here by position from the north to the south along the corridor:

SR 195 & 16th Avenue

As a part of the Wheatland Estates Study the intersection of SR 195 & 16th Avenue is an at grade intersection with SR 195. The improvement project proposes restricting the eastbound movement from a left-through-right lane to a channelized right turn only lane, with an acceleration lane. This project improves safety by removing competing and conflicting movements within the median, improves intersection level of service to an acceptable level and promotes the redistribution of I-90 bound trips as those trips must travel south past Thorpe Rd to the J-turn to then return to 16th Avenue and then to I-90.

SR 195 & Thorpe Rd

As a part of the Summit Development and the Tangle Ridge Development the intersection of SR 195 & Thorpe Road is an at grade intersection with SR 195 with north and south J-turns. The improvement project consists of a directional sign with flashing beacons. The sign provides drivers alternate routes to the downtown core and the South Hill. The flashing beacons are to be activated when the ramp meter signal at the I-90/SR 195 Eastbound Ramp is active, providing additional driver information prior to the Thorpe Exit. The project promotes the redirection of I-90 eastbound trips by offering alternative time saving routes.

SR 195 & Inland Empire Way

This is a temporary solution to connects the Northbound route of Cheney-Spokane Road to Inland Empire Way. This project has not been conditioned by a project yet. This improvement projects extends the SR 195 northbound onramp at Cheney-Spokane Road further along SR 195 under the railroad bridge. The on ramp is separated from SR 195 by a barrier wall. After the railroad bridge the inland Empire way Exit would be restored, thus creating the northbound link. For SR 195 bound trips they would proceed on the ramp that would then merge onto SR 195. A secondary component would be the installation of a ramp meter just before this junction. The project promotes the redistribution of downtown and south hill destination trips to the alternative route of Inland Empire Way. The installation of the ramp meter further encourages the alternate route by increasing travel time.

SR 195 & Meadowlane

As a part of the Summit and Wheatland Estates Developments, the intersection of SR 195 & Meadowlane is an at grade intersection. The improvement project is the installation of a J-turn south of the intersection. The improvement project proposes restricting the eastbound movement from a left-through-right lane to a channelized right turn only lane, with an acceleration lane. The northbound trips would be redirected as eastbound right turns, that would then utilize the J-turn to return the trips to a northbound direction. This project improves safety by removing competing and conflicting movements within the median, and improves intersection level of service to an acceptable level.

SR 195 & Hatch Road

Per the Six Year Comprehensive Street Program (2021 - 2026), the City of Spokane includes the reconstruction of the Hatch Bridge deck to perpetuate the existing functionality. The project expands the roadway width and increases the storage length of the westbound right turn lane. This improvement is anticipated to increase intersection capacity and improve intersection level of service.

***Year 2026 with Background Traffic Growth***

This scenario assumes that the existing traffic volumes experience an increase above the existing volumes at the established background rate. The traffic volumes for this condition include the existing traffic, as shown on Figures 3 & 4, multiplied by the background growth rate for year 2026(1.051). Please see Figures 5 & 6 for the traffic volumes used for this scenario. A summary of the Level of Service results is shown in the following table. This scenario creates a future year baseline that allows for a direct comparison of the with background project scenario.

***Table 4 – Year 2026 Level of Service, with Background Traffic Growth (Figure 5&6)***

| **INTERSECTION** | **(S)ignalized (U)nsignalized** | **AM Peak Hour** | | **PM Peak Hour** | |
|---|---|---|---|---|---|
| | | **Delay (sec)** | **LOS** | **Delay (sec)** | **LOS** |
| SR 195 & 16th Avenue | U | 28.7 | D | **58.6** | **F** |
| • RO only on EB Approach | (U) | (20.5) | (C) | (31.1) | (D) |
| SR 195 & Thorpe Avenue | U | 22.2 | C | 20.1 | C |
| SR 195 & Inland Empire Way | U | 10.8 | B | 15.7 | C |
| Ch-Sp Road & SR 195 NB on/off Ramps | U | 9.1 | A | 9.1 | A |
| Ch-Sp Road & SR 195 SB on/off Ramps (1) | U | 23.0 | C | 14.2 | B |
| Ch-Sp Road & SR 195 SB on/off Ramps (2) | U | 10.9 | B | 16.6 | C |
| SR 195 & Meadowlane Drive | U | 28.4 | D | 23.5 | C |
| SR 195 & Hatch Road | U | 17.5 | C | 22.4 | C |

The City of Spokane and WSDOT have adopted level of service D as the minimum acceptable level for signalized intersections and level of service E as the minimum acceptable level for unsignalized intersections.

As shown in Table 4, the intersections are anticipated to operate at an acceptable level of service except the intersection of SR 195 & 16th Avenue. With the reconfiguration on eastbound approach to a right out only, the intersection of SR 195 & 16th Avenue is anticipated to operate at an acceptable level of service.

SR 195 & 16th Avenue as a part of the Wheatland Estates Study the intersection of SR 195 & 16th Avenue is an at grade intersection with SR 195. The improvement project proposes restricting the eastbound movement from a left-through-right lane to a channelized right turn only lane, with an acceleration lane. This project improves safety by removing competing and conflicting movements within the median, improves intersection level of service to an acceptable level and promotes the redistribution of I-90 bound trips as those trips must travel south past Thorpe Rd to the J-turn to then return to 16th Avenue and then to I-90.

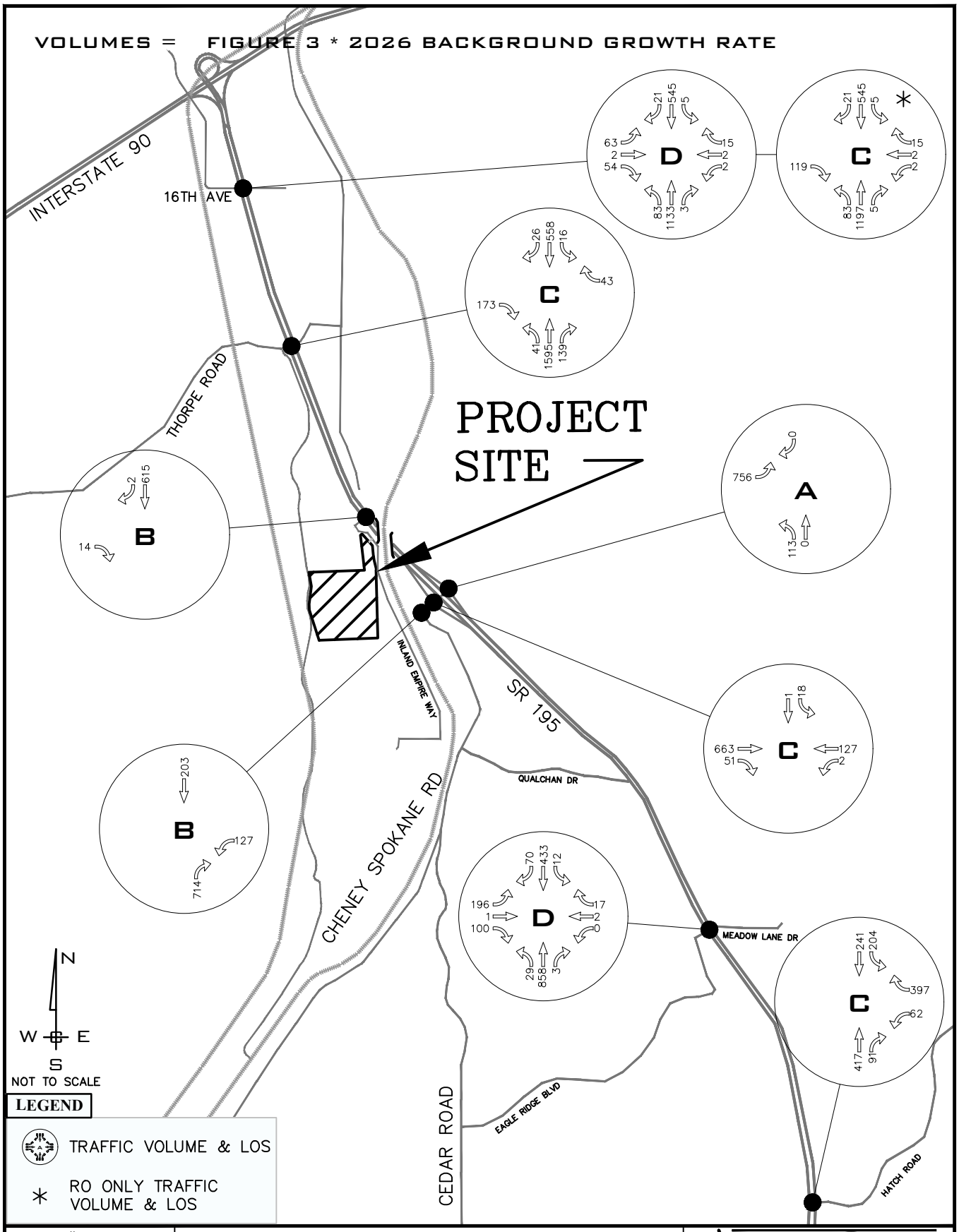


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FIGURE 5

2026 AM VOL. W GROWTH RATE & LOS

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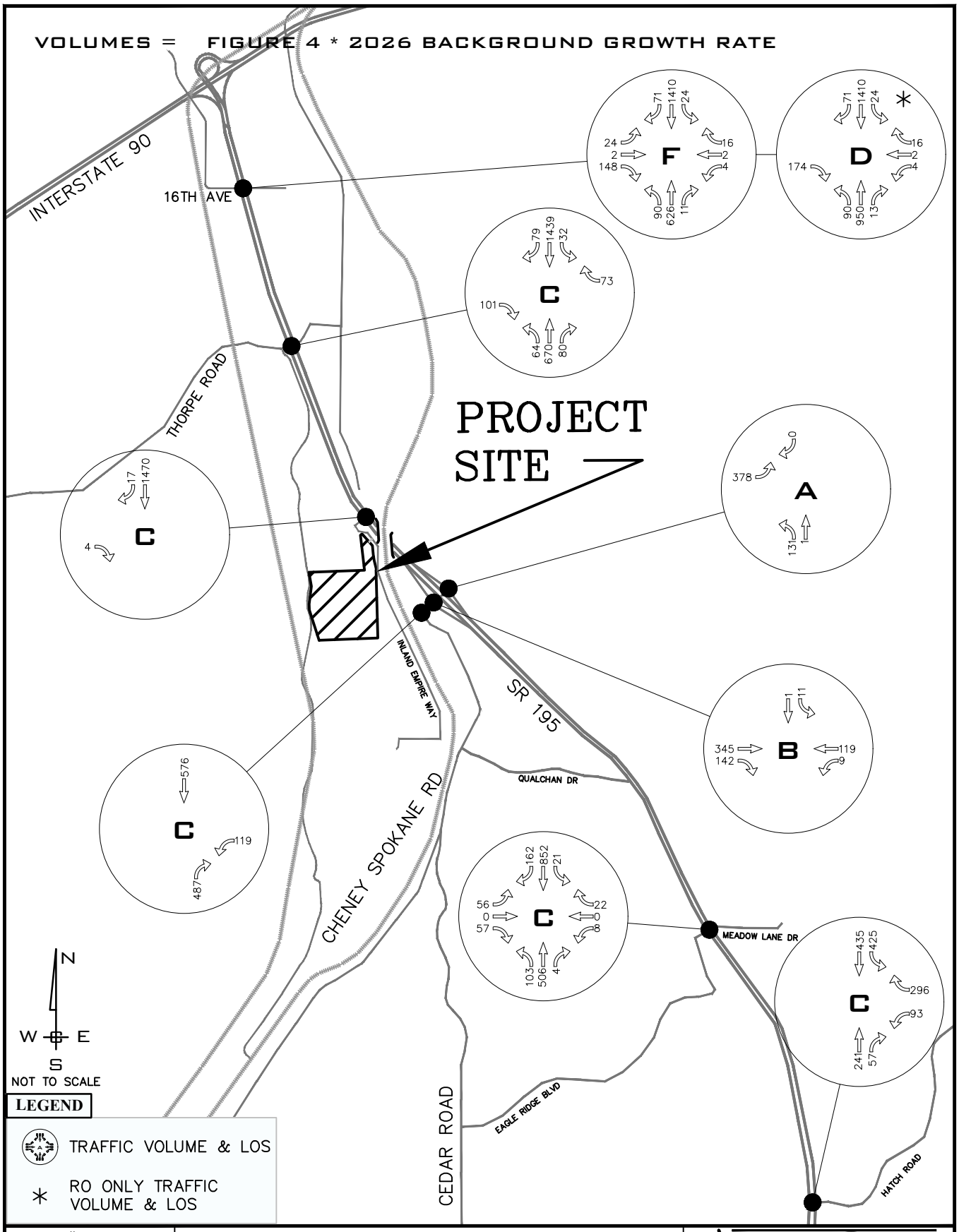


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FIGURE 6

2026 PM VOL. W GROWTH RATE & LOS

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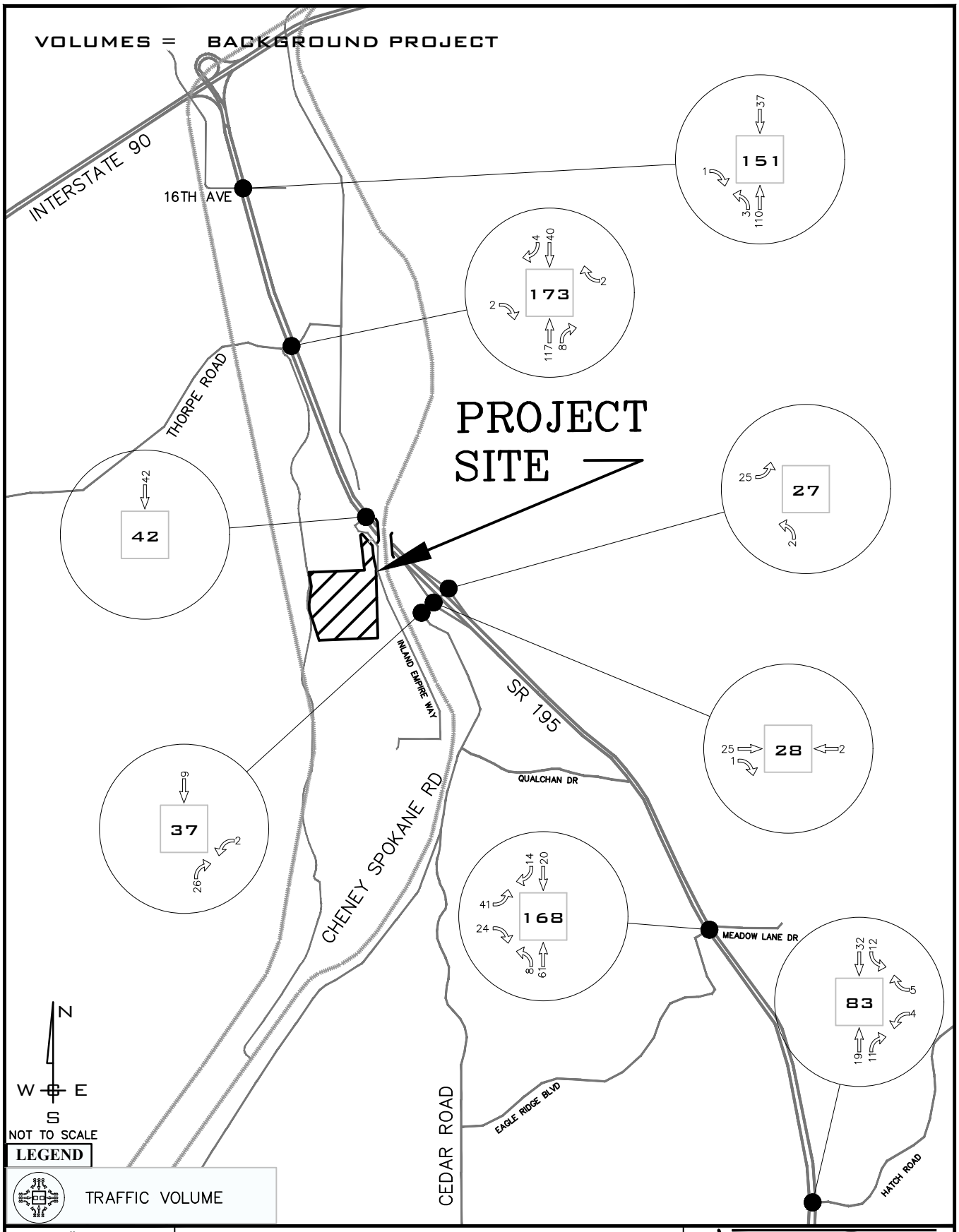
***Background Project Traffic***

In addition to the natural increase in background growth, background projects that have already been approved or have made application and have been vested before this project have been included. The summary of background project traffic volumes used for this report are shown on Table 5. Please see Figures 7 & 8 for a graphical representation of this distribution.

***Table 5 – Summary of the Background Project Trip Generation (Figure 7&8)***

| Background Projects | Land Use (ITE LUC) | Unit | AM Peak Hour Trips | | | PM Peak Hour Trips | | |
|---|---|---|---|---|---|---|---|---|
| | | | Vol. / LUC | Directional Distribution | | Vol. / LUC | Directional Distribution | |
| | | | | In | Out | | In | Out |
| Eagle Ridge 13th Addition | Single-Family (210) | 104 | 77 | 19 | 58 | 103 | 65 | 38 |
| The Summit | Single-Family (210) | 99 | 74 | 19 | 55 | 99 | 62 | 37 |
| Tangle Ridge | Single-Family (210) | 45 | 34 | 8 | 26 | 45 | 28 | 17 |
| Wheatland Estates | Single-Family (210) | 200 | 148 | 37 | 111 | 198 | 125 | 73 |
| Total | | | 333 | 83 | 250 | 445 | 280 | 165 |

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# TRAFFIC IMPACT ANALYSIS
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FIGURE 7

AM BACKGROUND TRIPS

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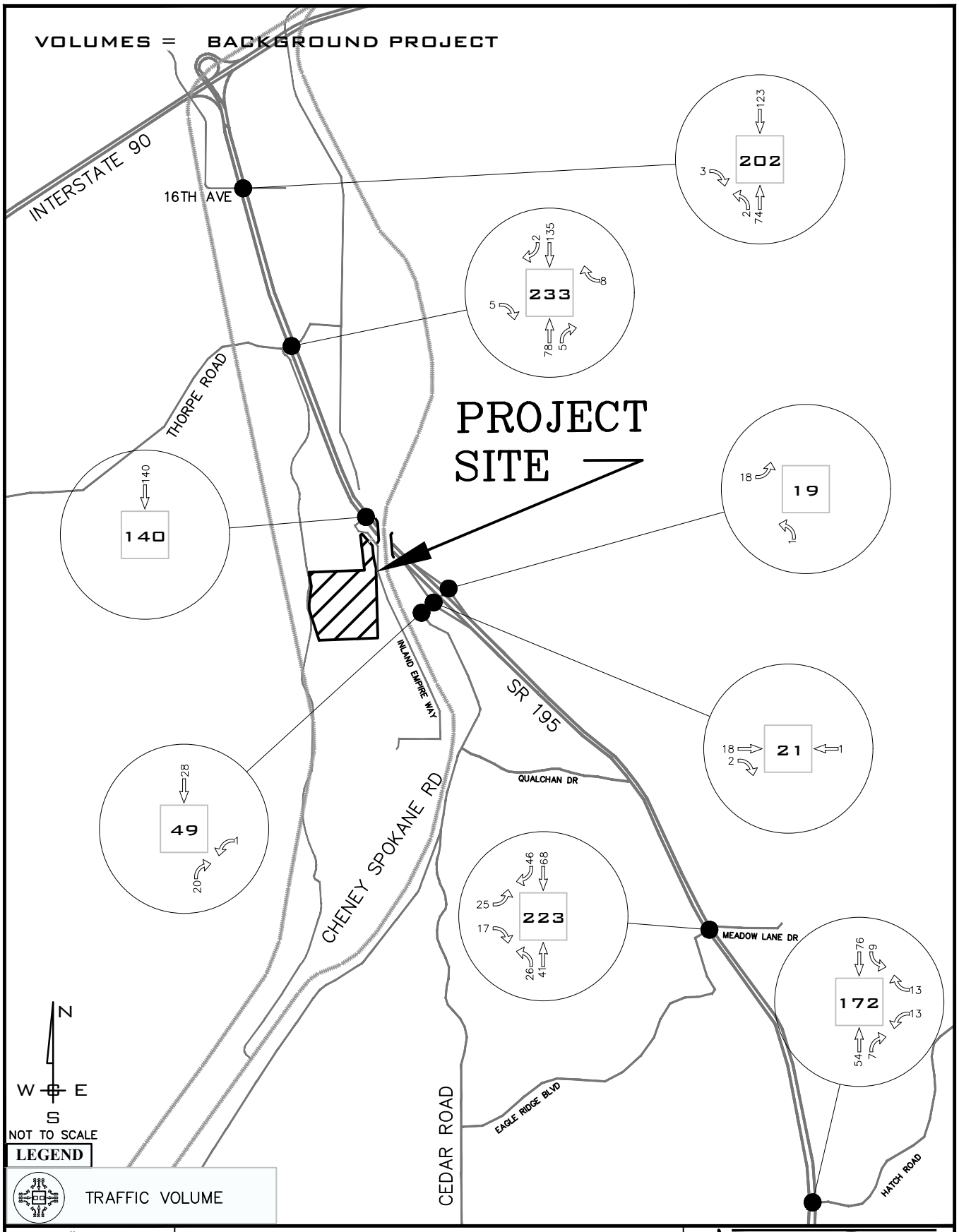


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| FIGURE 8 | PM BACKGROUND TRIPS | |

***Year 2026 with the Background Projects and without the Project***

This scenario assumes that the development has not moved forward. The traffic volumes for this condition include the traffic volumes shown on Figures 5 & 6 and adds the traffic from the background projects as shown on Figures 7 & 8. Please see Figures 9 & 10 for the traffic volumes used for this scenario. A summary of the Level of Service results is shown in the following table.

***Table 6 – Year 2026 LOS, with the Background Projects and without the Project (Fig. 9&10)***

| **INTERSECTION** | | **AM Peak Hour** | | **PM Peak Hour** | |
|---|---|---|---|---|---|
| **(S)ignalized (U)nsignalized** | | **Delay (sec)** | **LOS** | **Delay (sec)** | **LOS** |
| SR 195 & 16th Avenue | U | 33.4 | D | 93.1 | **F** |
| • RO only on EB Approach | (U) | (22.8) | (C) | (53.4) | **(F)** |
| SR 195 & Thorpe Avenue | U | 24.8 | C | 23.2 | C |
| SR 195 & Inland Empire Way | U | 11.0 | B | 17.0 | C |
| Ch-Sp Road & SR 195 NB on/off Ramps | U | 9.1 | A | 9.1 | A |
| Ch-Sp Road & SR 195 SB on/off Ramps (1) | U | 24.1 | C | 14.5 | B |
| Ch-Sp Road & SR 195 SB on/off Ramps (2) | U | 11.1 | B | 17.4 | C |
| SR 195 & Meadowlane Drive | U | 46.5 | E | 37.4 | E |
| • WSDOT ½ J-Turn | (U) | (14.3) | (B) | (14.6) | (B) |
| SR 195 & Hatch Road | U | 18.6 | C | 31.1 | D |
| • Hatch Road Bridge Project | (U) | (18.6) | (C) | (31.1) | (D) |

The City of Spokane and WSDOT have adopted level of service D as the minimum acceptable level for signalized intersections and level of service E as the minimum acceptable level for unsignalized intersections.

As shown in Table 6, all intersections are anticipated to operate at an acceptable level of service except the intersection of SR 195 & 16th Avenue. The LOS deficiency of the intersection of SR 195 & 16th Avenue is just above the threshold (50.0 sec) and resulted by WB left and thru movements which have relatively low traffic volumes (Thru: 2, Left: 4). As the demand volumes used for the future year are only a projection of future traffic volumes, we recommend that the volumes and operation for the intersection be monitored over time.

At Meadowlane Road a ½ J turn is proposed that would redirect the eastbound left turns to turn right and travel a distance before crossing over the median into an acceleration lane located to the far right. These trips would then accelerate and travel north through the intersection, similar to the J turns installed at Thorpe Road & SR 195.

At Hatch Road per the Six Year Comprehensive Street Program (2021 - 2026), the City of Spokane includes the reconstruction of the Hatch Bridge deck to perpetuate the existing functionality. The project includes the expand the storage length of westbound right turn lane at the intersection of Hatch Road and SR 195.

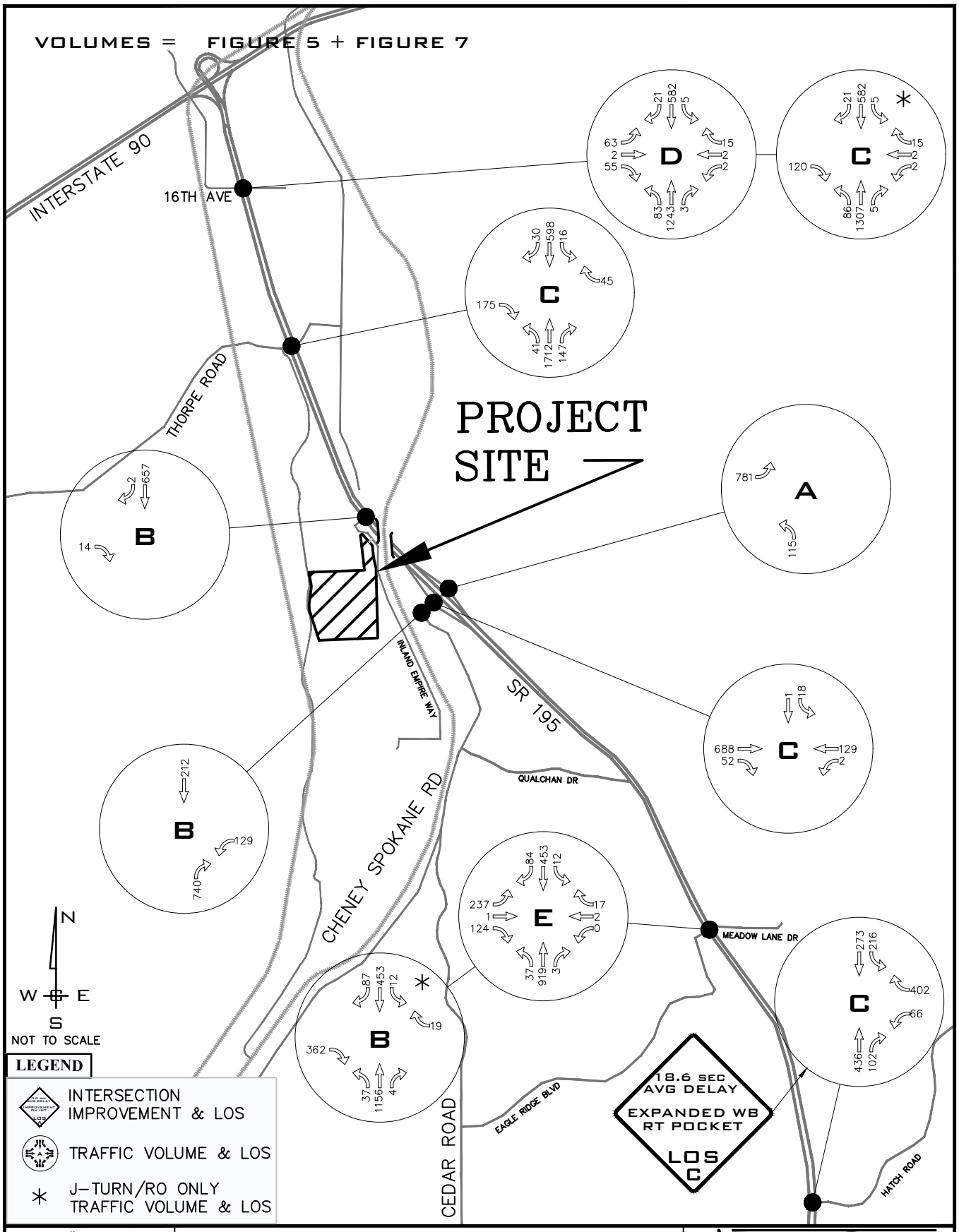


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FIGURE 9

## 2026 AM VOL. W/ BACKGROUND W-O PROJECT & LOS

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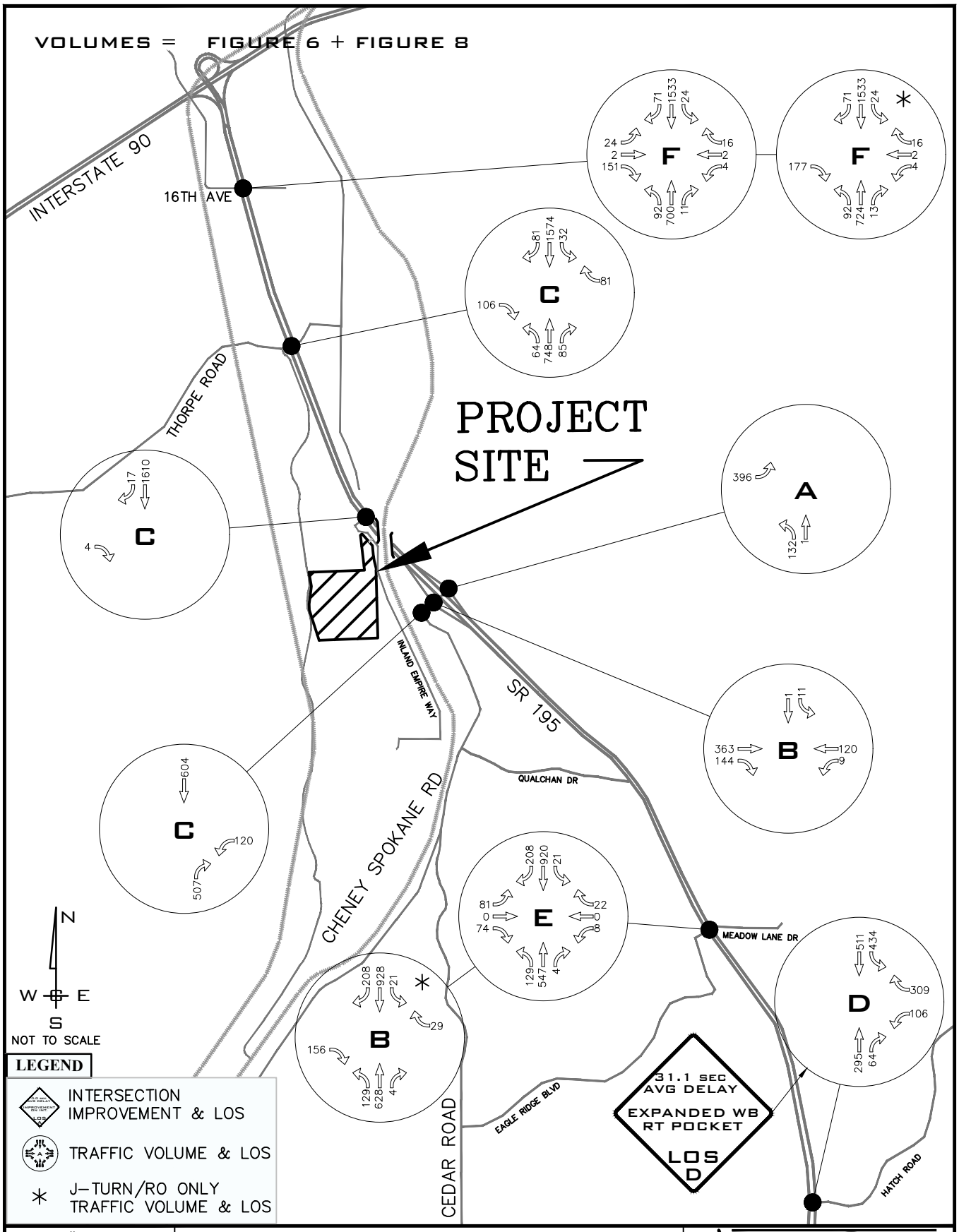


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FIGURE 10

2026 PM VOL. W/ BACKGROUND
W-O PROJECT & LOS

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***Trip Generation and Distribution***

As noted earlier, trip generation rates for the AM and PM peak hours are determined by the use of the *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE). The purpose of the *Trip Generation Manual* is to compile and quantify empirical data into trip generation rates for specific land uses within the US, UK and Canada.

**Existing Land Use**

For the existing auto care center (Approximately 2.0 ksf GFA) with auto wrecking junk yard, Land Use Code (LUC) #942, Automobile Care Center was used to establish the number of potential trips generated by the existing land use. The trip generation rates and the anticipated number of AM and PM peak hour trips for the existing land use are shown on Table 7.

***Table 7*** **-Trip Generation Rates for LUC # 942 – Automobile Care Center**

| KSF | AM Peak Hour Trips | | | PM Peak Hour Trips | | |
|---|---|---|---|---|---|---|
| | Vol. @ 2.25 trips per Unit | Directional Distribution | | Vol. @ 3.11 trips per Unit | Directional Distribution | |
| | | 66% In | 34% Out | | 48% In | 52% Out |
| 2.0 | 5 | 3 | 2 | 7 | 3 | 4 |

| Average Daily Trip Ends (ADT) | | | No ADT Average Rate Provided by ITE Trip Generation Manual |
|---|---|---|---|
| Units | Average Rate | ADT | |
| 2.0 | - | - | |

**Proposed Land Use**

For the proposed 157 units of a manufactured housing development, Land Use Code (LUC) #240, Mobile Home Park was used to establish the number of potential trips generated by the proposed land use. The trip generation rates and the anticipated number of AM and PM peak hour trips for the land use are shown on Table 8.

***Table 8*** **-Trip Generation Rates for LUC # 240 – Mobile Home Park**

| Dwelling Units | AM Peak Hour Trips | | | PM Peak Hour Trips | | |
|---|---|---|---|---|---|---|
| | Vol. @ 0.26 trips/units | Directional Distribution | | Vol. @ 0.46 trips / Units | Directional Distribution | |
| | | 31% In | 69% Out | | 62% In | 38% Out |
| 157 | 41 | 13 | 28 | 73 | 45 | 28 |

| Average Daily Trip Ends (ADT) | | |
|---|---|---|
| Units | Rate | ADT |
| 157 | 5.00 | 785 |

**Trip Generation Summary**

Since the existing automobile care center use is proposed to be replaced by the proposed project, the existing land use subtracted from the proposed land use with the difference in trips generated is shown on Table 9.

***Table 9*** **- Trip Generation Summary (Figure 11 & 12)**

| Land Use Code (LUC) | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | Vol. per LUC | Directional Distribution | | Vol. per LUC | Directional Distribution | |
| | | In | Out | | In | Out |
| LUC 240 Mobile Home Park (Proposed) | 41 | 13 | 28 | 73 | 45 | 28 |
| LUC 942 Automobile Care Center (Existing) | <5> | <3> | <2> | <7> | <3> | <4> |
| **New Trips** | **36** | **10** | **26** | **66** | **42** | **24** |

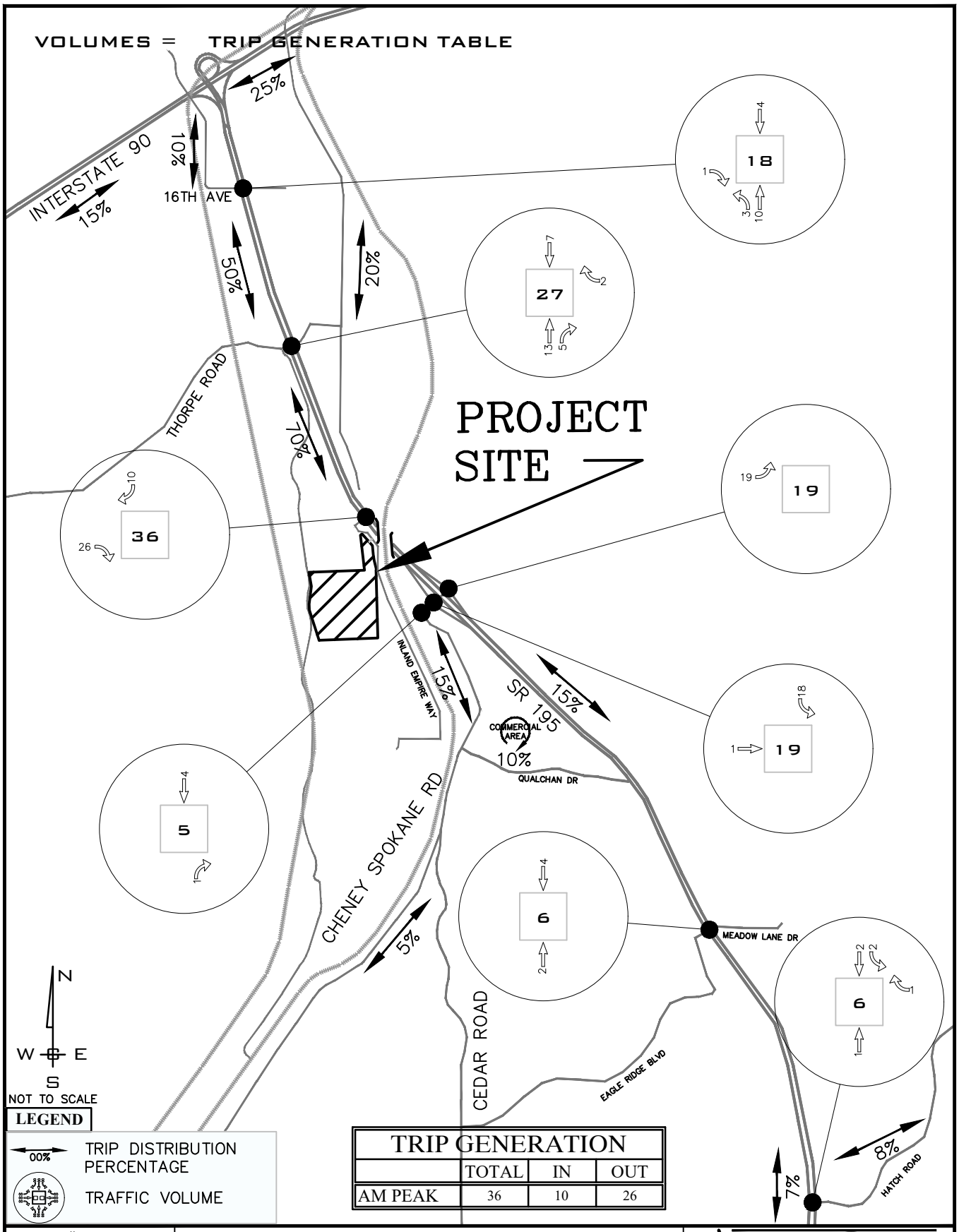
| Average Daily Trip Ends (ADT) | | |
|---|---|---|
| **Land Use Code (LUC)** | **Rate** | **ADT** |
| LUC 240 Mobile Home Park (Proposed) | | 785 |
| LUC 942 Automobile Care Center (Existing) | | - |
| **New Trips** | | **-** |

< > indicates Subtraction of number

As shown in Table 9, the proposed land use is anticipated to generate 36 additional trips in the AM peak hour with 10 additional trips entering the site and 26 additional trips exiting the site. In the PM peak hour, the proposed land use is anticipated to generate a total of 66 additional trips, with 42 additional trips entering the site and 24 additional trips exiting the site. Please see Figure 11 & 12 for Trip Distribution.

***Trip Distribution Characteristics of the Proposed Project***

Considering many factors such as the surrounding transportation facilities, typical commuting patterns, existing development in the area, and Average Daily Traffic counts, traffic for the proposed development is anticipated as follows: 70% of trips will go to/from the north via SR 195, 15% of trips will go to/from the south via SR 195, and 15% of trips will go to/from the southwest via Cheney Spokane Road. Of the 70% trips to/from the north via SR 195, 20% of these trips will go to/from the east and north via Thorpe Road, 10% of these trips will go to/from the west and north via 16$^{th}$ Avenue, 15% of these trips will go to/from the west via I-90 and 25% of these trips will go to/from the east via I-90. Of the 15% of trips to/from the south via SR 195, 8% of trips will travel to/from the east via Hatch Road and 7% of trips will travel to/from the south via SR 195. Of the 15% to/from the southwest on Cheney-Spokane Road, 10% of trips will get captured by the shopping areas along Cheney-Spokane Road and 5% of trips will continue to/from the southwest via Cheney-Spokane Road.




| TRIP GENERATION | | | |
|---|---|---|---|
| | TOTAL | IN | OUT |
| AM PEAK | 36 | 10 | 26 |

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DATE: 03/08/21
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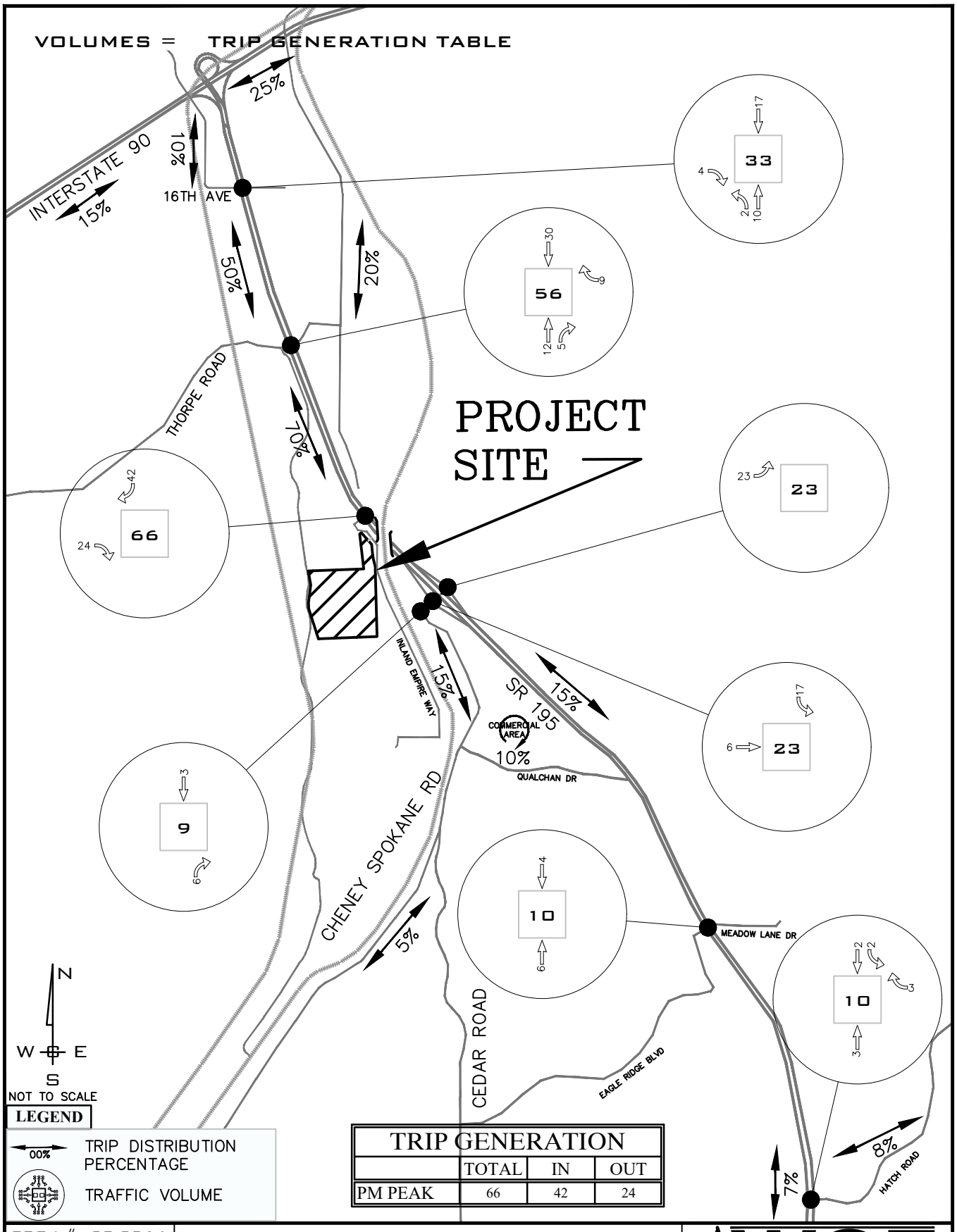
APPROVED: TRW

# TRAFFIC IMPACT ANALYSIS
# LATAH GLEN RESIDENTIAL
## 3504 S INLAND EMPIRE WAY
## SPOKANE, WASHINGTON

FIGURE 11

## AM PROJECT TRIP DISTRIBUTION

WCE
WHIPPLE CONSULTING ENGINEERS
CIVIL AND TRANSPORTATION ENGINEERING
21 SOUTH PINES ROAD
SPOKANE VALLEY, WASHINGTON 99206
PH: 509-893-2617 FAX: 509-926-0227




| TRIP GENERATION | | | |
|---|---|---|---|
| | TOTAL | IN | OUT |
| PM PEAK | 66 | 42 | 24 |

PROJ #: 20-2564
DATE: 03/08/21
DRAWN: KMK
APPROVED: TRW

# TRAFFIC IMPACT ANALYSIS
# LATAH GLEN RESIDENTIAL
## 3504 S INLAND EMPIRE WAY
## SPOKANE, WASHINGTON

FIGURE 12

## PM PROJECT TRIP DISTRIBUTION

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SPOKANE VALLEY, WASHINGTON 99206
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***Year 2026 with the Background Projects and the Project***

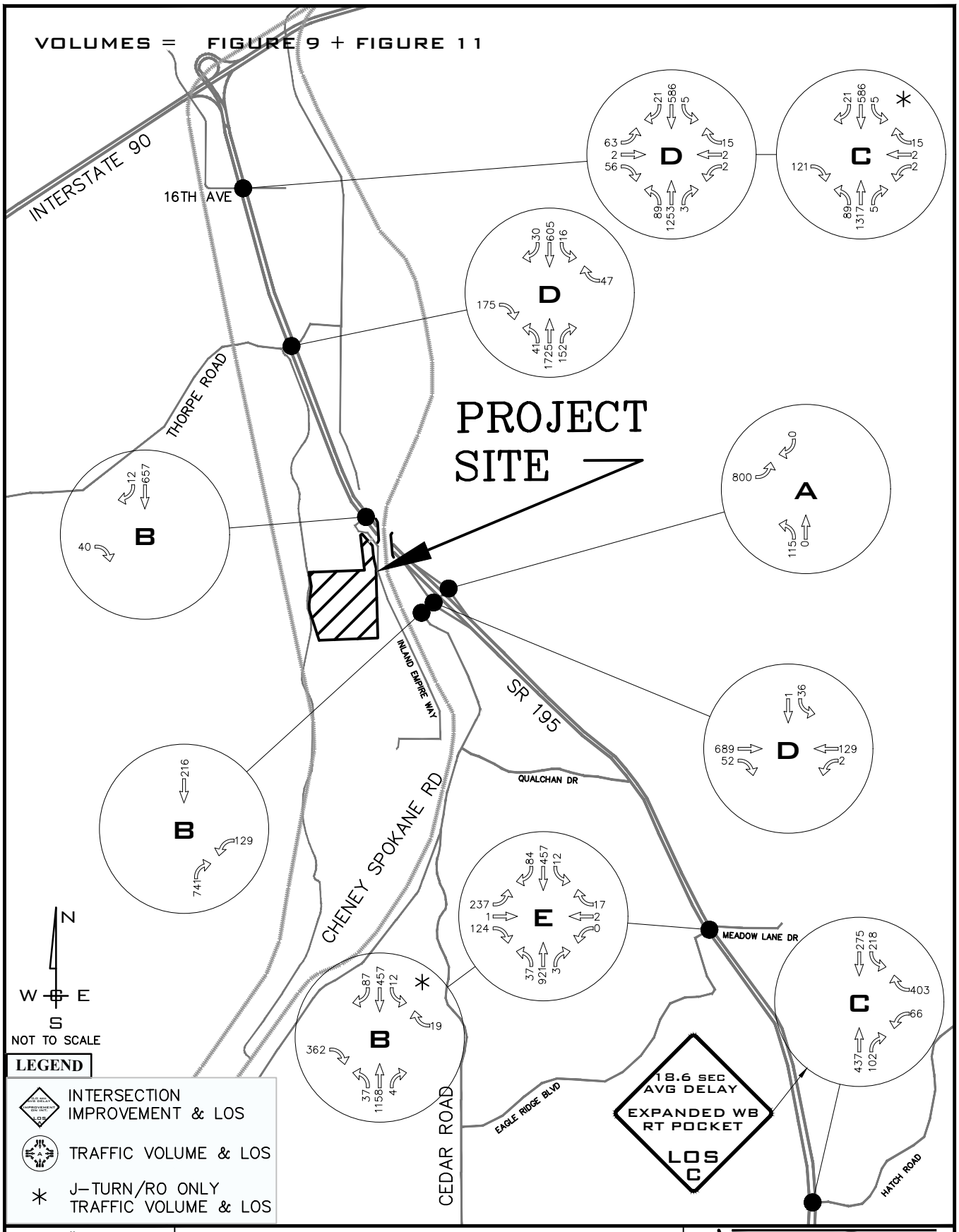
This scenario assumes that the project has moved forward and is added to the previously established baseline. The traffic volume for this condition includes the traffic volumes shown on Figures 9 & 10 and adds the project trips as shown on Figures 11 & 12. Please see Figures 13 & 14 for the traffic volumes used for this scenario. A summary of the Level of Service results is shown in the following table.

***Table 10 – Year 2026 LOS, with the Background Projects and with the Project (Fig. 13&14)***

| **INTERSECTION** | | **AM Peak Hour** | | **PM Peak Hour** | |
|---|---|---|---|---|---|
| **(S)ignalized (U)nsignalized** | | **Delay (sec)** | **LOS** | **Delay (sec)** | **LOS** |
| SR 195 & 16th Avenue | U | 34.3 | D | 102.3 | **F** |
| • RO only on EB Approach | (U) | (23.3) | (C) | (73.1) | **(F)** |
| SR 195 & Thorpe Avenue | U | 25.4 | D | 24.0 | C |
| SR 195 & Inland Empire Way | U | 11.3 | B | 18.1 | C |
| Ch-Sp Road & SR 195 NB on/off Ramps | U | 9.1 | A | 9.1 | A |
| Ch-Sp Road & SR 195 SB on/off Ramps (1) | U | 26.8 | D | 15.1 | C |
| Ch-Sp Road & SR 195 SB on/off Ramps (2) | U | 11.1 | B | 17.4 | C |
| SR 195 & Meadowlane Drive | U | 47.0 | E | 37.8 | E |
| • WSDOT ½ J-Turn | (U) | (14.3) | (B) | (14.7) | (B) |
| SR 195 & Hatch Road | U | 18.6 | C | 31.8 | D |
| • Hatch Road Bridge Project | (U) | (18.6) | (C) | (31.8) | (D) |

The City of Spokane and WSDOT have adopted level of service D as the minimum acceptable level for signalized intersections and level of service E as the minimum acceptable level for unsignalized intersections.

As shown in Table 10, all intersections are anticipated to operate at an acceptable level of service except the intersection of SR 195 & 16$^{th}$ Avenue. As mentioned in the without project scenario, the LOS deficiency is resulted by WB left and thru movements which have relatively low traffic volumes (Thru: 2, Left: 4). As the demand volumes used for the future year are only a projection of future traffic volumes, we recommend that the volumes and operation for the intersection be monitored over time.

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DATE: 03/08/21
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# TRAFFIC IMPACT ANALYSIS
# LATAH GLEN RESIDENTIAL
## 3504 S INLAND EMPIRE WAY
## SPOKANE, WASHINGTON

FIGURE 13

2026 AM VOL. W/ BACKGROUND W/ PROJECT & LOS

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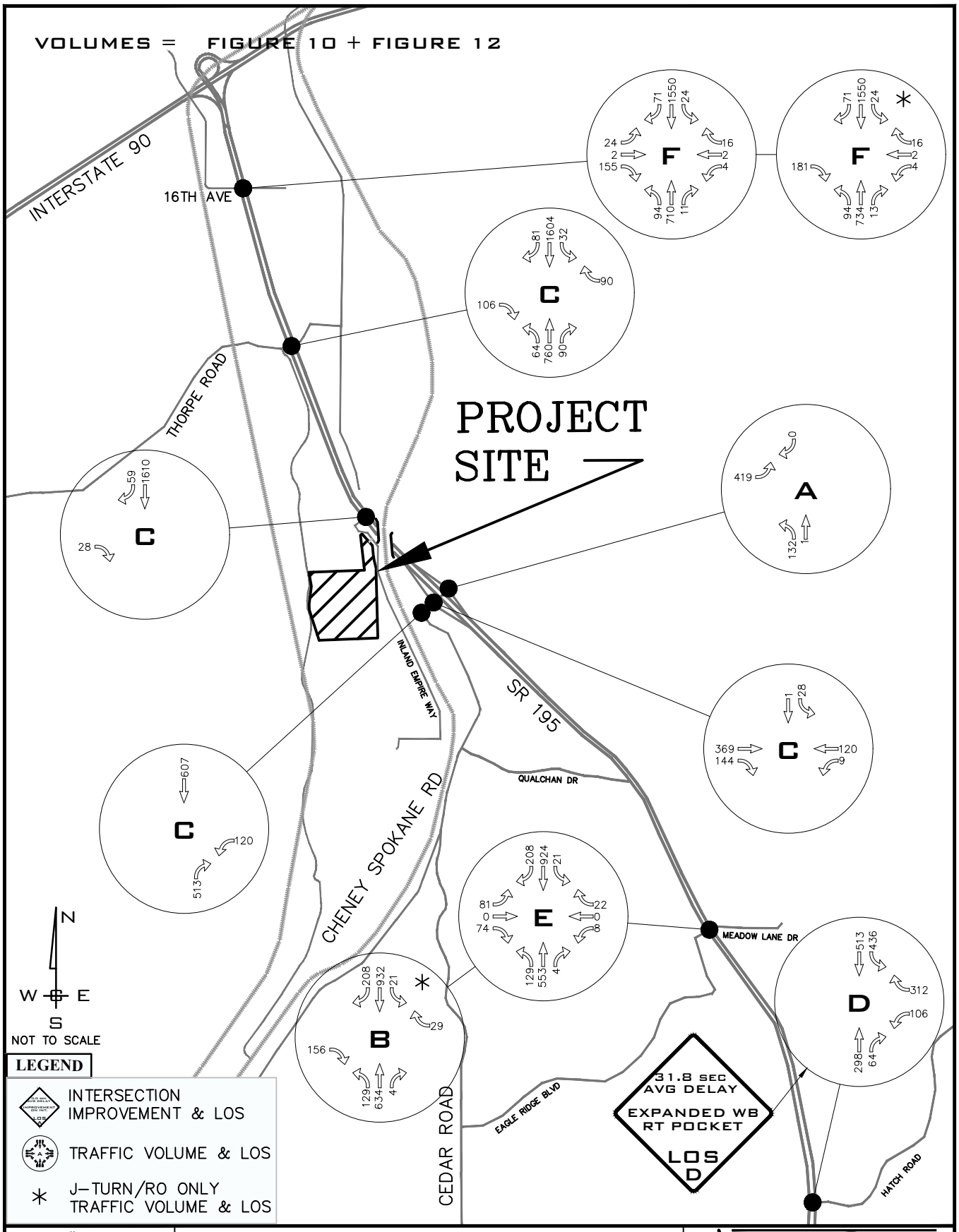
SPOKANE VALLEY, WASHINGTON 99206
PH: 509-893-2617 FAX: 509-926-0227




PROJ #: 20-2564
DATE: 03/08/21
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APPROVED: TRW

# TRAFFIC IMPACT ANALYSIS
# LATAH GLEN RESIDENTIAL
## 3504 S INLAND EMPIRE WAY
## SPOKANE, WASHINGTON

FIGURE 14

2026 PM VOL. W/ BACKGROUND W/ PROJECT & LOS

WCE
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21 SOUTH PINES ROAD
SPOKANE VALLEY, WASHINGTON 99206
PH: 509-893-2617 FAX: 509-926-0227

*Right-Turn Lane Warrant Analysis*

Per the request of WSDOT, we have analyzed the intersection of Inland Empire Way & SR 195 to determine if a right turn is warranted based upon the WSDOT design manual Exhibit 1310-7a and Exhibit 1310-11. The results are summarized here and the exhibits are shown in the appendix:

**Future Traffic Volumes with the Project**

For right-turn lane warrant analysis, the traffic volumes for 2026 with background projects and project scenario as shown in Figure 13 & 14 have been used. The summary of traffic volumes for 2021 & 2026 scenarios are shown in following tables.

***Table 11* - Existing Traffic Volumes on SR 195 Southbound**

| Time | Southbound (Veh/hour) | | |
|---|---|---|---|
| | Through | Right-Turn | Right-lane (Through + Right) * |
| AM Peak Hour | 492 | 2 | - |
| PM Peak Hour | 1038 | 12 | 774 |

***Per 1310.03 Right-Turn Lanes in WSDOT Design Manual, for multilane, high-speed highways (posted speed 45 mph or above), it is noted to use the right-lane peak hour approach volume (through + right-turn). Since the traffic volumes in PM peak hour for the project trips and existing traffic volumes are the most critical, only traffic volumes for right-lane in PM peak hour have been counted.**

***Table 12* - Summary of 2026 Southbound Traffic Volumes at Inland Empire Way & SR 195**

| Time | Southbound (Veh/hour) | | |
|---|---|---|---|
| | Through | Right-Turn | Right-lane (Through + Right) * |
| AM Peak Hour | 657 | 12 | - |
| PM Peak Hour | 1610 | 59 | 1,230 |

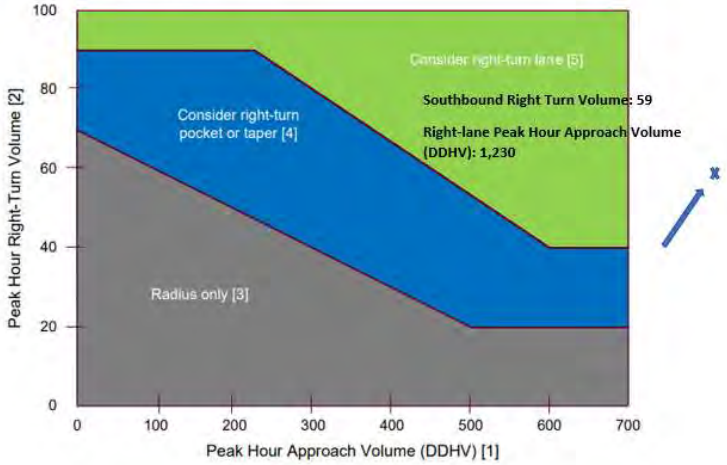
***Based upon the 2021 ratio between the total SB volumes and right-lane volumes (774/ (1,038+12) =0.737), 2026 right-lane volume has been calculated ((1,610+59) x 0.737 = 1,230).**

**Right-Turn Lane Warrant Analysis**

Per 1310.03 Right-Turn Lanes in WSDOT Design Manual, the intersection of Inland Empire Way & SR 195 has been analyzed to determine if a right turn lane is warranted. The result and exhibit are shown below:

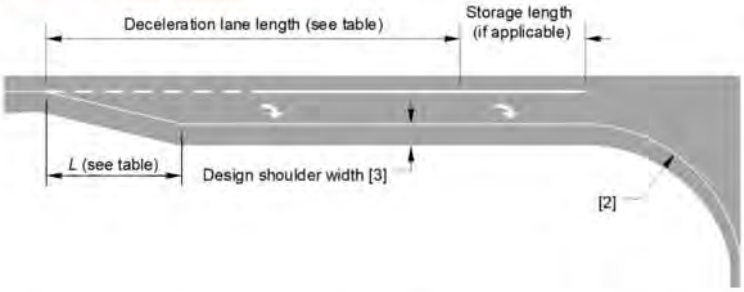
| Intersection: | Results |
|---|---|
| SR 195 & Inland Empire Way<br>• Right Turn Lane Warrant Analysis | Plots above the line –<br>The right-turn lane warrant is met |

Exhibit 1310-11 Right-Turn Lane Guidelines




[5] For right-turn lane design, see Exhibit 1310-13.

Exhibit 1310-13 Right-Turn Lane




| Highway Design Speed (mph) | Deceleration Lane Length (ft) |
|---|---|
| 30 | 160 [1] |
| 35 | 220 |
| 40 | 275 |
| 45 | 350 |
| 50 | 425 |
| 55 | 515 |
| 60 | 605 |
| 65 | 715 |
| 70 | 820 |

**Minimum Deceleration Lane Length (ft)**

| Posted Speed Limit | L |
|---|---|
| Below 40 mph | 40 ft |
| 40 mph or above | 100 ft |

| Grade | Upgrade | Downgrade |
|---|---|---|
| 3% to less than 5% | 0.9 | 1.2 |
| 5% or more | 0.8 | 1.35 |

**Adjustment Multiplier for Grades 3% or Greater**

Notes:
[1] When adjusting for grade, do not reduce the deceleration lane to less than 150 ft.
[2] For right-turn corner design, see Exhibit 1310-6.
[3] See 1310.03(6) and Chapter 1230.

## Conclusion

Based upon the right-turn lane warrant analysis provided, it is concluded that the intersection meets the WSDOT right turn lane warrant. However, the intersection level of service remains at an acceptable level through the buildout period. Additionally, there is also a sight distance concern associated with a dedicated right turn lane, as a vehicle within the turn lane blocks the view of oncoming traffic. We propose additional consultation with the WSDOT that this be reevaluated after the 100th homesite.

### *Highway Segment LOS and Queue Analysis*

WSDOT has requested within the scope that an analysis of the SR 195 NB Ramp and I-90 Interchange be included. For a highway interchange there is not a single level of service model like a standard intersection but the analysis of multiple elements, and then the review by a transportation professional to determine acceptance and/or impact. These elements include the ramp queue length, the ramp merge area, and the I-90 freeway segment. These elements have been analyzed for the current condition. The future year 2026 without the project with the 1.0% background growth rate and the background projects. The future year 2026 with the project, with the 1.0% background growth rate and the background projects.

**NB SR 195 Ramp Configurations**

NB SR 195 Ramp has 2-lanes, each with 500 ft (20 vehicles per lane) of storage. The vehicle release method is alternating green phases. The WSDOT recommended maximum hourly rate and minimum hourly rate to avoid ramp queuing on NB SR 195 Ramp are maximum of 1200 vph (AM) & 800 vhp (PM) and minimum of 800 vph (AM) & 300 vph (PM).

**Traffic Volumes Statement**

*With WSDOT's Open Bid to install Ramp Meters along I-90 at Hwy 2 as well as other ramps within the downtown core. These projected volumes are subject to change, to an unpredictable value. Also, with the change in volumes all analysis that utilizes these volumes will also be subject to change.*

Traffic volumes for the year 2019 conditions were provided by WSDOT. Traffic volumes for the year 2021 existing conditions assumed that the 2019 traffic volumes experience an increase above the 2019 traffic volumes at the established background rate. Two scenarios were examined for the year 2026 analysis. The first scenario assumes that the development has not moved forward and analyzes the scoped intersections with the background growth rate & background projects (Amazon, The Summit, Eagle Ridge 13th Addition, Tangle Ridge & Wheatland Estates). The second scenario assumes the same, but adds the project trips. These scenarios will allow a determination to be made as to what the future conditions may be both with and without the project. The volumes used for this analysis are shown on the following Tables.

***Table 13 – AM Traffic Volumes (vehicles per hour)***

| | 2019 | Growth Rate (2021) | 2021 | Growth Rate (2026) | Background Project | 2026 Without Project | Project | 2026 With Project |
|---|---|---|---|---|---|---|---|---|
| **I-90 Main** | 3,556 | 1.020 | 3,627 | 1.051 | 8 | 3,821 | - | 3,821 |
| **SR 195 EB** | 1,277 | 1.020 | 1,303 | 1.051 | 40 | 1,409 | 6 | 1,415 |

***Table 14 – PM Traffic Volumes (vehicles per hour)***

| | 2019 | Growth Rate (2021) | 2021 | Growth Rate (2026) | Background Project | 2026 Without Project | Project | 2026 With Project |
|---|---|---|---|---|---|---|---|---|
| **I-90 Main** | 4,322 | 1.020 | 4,409 | 1.051 | 719 | 5,353 | - | 5,353 |
| **SR195 EB** | 630 | 1.020 | 643 | 1.051 | 26 | 701 | 6 | 707 |

**NB SR 195 Ramp Queue Length Analysis**

Based upon the spreadsheet provided by WSDOT for queue analysis, the maximum queue length on NB SR 195 Ramp has been updated and summarized in Table 15.

***Table 15-EB SR 195 Ramps-Queue length analysis with current discharge rate***

| Scenario | | | A<br>2021 Existing | B<br>2026 without Project | C<br>2026 with Project | C - B |
|---|---|---|---|---|---|---|
| **Traffic Volumes (VPH)** | | **AM** | 1,303 | 1,409 | 1,415 | 6 |
| | | **PM** | 643 | 701 | 705 | 4 |
| **WSDOT Ramp Existing Metering Rate (VPH) {Future Meter Rate}** | | **AM** | 1,200 | 1,200 | 1,200 | - |
| | | **PM** | 800 | 800 {500} | 800 {500} | - |
| **Vehicles in the Queue / Max. Queue Length/ Queue Exceedance/ Times of Exceedance** | **AM** | **Max. Vehicles in Queue (Veh)** | 135 | 227 | 233 | 6 |
| | | **Max. Queue Length (ft)** | 3,377 | 5,663 | 5,830 | 167 |
| | | **Queue Length Available (ft)** | 1,000 | 1,000 | 1,000 | |
| | | **Excess Queue Length (ft)** | 2,377 | 4,663 | 4,830 | 167 |
| | | **Time of Day 1,000 ft Queue Length is Exceeded (Max. Time of Exceedance)** | 7:35 AM – 8:29 AM (7:54 AM) | 7:30 AM – 8:59 AM (8:12 AM) | 7:30 AM – 8:59 AM (8:12 AM) | - |
| | **PM (Metering Rate: 800 VPH)** | **Max. Vehicles in Queue (Veh)** | 12 | 16 | 16 | 1 |
| | | **Max. Queue Length (ft)** | 304 | 391 | 400 | 9 |
| | | **Queue Length Available (ft)** | 1,000 | 1,000 | 1,000 | |
| | | **Excess Queue Length (ft)** | 0 | 0 | 0 | 0 |
| | | **Time of Day 1,000 ft Queue Length is Exceeded (Max. Time of Exceedance))** | - | - | - | - |
| | **PM (Metering Rate: 500 VPH)** | **Max. Vehicles in Queue (Veh)** | - | 499 | 516 | 17 |
| | | **Max. Queue Length (ft)** | - | 12,484 | 12,897 | 413 |
| | | **Queue Length Available (ft)** | 1,000 | 1,000 | 1,000 | |
| | | **Excess Queue Length (ft)** | - | 11,484 | 11,897 | 413 |
| | | **Time of Day 1,000 ft Queue Length is Exceeded (Max. Time of Exceedance)** | - | 3:18 PM – 5:59 PM (5:59 PM or After) | 3:18 PM – 5:59 PM (5:59 PM or After) | - |

As shown in Table 15, the maximum queue length for all scenarios in AM peak are anticipated to exceed the current storage space of 1,000 ft and the durations with queue beyond the storage for all scenarios are anticipated to continue to after AM peak hour. In PM peak, maximum queue lengths for all scenarios are anticipated to stay within the current storage space of 1,000 ft,

however, with 500 vph metering rate (to improve LOS on I-90 segment), the maximum queue length for all future scenarios in PM peak are anticipated to exceed the current storage space and the durations with queue beyond the storage for all future scenarios in PM peak are anticipated to continue to after PM peak hour. As the demand volumes used for the future year are only a projection of future traffic volumes, we recommend that the volumes and the queue length be monitored over time.

**I-90 Segments LOS Analysis**

The future Levels of Service at the freeway segments were calculated using the methods from the *Highway Capacity Manual 6th Edition* as implemented in *HCS7*, version 7.7. The Levels of Service for I-90 segments within the study area are summarized on the following table.

***Table 16- I-90 Freeway Levels of Service with Current Metering Rates (AM: 1,200 vph, PM: 800 vph)***

| I-90 SEGMENT | | 2021 Existing | | 2026 W/O Project | | 2026 W/ Project | |
|---|---|---|---|---|---|---|---|
| | | Density (pc/mi/ln) | LOS | Density (pc/mi/ln) | LOS | Density (pc/mi/ln) | LOS |
| Ramp Merge Area - NB SR 195 to EB I-90 (With 500 vph metering rate at PM) | AM | 37.4 | E | 39.8 | E | 39.8 | E |
| | PM | 37.1 | E | Exceed 50.0 (47.3) | **F** (E) | Exceed 50.0 (47.3) | **F** (E) |
| Basic Area - NB SR 195 to Walnut Street (With 500 vph metering rate at PM) | AM | 34.7 | D | 36.8 | E | 36.8 | E |
| | PM | 34.5 | D | Exceed 45.0 (44.0) | **F** (E) | Exceed 45.0 (44.0) | **F** (E) |
| Ramp Diverge Area - EB I-90 to Walnut Street | AM | 25.3 | C | 26.4 | C | 26.4 | C |
| | PM | 24.3 | C | 29.5 | C | 29.5 | C |

As shown in Table 16, the change of the density & level of Service on I-90 segments by adding new trips of the project were minimal considering. For 2026 PM peak hour at current metering rates, the level of service at Ramp Merge area and Basic area is anticipated to operate at "F". With 500 vph ramp metering rates in PM peak hour, it is anticipated to operate at level of service "E".

**Conclusion**

Based upon the analysis provided it is concluded that the addition of the project trips will have an impact upon the SR 195 & 1-90 Interchange, by adding 6 vehicles (167 ft) in queue for AM and 0 vehicles (9 ft) in queue for PM.

**SR 195 Corridor Improvement Projects.**

Within the SR 195 Corridor for the past two years development projects have been conditioned by WSDOT to construct an improvement project(s) along the corridor with the goal to achieve a net zero balance in trips at the I-90/SR 195 Eastbound on ramp. The projects would essentially redirect existing and future traffic from the mainline, or as in the case of 16th Avenue redirect trips before they even get onto SR 195. This redirection of trips would reduce traffic volumes so that there would be room for the future I-90 Eastbound trips. Typically, those trips that have a destination to the east of the City of Spokane, and is truly an intra state trip.

As shown in the previous analysis section the Northbound SR 195 to Eastbound I-90 Ramp it was concluded that the project trips would have a minimal impact on the ramp as the capacity of the ramp, with the ramp meter has been reached. So, these improvement projects would have an additional improvement to the operation of the corridor as a whole. The following are descriptions of the improvement projects:

**16th Avenue – EB Turn restrictions.** The improvement project places a raised island, that channelizes all eastbound trips as a right turn, southbound movement onto SR 195. The project also includes an acceleration lane before a merge section. By restricting the eastbound left turn movement, a lot of the trips that originate from the intersection of Sunset Highway & Government Way and 14th Avenue & Lindke Street, would by an increase in time and effort would be redirected toward sunset highway or seek I-90 connections outside of the downtown core. This improvement project has currently been included as a condition in the Wheatland Estates project.

**Thorpe Road Exit – Flashing Beacon and Sign.** The improvement project places a directional sign before the Thorpe Road Northbound Exit. The Sign provides direction toward the City Center and the South Hill via Inland Empire Way. There is also a flashing beacon sign that is activated when the ramp meter signal is operating. The flashing beacon provides drivers with advance warning of additional delay. It is believed that with advance warning, drivers bound for the City Center or the South Hill would opt to exit at Thorpe Road and take this alternate route to their destination. It is anticipated that the presence and operation of this improvement would redirect **15%** of traffic volumes from the mainline volumes. This improvement project is a condition of the Summit and Tangle Ridge Projects, the project has been privately funded, with an approved WSDOT design. The improvement is scheduled to be completed in the spring of 2021.

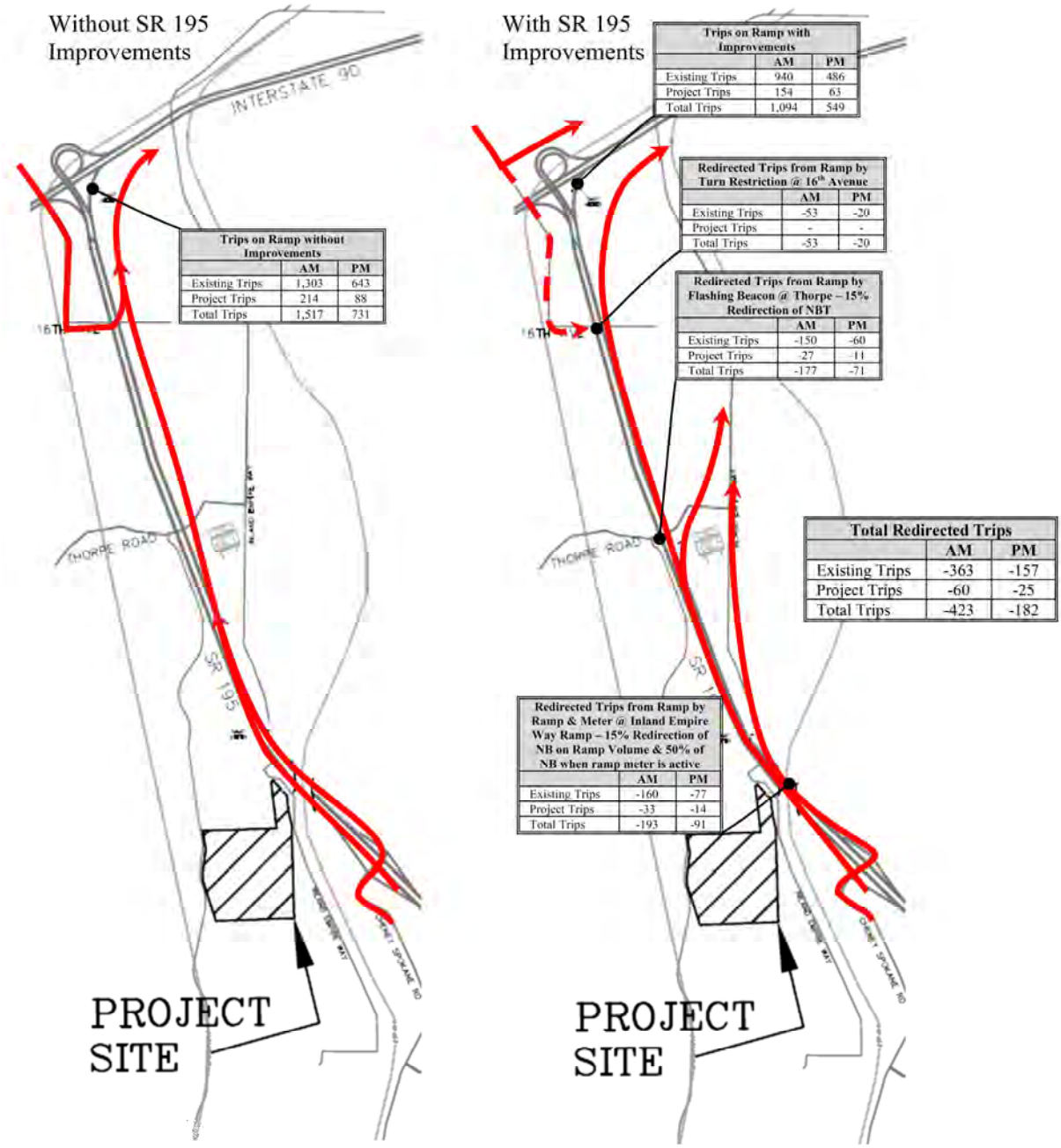
**Cheney-Spokane Road Ramp – Connection to Inland Empire Way.** This improvement project proposes to extend the northbound ramp further north along SR 195, underneath the existing railroad bridge to the original Inland Empire Way & Sr 195 intersection. From the original intersection the northbound on ramp will begin. For the extension SR 195 and the ramp will be separated by a WSDOT approved barrier wall. At the old intersection the connection to Inland Empire Way would be reestablished, providing an alternate route for traffic. It is anticipated that the presence of the route with appropriate signage would redirect **15%** of traffic volumes from the on-ramp volumes.

In addition to the connection, it is proposed that a ramp meter signal be installed at the ramp with an appropriate queue length. Like the ramp meter at I-90, the additional time delay would redirect drivers bound for the City Center or the South Hill to the alternative route of Inland Empire Way. The improvement is anticipated to create better local connections and preserve the state facilities for intra City travel (City to City) as opposed to inter City travel (travel within the City) It is anticipated that the presence and operation of the ramp meter redirect **50%** of traffic volumes from the on-ramp volumes when in operation. It is anticipated that the ramp meter would operate at similar times as the ramp meter at I-90, thus preserving the capacity of both. As the Thorpe Road Sign project establishes a virtual link for operations, the two meters could be tied together to provide drivers with additional advance warning.

There has also been discussion of utilizing the WSDOT reader board to provide additional driver information. The sign is currently north of the Cheney Spokane Road Interchange. Its relocation south of the interchange may redirect trips bound for the City Center and the South Hill to exit at Cheney Spokane Road.

The following is an Exhibit of the anticipated trips that would be redirected by these improvement projects. For convenience the anticipated trips from this project (Latah Glen) that may be redirected is highlighted in yellow.

**Exhibit 1 – Redirected Trips**



As shown in the Exhibit based upon the anticipated percentages of redistribution, the three improvement projects have the potential to remove 363 existing AM peak hour and 157 PM peak hour trips from the I-90/ SR 195 Northbound to Eastbound Ramp. This redirection of trips forms the basis for no additional trips on the ramp.

**Table 17 – Corridor Project Trip Summary – With Improvement Credit**

| | Original Trips on Ramp | | Redirected Trips from Ramp by SR 195 Projects | | | | | | | | Trips on Ramp after Redirection | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Turn Restriction @ 16th | | Flashing Beacon @ Thorpe | | Inland Empire Way Ramp & Meter | | Total | | | |
| | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| Existing Trips on Ramp | 1,303 | 643 | -53 | -20 | -150 | -60 | -160 | -77 | **-363** | **-157** | 940 | 486 |
| Summit | 22 | 17 | - | - | -3 | -2 | -3 | -3 | -6 | -5 | 16 | 12 |
| Wheatland | 50 | 9 | - | - | -6 | -1 | -8 | -1 | -14 | -2 | 36 | 7 |
| Tangle Ridge | 10 | 7 | - | - | -1 | -1 | -2 | -1 | -3 | -2 | 7 | 5 |
| Latah Glen | 13 | 5 | - | - | -2 | -1 | -2 | -1 | -4 | -2 | 9 | 3 |
| Talon Ridge | 42 | 14 | - | - | -5 | -2 | -6 | -2 | -11 | -4 | 31 | 10 |
| Greens @ Meadowlane | 5 | 3 | - | - | -1 | 0 | -1 | -1 | -2 | -1 | 3 | 2 |
| Marshall Creek | 72 | 33 | - | - | -9 | -4 | -11 | -5 | -20 | -9 | 52 | 24 |
| Project Total | 214 | 88 | 0 | 0 | -27 | -11 | -33 | -14 | -60 | -25 | **154** | **63** |
| Total | 1,517 | 731 | -53 | -20 | -177 | -71 | -193 | -91 | -423 | -182 | 1094 | 549 |
| Difference between Redirected Existing Trips & Total Project Trips on Ramp after Redirection | | | | | | | | | | | **-209** | **-94** |

As shown in Table 17 the corridor projects after redirection from the improvement projects are anticipated to total 154 AM Trips and 63 PM peak hour trips. With the credit from the improvement projects there would no additional trips on the ramps and also still be additional capacity for future projects within the corridor.

Improvement Project Timing

In regard to the timing of each improvement project a separate report is anticipated to be completed. This report would consider the corridor projects buildout schedule by year, the anticipated credit of each improvement, and when each improvement project would need to be implemented to maintain no additional trips on the ramp.

Conclusion

It is concluded that with the improvement projects that a significant number of trips would be redirected away from the NB US 195 to EB I-90 ramp, and that the net result would be no additional trips to the ramp.

## *Conclusions*

This Traffic Impact Analysis (TIA) has reviewed and analyzed the study area per the scope established by the City of Spokane and WSDOT. Based upon the analysis, field observations, assumptions, methodologies and results which are provided in the body of this report, it is concluded that the development of the proposed project will generate new trips on the existing transportation system and that those trips will have an impact on the transportation system. This conclusion was reached and has been documented within the body of this report.

- Under the **existing** conditions, all intersections are currently operating at an acceptable level of service.

- For the **year 2026 with background growth rate** scenario, all intersections are anticipated to continue to operate at an acceptable level of service except the intersection of SR 195 & 16th Avenue. With the mitigation provided by the Spangle-Wheatland project (Right Out only on eastbound approach), the intersection of SR 195 & 16th Avenue is anticipated to operate at an acceptable level of service.

- For the **year 2026 with background growth rate plus background projects and without this project** scenario, all intersections are anticipated to operate at an acceptable level of service except the intersection of SR 195 & 16th Avenue even with the mitigation provided by the Spangle – Wheatland project. The LOS deficiency of the intersection at SR 195 & 16th Avenue is just above the threshold (**53.4** sec vs LOS F threshold - 50.0 sec). As the demand volumes used for the future year are only a projection of future traffic volumes, we recommend that the volumes and operation for the intersection be monitored over time.

- For the **year 2026 with background growth rate plus background projects and with this project** scenario, all intersections are anticipated to operate at an acceptable level of service except the intersection of SR 195 & 16th Avenue even with the mitigation by the Spangle – Wheatland project (**73.1 sec** vs LOS F threshold – 50.0 sec). At this time no mitigation at the SR 195 & 16th intersection is proposed other than the change proposed by the Spangle – Wheatland project (Please see Wheatland Estates Proposed Traffic/Transportation Conditions of Approval letter in Background Project section of Appendix).

As shown in the Additional Analysis - Right Turn Lane Warrant Analysis section, it is concluded that the intersection of Inland Empire Way & SR 195 meets the WSDOT right turn lane warrant. However, the intersection level of service remains at an acceptable level through the buildout period. Additionally, there is also a sight distance concern associated with a dedicated right turn lane, as a vehicle within the turn lane blocks the view of oncoming traffic. We propose additional consultation with the WSDOT that this be reevaluated after the 100th home site has received an occupancy permit.

As shown in the additional analysis Highway Segment LOS and Queue Analysis section, based upon the analysis provided it is concluded that the addition of the project trips will have an impact upon the SR 195 & 1-90 Interchange, by adding 6 vehicles with a calculated 167 ft addition in queue for AM and 1 vehicle with a calculated 9 ft addition in queue for PM.

As shown in the additional analysis section – SR 195 Corridor Improvement Projects, it was concluded that with the EB Turn Restrictions at 16th Avenue, Flashing Beacon and Sign at Thorpe Road Exit, and Connection to Inland Empire Way at Cheney-Spokane Road Ramp projects (by other projects, yet to be approved but in the pipeline) that a significant number of trips would be redirected away the NB US 195 to EB I-90 ramp, and that the net result would be no additional trips to theI-90 Ramps.

***Recommendations***

It is recommended that the project be conditioned to participate in the Corridor Improvement projects as described within this document. The proposed conditions are as follows.

A. *Vehicular traffic from this project is expected to add 13 AM trips and 5 PM trips to the NB US 195 to EB I-90 ramp. WSDOT has commented that no additional peak hour trips may be added to the ramp due to safety concerns. Latah Glen is therefore required to contribute funds to complete an improvement to the US 195 corridor that will reduce the impact of its traffic on NB US 195 to EB I-90 ramp ("Mitigation Project"). Latah Glen may receive certificate(s) of occupancy after a financial commitment is in place (secured by a letter of credit or bond), which has been approved by the City, providing for the funding of the design and the construction for the Mitigation Project(s), which shall be under contract for construction within one year from issuance of the 157th certificate of occupancy. The details of the mitigation project(s) will be agreed upon by the developers, City and WSDOT. The applicant's contributions to funding the design and construction of the mitigation project(s) will qualify for a credit against transportation impact fees per SMC 17D.075.070*
B. *Latah Glenn may receive certificate(s) of occupancy once a financial commitment is in place (secured by a letter of credit or bond), which has been approved by the City, providing for a.) the construction of the 16th Avenue improvements with SR 195, and b.) Cheney-Spokane Road Ramp – Connection to Inland Empire Way Improvement. This commitment may be defined as an agreement between several developers to fund and construct the 16th Avenue, and the Cheney-Spokane Road Ramp – Connection to Inland Empire Way Improvement projects within a specified time frame, not to exceed six years, as agreed upon by city staff and WSDOT. The applicant's contributions to funding the design and construction of the Improvement projects will qualify for a credit against transportation impact fees per SMC 17D.075.070.*
    i. *The 16th Avenue and SR 195, improvement project participation is at $500.00/PM peak hour trip and will consist of the proportionate share of the following:*
        - *Install a raised curb island*
        - *Channelize the turn lane*

- *Add a southbound acceleration lane. tmze*

ii. *The Cheney-Spokane Road Ramp – Connection to Inland Empire Way Improvement project participation is at $1,160.64/PM peak hour trip and will consist of the proportionate share of the following:*
   - *Extend the northbound ramp to Inland Empire Way,*
   - *One or Two-way connection to Inland Empire Way,*
   - *Install ramp with acceleration lane*
   - *Install ramp meter signal*
   - *Relocate existing sign bridge*

iii. *Latah Glen Financial Commitment*
*The financial commitment for Latah Glen development based upon the rate of participation is as follows for the 16th Avenue improvement with 66 PM peak hour trips at $500.00 per unit. The participation percentage is anticipated to total $33,000 (66 trips * $500.00). For the Cheney-Spokane Road Ramp improvement with 66 PM peak hour trips at $1,160.64 per PM peak hour trip. The participation percentage is anticipated to total $76,602.24(66 trips * $1,160.64). In summary the total financial commitment due is $109,602.24 or $698.11 per unit ($109,602.24/157units).*

iv. *The applicant's contributions to funding the design and construction of the Improvement projects will qualify for a credit against transportation impact fees per SMC 17D.075.070.*

Based upon the conclusions within this study, the proposed project is recommended to complete all required conditions of approval and should be allowed to move forward without further traffic analysis, or offsite mitigation.

# TECHNICAL APPENDIX

# METHODS AND CRITERIA

## Unsignalized Intersection
## Level of Service Criteria

| Level of Service | Delay Range (sec) | Expected Delay to Minor Street Traffic |
|---|---|---|
| A | ≤ 10 | Little to No Delay |
| B | > 10 and ≤ 15 | Short Traffic Delays |
| C | >15 and ≤ 25 | Average Traffic Delays |
| D | >25 and ≤ 35 | Long Traffic Delays |
| E | > 35 and ≤ 50 | Very Long Traffic Delays |
| F | > 50 | Stop-and-Go Condition<br>Delays Generally Longer than Acceptable |

## Unsignalized Intersections
## Level of Service Descriptions

| LOS | General Description |
|---|---|
| A | • Nearly all drivers find freedom of operation.<br>• Very seldom is there more than one vehicle in the queue. |
| B | • Some drivers begin to consider the delay an inconvenience<br>• Occasionally there is more than one vehicle in the queue. |
| C | • Many times there is more than one vehicle in the queue.<br>• Most drivers feel restricted, but not objectionably so. |
| D | • Often there is more than one vehicle in the queue.<br>• Drivers feel quite restricted. |
| E | • Represents conditions in which the demand is near or equal to the probable maximum number of vehicles that can be accommodated by the movement.<br>• There is almost always more than one vehicle in the queue.<br>• Drivers find the delays approaching intolerable levels. |
| F | • Forced flow.<br>• Represents an intersection failure condition that is caused by geometric and/or operational constraints external to the intersection |

## Signalized Intersection
## Level of Service Criteria

| Level of Service | Delay Range (sec) |
|---|---|
| A | ≤ 10 |
| B | > 10 and ≤ 20 |
| C | >20 and ≤ 35 |
| D | >35 and ≤ 55 |
| E | > 55 and ≤ 80 |
| F | > 80 |

## Signalized Intersections
## Level of Service Descriptions

| LOS | General Description |
|---|---|
| A | • Very low delay at intersection.<br>• All signal cycles clear.<br>• No vehicles wait through more than one signal cycle. |
| B | • Operating speeds beginning to be affected by other traffic.<br>• Short traffic delays at intersections.<br>• Higher average intersections delays resulting from more vehicles stopping. |
| C | • Operating speeds and maneuverability closely controlled by other traffic.<br>• Higher delays at intersections than for LOS B due to a significant number of vehicles stopping.<br>• Not all signal cycles clear the waiting vehicles. |
| D | • Tolerable operating speeds, but long traffic delays occur at intersections<br>• The influence of congestion is noticeable.<br>• Many vehicles stop and the proportion of vehicles not stopping declines.<br>• The number of signal cycle failures, for which vehicles must wait through more than one signal cycle are noticeable. |
| E | • Speeds are restricted, very long traffic delays are experienced and traffic volumes are near capacity.<br>• Traffic flow is unstable so that any interruption, no matter how minor, will cause queues to form and service to deteriorate.<br>• Traffic signal cycle failures are frequent occurrences. |
| F | • Extreme delays resulting in long queues which may interfere with other traffic movements<br>• Stoppages of long duration and speeds may drop to zero.<br>• There may be frequent signal failures.<br>• Vehicle arrival rates are greater than capacity.<br>• Considered unacceptable by most drivers. |

# ACCIDENT DATA

OFFICER REPORTED CRASHES THAT OCCURRED *at* OR *in the vicinity of* MULTIPLE INTERSECTIONS IN THE CITY OF SPOKANE
**01/01/2015 - 12/31/2019** See 2nd tab below for road information & interchange drawing for reference

*Under 23 U.S. Code § 148 and 23 U.S. Code § 409, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.*

| Intersection | JURISDICTION | COUNTY | CITY | PRIMARY TRAFFICWAY | MILEPOST | REPORT NUMBER | DATE | TIME | MOST SEVERE INJURY TYPE | # INJ | # FAT | # VEHS | # PEDS | # BIKES | VEHICLE 1 TYPE | VEHICLE 2 TYPE | WEATHER | ROADWAY SURFACE CONDITION | LIGHTING CONDITION | Number of Accidents |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SR 195 & Hatch Rd | State Route | Spokane | Spokane | 195 | 91.17 | E648027 | 02/25/2017 | 16:12 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | 9 |
| | State Route | Spokane | Spokane | 195 | 91.17 | E672913 | 05/19/2017 | 16:45 | Suspected Minor Injury | 4 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 91.17 | E718548 | 09/29/2017 | 07:12 | Possible Injury | 2 | 0 | 3 | 0 | 0 | Passenger Car | Passenger Car | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 91.17 | E725396 | 10/19/2017 | 15:17 | Possible Injury | 1 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Overcast | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 91.17 | E812465 | 06/27/2018 | 13:32 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Motorcycle | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 91.17 | E823891 | 07/30/2018 | 17:51 | Suspected Minor Injury | 3 | 0 | 5 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 91.17 | E840198 | 09/20/2018 | 14:45 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 91.17 | E955333 | 08/30/2019 | 17:15 | Suspected Minor Injury | 2 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 91.17 | E979570 | 10/16/2019 | 17:36 | No Apparent Injury | 0 | 0 | 3 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| SR 195 & Meadowlane Dr | State Route | Spokane | Spokane | 195 | 92.28 | E631701 | 01/05/2017 | 20:47 | Suspected Minor Injury | 3 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | Clear or Partly Cloudy | Ice | Dark-Street Lights On | 11 |
| | State Route | Spokane | Spokane | 195 | 92.28 | E692060 | 07/11/2017 | 14:43 | Suspected Serious Injury | 2 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 92.28 | E697430 | 08/01/2017 | 10:37 | Possible Injury | 1 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 92.28 | E725216 | 10/18/2017 | 12:50 | Possible Injury | 1 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | Raining | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 92.28 | E780063 | 03/17/2018 | 14:58 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Overcast | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 92.28 | E844772 | 10/03/2018 | 13:15 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 92.28 | E849944 | 10/16/2018 | 09:30 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 92.28 | E911809 | 04/15/2019 | 23:35 | No Apparent Injury | 0 | 0 | 1 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | | Clear or Partly Cloudy | Dry | Dark-Street Lights On | |
| | State Route | Spokane | Spokane | 195 | 92.28 | E971806 | 10/08/2019 | 16:37 | Possible Injury | 1 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 92.28 | E974717 | 10/22/2019 | 17:41 | Suspected Serious Injury | 1 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | Overcast | Dry | Dusk | |
| | State Route | Spokane | Spokane | 195 | 92.28 | E994081 | 12/10/2019 | 21:22 | Possible Injury | 1 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | Overcast | Dry | Dark-Street Lights On | |
| SR 195 & Inland Empire Way | State Route | Spokane | Spokane | 195 | 94.31 | E751907 | 12/22/2017 | 17:20 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | Snowing | Ice | Dark-Street Lights On | 3 |
| | State Route | Spokane | Spokane | 195 | 94.32 | E640490 | 02/08/2017 | 15:54 | Possible Injury | 1 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | Snowing | Snow/Slush | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.32 | E889961 | 02/05/2019 | 12:32 | Suspected Minor Injury | 1 | 0 | 1 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | | Overcast | Ice | Daylight | |
| SR 195 & Thorpe Ave | State Route | Spokane | Spokane | 195 | 94.90 | E667717 | 04/28/2017 | 20:35 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | Overcast | Dry | Dark-Street Lights On | 20 |
| | State Route | Spokane | Spokane | 195 | 94.94 | E635511 | 01/24/2017 | 17:57 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | Snowing | Wet | Dark-Street Lights On | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E644072 | 02/17/2017 | 07:02 | No Apparent Injury | 0 | 0 | 1 | 0 | 0 | Passenger Car | | Overcast | Wet | Dawn | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E648023 | 03/02/2017 | 15:21 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E676257 | 05/30/2017 | 16:00 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Truck Tractor & Semi-Trailer | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E676966 | 05/23/2017 | 17:22 | Possible Injury | 1 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E679258 | 06/07/2017 | 19:17 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E715006 | 09/23/2017 | 08:49 | Possible Injury | 2 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E724463 | 10/18/2017 | 18:52 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | Raining | Wet | Dark-Street Lights On | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E772528 | 02/23/2018 | 07:41 | Possible Injury | 1 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E783182 | 03/20/2018 | 11:45 | Possible Injury | 2 | 0 | 3 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E788069 | 04/13/2018 | 06:20 | Possible Injury | 2 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | Overcast | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E795597 | 05/01/2018 | 11:45 | No Apparent Injury | 0 | 0 | 3 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E803124 | 05/17/2018 | 20:42 | Possible Injury | 2 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Overcast | Wet | Dark-No Street Lights | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E868458 | 11/27/2018 | 11:30 | Possible Injury | 2 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Raining | Wet | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E874480 | 12/16/2018 | 15:12 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Raining | Wet | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E875025 | 12/14/2018 | 16:22 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Not Stated | Overcast | Dry | Dark-Street Lights On | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E936964 | 06/30/2019 | 13:53 | Suspected Minor Injury | 1 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E938950 | 07/08/2019 | 09:02 | Suspected Minor Injury | 1 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 94.94 | E977454 | 11/01/2019 | 03:17 | No Apparent Injury | 0 | 0 | 1 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | | Clear or Partly Cloudy | Dry | Dark-Street Lights On | |
| SR 195 & 16th Ave | State Route | Spokane | Spokane | 195 | 95.55 | E633803 | 01/12/2017 | 17:00 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | Overcast | Dry | Dark-Street Lights On | 13 |
| | State Route | Spokane | Spokane | 195 | 95.55 | E663900 | 04/21/2017 | 13:54 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 95.55 | E675427 | 05/28/2017 | 15:58 | Possible Injury | 1 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 95.55 | E679721 | 06/02/2017 | 07:55 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Truck (Flatbad,Van,etc) | Truck (Flatbad,Van,etc) | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 95.55 | E699918 | 07/27/2017 | 09:36 | No Apparent Injury | 0 | 0 | 1 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 95.55 | E720893 | 10/03/2017 | 16:39 | Suspected Minor Injury | 2 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 95.55 | E784568 | 03/28/2018 | 13:00 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 95.55 | E943009 | 07/03/2019 | 16:40 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Passenger Car | Motorcycle | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 95.55 | E962177 | 09/20/2019 | 16:50 | Possible Injury | 2 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 95.55 | E965303 | 09/28/2019 | 15:05 | No Apparent Injury | 0 | 0 | 1 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | | Raining | Wet | Daylight | |
| | State Route | Spokane | Spokane | 195 | 95.55 | E971638 | 10/16/2019 | 11:33 | Suspected Minor Injury | 1 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 95.57 | E679722 | 06/02/2017 | 08:08 | Possible Injury | 1 | 0 | 5 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| | State Route | Spokane | Spokane | 195 | 95.59 | E790829 | 04/18/2018 | 07:44 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | |
| @ Ch-Sp SB | State Route | Spokane | Spokane | 195LX09388 | 0.00 | E698933 | 08/06/2017 | 11:22 | Possible Injury | 2 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | Clear or Partly Cloudy | Dry | Daylight | 1 |

# HSM ANALYSIS

## PROJECT SAFETY PERFORMANCE SUMMARY REPORT

| General Information | |
|---|---|
| Project Name | 20-2564 Latah Glen Residential |
| Project Description | Residential Development |
| Reference Number | SR 195 & 16th Avenue |
| Analyst | Whipple Consuting Engineer |
| Agency/Company | WSDOT |
| Contact Email | kkim@WhippleCE.com |
| Contact Phone | (509) 893-2617 |
| Date Completed | 05/12/11 |

Years of crash data incorporated into the analysis: 3

**PROJECT SUMMARY**


| Project Element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted average crash frequency $N_{predicted\ (KABCO)}$ | Expected average crash frequency $N_{expected\ (KABCO)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (KABC)}$ | Expected average crash frequency $N_{expected\ (KABC)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (O)}$ | Expected average crash frequency $N_{expected\ (O)}$ | Potential for Improvement |
| **INDIVIDUAL INTERSECTIONS** | | | | | | | | | |
| Intersection 1 | 1.8 | 3.3 | 1.5 | 0.7 | 1.3 | 0.6 | 1.0 | 1.9 | 0.9 |
| **COMBINED (sum of column)** | 1.8 | 3.3 | 1.5 | 0.7 | 1.3 | 0.6 | 1.0 | 1.9 | 0.9 |

**PROJECT SUMMARY -- Site-Specific EB Method Summary Results for Urban and Suburban Arterial Project**

| Crash severity level | $N_{predicted(PROJECT)}$ Predicted average crash frequency - Average safety performance of projects consisting of similar elements (anticipated average crashes/yr) | $N_{expected\ (PROJECT)}$ Expected average crash frequency - Actual long-term safety performance of the project (anticipated average crashes/yr) | $N_{potential\ for\ improvement\ (PROJECT)}$ Potential for Safety Improvement (anticipated average crashes/yr) |
|---|---|---|---|
| Fatal and injury (KABC) | 0.7 | 1.3 | 0.6 |
| Property damage only (PDO) | 1.0 | 1.9 | 0.9 |
| Total (KABCO) | 1.8 | 3.3 | 1.5 |

**HSM1 Extended Spreadsheet for Part C Chapter 12 v.9**

### Discussion of Results

**Given the potential effects of project characteristics on safety performance, results indicate that:**

1. It is anticipated that the project will, on average, experience 3.3 crashes per year (1.3 fatal and injury crashes per year; and 1.9 property damage only crashes per year).

2. A similar project is anticipated, on average, to experience 1.8 crashes per year (0.7 fatal and injury crashes per year; and 1 property damage only crashes per year).

3. It is anticipated the project has, on average, a potential for safety improvement of 1.5 crashes per year (0.6 fatal and injury crashes per year; and 0.9 property damage only crashes per year).

## WORKSHEET 2A -- GENERAL INFORMATION AND INPUT DATA FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| General Information | | Location Information | |
|---|---|---|---|
| Analyst | Whipple Consuting Engineer | Roadway | SR 195 |
| Agency or Company | WSDOT | Location Information | 16th Avenue |
| Date Performed | 1/29/2021 | Jurisdiction | WSDOT |
| Intersection | Intersection 1 | Analysis Year | 2021 |
| Signalized/Unsignalized | Unsignalized | | |

| Input Data | | | | Site Conditions | Base Conditions |
|---|---|---|---|---|---|
| Intersection type (3ST, 3SG, 4ST, 4SG) | | | | 4ST | -- |
| AADT $_{major}$ (veh/day) (total entering on major approaches)* | $AADT_{MAX}$ = | 46,800 | (veh/day) | 21,220 | -- |
| AADT $_{minor}$ (veh/day) (total entering on minor approaches)* | $AADT_{MAX}$ = | 5,900 | (veh/day) | 1,860 | -- |
| Intersection lighting (present/not present) | | | | Present | Not Present |
| Calibration factor, $C_i$ | | | | 1.00 | 1.00 |
| Data for unsignalized intersections only: | | | | | |
| Number of major-road approaches with left-turn lanes (0,1,2) | | | | 2 | 0 |
| Number of major-road approaches with right-turn lanes (0,1,2) | | | | 0 | 0 |
| Data for signalized intersections only: | | | | | |
| ~~Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with right-turn lanes: for 4SG, use maximum value of 4, all other, max 2)~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #1~~ | | | | | ~~Permissive~~ |
| ~~Type of left-turn signal phasing for Leg #2~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #3~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #4 (if applicable)~~ | | | | | ~~--~~ |
| ~~Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Intersection red light cameras (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only~~ | | | | | ~~--~~ |
| ~~Maximum number of lanes crossed by a pedestrian ($n_{lanesx}$)~~ | | | | | ~~--~~ |
| ~~Number of bus stops within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |
| ~~Schools within 300 m (1,000 ft) of the intersection (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |

| Average Annual Crash History (3 or 5-yr average) | | | |
|---|---|---|---|
| Multiple vehicle crashes | KABC | Fatal and Injury Only | 1.7 |
| | PDO | Property Damage Only | 2.0 |
| Single-vehicle crashes | KABC | Fatal and Injury Only | 0.0 |
| | PDO | Property Damage Only | 0.7 |

NOTES: * AADT: It is important to remember that the AADT(major) = AADT(major approach1) + AADT(minor approach2) (refer to p.12-8 in Part C of the HSM)

## WORKSHEET 2B -- CRASH MODIFICATION FACTORS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| CMF for Left-Turn Lanes | CMF for Left-Turn Signal Phasing | CMF for Right-Turn Lanes | CMF for Right Turn on Red | CMF for Lighting | CMF for Red Light Cameras | Combined CMF |
| *CMF 1i* | *CMF 2i* | *CMF 3i* | *CMF 4i* | *CMF 5i* | *CMF 6i* | *CMF $_{COMB}$* |
| from Table 12-24 | from Table 12-25 | from Table 12-26 | from Equation 12-35 | from Equation 12-36 | from Equation 12-37 | (1)*(2)*(3)*(4)*(5)*(6) |
| 0.5300 | 1.0000 | 1.0000 | 1.0000 | 0.9130 | 1.0000 | 0.4839 |

**WORKSHEET 2C -- MULTIPLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (6)*(7)*(8) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | **Overdispersion Parameter, k** | **Initial $N_{bimv}$** | **Proportion of Total Crashes** | **Adjusted $N_{bimv}$** | **Combined CMFs** | **Calibration Factor, $C_i$** | **Predicted $N_{bimv}$** |
| | from Table 12-10 | | | from Table 12-10 | from Equation 12-21 | | $(4)_{TOTAL}$*(5) | (7) from Worksheet 2B | | |
| | a | b | c | | | | | | | |
| Total | -8.90 | 0.82 | 0.25 | 0.40 | 3.163 | 1.000 | 3.163 | 0.48 | 1.00 | 1.530 |
| Fatal and Injury (FI) | -11.13 | 0.93 | 0.28 | 0.48 | 1.275 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.397 | 1.254 | 0.48 | 1.00 | 0.607 |
| Property Damage Only (PDO) | -8.74 | 0.77 | 0.23 | 0.40 | 1.940 | $(5)_{TOTAL}-(5)_{FI}$ = 0.603 | 1.908 | 0.48 | 1.00 | 0.923 |

**WORKSHEET 2D -- MULTIPLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| **Collision Type** | **Proportion of Collision Type(FI)** | **Predicted N *bimv* (FI) (crashes/year)** | **Proportion of Collision Type (PDO)** | **Predicted N *bimv* (PDO) (crashes/year)** | **Predicted N *bimv* (TOTAL) (crashes/year)** |
| | from Table 12-11 | $(9)_{FI}$ from Worksheet 2C | from Table 12-11 | $(9)_{PDO}$ from Worksheet 2C | $(9)_{PDO}$ from Worksheet 2C |
| Total | 1.000 | 0.607 | 1.000 | 0.923 | 1.530 |
| | | (2)*$(3)_{FI}$ | | (4)*$(5)_{PDO}$ | (3)+(5) |
| Rear-end collision | 0.338 | 0.205 | 0.374 | 0.345 | 0.551 |
| Head-on collision | 0.041 | 0.025 | 0.030 | 0.028 | 0.053 |
| Angle collision | 0.440 | 0.267 | 0.335 | 0.309 | 0.576 |
| Sideswipe | 0.121 | 0.073 | 0.044 | 0.041 | 0.114 |
| Other multiple-vehicle collision | 0.060 | 0.036 | 0.217 | 0.200 | 0.237 |

**WORKSHEET 2E -- SINGLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | **Overdispersion Parameter, k** | **Initial $N_{bisv}$** | **Proportion of Total Crashes** | **Adjusted $N_{bimv}$** | **Combined CMFs** | **Calibration Factor, $C_i$** | **Predicted $N_{bisv}$** |
| | from Table 12-12 | | | from Table 12-12 | from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27 | | $(4)_{TOTAL}$*(5) | (7) from Worksheet 2B | | (6)*(7)*(8) |
| | a | b | c | | | | | | | |
| Total | -5.33 | 0.33 | 0.12 | 0.65 | 0.320 | 1.000 | 0.320 | 0.48 | 1.00 | 0.155 |
| Fatal and Injury (FI) | -- | -- | -- | -- | 0.090 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.301 | 0.097 | 0.48 | 1.00 | 0.047 |
| Property Damage Only (PDO) | -7.04 | 0.36 | 0.25 | 0.54 | 0.208 | $(5)_{TOTAL}-(5)_{FI}$ = 0.699 | 0.224 | 0.48 | 1.00 | 0.108 |

**WORKSHEET 2F -- SINGLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| **Collision Type** | **Proportion of Collision Type$_{(FI)}$** | **Predicted N $_{bisv\ (FI)}$ (crashes/year)** | **Proportion of Collision Type $_{(PDO)}$** | **Predicted N $_{bisv\ (PDO)}$ (crashes/year)** | **Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)** |
| | from Table 12-13 | (9)$_{FI}$ from Worksheet 2E | from Table 12-13 | (9)$_{PDO}$ from Worksheet 2E | (9)$_{PDO}$ from Worksheet 2E |
| Total | 1.000 | 0.047 | 1.000 | 0.108 | 0.155 |
| | | (2)*(3)$_{FI}$ | | (4)*(5)$_{PDO}$ | (3)+(5) |
| Collision with parked vehicle | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| Collision with animal | 0.001 | 0.000 | 0.026 | 0.003 | 0.003 |
| Collision with fixed object | 0.679 | 0.032 | 0.847 | 0.092 | 0.123 |
| Collision with other object | 0.089 | 0.004 | 0.070 | 0.008 | 0.012 |
| Other single-vehicle collision | 0.051 | 0.002 | 0.007 | 0.001 | 0.003 |
| Single-vehicle noncollision | 0.179 | 0.008 | 0.049 | 0.005 | 0.014 |

**WORKSHEET 2G -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL STOP-CONTROLLED INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{pedi}$** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-16 | | (4)*(5)*(6) |
| Total | 1.530 | 0.155 | 1.685 | 0.022 | 1.00 | 0.037 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.037 |

**WORKSHEET 2H -- CRASH MODIFICATION FACTORS FOR VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS**

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| CMF for Bus Stops | CMF for Schools | CMF for Alcohol Sales Establishments | Combined CMF |
| $CMF_{1p}$ | $CMF_{2p}$ | $CMF_{3p}$ | |
| from Table 12-28 | from Table 12-29 | from Table 12-30 | (1)*(2)*(3) |
| -- | -- | -- | -- |

**WORKSHEET 2I -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS**

| (1) | (2) | | | | | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | | | **Overdispersion Parameter, k** | **$N_{pedbase}$** | **Combined CMF** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | from Table 12-14 | | | | | | from Equation 12-29 | (4) from Worksheet 2H | | (4)*(5)*(6) |
| | a | b | c | d | e | | | | | |
| Total | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |
| Fatal and Injury (FI) | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |

**WORKSHEET 2J -- VEHICLE-BICYCLE COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{bikei}$** | **Calibration factor, $C_i$** | **Predicted $N_{bikei}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-17 | | (4)*(5)*(6) |
| Total | 1.530 | 0.155 | 1.685 | 0.018 | 1.00 | 0.030 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.030 |

WORKSHEET 2K -- CRASH SEVERITY DISTRIBUTION FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| **Collision type** | **Fatal and injury (FI)** | **Property damage only (PDO)** | **Total** |
| | (3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J | (5) from Worksheet 2D and 2F | (6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J |
| **MULTIPLE-VEHICLE** | | | |
| Rear-end collisions (from Worksheet 2D) | 0.205 | 0.345 | 0.551 |
| Head-on collisions (from Worksheet 2D) | 0.025 | 0.028 | 0.053 |
| Angle collisions (from Worksheet 2D) | 0.267 | 0.309 | 0.576 |
| Sideswipe (from Worksheet 2D) | 0.073 | 0.041 | 0.114 |
| Other multiple-vehicle collision (from Worksheet 2D) | 0.036 | 0.200 | 0.237 |
| Subtotal | 0.607 | 0.923 | 1.530 |
| **SINGLE-VEHICLE** | | | |
| Collision with parked vehicle (from Worksheet 2F) | 0.000 | 0.000 | 0.000 |
| Collision with animal (from Worksheet 2F) | 0.000 | 0.003 | 0.003 |
| Collision with fixed object (from Worksheet 2F) | 0.032 | 0.092 | 0.123 |
| Collision with other object (from Worksheet 2F) | 0.004 | 0.008 | 0.012 |
| Other single-vehicle collision (from Worksheet 2F) | 0.002 | 0.001 | 0.003 |
| Single-vehicle noncollision (from Worksheet 2F) | 0.008 | 0.005 | 0.014 |
| Collision with pedestrian (from Worksheet 2G or 2I) | 0.037 | 0.000 | 0.037 |
| Collision with bicycle (from Worksheet 2J) | 0.030 | 0.000 | 0.030 |
| Subtotal | 0.114 | 0.108 | 0.222 |
| Total | 0.721 | 1.032 | 1.753 |

WORKSHEET 2L -- SUMMARY RESULTS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) |
|---|---|
| **Crash severity level** | **Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)** |
| | (Total) from Worksheet 2K |
| Total | 1.753 |
| Fatal and injury (FI) | 0.721 |
| Property damage only (PDO) | 1.032 |

**PROJECT ELEMENT RESULTS SUMMARY[1]**

| Summary for the project element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted average crash frequency $N_{predicted\ (KABCO)}$ | Expected average crash frequency $N_{expected\ (KABCO)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (KABC)}$ | Expected average crash frequency $N_{expected\ (KABC)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (O)}$ | Expected average crash frequency $N_{expected\ (O)}$ | Potential for Improvement |
| | 1.753 | 3.255 | 1.502 | 0.721 | 1.339 | 0.618 | 1.032 | 1.916 | 0.884 |

Special Note: When the project element is not included in the analysis the results will all be zeros. In addition if only the analysis only includes determining the predicted average crash frequency (i.e. EB analysis is not carried out), the results will show zero values where EB results are usually displayed.

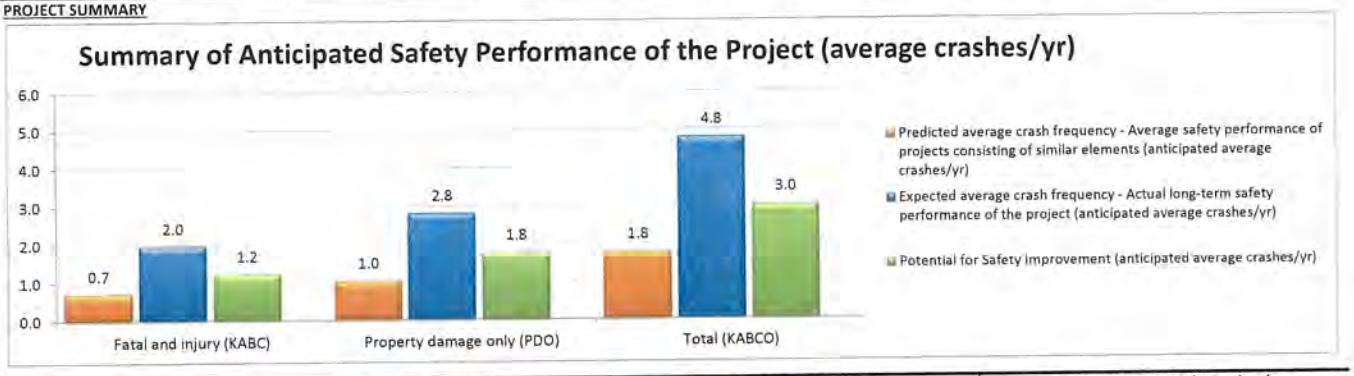
## PROJECT SAFETY PERFORMANCE SUMMARY REPORT

**General Information**

| | |
|---|---|
| Project Name | 20-2564 Latah Glen Residential |
| Project Description | Residential Development |
| Reference Number | SR 195 & Thorpe Avenue |
| Analyst | Whipple Consuting Engineer |
| Agency/Company | WSDOT |
| Contact Email | kkim@WhippleCE.com |
| Contact Phone | (509) 893-2617 |
| Date Completed | 05/12/11 |

Years of crash data incorporated into the analysis: 3

**PROJECT SUMMARY**




| Project Element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted average crash frequency $N_{predicted\ (KABCO)}$ | Expected average crash frequency $N_{expected\ (KABCO)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (KABC)}$ | Expected average crash frequency $N_{expected\ (KABC)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (O)}$ | Expected average crash frequency $N_{expected\ (O)}$ | Potential for Improvement |
| **INDIVIDUAL INTERSECTIONS** | | | | | | | | | |
| Intersection 1 | 1.8 | 4.8 | 3.0 | 0.7 | 2.0 | 1.2 | 1.0 | 2.8 | 1.8 |
| **COMBINED (sum of column)** | 1.8 | 4.8 | 3.0 | 0.7 | 2.0 | 1.2 | 1.0 | 2.8 | 1.8 |

**PROJECT SUMMARY -- Site-Specific EB Method Summary Results for Urban and Suburban Arterial Project**

| Crash severity level | $N_{predicted(PROJECT)}$ Predicted average crash frequency - Average safety performance of projects consisting of similar elements (anticipated average crashes/yr) | $N_{expected\ (PROJECT)}$ Expected average crash frequency - Actual long-term safety performance of the project (anticipated average crashes/yr) | $N_{potential\ for\ improvement\ (PROJECT)}$ Potential for Safety Improvement (anticipated average crashes/yr) |
|---|---|---|---|
| Fatal and injury (KABC) | 0.7 | 2.0 | 1.2 |
| Property damage only (PDO) | 1.0 | 2.8 | 1.8 |
| Total (KABCO) | 1.8 | 4.8 | 3.0 |

**HSM1 Extended Spreadsheet for Part C Chapter 12 v.9**

Discussion of Results

**Given the potential effects of project characteristics on safety performance, results indicate that:**

1. It is anticipated that the project will, on average, experience 4.8 crashes per year (2 fatal and injury crashes per year; and 2.8 property damage only crashes per year).

2. A similar project is anticipated, on average, to experience 1.8 crashes per year (0.7 fatal and injury crashes per year; and 1 property damage only crashes per year).

3. It is anticipated the project has, on average, a potential for safety improvement of 3 crashes per year (1.2 fatal and injury crashes per year; and 1.8 property damage only crashes per year).

## WORKSHEET 2A -- GENERAL INFORMATION AND INPUT DATA FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| **General Information** | | **Location Information** | |
|---|---|---|---|
| Analyst | Whipple Consuting Engineer | Roadway | SR 195 |
| Agency or Company | WSDOT | Location Information | Thorpe Avenue |
| Date Performed | 1/29/2021 | Jurisdiction | WSDOT |
| Intersection | Intersection 1 | Analysis Year | 2021 |
| Signalized/Unsignalized | Unsignalized | | |

| **Input Data** | | | | **Site Conditions** | **Base Conditions** |
|---|---|---|---|---|---|
| Intersection type (3ST, 3SG, 4ST, 4SG) | | | | 4ST | -- |
| AADT $_{major}$ (veh/day) (total entering on major approaches)* | $AADT_{MAX}$ = | 46,800 | (veh/day) | 22,500 | -- |
| AADT $_{minor}$ (veh/day) (total entering on minor approaches)* | $AADT_{MAX}$ = | 5,900 | (veh/day) | 1,650 | -- |
| Intersection lighting (present/not present) | | | | Present | Not Present |
| Calibration factor, $C_i$ | | | | 1.00 | 1.00 |
| Data for unsignalized intersections only: | | | | | |
| Number of major-road approaches with left-turn lanes (0,1,2) | | | | 2 | 0 |
| Number of major-road approaches with right-turn lanes (0,1,2) | | | | 0 | 0 |
| Data for signalized intersections only: | | | | | |
| ~~Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with right-turn lanes: for 4SG, use maximum value of 4, all other, max 2)~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #1~~ | | | | | ~~Permissive~~ |
| ~~Type of left-turn signal phasing for Leg #2~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #3~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #4 (if applicable)~~ | | | | | ~~--~~ |
| ~~Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Intersection red light cameras (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only~~ | | | | | ~~--~~ |
| ~~Maximum number of lanes crossed by a pedestrian ($n_{lanesx}$)~~ | | | | | ~~--~~ |
| ~~Number of bus stops within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |
| ~~Schools within 300 m (1,000 ft) of the intersection (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |

| **Average Annual Crash History (3 or 5-yr average)** | | | |
|---|---|---|---|
| Multiple vehicle crashes | KABC | Fatal and Injury Only | 3.0 |
| | PDO | Property Damage Only | 3.0 |
| Single-vehicle crashes | KABC | Fatal and Injury Only | 0.0 |
| | PDO | Property Damage Only | 0.7 |

NOTES: * AADT: It is important to remember that the AADT(major) = AADT(major approach1) + AADT(minor approach2) (refer to p.12-8 in Part C of the HSM)

## WORKSHEET 2B -- CRASH MODIFICATION FACTORS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| CMF for Left-Turn Lanes | CMF for Left-Turn Signal Phasing | CMF for Right-Turn Lanes | CMF for Right Turn on Red | CMF for Lighting | CMF for Red Light Cameras | Combined CMF |
| *CMF 1i* | *CMF 2i* | *CMF 3i* | *CMF 4i* | *CMF 5i* | *CMF 6i* | *CMF $_{COMB}$* |
| from Table 12-24 | from Table 12-25 | from Table 12-26 | from Equation 12-35 | from Equation 12-36 | from Equation 12-37 | (1)*(2)*(3)*(4)*(5)*(6) |
| 0.5300 | 1.0000 | 1.0000 | 1.0000 | 0.9130 | 1.0000 | 0.4839 |

**WORKSHEET 2C -- MULTIPLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (6)*(7)*(8) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** from Table 12-10 | | | **Overdispersion Parameter, k** from Table 12-10 | **Initial $N_{bimv}$** from Equation 12-21 | **Proportion of Total Crashes** | **Adjusted $N_{bimv}$** $(4)_{TOTAL}$*(5) | **Combined CMFs** (7) from Worksheet 2B | **Calibration Factor, $C_i$** | **Predicted $N_{bimv}$** |
| | a | b | c | | | | | | | |
| Total | -8.90 | 0.82 | 0.25 | 0.40 | 3.221 | 1.000 | 3.221 | 0.48 | 1.00 | 1.558 |
| Fatal and Injury (FI) | -11.13 | 0.93 | 0.28 | 0.48 | 1.302 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.397 | 1.280 | 0.48 | 1.00 | 0.619 |
| Property Damage Only (PDO) | -8.74 | 0.77 | 0.23 | 0.40 | 1.975 | $(5)_{TOTAL}-(5)_{FI}$ = 0.603 | 1.941 | 0.48 | 1.00 | 0.939 |

**WORKSHEET 2D -- MULTIPLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| **Collision Type** | **Proportion of Collision Type$_{(FI)}$** | **Predicted N $_{bimv\ (FI)}$ (crashes/year)** | **Proportion of Collision Type $_{(PDO)}$** | **Predicted N $_{bimv\ (PDO)}$ (crashes/year)** | **Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)** |
| | from Table 12-11 | $(9)_{FI}$ from Worksheet 2C | from Table 12-11 | $(9)_{PDO}$ from Worksheet 2C | $(9)_{PDO}$ from Worksheet 2C |
| Total | 1.000 | 0.619 | 1.000 | 0.939 | 1.558 |
| | | (2)*$(3)_{FI}$ | | (4)*$(5)_{PDO}$ | (3)+(5) |
| Rear-end collision | 0.338 | 0.209 | 0.374 | 0.351 | 0.561 |
| Head-on collision | 0.041 | 0.025 | 0.030 | 0.028 | 0.054 |
| Angle collision | 0.440 | 0.273 | 0.335 | 0.315 | 0.587 |
| Sideswipe | 0.121 | 0.075 | 0.044 | 0.041 | 0.116 |
| Other multiple-vehicle collision | 0.060 | 0.037 | 0.217 | 0.204 | 0.241 |

**WORKSHEET 2E -- SINGLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** from Table 12-12 | | | **Overdispersion Parameter, k** from Table 12-12 | **Initial $N_{bisv}$** from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27 | **Proportion of Total Crashes** | **Adjusted $N_{bimv}$** $(4)_{TOTAL}$*(5) | **Combined CMFs** (7) from Worksheet 2B | **Calibration Factor, $C_i$** | **Predicted $N_{bisv}$** (6)*(7)*(8) |
| | a | b | c | | | | | | | |
| Total | -5.33 | 0.33 | 0.12 | 0.65 | 0.322 | 1.000 | 0.322 | 0.48 | 1.00 | 0.156 |
| Fatal and Injury (FI) | -- | -- | -- | -- | 0.090 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.304 | 0.098 | 0.48 | 1.00 | 0.047 |
| Property Damage Only (PDO) | -7.04 | 0.36 | 0.25 | 0.54 | 0.206 | $(5)_{TOTAL}-(5)_{FI}$ = 0.696 | 0.224 | 0.48 | 1.00 | 0.108 |

WORKSHEET 2F -- SINGLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| Collision Type | Proportion of Collision Type$_{(FI)}$ | Predicted N $_{bisv\ (FI)}$ (crashes/year) | Proportion of Collision Type $_{(PDO)}$ | Predicted N $_{bisv\ (PDO)}$ (crashes/year) | Predicted N $_{bisv\ (TOTAL)}$ (crashes/year) |
| | from Table 12-13 | $(9)_{FI}$ from Worksheet 2E | from Table 12-13 | $(9)_{PDO}$ from Worksheet 2E | $(9)_{PDO}$ from Worksheet 2E |
| Total | 1.000 | 0.047 | 1.000 | 0.108 | 0.156 |
| | | $(2)*(3)_{FI}$ | | $(4)*(5)_{PDO}$ | (3)+(5) |
| Collision with parked vehicle | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| Collision with animal | 0.001 | 0.000 | 0.026 | 0.003 | 0.003 |
| Collision with fixed object | 0.679 | 0.032 | 0.847 | 0.092 | 0.124 |
| Collision with other object | 0.089 | 0.004 | 0.070 | 0.008 | 0.012 |
| Other single-vehicle collision | 0.051 | 0.002 | 0.007 | 0.001 | 0.003 |
| Single-vehicle noncollision | 0.179 | 0.008 | 0.049 | 0.005 | 0.014 |

WORKSHEET 2G -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL STOP-CONTROLLED INTERSECTIONS

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| Crash Severity Level | Predicted $N_{bimv}$ | Predicted $N_{bisv}$ | Predicted $N_{bi}$ | $f_{pedi}$ | Calibration factor, $C_i$ | Predicted $N_{pedi}$ |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-16 | | (4)*(5)*(6) |
| Total | 1.558 | 0.156 | 1.714 | 0.022 | 1.00 | 0.038 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.038 |

WORKSHEET 2H -- CRASH MODIFICATION FACTORS FOR VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| CMF for Bus Stops | CMF for Schools | CMF for Alcohol Sales Establishments | Combined CMF |
| $CMF_{1p}$ | $CMF_{2p}$ | $CMF_{3p}$ | |
| from Table 12-28 | from Table 12-29 | from Table 12-30 | (1)*(2)*(3) |
| -- | -- | -- | -- |

WORKSHEET 2I -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS

| (1) | (2) | | | | | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|---|---|---|
| Crash Severity Level | SPF Coefficients from Table 12-14 | | | | | Overdispersion Parameter, k | $N_{pedbase}$ from Equation 12-29 | Combined CMF (4) from Worksheet 2H | Calibration factor, $C_i$ | Predicted $N_{pedi}$ (4)*(5)*(6) |
| | a | b | c | d | e | | | | | |
| Total | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |
| Fatal and Injury (FI) | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |

WORKSHEET 2J -- VEHICLE-BICYCLE COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| Crash Severity Level | Predicted $N_{bimv}$ | Predicted $N_{bisv}$ | Predicted $N_{bi}$ | $f_{bikei}$ | Calibration factor, $C_i$ | Predicted $N_{bikei}$ |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-17 | | (4)*(5)*(6) |
| Total | 1.558 | 0.156 | 1.714 | 0.018 | 1.00 | 0.031 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.031 |

## WORKSHEET 2K -- CRASH SEVERITY DISTRIBUTION FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| **Collision type** | **Fatal and injury (FI)** | **Property damage only (PDO)** | **Total** |
| | (3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J | (5) from Worksheet 2D and 2F | (6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J |
| **MULTIPLE-VEHICLE** | | | |
| Rear-end collisions (from Worksheet 2D) | 0.209 | 0.351 | 0.561 |
| Head-on collisions (from Worksheet 2D) | 0.025 | 0.028 | 0.054 |
| Angle collisions (from Worksheet 2D) | 0.273 | 0.315 | 0.587 |
| Sideswipe (from Worksheet 2D) | 0.075 | 0.041 | 0.116 |
| Other multiple-vehicle collision (from Worksheet 2D) | 0.037 | 0.204 | 0.241 |
| Subtotal | 0.619 | 0.939 | 1.558 |
| **SINGLE-VEHICLE** | | | |
| Collision with parked vehicle (from Worksheet 2F) | 0.000 | 0.000 | 0.000 |
| Collision with animal (from Worksheet 2F) | 0.000 | 0.003 | 0.003 |
| Collision with fixed object (from Worksheet 2F) | 0.032 | 0.092 | 0.124 |
| Collision with other object (from Worksheet 2F) | 0.004 | 0.008 | 0.012 |
| Other single-vehicle collision (from Worksheet 2F) | 0.002 | 0.001 | 0.003 |
| Single-vehicle noncollision (from Worksheet 2F) | 0.008 | 0.005 | 0.014 |
| Collision with pedestrian (from Worksheet 2G or 2I) | 0.038 | 0.000 | 0.038 |
| Collision with bicycle (from Worksheet 2J) | 0.031 | 0.000 | 0.031 |
| Subtotal | 0.116 | 0.108 | 0.224 |
| Total | 0.735 | 1.047 | 1.783 |

## WORKSHEET 2L -- SUMMARY RESULTS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) |
|---|---|
| **Crash severity level** | **Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)** |
| | (Total) from Worksheet 2K |
| Total | 1.783 |
| Fatal and injury (FI) | 0.735 |
| Property damage only (PDO) | 1.047 |

### PROJECT ELEMENT RESULTS SUMMARY[1]

| Summary for the project element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted average crash frequency $N_{predicted\ (KABCO)}$ | Expected average crash frequency $N_{expected\ (KABCO)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (KABC)}$ | Expected average crash frequency $N_{expected\ (KABC)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (O)}$ | Expected average crash frequency $N_{expected\ (O)}$ | Potential for Improvement |
| | 1.783 | 4.796 | 3.013 | 0.735 | 1.978 | 1.243 | 1.047 | 2.818 | 1.770 |

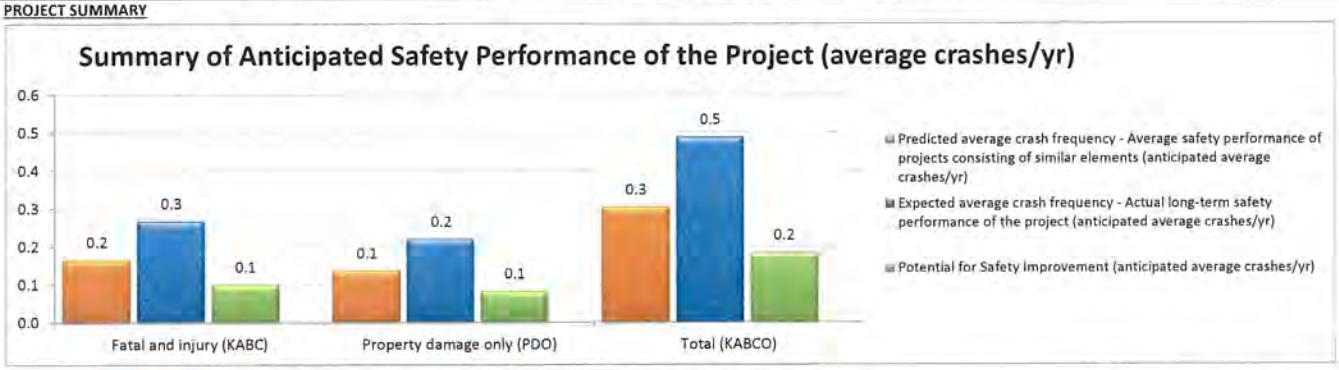
Special Note: When the project element is not included in the analysis the results will all be zeros. In addition if only the analysis only includes determining the predicted average crash frequency (i.e. EB analysis is not carried out), the results will show zero values where EB results are usually displayed.

## PROJECT SAFETY PERFORMANCE SUMMARY REPORT

| General Information | |
|---|---|
| Project Name | 20-2564 Latah Glen Residential |
| Project Description | Residential Development |
| Reference Number | SR 195 & Inland Empire Way |
| Analyst | Whipple Consuting Engineer |
| Agency/Company | WSDOT |
| Contact Email | kkim@WhippleCE.com |
| Contact Phone | (509) 893-2617 |
| Date Completed | 05/12/11 |

Years of crash data incorporated into the analysis: 3

**PROJECT SUMMARY**




| Project Element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted average crash frequency $N_{predicted\ (KABCO)}$ | Expected average crash frequency $N_{expected\ (KABCO)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (KABC)}$ | Expected average crash frequency $N_{expected\ (KABC)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (O)}$ | Expected average crash frequency $N_{expected\ (O)}$ | Potential for Improvement |
| **INDIVIDUAL INTERSECTIONS** | | | | | | | | | |
| Intersection 1 | 0.3 | 0.5 | 0.2 | 0.2 | 0.3 | 0.1 | 0.1 | 0.2 | 0.1 |
| **COMBINED (sum of column)** | 0.3 | 0.5 | 0.2 | 0.2 | 0.3 | 0.1 | 0.1 | 0.2 | 0.1 |

**PROJECT SUMMARY -- Site-Specific EB Method Summary Results for Urban and Suburban Arterial Project**

| Crash severity level | $N_{predicted(PROJECT)}$ Predicted average crash frequency - Average safety performance of projects consisting of similar elements (anticipated average crashes/yr) | $N_{expected\ (PROJECT)}$ Expected average crash frequency - Actual long-term safety performance of the project (anticipated average crashes/yr) | $N_{potential\ for\ improvement\ (PROJECT)}$ Potential for Safety Improvement (anticipated average crashes/yr) |
|---|---|---|---|
| Fatal and injury (KABC) | 0.2 | 0.3 | 0.1 |
| Property damage only (PDO) | 0.1 | 0.2 | 0.1 |
| Total (KABCO) | 0.3 | 0.5 | 0.2 |

**HSM1 Extended Spreadsheet for Part C Chapter 12 v.9**

### Discussion of Results

**Given the potential effects of project characteristics on safety performance, results indicate that:**

1. It is anticipated that the project will, on average, experience 0.5 crashes per year (0.3 fatal and injury crashes per year; and 0.2 property damage only crashes per year).

2. A similar project is anticipated, on average, to experience 0.3 crashes per year (0.2 fatal and injury crashes per year; and 0.1 property damage only crashes per year).

3. It is anticipated the project has, on average, a potential for safety improvement of 0.2 crashes per year (0.1 fatal and injury crashes per year; and 0.1 property damage only crashes per year).

## WORKSHEET 2A -- GENERAL INFORMATION AND INPUT DATA FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| General Information | | Location Information | |
|---|---|---|---|
| Analyst | Whipple Consuting Engineer | Roadway | SR 195 |
| Agency or Company | WSDOT | Location Information | Inland Empire Way |
| Date Performed | 1/29/2021 | Jurisdiction | WSDOT |
| Intersection | Intersection 1 | Analysis Year | 2021 |
| Signalized/Unsignalized | Unsignalized | | |

| Input Data | | | | Site Conditions | Base Conditions |
|---|---|---|---|---|---|
| Intersection type (3ST, 3SG, 4ST, 4SG) | | | | 3ST | -- |
| AADT $_{major}$ (veh/day) (total entering on major approaches)* | $AADT_{MAX}$ = | 45,700 | (veh/day) | 14,140 | -- |
| AADT $_{minor}$ (veh/day) (total entering on minor approaches)* | $AADT_{MAX}$ = | 9,300 | (veh/day) | 40 | -- |
| Intersection lighting (present/not present) | | | | Present | Not Present |
| Calibration factor, $C_i$ | | | | 1.00 | 1.00 |
| Data for unsignalized intersections only: | | | | | |
| Number of major-road approaches with left-turn lanes (0,1,2) | | | | 0 | 0 |
| Number of major-road approaches with right-turn lanes (0,1,2) | | | | 0 | 0 |
| Data for signalized intersections only: | | | | | |
| ~~Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with right-turn lanes: for 4SG, use maximum value of 4, all other, max 2)~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #1~~ | | | | | ~~Permissive~~ |
| ~~Type of left-turn signal phasing for Leg #2~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #3~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #4 (if applicable)~~ | | | | | ~~--~~ |
| ~~Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Intersection red light cameras (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only~~ | | | | | ~~--~~ |
| ~~Maximum number of lanes crossed by a pedestrian ($n_{lanesx}$)~~ | | | | | ~~--~~ |
| ~~Number of bus stops within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |
| ~~Schools within 300 m (1,000 ft) of the intersection (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |

| Average Annual Crash History (3 or 5-yr average) | | | |
|---|---|---|---|
| Multiple vehicle crashes | KABC | Fatal and Injury Only | 0.3 |
| | PDO | Property Damage Only | 0.3 |
| Single-vehicle crashes | KABC | Fatal and Injury Only | 0.3 |
| | PDO | Property Damage Only | 0.0 |

NOTES: * AADT: It is important to remember that the AADT(major) = AADT(major approach1) + AADT(minor approach2) (refer to p.12-8 in Part C of the HSM)

## WORKSHEET 2B -- CRASH MODIFICATION FACTORS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| CMF for Left-Turn Lanes | CMF for Left-Turn Signal Phasing | CMF for Right-Turn Lanes | CMF for Right Turn on Red | CMF for Lighting | CMF for Red Light Cameras | Combined CMF |
| *CMF 1i* | *CMF 2i* | *CMF 3i* | *CMF 4i* | *CMF 5i* | *CMF 6i* | *CMF $_{COMB}$* |
| from Table 12-24 | from Table 12-25 | from Table 12-26 | from Equation 12-35 | from Equation 12-36 | from Equation 12-37 | (1)*(2)*(3)*(4)*(5)*(6) |
| 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.9096 | 1.0000 | 0.9096 |

WORKSHEET 2C -- MULTIPLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (6)*(7)*(8) |
|---|---|---|---|---|---|---|---|---|---|---|
| Crash Severity Level | SPF Coefficients | | | Overdispersion Parameter, k | Initial $N_{bimv}$ | Proportion of Total Crashes | Adjusted $N_{bimv}$ | Combined CMFs | Calibration Factor, $C_i$ | Predicted $N_{bimv}$ |
| | from Table 12-10 | | | from Table 12-10 | from Equation 12-21 | | $(4)_{TOTAL}$*(5) | (7) from Worksheet 2B | | |
| | a | b | c | | | | | | | |
| Total | -13.36 | 1.11 | 0.41 | 0.80 | 0.290 | 1.000 | 0.290 | 0.91 | 1.00 | 0.263 |
| Fatal and Injury (FI) | -14.01 | 1.16 | 0.30 | 0.69 | 0.162 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.553 | 0.160 | 0.91 | 1.00 | 0.146 |
| Property Damage Only (PDO) | -15.38 | 1.20 | 0.51 | 0.77 | 0.131 | $(5)_{TOTAL}-(5)_{FI}$ = 0.447 | 0.129 | 0.91 | 1.00 | 0.118 |

WORKSHEET 2D -- MULTIPLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| Collision Type | Proportion of Collision Type(FI) | Predicted $N_{bimv\ (FI)}$ (crashes/year) | Proportion of Collision Type $_{(PDO)}$ | Predicted $N_{bimv\ (PDO)}$ (crashes/year) | Predicted $N_{bimv\ (TOTAL)}$ (crashes/year) |
| | from Table 12-11 | $(9)_{FI}$ from Worksheet 2C | from Table 12-11 | $(9)_{PDO}$ from Worksheet 2C | $(9)_{PDO}$ from Worksheet 2C |
| Total | 1.000 | 0.146 | 1.000 | 0.118 | 0.263 |
| | | (2)*$(3)_{FI}$ | | (4)*$(5)_{PDO}$ | (3)+(5) |
| Rear-end collision | 0.421 | 0.061 | 0.440 | 0.052 | 0.113 |
| Head-on collision | 0.045 | 0.007 | 0.023 | 0.003 | 0.009 |
| Angle collision | 0.343 | 0.050 | 0.262 | 0.031 | 0.081 |
| Sideswipe | 0.126 | 0.018 | 0.040 | 0.005 | 0.023 |
| Other multiple-vehicle collision | 0.065 | 0.009 | 0.235 | 0.028 | 0.037 |

WORKSHEET 2E -- SINGLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|---|
| Crash Severity Level | SPF Coefficients | | | Overdispersion Parameter, k | Initial $N_{bisv}$ | Proportion of Total Crashes | Adjusted $N_{bimv}$ | Combined CMFs | Calibration Factor, $C_i$ | Predicted $N_{bisv}$ |
| | from Table 12-12 | | | from Table 12-12 | from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27 | | $(4)_{TOTAL}$*(5) | (7) from Worksheet 2B | | (6)*(7)*(8) |
| | a | b | c | | | | | | | |
| Total | -6.81 | 0.16 | 0.51 | 1.14 | 0.033 | 1.000 | 0.033 | 0.91 | 1.00 | 0.030 |
| Fatal and Injury (FI) | -- | -- | -- | -- | 0.010 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.348 | 0.012 | 0.91 | 1.00 | 0.011 |
| Property Damage Only (PDO) | -8.36 | 0.25 | 0.55 | 1.29 | 0.019 | $(5)_{TOTAL}-(5)_{FI}$ = 0.652 | 0.022 | 0.91 | 1.00 | 0.020 |

**WORKSHEET 2F -- SINGLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| **Collision Type** | **Proportion of Collision Type$_{(FI)}$** | **Predicted N $_{bisv\ (FI)}$ (crashes/year)** | **Proportion of Collision Type $_{(PDO)}$** | **Predicted N $_{bisv\ (PDO)}$ (crashes/year)** | **Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)** |
| | from Table 12-13 | (9)$_{FI}$ from Worksheet 2E | from Table 12-13 | (9)$_{PDO}$ from Worksheet 2E | (9)$_{PDO}$ from Worksheet 2E |
| Total | 1.000 | 0.011 | 1.000 | 0.020 | 0.030 |
| | | (2)*(3)$_{FI}$ | | (4)*(5)$_{PDO}$ | (3)+(5) |
| Collision with parked vehicle | 0.001 | 0.000 | 0.003 | 0.000 | 0.000 |
| Collision with animal | 0.003 | 0.000 | 0.018 | 0.000 | 0.000 |
| Collision with fixed object | 0.762 | 0.008 | 0.834 | 0.017 | 0.025 |
| Collision with other object | 0.090 | 0.001 | 0.092 | 0.002 | 0.003 |
| Other single-vehicle collision | 0.039 | 0.000 | 0.023 | 0.000 | 0.001 |
| Single-vehicle noncollision | 0.105 | 0.001 | 0.030 | 0.001 | 0.002 |

**WORKSHEET 2G -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL STOP-CONTROLLED INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{pedi}$** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-16 | | (4)*(5)*(6) |
| Total | 0.263 | 0.030 | 0.294 | 0.021 | 1.00 | 0.006 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.006 |

**WORKSHEET 2H -- CRASH MODIFICATION FACTORS FOR VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS**

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| CMF for Bus Stops | CMF for Schools | CMF for Alcohol Sales Establishments | Combined CMF |
| $CMF_{1p}$ | $CMF_{2p}$ | $CMF_{3p}$ | |
| from Table 12-28 | from Table 12-29 | from Table 12-30 | (1)*(2)*(3) |
| -- | -- | -- | -- |

**WORKSHEET 2I -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS**

| (1) | (2) | | | | | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | | | **Overdispersion Parameter, k** | **$N_{pedbase}$** | **Combined CMF** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | from Table 12-14 | | | | | | from Equation 12-29 | (4) from Worksheet 2H | | (4)*(5)*(6) |
| | a | b | c | d | e | | | | | |
| Total | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |
| Fatal and Injury (FI) | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |

**WORKSHEET 2J -- VEHICLE-BICYCLE COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{bikei}$** | **Calibration factor, $C_i$** | **Predicted $N_{bikei}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-17 | | (4)*(5)*(6) |
| Total | 0.263 | 0.030 | 0.294 | 0.016 | 1.00 | 0.005 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.005 |

## WORKSHEET 2K -- CRASH SEVERITY DISTRIBUTION FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| **Collision type** | **Fatal and injury (FI)** | **Property damage only (PDO)** | **Total** |
| | (3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J | (5) from Worksheet 2D and 2F | (6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J |
| **MULTIPLE-VEHICLE** | | | |
| Rear-end collisions (from Worksheet 2D) | 0.061 | 0.052 | 0.113 |
| Head-on collisions (from Worksheet 2D) | 0.007 | 0.003 | 0.009 |
| Angle collisions (from Worksheet 2D) | 0.050 | 0.031 | 0.081 |
| Sideswipe (from Worksheet 2D) | 0.018 | 0.005 | 0.023 |
| Other multiple-vehicle collision (from Worksheet 2D) | 0.009 | 0.028 | 0.037 |
| Subtotal | 0.146 | 0.118 | 0.263 |
| **SINGLE-VEHICLE** | | | |
| Collision with parked vehicle (from Worksheet 2F) | 0.000 | 0.000 | 0.000 |
| Collision with animal (from Worksheet 2F) | 0.000 | 0.000 | 0.000 |
| Collision with fixed object (from Worksheet 2F) | 0.008 | 0.017 | 0.025 |
| Collision with other object (from Worksheet 2F) | 0.001 | 0.002 | 0.003 |
| Other single-vehicle collision (from Worksheet 2F) | 0.000 | 0.000 | 0.001 |
| Single-vehicle noncollision (from Worksheet 2F) | 0.001 | 0.001 | 0.002 |
| Collision with pedestrian (from Worksheet 2G or 2I) | 0.006 | 0.000 | 0.006 |
| Collision with bicycle (from Worksheet 2J) | 0.005 | 0.000 | 0.005 |
| Subtotal | 0.021 | 0.020 | 0.041 |
| Total | 0.167 | 0.137 | 0.305 |

## WORKSHEET 2L -- SUMMARY RESULTS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) |
|---|---|
| **Crash severity level** | **Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)** |
| | (Total) from Worksheet 2K |
| Total | 0.305 |
| Fatal and injury (FI) | 0.167 |
| Property damage only (PDO) | 0.137 |

### PROJECT ELEMENT RESULTS SUMMARY[1]

| Summary for the project element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted average crash frequency $N_{predicted\ (KABCO)}$ | Expected average crash frequency $N_{expected\ (KABCO)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (KABC)}$ | Expected average crash frequency $N_{expected\ (KABC)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (O)}$ | Expected average crash frequency $N_{expected\ (O)}$ | Potential for Improvement |
| | 0.305 | 0.489 | 0.185 | 0.167 | 0.268 | 0.101 | 0.137 | 0.221 | 0.083 |

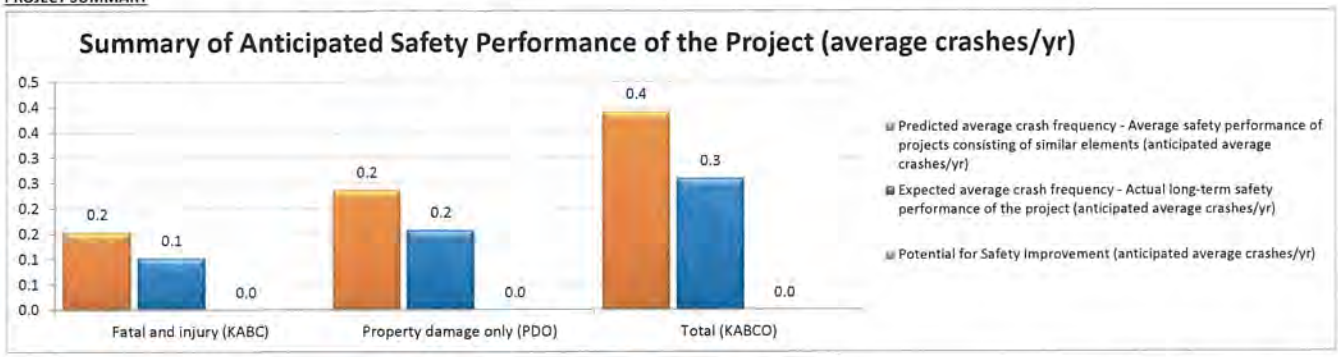
Special Note: When the project element is not included in the analysis the results will all be zeros. In addition if only the analysis only includes determining the predicted average crash frequency (i.e. EB analysis is not carried out), the results will show zero values where EB results are usually displayed.

## PROJECT SAFETY PERFORMANCE SUMMARY REPORT

| General Information | |
|---|---|
| Project Name | 20-2564 Latah Glen Residential |
| Project Description | Residential Development |
| Reference Number | SR 195 NB & Cheney-Spokane Road |
| Analyst | Whipple Consuting Engineer |
| Agency/Company | WSDOT |
| Contact Email | kkim@WhippleCE.com |
| Contact Phone | (509) 893-2617 |
| Date Completed | 05/12/11 |

Years of crash data incorporated into the analysis: 3

**PROJECT SUMMARY**




| Project Element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted average crash frequency $N_{predicted\ (KABCO)}$ | Expected average crash frequency $N_{expected\ (KABCO)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (KABC)}$ | Expected average crash frequency $N_{expected\ (KABC)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (O)}$ | Expected average crash frequency $N_{expected\ (O)}$ | Potential for Improvement |
| **INDIVIDUAL INTERSECTIONS** | | | | | | | | | |
| Intersection 1 | 0.4 | 0.3 | 0.0 | 0.2 | 0.1 | 0.0 | 0.2 | 0.2 | 0.0 |
| **COMBINED (sum of column)** | 0.4 | 0.3 | 0.0 | 0.2 | 0.1 | 0.0 | 0.2 | 0.2 | 0.0 |

**PROJECT SUMMARY – Site-Specific EB Method Summary Results for Urban and Suburban Arterial Project**

| Crash severity level | $N_{predicted(PROJECT)}$ Predicted average crash frequency - Average safety performance of projects consisting of similar elements (anticipated average crashes/yr) | $N_{expected\ (PROJECT)}$ Expected average crash frequency - Actual long-term safety performance of the project (anticipated average crashes/yr) | $N_{potential\ for\ improvement\ (PROJECT)}$ Potential for Safety Improvement (anticipated average crashes/yr) |
|---|---|---|---|
| Fatal and injury (KABC) | 0.2 | 0.1 | N/A |
| Property damage only (PDO) | 0.2 | 0.2 | N/A |
| Total (KABCO) | 0.4 | 0.3 | N/A |

**HSM1 Extended Spreadsheet for Part C Chapter 12 v.9**

Discussion of Results

**Given the potential effects of project characteristics on safety performance, results indicate that:**

1. It is anticipated that the project will, on average, experience 0.3 crashes per year (0.1 fatal and injury crashes per year; and 0.2 property damage only crashes per year).

2. A similar project is anticipated, on average, to experience 0.4 crashes per year (0.2 fatal and injury crashes per year; and 0.2 property damage only crashes per year).

#VALUE!

## WORKSHEET 2A -- GENERAL INFORMATION AND INPUT DATA FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| **General Information** | | **Location Information** | |
|---|---|---|---|
| Analyst | Whipple Consuting Engineer | Roadway | SR 195 |
| Agency or Company | WSDOT | Location Information | Cheney-Spokane Road & SR 195 NB Ramp |
| Date Performed | 1/29/2021 | Jurisdiction | WSDOT |
| Intersection | Intersection 1 | Analysis Year | 2021 |
| Signalized/Unsignalized | Unsignalized | | |

| **Input Data** | | | | **Site Conditions** | **Base Conditions** |
|---|---|---|---|---|---|
| Intersection type (3ST, 3SG, 4ST, 4SG) | | | | 3ST | -- |
| AADT $_{major}$ (veh/day) (total entering on major approaches)* | $AADT_{MAX}$ = | 45,700 | (veh/day) | 3,600 | -- |
| AADT $_{minor}$ (veh/day) (total entering on minor approaches)* | $AADT_{MAX}$ = | 9,300 | (veh/day) | 1,250 | -- |
| Intersection lighting (present/not present) | | | | Present | Not Present |
| Calibration factor, $C_i$ | | | | 1.00 | 1.00 |
| Data for unsignalized intersections only: | | | | | |
| Number of major-road approaches with left-turn lanes (0,1,2) | | | | 0 | 0 |
| Number of major-road approaches with right-turn lanes (0,1,2) | | | | 0 | 0 |
| Data for signalized intersections only: | | | | | |
| ~~Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with right-turn lanes: for 4SG, use maximum value of 4, all other, max 2)~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #1~~ | | | | | ~~Permissive~~ |
| ~~Type of left-turn signal phasing for Leg #2~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #3~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #4 (if applicable)~~ | | | | | ~~--~~ |
| ~~Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Intersection red light cameras (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only~~ | | | | | ~~--~~ |
| ~~Maximum number of lanes crossed by a pedestrian ($n_{lanesx}$)~~ | | | | | ~~--~~ |
| ~~Number of bus stops within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |
| ~~Schools within 300 m (1,000 ft) of the intersection (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |

| **Average Annual Crash History (3 or 5-yr average)** | | | |
|---|---|---|---|
| Multiple vehicle crashes | KABC | Fatal and Injury Only | 0.0 |
| | PDO | Property Damage Only | 0.0 |
| Single-vehicle crashes | KABC | Fatal and Injury Only | 0.0 |
| | PDO | Property Damage Only | 0.0 |

NOTES: * AADT: It is important to remember that the AADT(major) = AADT(major approach1) + AADT(minor approach2) (refer to p.12-8 in Part C of the HSM)

## WORKSHEET 2B -- CRASH MODIFICATION FACTORS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| CMF for Left-Turn Lanes | CMF for Left-Turn Signal Phasing | CMF for Right-Turn Lanes | CMF for Right Turn on Red | CMF for Lighting | CMF for Red Light Cameras | Combined CMF |
| *CMF 1i* | *CMF 2i* | *CMF 3i* | *CMF 4i* | *CMF 5i* | *CMF 6i* | *CMF $_{COMB}$* |
| from Table 12-24 | from Table 12-25 | from Table 12-26 | from Equation 12-35 | from Equation 12-36 | from Equation 12-37 | (1)*(2)*(3)*(4)*(5)*(6) |
| 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.9096 | 1.0000 | 0.9096 |

## WORKSHEET 2C -- MULTIPLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (6)*(7)*(8) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | **Overdispersion Parameter, k** | **Initial $N_{bimv}$** | **Proportion of Total Crashes** | **Adjusted $N_{bimv}$** | **Combined CMFs** | **Calibration Factor, $C_i$** | **Predicted $N_{bimv}$** |
| | from Table 12-10 | | | from Table 12-10 | from Equation 12-21 | | $(4)_{TOTAL}$*(5) | (7) from Worksheet 2B | | |
| | a | b | c | | | | | | | |
| Total | -13.36 | 1.11 | 0.41 | 0.80 | 0.260 | 1.000 | 0.260 | 0.91 | 1.00 | 0.237 |
| Fatal and Injury (FI) | -14.01 | 1.16 | 0.30 | 0.69 | 0.093 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.388 | 0.101 | 0.91 | 1.00 | 0.092 |
| Property Damage Only (PDO) | -15.38 | 1.20 | 0.51 | 0.77 | 0.147 | $(5)_{TOTAL}-(5)_{FI}$ = 0.612 | 0.159 | 0.91 | 1.00 | 0.145 |

## WORKSHEET 2D -- MULTIPLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| **Collision Type** | **Proportion of Collision Type$_{(FI)}$** | **Predicted N $_{bimv\ (FI)}$ (crashes/year)** | **Proportion of Collision Type $_{(PDO)}$** | **Predicted N $_{bimv\ (PDO)}$ (crashes/year)** | **Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)** |
| | from Table 12-11 | $(9)_{FI}$ from Worksheet 2C | from Table 12-11 | $(9)_{PDO}$ from Worksheet 2C | $(9)_{PDO}$ from Worksheet 2C |
| Total | 1.000 | 0.092 | 1.000 | 0.145 | 0.237 |
| | | (2)*$(3)_{FI}$ | | (4)*$(5)_{PDO}$ | (3)+(5) |
| Rear-end collision | 0.421 | 0.039 | 0.440 | 0.064 | 0.102 |
| Head-on collision | 0.045 | 0.004 | 0.023 | 0.003 | 0.007 |
| Angle collision | 0.343 | 0.031 | 0.262 | 0.038 | 0.069 |
| Sideswipe | 0.126 | 0.012 | 0.040 | 0.006 | 0.017 |
| Other multiple-vehicle collision | 0.065 | 0.006 | 0.235 | 0.034 | 0.040 |

## WORKSHEET 2E -- SINGLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | **Overdispersion Parameter, k** | **Initial $N_{bisv}$** | **Proportion of Total Crashes** | **Adjusted $N_{bimv}$** | **Combined CMFs** | **Calibration Factor, $C_i$** | **Predicted $N_{bisv}$** |
| | from Table 12-12 | | | from Table 12-12 | from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27 | | $(4)_{TOTAL}$*(5) | (7) from Worksheet 2B | | (6)*(7)*(8) |
| | a | b | c | | | | | | | |
| Total | -6.81 | 0.16 | 0.51 | 1.14 | 0.155 | 1.000 | 0.155 | 0.91 | 1.00 | 0.141 |
| Fatal and Injury (FI) | -- | -- | -- | -- | 0.048 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.344 | 0.053 | 0.91 | 1.00 | 0.049 |
| Property Damage Only (PDO) | -8.36 | 0.25 | 0.55 | 1.29 | 0.092 | $(5)_{TOTAL}-(5)_{FI}$ = 0.656 | 0.102 | 0.91 | 1.00 | 0.093 |

**WORKSHEET 2F -- SINGLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| **Collision Type** | **Proportion of Collision Type$_{(FI)}$** | **Predicted N $_{bisv\ (FI)}$ (crashes/year)** | **Proportion of Collision Type $_{(PDO)}$** | **Predicted N $_{bisv\ (PDO)}$ (crashes/year)** | **Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)** |
| | from Table 12-13 | $(9)_{FI}$ from Worksheet 2E | from Table 12-13 | $(9)_{PDO}$ from Worksheet 2E | $(9)_{PDO}$ from Worksheet 2E |
| Total | 1.000 | 0.049 | 1.000 | 0.093 | 0.141 |
| | | $(2)*(3)_{FI}$ | | $(4)*(5)_{PDO}$ | (3)+(5) |
| Collision with parked vehicle | 0.001 | 0.000 | 0.003 | 0.000 | 0.000 |
| Collision with animal | 0.003 | 0.000 | 0.018 | 0.002 | 0.002 |
| Collision with fixed object | 0.762 | 0.037 | 0.834 | 0.077 | 0.114 |
| Collision with other object | 0.090 | 0.004 | 0.092 | 0.009 | 0.013 |
| Other single-vehicle collision | 0.039 | 0.002 | 0.023 | 0.002 | 0.004 |
| Single-vehicle noncollision | 0.105 | 0.005 | 0.030 | 0.003 | 0.008 |

**WORKSHEET 2G -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL STOP-CONTROLLED INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{pedi}$** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-16 | | (4)*(5)*(6) |
| Total | 0.237 | 0.141 | 0.378 | 0.021 | 1.00 | 0.008 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.008 |

**WORKSHEET 2H -- CRASH MODIFICATION FACTORS FOR VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS**

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| CMF for Bus Stops | CMF for Schools | CMF for Alcohol Sales Establishments | Combined CMF |
| $CMF_{1p}$ | $CMF_{2p}$ | $CMF_{3p}$ | |
| from Table 12-28 | from Table 12-29 | from Table 12-30 | (1)*(2)*(3) |
| -- | -- | -- | -- |

**WORKSHEET 2I -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS**

| (1) | (2) | | | | | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | | | **Overdispersion Parameter, k** | **$N_{pedbase}$** | **Combined CMF** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | from Table 12-14 | | | | | | from Equation 12-29 | (4) from Worksheet 2H | | (4)*(5)*(6) |
| | a | b | c | d | e | | | | | |
| Total | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |
| Fatal and Injury (FI) | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |

**WORKSHEET 2J -- VEHICLE-BICYCLE COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{bikei}$** | **Calibration factor, $C_i$** | **Predicted $N_{bikei}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-17 | | (4)*(5)*(6) |
| Total | 0.237 | 0.141 | 0.378 | 0.016 | 1.00 | 0.006 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.006 |

**WORKSHEET 2K -- CRASH SEVERITY DISTRIBUTION FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| **Collision type** | **Fatal and injury (FI)**<br>(3) from Worksheet 2D and 2F;<br>(7) from 2G or 2I and 2J | **Property damage only (PDO)**<br>(5) from Worksheet 2D and 2F | **Total**<br>(6) from Worksheet 2D and 2F;<br>(7) from 2G or 2I and 2J |
| **MULTIPLE-VEHICLE** | | | |
| Rear-end collisions (from Worksheet 2D) | 0.039 | 0.064 | 0.102 |
| Head-on collisions (from Worksheet 2D) | 0.004 | 0.003 | 0.007 |
| Angle collisions (from Worksheet 2D) | 0.031 | 0.038 | 0.069 |
| Sideswipe (from Worksheet 2D) | 0.012 | 0.006 | 0.017 |
| Other multiple-vehicle collision (from Worksheet 2D) | 0.006 | 0.034 | 0.040 |
| Subtotal | 0.092 | 0.145 | 0.237 |
| **SINGLE-VEHICLE** | | | |
| Collision with parked vehicle (from Worksheet 2F) | 0.000 | 0.000 | 0.000 |
| Collision with animal (from Worksheet 2F) | 0.000 | 0.002 | 0.002 |
| Collision with fixed object (from Worksheet 2F) | 0.037 | 0.077 | 0.114 |
| Collision with other object (from Worksheet 2F) | 0.004 | 0.009 | 0.013 |
| Other single-vehicle collision (from Worksheet 2F) | 0.002 | 0.002 | 0.004 |
| Single-vehicle noncollision (from Worksheet 2F) | 0.005 | 0.003 | 0.008 |
| Collision with pedestrian (from Worksheet 2G or 2I) | 0.008 | 0.000 | 0.008 |
| Collision with bicycle (from Worksheet 2J) | 0.006 | 0.000 | 0.006 |
| Subtotal | 0.063 | 0.093 | 0.155 |
| Total | 0.154 | 0.237 | 0.392 |

**WORKSHEET 2L -- SUMMARY RESULTS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) |
|---|---|
| **Crash severity level** | **Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)** |
| | (Total) from Worksheet 2K |
| Total | 0.392 |
| Fatal and injury (FI) | 0.154 |
| Property damage only (PDO) | 0.237 |

**PROJECT ELEMENT RESULTS SUMMARY[1]**

| Summary for the project element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted average crash frequency $N_{predicted\ (KABCO)}$ | Expected average crash frequency $N_{expected\ (KABCO)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (KABC)}$ | Expected average crash frequency $N_{expected\ (KABC)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (O)}$ | Expected average crash frequency $N_{expected\ (O)}$ | Potential for Improvement |
| | 0.392 | 0.260 | 0.000 | 0.154 | 0.103 | 0.000 | 0.237 | 0.158 | 0.000 |

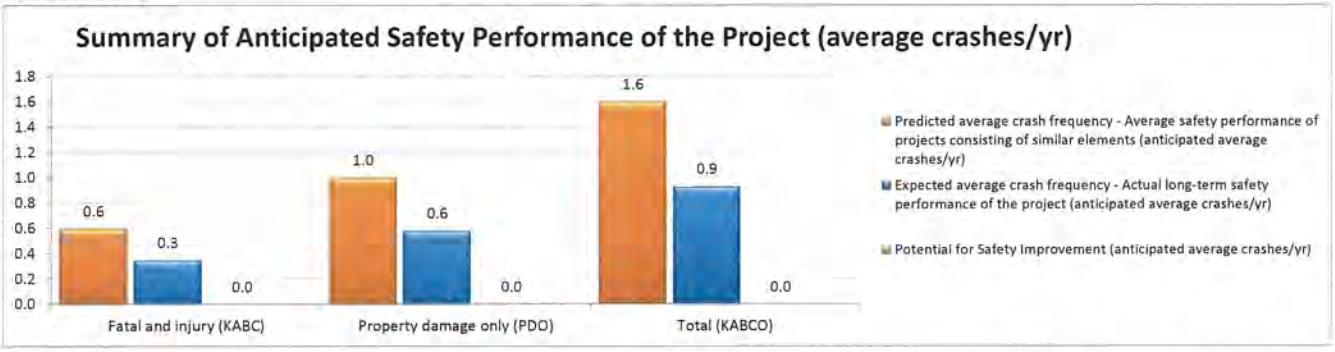
Special Note: When the project element is not included in the analysis the results will all be zeros. In addition if only the analysis only includes determining the predicted average crash frequency (i.e. EB analysis is not carried out), the results will show zero values where EB results are usually displayed.

## PROJECT SAFETY PERFORMANCE SUMMARY REPORT

| General Information | |
|---|---|
| Project Name | 20-2564 Latah Glen Residential |
| Project Description | Residential Development |
| Reference Number | SR 195 SB & Cheney-Spokane Road |
| Analyst | Whipple Consuting Engineer |
| Agency/Company | WSDOT |
| Contact Email | kkim@WhippleCE.com |
| Contact Phone | (509) 893-2617 |
| Date Completed | 05/12/11 |

Years of crash data incorporated into the analysis: 3

**PROJECT SUMMARY**




| Project Element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted average crash frequency $N_{predicted\ (KABCO)}$ | Expected average crash frequency $N_{expected\ (KABCO)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (KABC)}$ | Expected average crash frequency $N_{expected\ (KABC)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (O)}$ | Expected average crash frequency $N_{expected\ (O)}$ | Potential for Improvement |
| **INDIVIDUAL INTERSECTIONS** | | | | | | | | | |
| Intersection 1 | 1.6 | 0.9 | 0.0 | 0.6 | 0.3 | 0.0 | 1.0 | 0.6 | 0.0 |
| **COMBINED (sum of column)** | 1.6 | 0.9 | 0.0 | 0.6 | 0.3 | 0.0 | 1.0 | 0.6 | 0.0 |

**PROJECT SUMMARY – Site-Specific EB Method Summary Results for Urban and Suburban Arterial Project**

| Crash severity level | $N_{predicted(PROJECT)}$ Predicted average crash frequency - Average safety performance of projects consisting of similar elements (anticipated average crashes/yr) | $N_{expected\ (PROJECT)}$ Expected average crash frequency - Actual long-term safety performance of the project (anticipated average crashes/yr) | $N_{potential\ for\ improvement\ (PROJECT)}$ Potential for Safety Improvement (anticipated average crashes/yr) |
|---|---|---|---|
| Fatal and injury (KABC) | 0.6 | 0.3 | N/A |
| Property damage only (PDO) | 1.0 | 0.6 | N/A |
| Total (KABCO) | 1.6 | 0.9 | N/A |

**HSM1 Extended Spreadsheet for Part C Chapter 12 v.9**

### Discussion of Results

**Given the potential effects of project characteristics on safety performance, results indicate that:**

1. It is anticipated that the project will, on average, experience 0.9 crashes per year (0.3 fatal and injury crashes per year; and 0.6 property damage only crashes per year).

2. A similar project is anticipated, on average, to experience 1.6 crashes per year (0.6 fatal and injury crashes per year; and 1 property damage only crashes per year).

#VALUE!

## WORKSHEET 2A -- GENERAL INFORMATION AND INPUT DATA FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| **General Information** | | **Location Information** | |
|---|---|---|---|
| Analyst | Whipple Consuting Engineer | Roadway | SR 195 |
| Agency or Company | WSDOT | Location Information | Cheney-Spokane Road & SR 195 SB Ramps |
| Date Performed | 1/29/2021 | Jurisdiction | WSDOT |
| Intersection | Intersection 1 | Analysis Year | 2021 |
| Signalized/Unsignalized | Unsignalized | | |

| **Input Data** | | | | **Site Conditions** | **Base Conditions** |
|---|---|---|---|---|---|
| Intersection type (3ST, 3SG, 4ST, 4SG) | | | | 4ST | -- |
| $AADT_{major}$ (veh/day) (total entering on major approaches)* | $AADT_{MAX}$ = | 46,800 | (veh/day) | 5,840 | -- |
| $AADT_{minor}$ (veh/day) (total entering on minor approaches)* | $AADT_{MAX}$ = | 5,900 | (veh/day) | 5,590 | -- |
| Intersection lighting (present/not present) | | | | Present | Not Present |
| Calibration factor, $C_i$ | | | | 1.00 | 1.00 |
| Data for unsignalized intersections only: | | | | | |
| Number of major-road approaches with left-turn lanes (0,1,2) | | | | 0 | 0 |
| Number of major-road approaches with right-turn lanes (0,1,2) | | | | 0 | 0 |
| Data for signalized intersections only: | | | | | |
| ~~Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with right-turn lanes: for 4SG, use maximum value of 4, all other, max 2)~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #1~~ | | | | | ~~Permissive~~ |
| ~~Type of left-turn signal phasing for Leg #2~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #3~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #4 (if applicable)~~ | | | | | ~~--~~ |
| ~~Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Intersection red-light cameras (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only~~ | | | | | ~~--~~ |
| ~~Maximum number of lanes crossed by a pedestrian ($n_{lanesx}$)~~ | | | | | ~~--~~ |
| ~~Number of bus stops within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |
| ~~Schools within 300 m (1,000 ft) of the intersection (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |

| **Average Annual Crash History (3 or 5-yr average)** | | | |
|---|---|---|---|
| Multiple vehicle crashes | KABC | Fatal and Injury Only | 0.3 |
| | PDO | Property Damage Only | 0.0 |
| Single-vehicle crashes | KABC | Fatal and Injury Only | 0.0 |
| | PDO | Property Damage Only | 0.0 |

NOTES: * AADT: It is important to remember that the AADT(major) = AADT(major approach1) + AADT(minor approach2) (refer to p.12-8 in Part C of the HSM)

## WORKSHEET 2B -- CRASH MODIFICATION FACTORS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| CMF for Left-Turn Lanes | CMF for Left-Turn Signal Phasing | CMF for Right-Turn Lanes | CMF for Right Turn on Red | CMF for Lighting | CMF for Red Light Cameras | Combined CMF |
| *CMF 1i* | *CMF 2i* | *CMF 3i* | *CMF 4i* | *CMF 5i* | *CMF 6i* | $CMF_{COMB}$ |
| from Table 12-24 | from Table 12-25 | from Table 12-26 | from Equation 12-35 | from Equation 12-36 | from Equation 12-37 | (1)*(2)*(3)*(4)*(5)*(6) |
| 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.9130 | 1.0000 | 0.9130 |

**WORKSHEET 2C -- MULTIPLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (6)*(7)*(8) |
|---|---|---|---|---|---|---|---|---|---|---|
| Crash Severity Level | SPF Coefficients from Table 12-10 | | | Overdispersion Parameter, k from Table 12-10 | Initial $N_{bimv}$ from Equation 12-21 | Proportion of Total Crashes | Adjusted $N_{bimv}$ $(4)_{TOTAL}$*(5) | Combined CMFs (7) from Worksheet 2B | Calibration Factor, $C_i$ | Predicted $N_{bimv}$ |
| | a | b | c | | | | | | | |
| Total | -8.90 | 0.82 | 0.25 | 0.40 | 1.446 | 1.000 | 1.446 | 0.91 | 1.00 | 1.320 |
| Fatal and Injury (FI) | -11.13 | 0.93 | 0.28 | 0.48 | 0.523 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.361 | 0.522 | 0.91 | 1.00 | 0.477 |
| Property Damage Only (PDO) | -8.74 | 0.77 | 0.23 | 0.40 | 0.925 | $(5)_{TOTAL}-(5)_{FI}$ 0.639 | 0.924 | 0.91 | 1.00 | 0.843 |

**WORKSHEET 2D -- MULTIPLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| Collision Type | Proportion of Collision Type(FI) | Predicted N $_{bimv\ (FI)}$ (crashes/year) | Proportion of Collision Type $_{(PDO)}$ | Predicted N $_{bimv\ (PDO)}$ (crashes/year) | Predicted N $_{bimv\ (TOTAL)}$ (crashes/year) |
| | from Table 12-11 | $(9)_{FI}$ from Worksheet 2C | from Table 12-11 | $(9)_{PDO}$ from Worksheet 2C | $(9)_{PDO}$ from Worksheet 2C |
| Total | 1.000 | 0.477 | 1.000 | 0.843 | 1.320 |
| | | $(2)*(3)_{FI}$ | | $(4)*(5)_{PDO}$ | (3)+(5) |
| Rear-end collision | 0.338 | 0.161 | 0.374 | 0.315 | 0.477 |
| Head-on collision | 0.041 | 0.020 | 0.030 | 0.025 | 0.045 |
| Angle collision | 0.440 | 0.210 | 0.335 | 0.283 | 0.492 |
| Sideswipe | 0.121 | 0.058 | 0.044 | 0.037 | 0.095 |
| Other multiple-vehicle collision | 0.060 | 0.029 | 0.217 | 0.183 | 0.212 |

**WORKSHEET 2E -- SINGLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|---|
| Crash Severity Level | SPF Coefficients from Table 12-12 | | | Overdispersion Parameter, k from Table 12-12 | Initial $N_{bisv}$ from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27 | Proportion of Total Crashes | Adjusted $N_{bimv}$ $(4)_{TOTAL}$*(5) | Combined CMFs (7) from Worksheet 2B | Calibration Factor, $C_i$ | Predicted $N_{bisv}$ (6)*(7)*(8) |
| | a | b | c | | | | | | | |
| Total | -5.33 | 0.33 | 0.12 | 0.65 | 0.239 | 1.000 | 0.239 | 0.91 | 1.00 | 0.218 |
| Fatal and Injury (FI) | -- | -- | -- | -- | 0.067 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.280 | 0.067 | 0.91 | 1.00 | 0.061 |
| Property Damage Only (PDO) | -7.04 | 0.36 | 0.25 | 0.54 | 0.172 | $(5)_{TOTAL}-(5)_{FI}$ 0.720 | 0.172 | 0.91 | 1.00 | 0.157 |

**WORKSHEET 2F -- SINGLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| **Collision Type** | **Proportion of Collision Type$_{(FI)}$** | **Predicted N $_{bisv\ (FI)}$ (crashes/year)** | **Proportion of Collision Type $_{(PDO)}$** | **Predicted N $_{bisv\ (PDO)}$ (crashes/year)** | **Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)** |
| | from Table 12-13 | $(9)_{FI}$ from Worksheet 2E | from Table 12-13 | $(9)_{PDO}$ from Worksheet 2E | $(9)_{PDO}$ from Worksheet 2E |
| Total | 1.000 | 0.061 | 1.000 | 0.157 | 0.218 |
| | | $(2)*(3)_{FI}$ | | $(4)*(5)_{PDO}$ | (3)+(5) |
| Collision with parked vehicle | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| Collision with animal | 0.001 | 0.000 | 0.026 | 0.004 | 0.004 |
| Collision with fixed object | 0.679 | 0.041 | 0.847 | 0.133 | 0.174 |
| Collision with other object | 0.089 | 0.005 | 0.070 | 0.011 | 0.016 |
| Other single-vehicle collision | 0.051 | 0.003 | 0.007 | 0.001 | 0.004 |
| Single-vehicle noncollision | 0.179 | 0.011 | 0.049 | 0.008 | 0.019 |

**WORKSHEET 2G -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL STOP-CONTROLLED INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{pedi}$** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-16 | | (4)*(5)*(6) |
| Total | 1.320 | 0.218 | 1.538 | 0.022 | 1.00 | 0.034 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.034 |

**WORKSHEET 2H -- CRASH MODIFICATION FACTORS FOR VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS**

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| CMF for Bus Stops | CMF for Schools | CMF for Alcohol Sales Establishments | Combined CMF |
| $CMF_{1p}$ | $CMF_{2p}$ | $CMF_{3p}$ | |
| from Table 12-28 | from Table 12-29 | from Table 12-30 | (1)*(2)*(3) |
| -- | -- | -- | -- |

**WORKSHEET 2I -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS**

| (1) | (2) | | | | | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | | | **Overdispersion Parameter, k** | **$N_{pedbase}$** | **Combined CMF** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | from Table 12-14 | | | | | | from Equation 12-29 | (4) from Worksheet 2H | | (4)*(5)*(6) |
| | a | b | c | d | e | | | | | |
| Total | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |
| Fatal and Injury (FI) | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |

**WORKSHEET 2J -- VEHICLE-BICYCLE COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{bikel}$** | **Calibration factor, $C_i$** | **Predicted $N_{bikel}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-17 | | (4)*(5)*(6) |
| Total | 1.320 | 0.218 | 1.538 | 0.018 | 1.00 | 0.028 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.028 |

**WORKSHEET 2K -- CRASH SEVERITY DISTRIBUTION FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| **Collision type** | **Fatal and injury (FI)**<br>(3) from Worksheet 2D and 2F;<br>(7) from 2G or 2I and 2J | **Property damage only (PDO)**<br>(5) from Worksheet 2D and 2F | **Total**<br>(6) from Worksheet 2D and 2F;<br>(7) from 2G or 2I and 2J |
| **MULTIPLE-VEHICLE** | | | |
| Rear-end collisions (from Worksheet 2D) | 0.161 | 0.315 | 0.477 |
| Head-on collisions (from Worksheet 2D) | 0.020 | 0.025 | 0.045 |
| Angle collisions (from Worksheet 2D) | 0.210 | 0.283 | 0.492 |
| Sideswipe (from Worksheet 2D) | 0.058 | 0.037 | 0.095 |
| Other multiple-vehicle collision (from Worksheet 2D) | 0.029 | 0.183 | 0.212 |
| Subtotal | 0.477 | 0.843 | 1.320 |
| **SINGLE-VEHICLE** | | | |
| Collision with parked vehicle (from Worksheet 2F) | 0.000 | 0.000 | 0.000 |
| Collision with animal (from Worksheet 2F) | 0.000 | 0.004 | 0.004 |
| Collision with fixed object (from Worksheet 2F) | 0.041 | 0.133 | 0.174 |
| Collision with other object (from Worksheet 2F) | 0.005 | 0.011 | 0.016 |
| Other single-vehicle collision (from Worksheet 2F) | 0.003 | 0.001 | 0.004 |
| Single-vehicle noncollision (from Worksheet 2F) | 0.011 | 0.008 | 0.019 |
| Collision with pedestrian (from Worksheet 2G or 2I) | 0.034 | 0.000 | 0.034 |
| Collision with bicycle (from Worksheet 2J) | 0.028 | 0.000 | 0.028 |
| Subtotal | 0.123 | 0.157 | 0.279 |
| Total | 0.599 | 1.000 | 1.599 |

**WORKSHEET 2L -- SUMMARY RESULTS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) |
|---|---|
| **Crash severity level** | **Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)** |
| | (Total) from Worksheet 2K |
| Total | 1.599 |
| Fatal and injury (FI) | 0.599 |
| Property damage only (PDO) | 1.000 |

**PROJECT ELEMENT RESULTS SUMMARY[1]**

| Summary for the project element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Predicted average crash frequency** $N_{predicted\ (KABCO)}$ | **Expected average crash frequency** $N_{expected\ (KABCO)}$ | **Potential for Improvement** | **Predicted average crash frequency** $N_{predicted\ (KABC)}$ | **Expected average crash frequency** $N_{expected\ (KABC)}$ | **Potential for Improvement** | **Predicted average crash frequency** $N_{predicted\ (O)}$ | **Expected average crash frequency** $N_{expected\ (O)}$ | **Potential for Improvement** |
| | 1.599 | 0.930 | 0.000 | 0.599 | 0.348 | 0.000 | 1.000 | 0.581 | 0.000 |

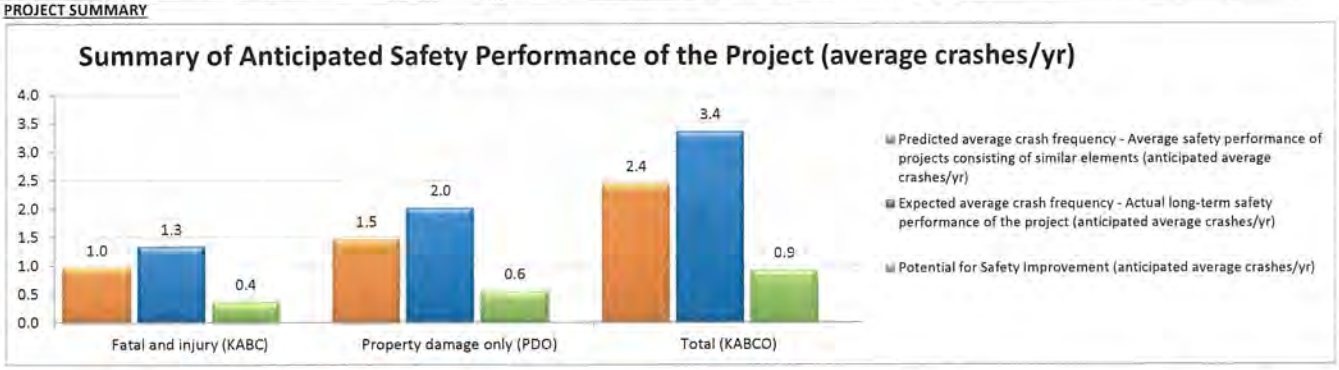
Special Note: When the project element is not included in the analysis the results will all be zeros. In addition if only the analysis only includes determining the predicted average crash frequency (i.e. EB analysis is not carried out), the results will show zero values where EB results are usually displayed.

## PROJECT SAFETY PERFORMANCE SUMMARY REPORT

| General Information | |
|---|---|
| Project Name | 20-2564 Latah Glen Residential |
| Project Description | Residential Development |
| Reference Number | SR 195 & Meadowlane Road |
| Analyst | Whipple Consuting Engineer |
| Agency/Company | WSDOT |
| Contact Email | kkim@WhippleCE.com |
| Contact Phone | (509) 893-2617 |
| Date Completed | 05/12/11 |

Years of crash data incorporated into the analysis: 3

**PROJECT SUMMARY**




| Project Element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted average crash frequency $N_{predicted\ (KABCO)}$ | Expected average crash frequency $N_{expected\ (KABCO)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (KABC)}$ | Expected average crash frequency $N_{expected\ (KABC)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (O)}$ | Expected average crash frequency $N_{expected\ (O)}$ | Potential for Improvement |
| **INDIVIDUAL INTERSECTIONS** | | | | | | | | | |
| Intersection 1 | 2.4 | 3.4 | 0.9 | 1.0 | 1.3 | 0.4 | 1.5 | 2.0 | 0.6 |
| **COMBINED (sum of column)** | 2.4 | 3.4 | 0.9 | 1.0 | 1.3 | 0.4 | 1.5 | 2.0 | 0.6 |

**PROJECT SUMMARY -- Site-Specific EB Method Summary Results for Urban and Suburban Arterial Project**

| Crash severity level | $N_{predicted(PROJECT)}$ Predicted average crash frequency - Average safety performance of projects consisting of similar elements (anticipated average crashes/yr) | $N_{expected\ (PROJECT)}$ Expected average crash frequency - Actual long-term safety performance of the project (anticipated average crashes/yr) | $N_{potential\ for\ improvement\ (PROJECT)}$ Potential for Safety Improvement (anticipated average crashes/yr) |
|---|---|---|---|
| Fatal and injury (KABC) | 1.0 | 1.3 | 0.4 |
| Property damage only (PDO) | 1.5 | 2.0 | 0.6 |
| Total (KABCO) | 2.4 | 3.4 | 0.9 |

**HSM1 Extended Spreadsheet for Part C Chapter 12 v.9**

### Discussion of Results

**Given the potential effects of project characteristics on safety performance, results indicate that:**

1. It is anticipated that the project will, on average, experience 3.4 crashes per year (1.3 fatal and injury crashes per year; and 2 property damage only crashes per year).

2. A similar project is anticipated, on average, to experience 2.4 crashes per year (1 fatal and injury crashes per year; and 1.5 property damage only crashes per year).

3. It is anticipated the project has, on average, a potential for safety improvement of 0.9 crashes per year (0.4 fatal and injury crashes per year; and 0.6 property damage only crashes per year).

## WORKSHEET 2A -- GENERAL INFORMATION AND INPUT DATA FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| **General Information** | | **Location Information** | |
|---|---|---|---|
| Analyst | Whipple Consuting Engineer | Roadway | SR 195 |
| Agency or Company | WSDOT | Location Information | Meadowlane Road |
| Date Performed | 1/29/2021 | Jurisdiction | WSDOT |
| Intersection | Intersection 1 | Analysis Year | 2021 |
| Signalized/Unsignalized | Unsignalized | | |

| **Input Data** | | | | **Site Conditions** | **Base Conditions** |
|---|---|---|---|---|---|
| Intersection type (3ST, 3SG, 4ST, 4SG) | | | | 4ST | -- |
| AADT $_{major}$ (veh/day) (total entering on major approaches)* | $AADT_{MAX}$ = | 46,800 | (veh/day) | 15,690 | -- |
| AADT $_{minor}$ (veh/day) (total entering on minor approaches)* | $AADT_{MAX}$ = | 5,900 | (veh/day) | 1,370 | -- |
| Intersection lighting (present/not present) | | | | Present | Not Present |
| Calibration factor, $C_i$ | | | | 1.00 | 1.00 |
| Data for unsignalized intersections only: | | | | | |
| Number of major-road approaches with left-turn lanes (0,1,2) | | | | 0 | 0 |
| Number of major-road approaches with right-turn lanes (0,1,2) | | | | 0 | 0 |
| Data for signalized intersections only: | | | | | |
| ~~Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with right-turn lanes: for 4SG, use maximum value of 4, all other, max 2)~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #1~~ | | | | | ~~Permissive~~ |
| ~~Type of left-turn signal phasing for Leg #2~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #3~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #4 (if applicable)~~ | | | | | ~~--~~ |
| ~~Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Intersection red light cameras (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only~~ | | | | | ~~--~~ |
| ~~Maximum number of lanes crossed by a pedestrian ($n_{lanesx}$)~~ | | | | | ~~--~~ |
| ~~Number of bus stops within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |
| ~~Schools within 300 m (1,000 ft) of the intersection (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |

| **Average Annual Crash History (3 or 5-yr average)** | | | |
|---|---|---|---|
| Multiple vehicle crashes | KABC | Fatal and Injury Only | 2.3 |
| | PDO | Property Damage Only | 1.0 |
| Single-vehicle crashes | KABC | Fatal and Injury Only | 0.0 |
| | PDO | Property Damage Only | 0.3 |

NOTES: * AADT: It is important to remember that the AADT(major) = AADT(major approach1) + AADT(minor approach2) (refer to p.12-8 in Part C of the HSM)

## WORKSHEET 2B -- CRASH MODIFICATION FACTORS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| CMF for Left-Turn Lanes | CMF for Left-Turn Signal Phasing | CMF for Right-Turn Lanes | CMF for Right Turn on Red | CMF for Lighting | CMF for Red Light Cameras | Combined CMF |
| *CMF 1i* | *CMF 2i* | *CMF 3i* | *CMF 4i* | *CMF 5i* | *CMF 6i* | *CMF $_{COMB}$* |
| from Table 12-24 | from Table 12-25 | from Table 12-26 | from Equation 12-35 | from Equation 12-36 | from Equation 12-37 | (1)*(2)*(3)*(4)*(5)*(6) |
| 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.9130 | 1.0000 | 0.9130 |

**WORKSHEET 2C -- MULTIPLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (6)*(7)*(8) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | **Overdispersion Parameter, k** | **Initial $N_{bimv}$** | **Proportion of Total Crashes** | **Adjusted $N_{bimv}$** | **Combined CMFs** | **Calibration Factor, $C_i$** | **Predicted $N_{bimv}$** |
| | from Table 12-10 | | | from Table 12-10 | from Equation 12-21 | | $(4)_{TOTAL}$*(5) | (7) from Worksheet 2B | | |
| | a | b | c | | | | | | | |
| Total | -8.90 | 0.82 | 0.25 | 0.40 | 2.288 | 1.000 | 2.288 | 0.91 | 1.00 | 2.088 |
| Fatal and Injury (FI) | -11.13 | 0.93 | 0.28 | 0.48 | 0.884 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.382 | 0.873 | 0.91 | 1.00 | 0.797 |
| Property Damage Only (PDO) | -8.74 | 0.77 | 0.23 | 0.40 | 1.433 | $(5)_{TOTAL}-(5)_{FI}$ = 0.618 | 1.415 | 0.91 | 1.00 | 1.292 |

**WORKSHEET 2D -- MULTIPLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| **Collision Type** | **Proportion of Collision Type$_{(FI)}$** | **Predicted N $_{bimv\ (FI)}$ (crashes/year)** | **Proportion of Collision Type $_{(PDO)}$** | **Predicted N $_{bimv\ (PDO)}$ (crashes/year)** | **Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)** |
| | from Table 12-11 | $(9)_{FI}$ from Worksheet 2C | from Table 12-11 | $(9)_{PDO}$ from Worksheet 2C | $(9)_{PDO}$ from Worksheet 2C |
| Total | 1.000 | 0.797 | 1.000 | 1.292 | 2.088 |
| | | (2)*$(3)_{FI}$ | | (4)*$(5)_{PDO}$ | (3)+(5) |
| Rear-end collision | 0.338 | 0.269 | 0.374 | 0.483 | 0.752 |
| Head-on collision | 0.041 | 0.033 | 0.030 | 0.039 | 0.071 |
| Angle collision | 0.440 | 0.351 | 0.335 | 0.433 | 0.783 |
| Sideswipe | 0.121 | 0.096 | 0.044 | 0.057 | 0.153 |
| Other multiple-vehicle collision | 0.060 | 0.048 | 0.217 | 0.280 | 0.328 |

**WORKSHEET 2E -- SINGLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | **Overdispersion Parameter, k** | **Initial $N_{bisv}$** | **Proportion of Total Crashes** | **Adjusted $N_{bimv}$** | **Combined CMFs** | **Calibration Factor, $C_i$** | **Predicted $N_{bisv}$** |
| | from Table 12-12 | | | from Table 12-12 | from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27 | | $(4)_{TOTAL}$*(5) | (7) from Worksheet 2B | | (6)*(7)*(8) |
| | a | b | c | | | | | | | |
| Total | -5.33 | 0.33 | 0.12 | 0.65 | 0.279 | 1.000 | 0.279 | 0.91 | 1.00 | 0.255 |
| Fatal and Injury (FI) | -- | -- | -- | -- | 0.078 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.312 | 0.087 | 0.91 | 1.00 | 0.080 |
| Property Damage Only (PDO) | -7.04 | 0.36 | 0.25 | 0.54 | 0.173 | $(5)_{TOTAL}-(5)_{FI}$ = 0.688 | 0.192 | 0.91 | 1.00 | 0.176 |

**WORKSHEET 2F -- SINGLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| **Collision Type** | **Proportion of Collision Type$_{(FI)}$** | **Predicted N $_{bisv\ (FI)}$ (crashes/year)** | **Proportion of Collision Type $_{(PDO)}$** | **Predicted N $_{bisv\ (PDO)}$ (crashes/year)** | **Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)** |
| | from Table 12-13 | (9)$_{FI}$ from Worksheet 2E | from Table 12-13 | (9)$_{PDO}$ from Worksheet 2E | (9)$_{PDO}$ from Worksheet 2E |
| Total | 1.000 | 0.080 | 1.000 | 0.176 | 0.255 |
| | | (2)*(3)$_{FI}$ | | (4)*(5)$_{PDO}$ | (3)+(5) |
| Collision with parked vehicle | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| Collision with animal | 0.001 | 0.000 | 0.026 | 0.005 | 0.005 |
| Collision with fixed object | 0.679 | 0.054 | 0.847 | 0.149 | 0.203 |
| Collision with other object | 0.089 | 0.007 | 0.070 | 0.012 | 0.019 |
| Other single-vehicle collision | 0.051 | 0.004 | 0.007 | 0.001 | 0.005 |
| Single-vehicle noncollision | 0.179 | 0.014 | 0.049 | 0.009 | 0.023 |

**WORKSHEET 2G -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL STOP-CONTROLLED INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{pedi}$** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-16 | | (4)*(5)*(6) |
| Total | 2.088 | 0.255 | 2.344 | 0.022 | 1.00 | 0.052 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.052 |

**WORKSHEET 2H -- CRASH MODIFICATION FACTORS FOR VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS**

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| CMF for Bus Stops | CMF for Schools | CMF for Alcohol Sales Establishments | Combined CMF |
| $CMF_{1p}$ | $CMF_{2p}$ | $CMF_{3p}$ | |
| from Table 12-28 | from Table 12-29 | from Table 12-30 | (1)*(2)*(3) |
| -- | -- | -- | -- |

**WORKSHEET 2I -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS**

| (1) | (2) | | | | | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | | | **Overdispersion Parameter, k** | **$N_{pedbase}$** | **Combined CMF** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | from Table 12-14 | | | | | | from Equation 12-29 | (4) from Worksheet 2H | | (4)*(5)*(6) |
| | a | b | c | d | e | | | | | |
| Total | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |
| Fatal and Injury (FI) | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |

**WORKSHEET 2J -- VEHICLE-BICYCLE COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{bikei}$** | **Calibration factor, $C_i$** | **Predicted $N_{bikei}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-17 | | (4)*(5)*(6) |
| Total | 2.088 | 0.255 | 2.344 | 0.018 | 1.00 | 0.042 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.042 |

WORKSHEET 2K -- CRASH SEVERITY DISTRIBUTION FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| **Collision type** | **Fatal and injury (FI)** | **Property damage only (PDO)** | **Total** |
| | (3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J | (5) from Worksheet 2D and 2F | (6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J |
| **MULTIPLE-VEHICLE** | | | |
| Rear-end collisions (from Worksheet 2D) | 0.269 | 0.483 | 0.752 |
| Head-on collisions (from Worksheet 2D) | 0.033 | 0.039 | 0.071 |
| Angle collisions (from Worksheet 2D) | 0.351 | 0.433 | 0.783 |
| Sideswipe (from Worksheet 2D) | 0.096 | 0.057 | 0.153 |
| Other multiple-vehicle collision (from Worksheet 2D) | 0.048 | 0.280 | 0.328 |
| Subtotal | 0.797 | 1.292 | 2.088 |
| **SINGLE-VEHICLE** | | | |
| Collision with parked vehicle (from Worksheet 2F) | 0.000 | 0.000 | 0.000 |
| Collision with animal (from Worksheet 2F) | 0.000 | 0.005 | 0.005 |
| Collision with fixed object (from Worksheet 2F) | 0.054 | 0.149 | 0.203 |
| Collision with other object (from Worksheet 2F) | 0.007 | 0.012 | 0.019 |
| Other single-vehicle collision (from Worksheet 2F) | 0.004 | 0.001 | 0.005 |
| Single-vehicle noncollision (from Worksheet 2F) | 0.014 | 0.009 | 0.023 |
| Collision with pedestrian (from Worksheet 2G or 2I) | 0.052 | 0.000 | 0.052 |
| Collision with bicycle (from Worksheet 2J) | 0.042 | 0.000 | 0.042 |
| Subtotal | 0.173 | 0.176 | 0.349 |
| Total | 0.970 | 1.467 | 2.437 |

WORKSHEET 2L -- SUMMARY RESULTS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) |
|---|---|
| **Crash severity level** | **Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)** |
| | (Total) from Worksheet 2K |
| Total | 2.437 |
| Fatal and injury (FI) | 0.970 |
| Property damage only (PDO) | 1.467 |

PROJECT ELEMENT RESULTS SUMMARY[1]

| Summary for the project element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted average crash frequency $N_{predicted\ (KABCO)}$ | Expected average crash frequency $N_{expected\ (KABCO)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (KABC)}$ | Expected average crash frequency $N_{expected\ (KABC)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (O)}$ | Expected average crash frequency $N_{expected\ (O)}$ | Potential for Improvement |
| | 2.437 | 3.353 | 0.916 | 0.970 | 1.335 | 0.364 | 1.467 | 2.019 | 0.551 |

Special Note: When the project element is not included in the analysis the results will all be zeros. In addition if only the analysis only includes determining the predicted average crash frequency (i.e. EB analysis is not carried out), the results will show zero values where EB results are usually displayed.

## PROJECT SAFETY PERFORMANCE SUMMARY REPORT

**General Information**

| | |
|---|---|
| Project Name | 20-2564 Latah Glen Residential |
| Project Description | Residential Development |
| Reference Number | SR 195 & Hatch Road |
| Analyst | Whipple Consuting Engineer |
| Agency/Company | WSDOT |
| Contact Email | kkim@WhippleCE.com |
| Contact Phone | (509) 893-2617 |
| Date Completed | 05/12/11 |

Years of crash data incorporated into the analysis: 3

**PROJECT SUMMARY**


| Project Element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted average crash frequency $N_{predicted\ (KABCO)}$ | Expected average crash frequency $N_{expected\ (KABCO)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (KABC)}$ | Expected average crash frequency $N_{expected\ (KABC)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (O)}$ | Expected average crash frequency $N_{expected\ (O)}$ | Potential for Improvement |
| **INDIVIDUAL INTERSECTIONS** | | | | | | | | | |
| Intersection 1 | 1.6 | 2.8 | 1.2 | 0.6 | 1.0 | 0.4 | 1.1 | 1.8 | 0.8 |
| **COMBINED (sum of column)** | 1.6 | 2.8 | 1.2 | 0.6 | 1.0 | 0.4 | 1.1 | 1.8 | 0.8 |

**PROJECT SUMMARY -- Site-Specific EB Method Summary Results for Urban and Suburban Arterial Project**

| Crash severity level | $N_{predicted(PROJECT)}$ Predicted average crash frequency - Average safety performance of projects consisting of similar elements (anticipated average crashes/yr) | $N_{expected\ (PROJECT)}$ Expected average crash frequency - Actual long-term safety performance of the project (anticipated average crashes/yr) | $N_{potential\ for\ improvement\ (PROJECT)}$ Potential for Safety Improvement (anticipated average crashes/yr) |
|---|---|---|---|
| Fatal and injury (KABC) | 0.6 | 1.0 | 0.4 |
| Property damage only (PDO) | 1.1 | 1.8 | 0.8 |
| Total (KABCO) | 1.6 | 2.8 | 1.2 |

**HSM1 Extended Spreadsheet for Part C Chapter 12 v.9**

### Discussion of Results

**Given the potential effects of project characteristics on safety performance, results indicate that:**

1. It is anticipated that the project will, on average, experience 2.8 crashes per year (1 fatal and injury crashes per year; and 1.8 property damage only crashes per year).

2. A similar project is anticipated, on average, to experience 1.6 crashes per year (0.6 fatal and injury crashes per year; and 1.1 property damage only crashes per year).

3. It is anticipated the project has, on average, a potential for safety improvement of 1.2 crashes per year (0.4 fatal and injury crashes per year; and 0.8 property damage only crashes per year).

## WORKSHEET 2A -- GENERAL INFORMATION AND INPUT DATA FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| General Information | | Location Information | |
|---|---|---|---|
| Analyst | Whipple Consuting Engineer | Roadway | SR 195 |
| Agency or Company | WSDOT | Location Information | Hatch Road |
| Date Performed | 1/29/2021 | Jurisdiction | WSDOT |
| Intersection | Intersection 1 | Analysis Year | 2021 |
| Signalized/Unsignalized | Unsignalized | | |

| Input Data | | | | Site Conditions | Base Conditions |
|---|---|---|---|---|---|
| Intersection type (3ST, 3SG, 4ST, 4SG) | | | | 3ST | -- |
| AADT $_{major}$ (veh/day) (total entering on major approaches)* | $AADT_{MAX}$ = | 45,700 | (veh/day) | 11,020 | -- |
| AADT $_{minor}$ (veh/day) (total entering on minor approaches)* | $AADT_{MAX}$ = | 9,300 | (veh/day) | 3,710 | -- |
| Intersection lighting (present/not present) | | | | Present | Not Present |
| Calibration factor, $C_i$ | | | | 1.00 | 1.00 |
| Data for unsignalized intersections only: | | | | | |
| Number of major-road approaches with left-turn lanes (0,1,2) | | | | 0 | 0 |
| Number of major-road approaches with right-turn lanes (0,1,2) | | | | 0 | 0 |
| Data for signalized intersections only: | | | | | |
| ~~Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with right-turn lanes: for 4SG, use maximum value of 4, all other, max 2)~~ | | | | ~~0~~ | ~~0~~ |
| ~~Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #1~~ | | | | | ~~Permissive~~ |
| ~~Type of left-turn signal phasing for Leg #2~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #3~~ | | | | | ~~--~~ |
| ~~Type of left-turn signal phasing for Leg #4 (if applicable)~~ | | | | | ~~--~~ |
| ~~Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]~~ | | | | ~~0~~ | ~~0~~ |
| ~~Intersection red light cameras (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only~~ | | | | | ~~--~~ |
| ~~Maximum number of lanes crossed by a pedestrian ($n_{lanesx}$)~~ | | | | | ~~--~~ |
| ~~Number of bus stops within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |
| ~~Schools within 300 m (1,000 ft) of the intersection (present/not present)~~ | | | | ~~Not Present~~ | ~~Not Present~~ |
| ~~Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection~~ | | | | ~~0~~ | ~~0~~ |

| Average Annual Crash History (3 or 5-yr average) | | | |
|---|---|---|---|
| Multiple vehicle crashes | KABC | Fatal and Injury Only | 1.7 |
| | PDO | Property Damage Only | 1.3 |
| Single-vehicle crashes | KABC | Fatal and Injury Only | 0.0 |
| | PDO | Property Damage Only | 0.0 |

NOTES: * AADT: It is important to remember that the AADT(major) = AADT(major approach1) + AADT(minor approach2) (refer to p.12-8 in Part C of the HSM)

## WORKSHEET 2B -- CRASH MODIFICATION FACTORS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| CMF for Left-Turn Lanes | CMF for Left-Turn Signal Phasing | CMF for Right-Turn Lanes | CMF for Right Turn on Red | CMF for Lighting | CMF for Red Light Cameras | Combined CMF |
| *CMF 1i* | *CMF 2i* | *CMF 3i* | *CMF 4i* | *CMF 5i* | *CMF 6i* | *CMF $_{COMB}$* |
| from Table 12-24 | from Table 12-25 | from Table 12-26 | from Equation 12-35 | from Equation 12-36 | from Equation 12-37 | (1)*(2)*(3)*(4)*(5)*(6) |
| 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.9096 | 1.0000 | 0.9096 |

## WORKSHEET 2C -- MULTIPLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (6)*(7)*(8) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | **Overdispersion Parameter, k** | **Initial $N_{bimv}$** | **Proportion of Total Crashes** | **Adjusted $N_{bimv}$** | **Combined CMFs** | **Calibration Factor, $C_i$** | **Predicted $N_{bimv}$** |
| | from Table 12-10 | | | from Table 12-10 | from Equation 12-21 | | $(4)_{TOTAL}$*(5) | (7) from Worksheet 2B | | |
| | a | b | c | | | | | | | |
| Total | -13.36 | 1.11 | 0.41 | 0.80 | 1.406 | 1.000 | 1.406 | 0.91 | 1.00 | 1.279 |
| Fatal and Injury (FI) | -14.01 | 1.16 | 0.30 | 0.69 | 0.473 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.326 | 0.458 | 0.91 | 1.00 | 0.416 |
| Property Damage Only (PDO) | -15.38 | 1.20 | 0.51 | 0.77 | 0.981 | $(5)_{TOTAL}-(5)_{FI}$ 0.674 | 0.948 | 0.91 | 1.00 | 0.863 |

## WORKSHEET 2D -- MULTIPLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| **Collision Type** | **Proportion of Collision Type$_{(FI)}$** | **Predicted N $_{bimv\ (FI)}$ (crashes/year)** | **Proportion of Collision Type $_{(PDO)}$** | **Predicted N $_{bimv\ (PDO)}$ (crashes/year)** | **Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)** |
| | from Table 12-11 | $(9)_{FI}$ from Worksheet 2C | from Table 12-11 | $(9)_{PDO}$ from Worksheet 2C | $(9)_{PDO}$ from Worksheet 2C |
| Total | 1.000 | 0.416 | 1.000 | 0.863 | 1.279 |
| | | (2)*$(3)_{FI}$ | | (4)*$(5)_{PDO}$ | (3)+(5) |
| Rear-end collision | 0.421 | 0.175 | 0.440 | 0.380 | 0.555 |
| Head-on collision | 0.045 | 0.019 | 0.023 | 0.020 | 0.039 |
| Angle collision | 0.343 | 0.143 | 0.262 | 0.226 | 0.369 |
| Sideswipe | 0.126 | 0.052 | 0.040 | 0.035 | 0.087 |
| Other multiple-vehicle collision | 0.065 | 0.027 | 0.235 | 0.203 | 0.230 |

## WORKSHEET 2E -- SINGLE-VEHICLE COLLISIONS BY SEVERITY LEVEL FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | **Overdispersion Parameter, k** | **Initial $N_{bisv}$** | **Proportion of Total Crashes** | **Adjusted $N_{bimv}$** | **Combined CMFs** | **Calibration Factor, $C_i$** | **Predicted $N_{bisv}$** |
| | from Table 12-12 | | | from Table 12-12 | from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27 | | $(4)_{TOTAL}$*(5) | (7) from Worksheet 2B | | (6)*(7)*(8) |
| | a | b | c | | | | | | | |
| Total | -6.81 | 0.16 | 0.51 | 1.14 | 0.323 | 1.000 | 0.323 | 0.91 | 1.00 | 0.294 |
| Fatal and Injury (FI) | -- | -- | -- | -- | 0.100 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.313 | 0.101 | 0.91 | 1.00 | 0.092 |
| Property Damage Only (PDO) | -8.36 | 0.25 | 0.55 | 1.29 | 0.220 | $(5)_{TOTAL}-(5)_{FI}$ 0.687 | 0.222 | 0.91 | 1.00 | 0.202 |

**WORKSHEET 2F -- SINGLE-VEHICLE COLLISIONS BY COLLISION TYPE FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|
| **Collision Type** | **Proportion of Collision Type$_{(FI)}$** | **Predicted N $_{bisv\ (FI)}$ (crashes/year)** | **Proportion of Collision Type $_{(PDO)}$** | **Predicted N $_{bisv\ (PDO)}$ (crashes/year)** | **Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)** |
| | from Table 12-13 | (9)$_{FI}$ from Worksheet 2E | from Table 12-13 | (9)$_{PDO}$ from Worksheet 2E | (9)$_{PDO}$ from Worksheet 2E |
| Total | 1.000 | 0.092 | 1.000 | 0.202 | 0.294 |
| | | (2)*(3)$_{FI}$ | | (4)*(5)$_{PDO}$ | (3)+(5) |
| Collision with parked vehicle | 0.001 | 0.000 | 0.003 | 0.001 | 0.001 |
| Collision with animal | 0.003 | 0.000 | 0.018 | 0.004 | 0.004 |
| Collision with fixed object | 0.762 | 0.070 | 0.834 | 0.169 | 0.239 |
| Collision with other object | 0.090 | 0.008 | 0.092 | 0.019 | 0.027 |
| Other single-vehicle collision | 0.039 | 0.004 | 0.023 | 0.005 | 0.008 |
| Single-vehicle noncollision | 0.105 | 0.010 | 0.030 | 0.006 | 0.016 |

**WORKSHEET 2G -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL STOP-CONTROLLED INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{pedi}$** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-16 | | (4)*(5)*(6) |
| Total | 1.279 | 0.294 | 1.573 | 0.021 | 1.00 | 0.033 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.033 |

**WORKSHEET 2H -- CRASH MODIFICATION FACTORS FOR VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS**

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| CMF for Bus Stops | CMF for Schools | CMF for Alcohol Sales Establishments | Combined CMF |
| $CMF_{1p}$ | $CMF_{2p}$ | $CMF_{3p}$ | |
| from Table 12-28 | from Table 12-29 | from Table 12-30 | (1)*(2)*(3) |
| -- | -- | -- | -- |

**WORKSHEET 2I -- VEHICLE-PEDESTRIAN COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL SIGNALIZED INTERSECTIONS**

| (1) | (2) | | | | | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | | | **Overdispersion Parameter, k** | **$N_{pedbase}$** | **Combined CMF** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | from Table 12-14 | | | | | | from Equation 12-29 | (4) from Worksheet 2H | | (4)*(5)*(6) |
| | a | b | c | d | e | | | | | |
| Total | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |
| Fatal and Injury (FI) | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |

**WORKSHEET 2J -- VEHICLE-BICYCLE COLLISIONS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS**

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{bikei}$** | **Calibration factor, $C_i$** | **Predicted $N_{bikei}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-17 | | (4)*(5)*(6) |
| Total | 1.279 | 0.294 | 1.573 | 0.016 | 1.00 | 0.025 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.025 |

WORKSHEET 2K -- CRASH SEVERITY DISTRIBUTION FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) | (3) | (4) |
|---|---|---|---|
| **Collision type** | **Fatal and injury (FI)**<br>(3) from Worksheet 2D and 2F;<br>(7) from 2G or 2I and 2J | **Property damage only (PDO)**<br>(5) from Worksheet 2D and 2F | **Total**<br>(6) from Worksheet 2D and 2F;<br>(7) from 2G or 2I and 2J |
| **MULTIPLE-VEHICLE** | | | |
| Rear-end collisions (from Worksheet 2D) | 0.175 | 0.380 | 0.555 |
| Head-on collisions (from Worksheet 2D) | 0.019 | 0.020 | 0.039 |
| Angle collisions (from Worksheet 2D) | 0.143 | 0.226 | 0.369 |
| Sideswipe (from Worksheet 2D) | 0.052 | 0.035 | 0.087 |
| Other multiple-vehicle collision (from Worksheet 2D) | 0.027 | 0.203 | 0.230 |
| Subtotal | 0.416 | 0.863 | 1.279 |
| **SINGLE-VEHICLE** | | | |
| Collision with parked vehicle (from Worksheet 2F) | 0.000 | 0.001 | 0.001 |
| Collision with animal (from Worksheet 2F) | 0.000 | 0.004 | 0.004 |
| Collision with fixed object (from Worksheet 2F) | 0.070 | 0.169 | 0.239 |
| Collision with other object (from Worksheet 2F) | 0.008 | 0.019 | 0.027 |
| Other single-vehicle collision (from Worksheet 2F) | 0.004 | 0.005 | 0.008 |
| Single-vehicle noncollision (from Worksheet 2F) | 0.010 | 0.006 | 0.016 |
| Collision with pedestrian (from Worksheet 2G or 2I) | 0.033 | 0.000 | 0.033 |
| Collision with bicycle (from Worksheet 2J) | 0.025 | 0.000 | 0.025 |
| Subtotal | 0.150 | 0.202 | 0.352 |
| Total | 0.567 | 1.065 | 1.631 |

WORKSHEET 2L -- SUMMARY RESULTS FOR URBAN AND SUBURBAN ARTERIAL INTERSECTIONS

| (1) | (2) |
|---|---|
| **Crash severity level** | **Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)** |
| | (Total) from Worksheet 2K |
| Total | 1.631 |
| Fatal and injury (FI) | 0.567 |
| Property damage only (PDO) | 1.065 |

**PROJECT ELEMENT RESULTS SUMMARY**[1]

| Summary for the project element | Total Crashes/yr (KABCO) | | | Fatal and Injury Crashes/yr (KABC) | | | Property Damage Only Crashes/yr (PDO) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Predicted average crash frequency $N_{predicted\ (KABCO)}$ | Expected average crash frequency $N_{expected\ (KABCO)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (KABC)}$ | Expected average crash frequency $N_{expected\ (KABC)}$ | Potential for Improvement | Predicted average crash frequency $N_{predicted\ (O)}$ | Expected average crash frequency $N_{expected\ (O)}$ | Potential for Improvement |
| | 1.631 | 2.782 | 1.151 | 0.567 | 0.966 | 0.400 | 1.065 | 1.816 | 0.751 |

Special Note: When the project element is not included in the analysis the results will all be zeros. In addition if only the analysis only includes determining the predicted average crash frequency (i.e. EB analysis is not carried out), the results will show zero values where EB results are usually displayed.

# RAW TRAFFIC COUNTS

PROJECT: WCE Wheatland
JOB NO. 19-19
INTERSECTION: 16th Avenue & US 195

# TRAFFIC COUNT REDUCTION WORKSHEET

DATE OF COUNT: 8/13/2019
Counter: Miovision
Analyst: BNG

AM PEAK HOURS

Phone: (509) 951-1851
email: beng@trfcnts.com

Traffic Counts & Surveys Inc.

| APPROACH | MOVEMENT | 15 Minute Period Beginning @ 6:30 AM | | 6:45 AM | | 7:00 AM | | 7:15 AM | | 7:30 AM | | 7:45 AM | | 8:00 AM | | 8:15 AM | | 8:30 AM | | 8:45 AM | | 9:00 AM | | 9:15 AM | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk |
| Eastbound | Left | 14 | 0 | 34 | 0 | 14 | 0 | 18 | 0 | 16 | 0 | 15 | 0 | 10 | 0 | 17 | 0 | 15 | 0 | 15 | 0 | 12 | 0 | 9 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| | Right | 12 | 0 | 6 | 0 | 7 | 0 | 8 | 0 | 10 | 0 | 14 | 0 | 18 | 0 | 17 | 0 | 14 | 0 | 22 | 0 | 14 | 0 | 14 | 2 |
| | App. Total | 26 | 0 | 40 | 0 | 21 | 0 | 26 | 0 | 26 | 0 | 30 | 0 | 28 | 1 | 36 | 0 | 30 | 0 | 37 | 0 | 27 | 0 | 23 | 2 |
| | Pct Trucks | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0.034 | | 0 | | 0 | | 0 | | 0 | | 0.08 |
| Westbound | Left | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| | Through | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 4 | 0 | 2 | 0 | 4 | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 6 | 0 | 4 | 0 | 5 | 0 | 1 | 0 | 9 | 0 | 2 | 0 |
| | App. Total | 5 | 0 | 2 | 0 | 6 | 0 | 2 | 0 | 7 | 0 | 2 | 0 | 7 | 0 | 5 | 0 | 6 | 0 | 2 | 0 | 9 | 0 | 3 | 0 |
| | Pct Trucks | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Northbound | Left | 19 | 0 | 9 | 0 | 16 | 0 | 16 | 0 | 16 | 0 | 23 | 0 | 22 | 0 | 12 | 0 | 9 | 0 | 21 | 0 | 13 | 0 | 14 | 0 |
| | Through | 227 | 5 | 224 | 1 | 263 | 2 | 286 | 1 | 296 | 8 | 244 | 5 | 214 | 3 | 194 | 9 | 235 | 7 | 220 | 14 | 193 | 9 | 166 | 8 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| | App. Total | 246 | 5 | 233 | 1 | 279 | 2 | 302 | 1 | 314 | 8 | 267 | 5 | 237 | 3 | 206 | 9 | 244 | 7 | 241 | 14 | 207 | 9 | 181 | 8 |
| | Pct Trucks | | 0.02 | | 0.004 | | 0.007 | | 0.003 | | 0.025 | | 0.018 | | 0.013 | | 0.042 | | 0.028 | | 0.055 | | 0.042 | | 0.042 |
| Southbound | Left | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 5 | 0 | 2 | 0 | 5 | 0 | 4 | 0 | 7 | 0 |
| | Through | 75 | 8 | 92 | 14 | 83 | 10 | 118 | 15 | 124 | 12 | 95 | 11 | 116 | 17 | 125 | 15 | 132 | 15 | 114 | 9 | 117 | 10 | 111 | 14 |
| | Right | 6 | 0 | 5 | 0 | 3 | 0 | 3 | 0 | 9 | 0 | 4 | 0 | 4 | 0 | 7 | 0 | 8 | 0 | 11 | 0 | 14 | 0 | 6 | 0 |
| | App. Total | 83 | 8 | 98 | 14 | 87 | 10 | 121 | 15 | 134 | 12 | 101 | 11 | 122 | 17 | 137 | 15 | 142 | 15 | 130 | 9 | 135 | 10 | 124 | 14 |
| | Pct Trucks | | 0.088 | | 0.125 | | 0.103 | | 0.11 | | 0.082 | | 0.098 | | 0.122 | | 0.099 | | 0.096 | | 0.065 | | 0.069 | | 0.101 |
| Total Intersection Volume | | 360 | 13 | 373 | 15 | 393 | 12 | 451 | 16 | 481 | 20 | 400 | 16 | 394 | 21 | 384 | 24 | 422 | 22 | 410 | 23 | 378 | 19 | 331 | 24 |
| Intersection Pct Trucks | | 3.5% | | 3.9% | | 3.0% | | 3.4% | | 4.0% | | 3.8% | | 5.1% | | 5.9% | | 5.0% | | 5.3% | | 4.8% | | 6.8% | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 15 Minute Period Beginning @ 6:30 | 6:45 | 7:00 | 7:15 | 7:30 | 7:45 | 8:00 | 8:15 | 8:30 | 8:45 | 9:00 | 9:15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped |
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Bicycle Volumes

| APPROACH | MOVEMENT | 15 Minute Period Beginning @ 6:30 | 6:45 | 7:00 | 7:15 | 7:30 | 7:45 | 8:00 | 8:15 | 8:30 | 8:45 | 9:00 | 9:15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike |
| Eastbound | Through | | | | | | | | | | | | |
| Westbound | Through | | | | | | | | | | | | |
| Northbound | Through | | | | | | | | | | | | |
| Southbound | Through | | | | | | | | | | | | |
| | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Intersection Total One Hour Volumes | | Pct Trucks |
|---|---|---|
| 6:30 AM | 1633 | 3.4% |
| 6:45 AM | 1761 | 3.6% |
| 7:00 AM | 1789 | 3.6% |
| **7:15 AM** | **1799** | **4.1%** |
| 7:30 AM | 1740 | 4.7% |
| 7:45 AM | 1683 | 4.9% |
| 8:00 AM | 1700 | 5.3% |
| 8:15 AM | 1682 | 5.2% |
| 8:30 AM | 1629 | 5.4% |

PROJECT: WCE Wheatland
JOB NO. 19-19
INTERSECTION: 16th Avenue & US 195

Data Transfer
Intersection No. 1

DATE OF COUNT: 8/13/2019
Counter Analyst
Miovision BNG

TRAFFIC COUNT REDUCTION WORKSHEET
AM PEAK HOUR BREAKDOWN

Phone: (509) 951-1851
email: beng@trfcnts.com

Traffic Counts & Surveys Inc

| APPROACH | MOVEMENT | 7:15 AM | | 7:30 AM | | 7:45 AM | | 8:00 AM | | TOTAL | P.H.F. | Pct Trucks | | App Dist |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | pass | trk | pass | trk | pass | trk | pass | trk | | | | | |
| Eastbound | Left | 18 | 0 | 16 | 0 | 15 | 0 | 10 | 0 | 59 | 0.82 | 0% | | 53.15% |
| | Through | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0.50 | 50% | | 1.80% |
| | Right | 8 | 0 | 10 | 0 | 14 | 0 | 18 | 0 | 50 | 0.69 | 0% | | 45.05% |
| | App. Total | 26 | 0 | 26 | 0 | 30 | 0 | 28 | 1 | 111 | 0.93 | | | |
| | Pct Trucks | | 0 | | 0 | | 0 | | 0.034483 | | | | | |
| Westbound | Left | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0.25 | 0% | | 11.11% |
| | Through | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0.50 | 0% | | 11.11% |
| | Right | 0 | 0 | 6 | 0 | 2 | 0 | 6 | 0 | 14 | 0.58 | 0% | | 77.78% |
| | App. Total | 2 | 0 | 7 | 0 | 2 | 0 | 7 | 0 | 18 | 0.64 | | | |
| | Pct Trucks | | 0 | | 0 | | 0 | | 0 | | | | | |
| Northbound | Left | 16 | 0 | 16 | 0 | 23 | 0 | 22 | 0 | 77 | 0.84 | 0% | | 6.77% |
| | Through | 286 | 1 | 296 | 8 | 244 | 5 | 214 | 3 | 1057 | 0.87 | 2% | | 92.96% |
| | Right | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0.38 | 0% | | 0.26% |
| | App. Total | 302 | 1 | 314 | 8 | 267 | 5 | 237 | 3 | 1137 | 0.88 | | | |
| | Pct Trucks | | 0.0033 | | 0.024845 | | 0.018382 | | 0.0125 | | | | | |
| Southbound | Left | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 5 | 0.63 | 0% | | 0.94% |
| | Through | 118 | 15 | 124 | 12 | 95 | 11 | 116 | 17 | 508 | 0.93 | 11% | | 95.31% |
| | Right | 3 | 0 | 9 | 0 | 4 | 0 | 4 | 0 | 20 | 0.56 | 0% | | 3.75% |
| | App. Total | 121 | 15 | 134 | 12 | 101 | 11 | 122 | 17 | 533 | 0.91 | | | |
| | Pct Trucks | | 0.110294 | | 0.082192 | | 0.098214 | | 0.122302 | | | | | |
| Total Intersection Volume | | 451 | 16 | 481 | 20 | 400 | 16 | 394 | 21 | **1799** | **0.90** | **4%** | | |
| Intersection Pct Trucks | | | 3.4% | | 4.0% | | 3.8% | | 5.1% | | | | | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 7:15 Ped | 7:30 Ped | 7:45 Ped | 8:00 Ped | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | **0** |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | **0** |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | **0** |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | **0** |
| | Total | 0 | 0 | 0 | 0 | |

Bicycles Volumes

| APPROACH | MOVEMENT | 7:15 bike | 7:30 bike | 7:45 bike | 8:00 bike | Confli. Bike TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Through | | | | | **0** |
| Westbound | Through | | | | | **0** |
| Northbound | Through | | | | | **0** |
| Southbound | Through | | | | | **0** |
| | Total | 0 | 0 | 0 | 0 | |

Notes

| Miovision Vehicle classification | |
|---|---|
| Passenger Vehicle | Truck Vehicle |

PROJECT: WCE Wheatland
JOB NO. 19-19
INTERSECTION: 16th Avenue & US 195

# TRAFFIC COUNT REDUCTION WORKSHEET

Traffic Counts & Surveys Inc.
Phone: (509) 951-1851
email: beng@trfcnts.com

DATE OF COUNT: 8/13/2019
Counter Analyst
Miovision BNG

PM PEAK HOURS

| | | 15 Minute Period Beginning @ | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APPROACH | MOVEMENT | 3:30 PM | | 3:45 PM | | 4:00 PM | | 4:15 PM | | 4:30 PM | | 4:45 PM | | 5:00 PM | | 5:15 PM | | 5:30 PM | | 5:45 PM | | 6:00 PM | | 6:15 PM | |
| | | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk |
| Eastbound | Left | 12 | 1 | 16 | 0 | 3 | 0 | 10 | 0 | 4 | 0 | 4 | 0 | 4 | 0 | 4 | 0 | 5 | 0 | 10 | 0 | 5 | 0 | 3 | 0 |
| | Through | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 27 | 0 | 23 | 0 | 24 | 0 | 32 | 0 | 33 | 0 | 41 | 0 | 32 | 0 | 23 | 0 | 24 | 0 | 22 | 0 | 26 | 0 | 19 | 0 |
| | App. Total | 39 | 1 | 39 | 0 | 28 | 0 | 43 | 0 | 37 | 0 | 45 | 0 | 37 | 0 | 27 | 1 | 29 | 0 | 32 | 0 | 31 | 0 | 22 | 0 |
| | Pct Trucks | | 0.025 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0.036 | | 0 | | 0 | | 0 | | 0 |
| Westbound | Left | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| | Right | 3 | 0 | 5 | 0 | 3 | 0 | 1 | 0 | 5 | 1 | 3 | 0 | 5 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 4 | 0 | 5 | 0 |
| | App. Total | 4 | 0 | 5 | 0 | 5 | 0 | 1 | 0 | 6 | 1 | 5 | 0 | 8 | 0 | 4 | 0 | 5 | 0 | 7 | 0 | 4 | 0 | 5 | 0 |
| | Pct Trucks | | 0 | | 0 | | 0 | | 0 | | 0.143 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Northbound | Left | 17 | 0 | 17 | 0 | 26 | 0 | 13 | 0 | 20 | 0 | 31 | 0 | 20 | 0 | 24 | 0 | 28 | 0 | 25 | 0 | 22 | 0 | 17 | 0 |
| | Through | 162 | 6 | 145 | 9 | 136 | 8 | 143 | 11 | 146 | 16 | 137 | 9 | 117 | 5 | 150 | 5 | 141 | 12 | 127 | 12 | 142 | 6 | 147 | 5 |
| | Right | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 3 | 0 | 2 | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| | App. Total | 180 | 6 | 162 | 9 | 162 | 8 | 158 | 11 | 169 | 16 | 171 | 9 | 139 | 5 | 176 | 5 | 171 | 12 | 153 | 12 | 165 | 6 | 165 | 5 |
| | Pct Trucks | | 0.032 | | 0.053 | | 0.047 | | 0.065 | | 0.086 | | 0.05 | | 0.035 | | 0.028 | | 0.066 | | 0.073 | | 0.035 | | 0.029 |
| Southbound | Left | 9 | 0 | 6 | 0 | 6 | 0 | 8 | 0 | 3 | 1 | 5 | 0 | 5 | 0 | 8 | 0 | 13 | 0 | 6 | 0 | 7 | 0 | 7 | 1 |
| | Through | 236 | 5 | 268 | 7 | 248 | 5 | 316 | 0 | 333 | 8 | 341 | 2 | 314 | 1 | 290 | 4 | 292 | 2 | 234 | 5 | 203 | 4 | 211 | 3 |
| | Right | 17 | 0 | 12 | 0 | 19 | 0 | 14 | 0 | 19 | 0 | 13 | 0 | 20 | 0 | 19 | 0 | 17 | 0 | 17 | 0 | 8 | 0 | 20 | 0 |
| | App. Total | 262 | 5 | 286 | 7 | 273 | 5 | 338 | 0 | 355 | 9 | 359 | 2 | 339 | 1 | 317 | 4 | 322 | 2 | 257 | 5 | 218 | 4 | 238 | 4 |
| | Pct Trucks | | 0.019 | | 0.024 | | 0.018 | | 0 | | 0.025 | | 0.006 | | 0.003 | | 0.012 | | 0.006 | | 0.019 | | 0.018 | | 0.017 |
| Total Intersection Volume | | 485 | 12 | 492 | 16 | 468 | 13 | 540 | 11 | 567 | 26 | 580 | 11 | 523 | 6 | 524 | 10 | 527 | 14 | 449 | 17 | 418 | 10 | 430 | 9 |
| Intersection Pct Trucks | | 2.4% | | 3.1% | | 2.7% | | 2.0% | | 4.4% | | 1.9% | | 1.1% | | 1.9% | | 2.6% | | 3.6% | | 2.3% | | 2.1% | |

Pedestrian Volumes

| | | 15 Minute Period Beginning @ | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APPROACH | MOVEMENT | 3:30 | 3:45 | 4:00 | 4:15 | 4:30 | 4:45 | 5:00 | 5:15 | 5:30 | 5:45 | 6:00 | 6:15 |
| | | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped |
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Bicycle Volumes

| | | 15 Minute Period Beginning @ | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APPROACH | MOVEMENT | 3:30 | 3:45 | 4:00 | 4:15 | 4:30 | 4:45 | 5:00 | 5:15 | 5:30 | 5:45 | 6:00 | 6:15 |
| | | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike |
| Eastbound | Through | | | | | | | | | | | | |
| Westbound | Through | | | | | | | | | | | | |
| Northbound | Through | | | | | | | | | | | | |
| Southbound | Through | | | | | | | | | | | | |
| | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Intersection Total | | Pct |
|---|---|---|
| One Hour Volumes | | Trucks |
| 3:30 PM | 2037 | 2.6% |
| 3:45 PM | 2133 | 3.1% |
| 4:00 PM | 2216 | 2.8% |
| **4:15 PM** | **2264** | **2.4%** |
| 4:30 PM | 2247 | 2.4% |
| 4:45 PM | 2195 | 1.9% |
| 5:00 PM | 2070 | 2.3% |
| 5:15 PM | 1969 | 2.6% |
| 5:30 PM | 1874 | 2.7% |

PROJECT: WCE Wheatland
JOB NO. 19-19
INTERSECTION: 16th Avenue & US 195

Data Transfer
Intersection No. 1

DATE OF COUNT: 8/13/2019
Counter Analyst
Miovision BNG

TRAFFIC COUNT REDUCTION WORKSHEET
PM PEAK HOUR BREAKDOWN

Phone: (509) 951-1851
email: beng@trfcnts.com

Traffic Counts & Surveys Inc.

| APPROACH | MOVEMENT | 4:15 PM | | 4:30 PM | | 4:45 PM | | 5:00 PM | | TOTAL | P.H.F. | Pct Trucks | | App Dist |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | pass | trk | pass | trk | pass | trk | pass | trk | | | | | |
| Eastbound | Left | 10 | 0 | 4 | 0 | 4 | 0 | 4 | 0 | 22 | 0.55 | 0% | | 13.58% |
| | Through | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0.50 | 0% | | 1.23% |
| | Right | 32 | 0 | 33 | 0 | 41 | 0 | 32 | 0 | 138 | 0.84 | 0% | | 85.19% |
| | App. Total | 43 | 0 | 37 | 0 | 45 | 0 | 37 | 0 | 162 | 0.90 | | | |
| | Pct Trucks | | 0 | | 0 | | 0 | | 0 | | | | | |
| Westbound | Left | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 4 | 0.50 | 0% | | 19.05% |
| | Through | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0.50 | 0% | | 9.52% |
| | Right | 1 | 0 | 5 | 1 | 3 | 0 | 5 | 0 | 15 | 0.63 | 7% | | 71.43% |
| | App. Total | 1 | 0 | 6 | 1 | 5 | 0 | 8 | 0 | 21 | 0.66 | | | |
| | Pct Trucks | | 0 | | 0.142857 | | 0 | | 0 | | | | | |
| Northbound | Left | 13 | 0 | 20 | 0 | 31 | 0 | 20 | 0 | 84 | 0.68 | 0% | | 12.39% |
| | Through | 143 | 11 | 146 | 16 | 137 | 9 | 117 | 5 | 584 | 0.90 | 7% | | 86.14% |
| | Right | 2 | 0 | 3 | 0 | 3 | 0 | 2 | 0 | 10 | 0.83 | 0% | | 1.47% |
| | App. Total | 158 | 11 | 169 | 16 | 171 | 9 | 139 | 5 | 678 | 0.92 | | | |
| | Pct Trucks | | 0.065089 | | 0.086486 | | 0.05 | | 0.034722 | | | | | |
| Southbound | Left | 8 | 0 | 3 | 1 | 5 | 0 | 5 | 0 | 22 | 0.69 | 5% | | 1.57% |
| | Through | 316 | 0 | 333 | 8 | 341 | 2 | 314 | 1 | 1315 | 0.96 | 1% | | 93.73% |
| | Right | 14 | 0 | 19 | 0 | 13 | 0 | 20 | 0 | 66 | 0.83 | 0% | | 4.70% |
| | App. Total | 338 | 0 | 355 | 9 | 359 | 2 | 339 | 1 | 1403 | 0.96 | | | |
| | Pct Trucks | | 0 | | 0.024725 | | 0.00554 | | 0.002941 | | | | | |
| Total Intersection Volume | | 540 | 11 | 567 | 26 | 580 | 11 | 523 | 6 | **2264** | **0.95** | **2%** | | |
| Intersection Pct Trucks | | | 2.0% | | 4.4% | | 1.9% | | 1.1% | | | | | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 4:15 Ped | 4:30 Ped | 4:45 Ped | 5:00 Ped | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 0 | 0 | |

Bicycles Volumes

| APPROACH | MOVEMENT | 5:00 bike | 5:15 bike | 5:30 bike | 5:45 bike | Confli. Bike TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Through | | | | | 0 |
| Westbound | Through | | | | | 0 |
| Northbound | Through | | | | | 0 |
| Southbound | Through | | | | | 0 |
| | Total | 0 | 0 | 0 | 0 | |

Notes

Miovision Vehicle classification

| Passenger Vehicle | Truck Vehicle |
|---|---|

PROJECT: WCE The Summit
JOB NO. 18-02
INTERSECTION: Thope Road & SR 195

# TRAFFIC COUNT REDUCTION WORKSHEET

Traffic Counts & Surveys Inc.
Phone: (509) 951-1851
email: beng@trfcnts.com

DATE OF COUNT: 11/6/2018
Counter: Miovision
Analyst: BNG

AM PEAK HOURS

| APPROACH | MOVEMENT | 15 Minute Period Beginning @ | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 6:30 AM | | 6:45 AM | | 7:00 AM | | 7:15 AM | | 7:30 AM | | 7:45 AM | | 8:00 AM | | 8:15 AM | | 8:30 AM | | 8:45 AM | | 9:00 AM | | 9:15 AM | |
| | | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk |
| Eastbound | Left | 25 | 0 | 38 | 0 | 22 | 0 | 21 | 0 | 29 | 0 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 3 | 0 | 4 | 0 | 0 | 0 | 2 | 0 | 5 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 5 | 0 | 7 | 0 | 19 | 2 | 9 | 1 | 13 | 1 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 33 | 0 | 49 | 0 | 41 | 2 | 32 | 1 | 47 | 1 | 35 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct Trucks | | 0 | | 0 | | 0.047 | | 0.03 | | 0.021 | | 0.028 | | 0 | | | | | | | | | | |
| Westbound | Left | 0 | 0 | 4 | 0 | 2 | 0 | 5 | 1 | 3 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 3 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 8 | 0 | 4 | 0 | 8 | 0 | 1 | 0 | 5 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 11 | 0 | 8 | 0 | 11 | 0 | 7 | 1 | 8 | 0 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct Trucks | | 0 | | 0 | | 0 | | 0.125 | | 0 | | 0.077 | | | | | | | | | | | | |
| Northbound | Left | 4 | 1 | 13 | 0 | 7 | 1 | 11 | 1 | 5 | 0 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 244 | 1 | 263 | 4 | 278 | 3 | 355 | 6 | 434 | 2 | 295 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 11 | 0 | 14 | 0 | 14 | 0 | 24 | 1 | 42 | 0 | 34 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 259 | 2 | 290 | 4 | 299 | 4 | 390 | 8 | 481 | 2 | 341 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct Trucks | | 0.008 | | 0.014 | | 0.013 | | 0.02 | | 0.004 | | 0.026 | | 0 | | | | | | | | | | |
| Southbound | Left | 1 | 0 | 3 | 1 | 1 | 0 | 2 | 1 | 4 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 67 | 16 | 90 | 16 | 83 | 16 | 111 | 14 | 105 | 15 | 141 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 3 | 0 | 5 | 0 | 3 | 0 | 5 | 1 | 7 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 71 | 16 | 98 | 17 | 87 | 16 | 118 | 16 | 116 | 16 | 152 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct Trucks | | 0.184 | | 0.148 | | 0.155 | | 0.119 | | 0.121 | | 0.079 | | | | | | | | | | | | |
| Total Intersection Volume | | 374 | 18 | 445 | 21 | 438 | 22 | 547 | 26 | 652 | 19 | 540 | 24 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Intersection Pct Trucks | | 4.6% | | 4.5% | | 4.8% | | 4.5% | | 2.8% | | 4.3% | | 0.0% | | | | | | | | | | | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 15 Minute Period Beginning @ | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 6:30 | 6:45 | 7:00 | 7:15 | 7:30 | 7:45 | 8:00 | 8:15 | 8:30 | 8:45 | 9:00 | 9:15 |
| | | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped |
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Bicycle Volumes

| APPROACH | MOVEMENT | 15 Minute Period Beginning @ | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 6:30 | 6:45 | 7:00 | 7:15 | 7:30 | 7:45 | 8:00 | 8:15 | 8:30 | 8:45 | 9:00 | 9:15 |
| | | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike |
| Eastbound | Through | | | | | | | | | | | | |
| Westbound | Through | | | | | | | | | | | | |
| Northbound | Through | | | | | | | | | | | | |
| Southbound | Through | | | | | | | | | | | | |
| | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Intersection Total One Hour Volumes | | Pct Trucks |
|---|---|---|
| 6:30 AM | 1891 | 4.6% |
| 6:45 AM | 2170 | 4.1% |
| 7:00 AM | 2268 | 4.0% |
| 7:15 AM | 1811 | 3.8% |
| 7:30 AM | 1238 | 3.5% |
| 7:45 AM | 567 | 4.2% |
| 8:00 AM | 3 | 0.0% |
| 8:15 AM | 0 | |
| 8:30 AM | 0 | |

PROJECT: WCE The Summit
JOB NO. 18-02
INTERSECTION: Thope Road & SR 195

Data Transfer
Intersection No. 1

DATE OF COUNT: 11/6/2018
Counter Analyst
Miovision BNG

TRAFFIC COUNT REDUCTION WORKSHEET
AM PEAK HOUR BREAKDOWN

Phone: (509) 951-1851
email: beng@trfcnts.com

Traffic Counts & Surveys Inc.

| APPROACH | MOVEMENT | 7:00 AM | | 7:15 AM | | 7:30 AM | | 7:45 AM | | | | Pct | | App |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | pass | trk | pass | trk | pass | trk | pass | trk | TOTAL | P.H.F. | Trucks | | Dist |
| Eastbound | Left | 22 | 0 | 21 | 0 | 29 | 0 | 21 | 1 | 94 | 0.81 | 1% | | 58.75% |
| | Through | 0 | 0 | 2 | 0 | 5 | 0 | 4 | 0 | 11 | 0.55 | 0% | | 6.88% |
| | Right | 19 | 2 | 9 | 1 | 13 | 1 | 10 | 0 | 55 | 0.65 | 7% | | 34.38% |
| | App. Total | 41 | 2 | 32 | 1 | 47 | 1 | 35 | 1 | 160 | 0.83 | | | |
| | Pct Trucks | | 0.046512 | | 0.030303 | | 0.020833 | | 0.027778 | | | | | |
| Westbound | Left | 2 | 0 | 5 | 1 | 3 | 0 | 6 | 0 | 17 | 0.71 | 6% | | 42.50% |
| | Through | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 0.75 | 0% | | 7.50% |
| | Right | 8 | 0 | 1 | 0 | 5 | 0 | 5 | 1 | 20 | 0.63 | 5% | | 50.00% |
| | App. Total | 11 | 0 | 7 | 1 | 8 | 0 | 12 | 1 | 40 | 0.77 | | | |
| | Pct Trucks | | 0 | | 0.125 | | 0 | | 0.076923 | | | | | |
| Northbound | Left | 7 | 1 | 11 | 1 | 5 | 0 | 12 | 1 | 38 | 0.73 | 8% | | 2.48% |
| | Through | 278 | 3 | 355 | 6 | 434 | 2 | 295 | 6 | 1379 | 0.79 | 1% | | 89.90% |
| | Right | 14 | 0 | 24 | 1 | 42 | 0 | 34 | 2 | 117 | 0.70 | 3% | | 7.63% |
| | App. Total | 299 | 4 | 390 | 8 | 481 | 2 | 341 | 9 | 1534 | 0.79 | | | |
| | Pct Trucks | | 0.013201 | | 0.020101 | | 0.004141 | | 0.025714 | | | | | |
| Southbound | Left | 1 | 0 | 2 | 1 | 4 | 1 | 6 | 0 | 15 | 0.63 | 13% | | 2.81% |
| | Through | 83 | 16 | 111 | 14 | 105 | 15 | 141 | 13 | 498 | 0.81 | 12% | | 93.26% |
| | Right | 3 | 0 | 5 | 1 | 7 | 0 | 5 | 0 | 21 | 0.75 | 5% | | 3.93% |
| | App. Total | 87 | 16 | 118 | 16 | 116 | 16 | 152 | 13 | 534 | 0.81 | | | |
| | Pct Trucks | | 0.15534 | | 0.119403 | | 0.121212 | | 0.078788 | | | | | |
| Total Intersection Volume | | 438 | 22 | 547 | 26 | 652 | 19 | 540 | 24 | **2268** | **0.85** | **4%** | | |
| Intersection Pct Trucks | | | 4.8% | | 4.5% | | 2.8% | | 4.3% | | | | | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 7:00 Ped | 7:15 Ped | 7:30 Ped | 7:45 Ped | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 1 | 1 | 1 | 1 | 4 |
| Westbound | Crosswalk | 1 | 1 | 1 | 1 | 4 |
| Northbound | Crosswalk | 1 | 1 | 1 | 1 | 4 |
| Southbound | Crosswalk | 1 | 1 | 1 | 1 | 4 |
| | Total | 4 | 4 | 4 | 4 | |

Bicycles Volumes

| APPROACH | MOVEMENT | 7:00 bike | 7:15 bike | 7:30 bike | 7:45 bike | Confli. Bike TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Through | | | | | 0 |
| Westbound | Through | | | | | 0 |
| Northbound | Through | | | | | 0 |
| Southbound | Through | | | | | 0 |
| | Total | 0 | 0 | 0 | 0 | |

Notes

| Miovision Vehicle classification | |
|---|---|
| Passenger Vehicle | Truck Vehicle |

PROJECT: WCE The Summit
JOB NO. 18-02
INTERSECTION: Thope Road & SR 195

TRAFFIC COUNT REDUCTION WORKSHEET

Traffic Counts & Surveys Inc.
Phone: (509) 951-1851
email: beng@trfcnts.com

DATE OF COUNT: 11/13/2018
Counter: Miovision
Analyst: BNG

PM PEAK HOURS

| APPROACH | MOVEMENT | 15 Minute Period Beginning @ 3:30 PM | | 3:45 PM | | 4:00 PM | | 4:15 PM | | 4:30 PM | | 4:45 PM | | 5:00 PM | | 5:15 PM | | 5:30 PM | | 5:45 PM | | 6:00 PM | | 6:15 PM | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk |
| Eastbound | Left | 9 | 0 | 32 | 0 | 9 | 1 | 11 | 0 | 11 | 0 | 12 | 0 | 13 | 0 | 5 | 0 | 12 | 0 | 14 | 0 | 9 | 0 | 9 | 0 |
| | Through | 3 | 0 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 3 | 0 | 1 | 0 | 3 | 0 | 1 | 0 | 2 | 0 |
| | Right | 16 | 2 | 11 | 0 | 8 | 0 | 11 | 0 | 10 | 0 | 13 | 0 | 9 | 0 | 12 | 0 | 14 | 0 | 9 | 0 | 11 | 0 | 5 | 0 |
| | App. Total | 28 | 2 | 48 | 0 | 18 | 1 | 23 | 0 | 21 | 0 | 27 | 0 | 25 | 0 | 20 | 0 | 27 | 0 | 26 | 0 | 21 | 0 | 16 | 0 |
| | Pct Trucks | | 0.067 | | 0 | | 0.053 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Westbound | Left | 6 | 0 | 8 | 0 | 6 | 0 | 9 | 0 | 11 | 0 | 7 | 0 | 7 | 0 | 5 | 0 | 5 | 0 | 7 | 0 | 6 | 0 | 3 | 0 |
| | Through | 1 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 6 | 0 | 3 | 0 | 1 | 0 | 4 | 0 | 1 | 0 | 3 | 0 | 1 | 0 | 1 | 0 |
| | Right | 4 | 0 | 6 | 2 | 8 | 1 | 3 | 0 | 10 | 0 | 3 | 0 | 6 | 1 | 3 | 0 | 5 | 0 | 6 | 0 | 7 | 0 | 4 | 0 |
| | App. Total | 11 | 0 | 14 | 2 | 19 | 1 | 14 | 0 | 27 | 0 | 13 | 0 | 14 | 1 | 12 | 0 | 11 | 0 | 16 | 0 | 14 | 0 | 8 | 0 |
| | Pct Trucks | | 0 | | 0.125 | | 0.05 | | 0 | | 0 | | 0 | | 0.067 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Northbound | Left | 9 | 0 | 18 | 1 | 12 | 0 | 13 | 0 | 11 | 0 | 20 | 0 | 16 | 0 | 12 | 0 | 9 | 0 | 11 | 0 | 13 | 1 | 13 | 1 |
| | Through | 174 | 13 | 153 | 14 | 134 | 11 | 128 | 7 | 122 | 10 | 143 | 8 | 152 | 9 | 132 | 2 | 140 | 8 | 118 | 5 | 126 | 4 | 96 | 4 |
| | Right | 7 | 1 | 13 | 0 | 12 | 0 | 20 | 0 | 14 | 0 | 16 | 0 | 19 | 0 | 17 | 0 | 7 | 0 | 11 | 0 | 3 | 0 | 9 | 0 |
| | App. Total | 190 | 14 | 184 | 15 | 158 | 11 | 161 | 7 | 147 | 10 | 179 | 8 | 187 | 9 | 161 | 2 | 156 | 8 | 140 | 5 | 142 | 5 | 118 | 5 |
| | Pct Trucks | | 0.069 | | 0.075 | | 0.065 | | 0.042 | | 0.064 | | 0.043 | | 0.046 | | 0.012 | | 0.049 | | 0.034 | | 0.034 | | 0.041 |
| Southbound | Left | 5 | 0 | 14 | 0 | 6 | 0 | 7 | 0 | 7 | 0 | 8 | 0 | 8 | 0 | 7 | 0 | 3 | 0 | 5 | 0 | 6 | 0 | 4 | 1 |
| | Through | 258 | 6 | 279 | 5 | 289 | 3 | 290 | 3 | 298 | 5 | 317 | 2 | 350 | 1 | 325 | 1 | 266 | 4 | 224 | 7 | 201 | 2 | 184 | 2 |
| | Right | 20 | 1 | 21 | 0 | 30 | 0 | 20 | 0 | 13 | 0 | 12 | 0 | 11 | 0 | 22 | 1 | 19 | 0 | 16 | 2 | 18 | 0 | 16 | 0 |
| | App. Total | 283 | 7 | 314 | 5 | 325 | 3 | 317 | 3 | 318 | 5 | 337 | 2 | 369 | 1 | 354 | 2 | 288 | 4 | 245 | 9 | 225 | 2 | 204 | 3 |
| | Pct Trucks | | 0.024 | | 0.016 | | 0.009 | | 0.009 | | 0.015 | | 0.006 | | 0.003 | | 0.006 | | 0.014 | | 0.035 | | 0.009 | | 0.014 |
| Total Intersection Volume | | 512 | 23 | 560 | 22 | 520 | 16 | 515 | 10 | 513 | 15 | 556 | 10 | 595 | 11 | 547 | 4 | 482 | 12 | 427 | 14 | 402 | 7 | 346 | 8 |
| Intersection Pct Trucks | | 4.3% | | 3.8% | | 3.0% | | 1.9% | | 2.8% | | 1.8% | | 1.8% | | 0.7% | | 2.4% | | 3.2% | | 1.7% | | 2.3% | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 15 Minute Period Beginning @ 3:30 | 3:45 | 4:00 | 4:15 | 4:30 | 4:45 | 5:00 | 5:15 | 5:30 | 5:45 | 6:00 | 6:15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped |
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Bicycle Volumes

| APPROACH | MOVEMENT | 15 Minute Period Beginning @ 3:30 | 3:45 | 4:00 | 4:15 | 4:30 | 4:45 | 5:00 | 5:15 | 5:30 | 5:45 | 6:00 | 6:15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike |
| Eastbound | Through | | | | | | | | | | | | |
| Westbound | Through | | | | | | | | | | | | |
| Northbound | Through | | | | | | | | | | | | |
| Southbound | Through | | | | | | | | | | | | |
| | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Intersection Total One Hour Volumes | | Pct Trucks |
|---|---|---|
| 3:30 PM | 2178 | 3.3% |
| 3:45 PM | 2171 | 2.9% |
| 4:00 PM | 2155 | 2.4% |
| 4:15 PM | 2225 | 2.1% |
| 4:30 PM | 2251 | 1.8% |
| 4:45 PM | 2217 | 1.7% |
| 5:00 PM | 2092 | 2.0% |
| 5:15 PM | 1895 | 2.0% |
| 5:30 PM | 1698 | 2.4% |

PROJECT: WCE The Summit
JOB NO. 18-02
INTERSECTION: Thope Road & SR 195

Data Transfer
Intersection No. 1

DATE OF COUNT: 11/13/2018
Counter Analyst
Miovision BNG

TRAFFIC COUNT REDUCTION WORKSHEET
PM PEAK HOUR BREAKDOWN

Phone: (509) 951-1851
email: beng@trfcnts.com

Traffic Counts & Surveys Inc.

| APPROACH | MOVEMENT | 4:30 PM | | 4:45 PM | | 5:00 PM | | 5:15 PM | | | | Pct | | App |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | pass | trk | pass | trk | pass | trk | pass | trk | TOTAL | P.H.F. | Trucks | | Dist |
| Eastbound | Left | 11 | 0 | 12 | 0 | 13 | 0 | 5 | 0 | 41 | 0.79 | 0% | | 44.09% |
| | Through | 0 | 0 | 2 | 0 | 3 | 0 | 3 | 0 | 8 | 0.67 | 0% | | 8.60% |
| | Right | 10 | 0 | 13 | 0 | 9 | 0 | 12 | 0 | 44 | 0.85 | 0% | | 47.31% |
| | App. Total | 21 | 0 | 27 | 0 | 25 | 0 | 20 | 0 | 93 | 0.86 | | | |
| | Pct Trucks | | 0 | | 0 | | 0 | | 0 | | | | | |
| Westbound | Left | 11 | 0 | 7 | 0 | 7 | 0 | 5 | 0 | 30 | 0.68 | 0% | | 44.78% |
| | Through | 6 | 0 | 3 | 0 | 1 | 0 | 4 | 0 | 14 | 0.58 | 0% | | 20.90% |
| | Right | 10 | 0 | 3 | 0 | 6 | 1 | 3 | 0 | 23 | 0.58 | 4% | | 34.33% |
| | App. Total | 27 | 0 | 13 | 0 | 14 | 1 | 12 | 0 | 67 | 0.62 | | | |
| | Pct Trucks | | 0 | | 0 | | 0.066667 | | 0 | | | | | |
| Northbound | Left | 11 | 0 | 20 | 0 | 16 | 0 | 12 | 0 | 59 | 0.74 | 0% | | 8.39% |
| | Through | 122 | 10 | 143 | 8 | 152 | 9 | 132 | 2 | 578 | 0.90 | 5% | | 82.22% |
| | Right | 14 | 0 | 16 | 0 | 19 | 0 | 17 | 0 | 66 | 0.87 | 0% | | 9.39% |
| | App. Total | 147 | 10 | 179 | 8 | 187 | 9 | 161 | 2 | 703 | 0.90 | | | |
| | Pct Trucks | | 0.063694 | | 0.042781 | | 0.045918 | | 0.01227 | | | | | |
| Southbound | Left | 7 | 0 | 8 | 0 | 8 | 0 | 7 | 0 | 30 | 0.94 | 0% | | 2.16% |
| | Through | 298 | 5 | 317 | 2 | 350 | 1 | 325 | 1 | 1299 | 0.93 | 1% | | 93.59% |
| | Right | 13 | 0 | 12 | 0 | 11 | 0 | 22 | 1 | 59 | 0.64 | 2% | | 4.25% |
| | App. Total | 318 | 5 | 337 | 2 | 369 | 1 | 354 | 2 | 1388 | 0.94 | | | |
| | Pct Trucks | | 0.01548 | | 0.0059 | | 0.002703 | | 0.005618 | | | | | |
| Total Intersection Volume | | 513 | 15 | 556 | 10 | 595 | 11 | 547 | 4 | **2251** | **0.93** | **2%** | | |
| Intersection Pct Trucks | | | 2.8% | | 1.8% | | 1.8% | | 0.7% | | | | | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 4:30 Ped | 4:45 Ped | 5:00 Ped | 5:15 Ped | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | **0** |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | **0** |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | **0** |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | **0** |
| | Total | 0 | 0 | 0 | 0 | |

Bicycles Volumes

| APPROACH | MOVEMENT | 5:00 bike | 5:15 bike | 5:30 bike | 5:45 bike | Confli. Bike TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Through | | | | | **0** |
| Westbound | Through | | | | | **0** |
| Northbound | Through | | | | | **0** |
| Southbound | Through | | | | | **0** |
| | Total | 0 | 0 | 0 | 0 | |

Notes

| Miovision Vehicle classification | |
|---|---|
| Passenger Vehicle | Truck Vehicle |

# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Latah Glenn — Inland Empire Way
JOB NO. 21-45 — &
DATE OF COUNT: 1/6/2021 — SR 195 SB
Counter: Miovision — Analyst: BNG
AM PEAK HOURS
15 Minute Period Beginning @

Traffic Counts & Surveys Inc.

| APPROACH | Movement | 6:30 AM | | | 6:45 AM | | | 7:00 AM | | | 7:15 AM | | | 7:30 AM | | | 7:45 AM | | | 8:00 AM | | | 8:15 AM | | | 8:30 AM | | | 8:45 AM | | | 9:00 AM | | | 9:15 AM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV |
| Eastbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 5 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 |
| | App. Total | 0 | 5 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 |
| | Pct HV | 0% | | | 0% | | | 0% | | | 0% | | | 0% | | | 25% | | | 0% | | | 0% | | | 0% | | | | | | 0% | | | 0% | | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 61 | 6 | 0 | 84 | 16 | 0 | 62 | 10 | 0 | 73 | 7 | 0 | 98 | 11 | 0 | 113 | 10 | 0 | 121 | 14 | 0 | 113 | 12 | 0 | 115 | 10 | 0 | 118 | 7 | 0 | 105 | 15 | 0 | 109 | 14 |
| | Right | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 2 | 0 |
| | App. Total | 0 | 61 | 6 | 0 | 85 | 16 | 0 | 62 | 10 | 0 | 73 | 7 | 0 | 98 | 11 | 0 | 113 | 11 | 0 | 122 | 14 | 0 | 113 | 12 | 0 | 116 | 10 | 0 | 122 | 7 | 0 | 106 | 15 | 0 | 111 | 14 |
| | Pct HV | 9% | | | 16% | | | 14% | | | 9% | | | 10% | | | 9% | | | 10% | | | 10% | | | 8% | | | 5% | | | 12% | | | 11% | | |
| Total Class Volume | | 0 | 66 | 6 | 0 | 89 | 16 | 0 | 63 | 10 | 0 | 75 | 7 | 0 | 100 | 11 | 0 | 116 | 12 | 0 | 126 | 14 | 0 | 114 | 12 | 0 | 1 | 10 | 0 | 122 | 7 | 0 | 109 | 15 | 0 | 114 | 14 |
| Total Interval Volume | | 72 | | | 105 | | | 73 | | | 82 | | | 111 | | | 128 | | | 140 | | | 126 | | | 11 | | | 129 | | | 124 | | | 128 | | |
| Intersection Pct HV | | 8% | | | 15% | | | 14% | | | 9% | | | 10% | | | 9% | | | 10% | | | 10% | | | 91% | | | 5% | | | 12% | | | 11% | | |

Pedestrian Volumes

| APPROACH | Movement | 15 Minute Period Beginning @ 6:30 | 6:45 | 7:00 | 7:15 | 7:30 | 7:45 | 8:00 | 8:15 | 8:30 | 8:45 | 9:00 | 9:15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Miovision Vehicle Classification

| Bike (BK) | Passenger Car (PC) | Heavy Vehicle (HV) |
|---|---|---|


| Intersection Total One Hour Volumes | | Pct HV |
|---|---|---|
| 6:30 AM | 332 | 11.7% |
| 6:45 AM | 371 | 11.9% |
| **7:00 AM** | **394** | **10.2%** |
| 7:15 AM | 461 | 9.5% |
| 7:30 AM | 505 | 9.7% |
| 7:45 AM | 405 | 11.9% |
| 8:00 AM | 406 | 10.6% |
| 8:15 AM | 390 | 11.3% |
| 8:30 AM | 392 | 11.7% |

App.= Approach
Pct= Percent

# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Latah Glenn Inland Empire Way & SR 195 SB
JOB NO. 21-45
DATE OF COUNT: 1/6/2021
Counter Analyst
Miovision BNG

| APPROACH | MOVEMENT | AM PEAK HOURS 7:30 AM BK | PC | HV | 7:45 AM BK | PC | HV | 8:00 AM BK | PC | HV | 8:15 AM BK | PC | HV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 2 | 0 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 1 | 0 |
| | App. Total | 0 | 2 | 0 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 1 | 0 |
| | Pct HV | | 0% | | | 25% | | | 0% | | | 0% | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 98 | 11 | 0 | 113 | 10 | 0 | 121 | 14 | 0 | 113 | 12 |
| | Right | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 98 | 11 | 0 | 113 | 11 | 0 | 122 | 14 | 0 | 113 | 12 |
| | Pct HV | | 10% | | | 9% | | | 10% | | | 10% | |
| Total Class Volume | | 0 | 100 | 11 | 0 | 116 | 12 | 0 | 126 | 14 | 0 | 114 | 12 |
| Total Interval Volume | | | 111 | | | 128 | | | 140 | | | 126 | |
| Intersection Pct Trucks | | | 10% | | | 9% | | | 10% | | | 10% | |

**Approach — Receiving**

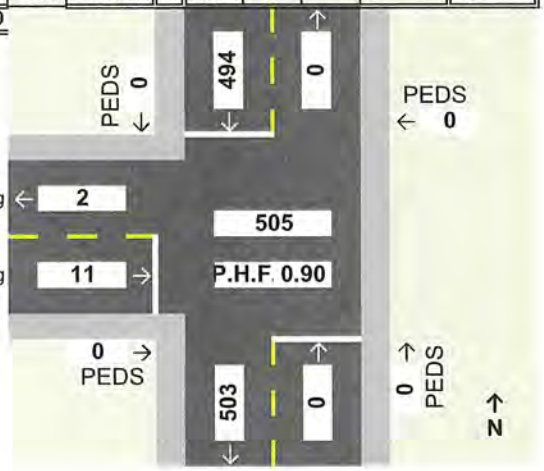
| Mvmt | TOTAL HV | TOTAL Veh | PHF | Percentage of: HV | Percentage of: Approach |
|---|---|---|---|---|---|
| EBU | 0 | 0 | | | 0.00% |
| EBL | 0 | 0 | | | 0.00% |
| EBR | 1 | 11 | | 9% | 100.00% |
| Total | 1 | 11 | 0.69 | 9% | 100.00% |
| NBU | 0 | 0 | | | |
| NBL | 0 | 0 | | | |
| NBT | 0 | 0 | | | |
| Total | 0 | 0 | | | |
| SBU | 0 | 0 | | | 0.00% |
| SBT | 47 | 492 | | 10% | 99.60% |
| SBR | 1 | 2 | | 50% | 0.40% |
| Total | 48 | 494 | 0.91 | 10% | 100.00% |
| **Total** | **49** | **505** | **0.90** | | |

**Departing**

| Mvmt | Total | Percentage of: HV | Percentage of: Approach | App. |
|---|---|---|---|---|
| EBU | 0 | 0% | 0.00% | Eastbound |
| NBL | 0 | 0% | 0.00% | |
| SBR | 2 | 100% | 100.00% | |
| Total | 2 | 50% | 100.00% | |
| NBU | 0 | 0% | 0.00% | Northbound |
| EBR | 11 | 100% | 2.19% | |
| SBT | 492 | #### | 97.81% | |
| Total | 503 | 10% | 100.00% | |
| SBU | 0 | 0% | | Southbound |
| NBT | 0 | 0% | | |
| EBL | 0 | 0% | | |
| Total | 0 | | | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 7:30 | 7:45 | 8:00 | 8:15 | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 0 | 0 | |




Traffic Counts & Surveys Inc.

Movement = Mvmt
Pedestrian = Ped
P.H.F.= Peak Hour Factor
App.= Approach
Pct= Percent

# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Latah Glenn — Inland Empire Way
JOB NO. 21-45 — &
DATE OF COUNT: 1/7/2020 — SR 195 SB
Counter: Miovision — Analyst: BNG
PM PEAK HOURS
15 Minute Period Beginning @

Traffic Counts & Surveys Inc

| APPROACH | Movement | 3:30 PM | | | 3:45 PM | | | 4:00 PM | | | 4:15 PM | | | 4:30 PM | | | 4:45 PM | | | 5:00 PM | | | 5:15 PM | | | 5:30 PM | | | 5:45 PM | | | 6:00 PM | | | 6:15 PM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV |
| Eastbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 |
| | App. Total | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 |
| | Pct HV | | 0% | | | | | | 0% | | | 0% | | | 0% | | | | | | 0% | | | | | | | | | 0% | | | 0% | | | 0% | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 226 | 5 | 0 | 251 | 6 | 0 | 251 | 3 | 0 | 264 | 0 | 0 | 273 | 5 | 0 | 240 | 2 | 0 | 230 | 2 | 0 | 279 | 1 | 0 | 210 | 6 | 0 | 190 | 5 | 0 | 143 | 3 | 0 | 136 | 2 |
| | Right | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| | App. Total | 0 | 229 | 5 | 0 | 254 | 6 | 0 | 255 | 3 | 0 | 265 | 0 | 0 | 274 | 5 | 0 | 246 | 2 | 0 | 231 | 2 | 0 | 282 | 1 | 0 | 211 | 6 | 0 | 192 | 5 | 0 | 143 | 3 | 0 | 138 | 2 |
| | Pct HV | | 2% | | | 2% | | | 1% | | | 0% | | | 2% | | | 1% | | | 1% | | | 0% | | | 3% | | | 3% | | | 2% | | | 1% | |
| Total Class Volume | | 0 | 234 | 5 | 0 | 254 | 6 | 0 | 256 | 3 | 0 | 266 | 0 | 0 | 275 | 5 | 0 | 246 | 2 | 0 | 233 | 2 | 0 | 282 | 1 | 0 | 0 | 6 | 0 | 193 | 5 | 0 | 145 | 3 | 0 | 139 | 2 |
| Total Interval Volume | | | 239 | | | 260 | | | 259 | | | 266 | | | 280 | | | 248 | | | 235 | | | 283 | | | 6 | | | 198 | | | 148 | | | 141 | |
| Intersection Pct HV | | | 2% | | | 2% | | | 1% | | | 0% | | | 2% | | | 1% | | | 1% | | | 0% | | | 100% | | | 3% | | | 2% | | | 1% | |

Pedestrian Volumes

| APPROACH | Movement | 15 Minute Period Beginning @ 3:30 | 3:45 | 4:00 | 4:15 | 4:30 | 4:45 | 5:00 | 5:15 | 5:30 | 5:45 | 6:00 | 6:15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Miovision Vehicle Classification

| Bike (BK) | Passenger Car (PC) | Heavy Vehicle (HV) |
|---|---|---|


| Intersection Total One Hour Volumes | | Pct HV |
|---|---|---|
| 3:30 AM | 1,024 | 1.4% |
| 3:45 AM | 1,065 | 1.3% |
| **4:00 AM** | **1,053** | **0.9%** |
| 4:15 AM | 1,029 | 0.9% |
| 4:30 AM | 1,046 | 1.0% |
| 4:45 AM | 772 | 1.4% |
| 5:00 AM | 722 | 1.9% |
| 5:15 AM | 635 | 2.4% |
| 5:30 AM | 493 | 3.2% |

App.= Approach
Pct= Percent

# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Latah Glenn Inland Empire Way & SR 195 SB
JOB NO. 21-45
DATE OF COUNT: 1/7/2020

Counter Miovision | Analyst BNG

PM PEAK HOURS

| APPROACH | MOVEMENT | 4:00 PM BK | 4:00 PM PC | 4:00 PM HV | 4:15 PM BK | 4:15 PM PC | 4:15 PM HV | 4:30 PM BK | 4:30 PM PC | 4:30 PM HV | 4:45 PM BK | 4:45 PM PC | 4:45 PM HV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| | Pct HV | | 0% | | | 0% | | | 0% | | | | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 251 | 3 | 0 | 264 | 0 | 0 | 273 | 5 | 0 | 240 | 2 |
| | Right | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 6 | 0 |
| | App. Total | 0 | 255 | 3 | 0 | 265 | 0 | 0 | 274 | 5 | 0 | 246 | 2 |
| | Pct HV | | 1% | | | 0% | | | 2% | | | 1% | |
| Total Class Volume | | 0 | 234 | 5 | 0 | 234 | 5 | 0 | 234 | 5 | 0 | 234 | 5 |
| Total Interval Volume | | | 259 | | | 266 | | | 280 | | | 248 | |
| Intersection Pct Trucks | | | 1% | | | 0% | | | 2% | | | 1% | |

Approach — Receiving

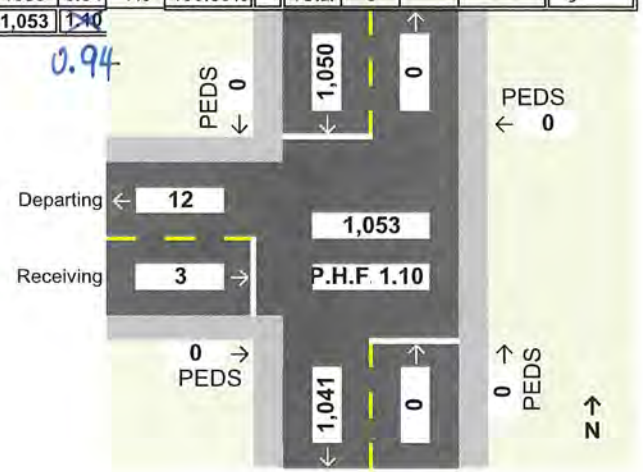
| Mvmt | TOTAL HV | TOTAL Veh | PHF | Percentage of: HV | Percentage of: Approach |
|---|---|---|---|---|---|
| EBU | 0 | 0 | | | 0.00% |
| EBL | 0 | 0 | | | 0.00% |
| EBR | 0 | 3 | | 0% | 100.00% |
| Total | 0 | 3 | 0.75 | 0% | 100.00% |
| NBU | 0 | 0 | | | |
| NBL | 0 | 0 | | | |
| NBT | 0 | 0 | | | |
| Total | 0 | 0 | | | |
| SBU | 0 | 0 | | | 0.00% |
| SBT | 10 | 1038 | | 1% | 98.86% |
| SBR | 0 | 12 | | 0% | 1.14% |
| Total | 10 | 1050 | 0.94 | 1% | 100.00% |
| **Total** | **10** | **1,053** | ~~1.40~~ 0.94 | | |

Approach — Departing

| Mvmt | Total | Percentage of: HV | Percentage of: Approach | App. |
|---|---|---|---|---|
| EBU | 0 | 0% | 0.00% | Eastbound |
| NBL | 0 | 0% | 0.00% | |
| SBR | 12 | 0% | 100.00% | |
| Total | 12 | 0% | 100.00% | |
| NBU | 0 | 0% | 0.00% | Northbound |
| EBR | 3 | 0% | 0.29% | |
| SBT | 1038 | #### | 99.71% | |
| Total | 1041 | 1% | 100.00% | |
| SBU | 0 | 0% | | Southbound |
| NBT | 0 | 0% | | |
| EBL | 0 | 0% | | |
| Total | 0 | | | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 7:00 | 7:15 | 7:30 | 7:45 | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 0 | 0 | |




Traffic Counts & Surveys Inc.

Movement = Mvmt
Pedestrian = Ped
P.H.F.= Peak Hour Factor
App.= Approach
Pct= Percent

# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Marshal Creek
JOB NO. 21-46
DATE OF COUNT: 5/8/2019
Counter Miovision
Analyst BNG

Cheney-Spokane Road
&
SR 195 NB Ramps

AM PEAK HOURS
15 Minute Period Beginning @

Traffic Counts & Surveys Inc.

| APPROACH | Movement | 6:30 AM | | | 6:45 AM | | | 7:00 AM | | | 7:15 AM | | | 7:30 AM | | | 7:45 AM | | | 8:00 AM | | | 8:15 AM | | | 8:30 AM | | | 8:45 AM | | | 9:00 AM | | | 9:15 AM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV |
| Eastbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 109 | 0 | 0 | 106 | 1 | 0 | 138 | 2 | 0 | 172 | 4 | 0 | 234 | 2 | 0 | 150 | 3 | 0 | 121 | 0 | 0 | 106 | 1 | 0 | 105 | 1 | 0 | 89 | 5 | 0 | 74 | 1 | 0 | 74 | 4 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 109 | 0 | 0 | 106 | 1 | 0 | 138 | 2 | 0 | 172 | 4 | 0 | 234 | 2 | 0 | 150 | 3 | 0 | 122 | 0 | 0 | 106 | 1 | 0 | 105 | 1 | 0 | 89 | 5 | 0 | 74 | 1 | 0 | 74 | 4 |
| | Pct HV | | 0% | | | 1% | | | 1% | | | 2% | | | 1% | | | 2% | | | 0% | | | 1% | | | 1% | | | 5% | | | 1% | | | 5% | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 8 | 0 | 0 | 22 | 2 | 0 | 19 | 0 | 0 | 39 | 0 | 0 | 25 | 0 | 0 | 22 | 0 | 0 | 30 | 0 | 0 | 31 | 1 | 0 | 32 | 1 | 0 | 32 | 0 | 0 | 26 | 4 | 0 | 29 | 1 |
| | Through | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 8 | 0 | 0 | 23 | 2 | 0 | 19 | 0 | 0 | 39 | 0 | 0 | 25 | 0 | 0 | 22 | 0 | 0 | 30 | 0 | 0 | 31 | 1 | 0 | 32 | 1 | 0 | 32 | 0 | 0 | 26 | 4 | 0 | 29 | 1 |
| | Pct HV | | 0% | | | 8% | | | 0% | | | 0% | | | 0% | | | 0% | | | 0% | | | 3% | | | 3% | | | 0% | | | 13% | | | 3% | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | | | | | | | | | | | | | | | 0% | | | | | | | | | | |
| Total Class Volume | | 0 | 117 | 0 | 0 | 129 | 3 | 0 | 157 | 2 | 0 | 211 | 4 | 0 | 259 | 2 | 0 | 172 | 3 | 0 | 152 | 0 | 0 | 137 | 2 | 0 | 105 | 2 | 0 | 121 | 5 | 0 | 100 | 5 | 0 | 103 | 5 |
| Total Interval Volume | | | 117 | | | 132 | | | 159 | | | 215 | | | 261 | | | 175 | | | 152 | | | 139 | | | 107 | | | 126 | | | 105 | | | 108 | |
| Intersection Pct HV | | | 0% | | | 2% | | | 1% | | | 2% | | | 1% | | | 2% | | | 0% | | | 1% | | | 2% | | | 4% | | | 5% | | | 5% | |

Pedestrian Volumes

| APPROACH | Movement | 15 Minute Period Beginning @ 6:30 | 6:45 | 7:00 | 7:15 | 7:30 | 7:45 | 8:00 | 8:15 | 8:30 | 8:45 | 9:00 | 9:15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Miovision Vehicle Classification

Bike (BK) | Passenger Car (PC) | Heavy Vehicle (HV)


| Intersection Total One Hour Volumes | | Pct HV |
|---|---|---|
| 6:30 AM | 623 | 1.4% |
| 6:45 AM | 767 | 1.4% |
| **7:00 AM** | **810** | **1.4%** |
| 7:15 AM | 803 | 1.1% |
| 7:30 AM | 727 | 1.0% |
| 7:45 AM | 573 | 1.2% |
| 8:00 AM | 524 | 1.7% |
| 8:15 AM | 477 | 2.9% |
| 8:30 AM | 446 | 3.8% |

App.= Approach
Pct= Percent

# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Marshal Creek Cheney-Spokane Road & SR 195 NB Ramps
JOB NO. 21-46
DATE OF COUNT: 5/8/2019
Counter Analyst
Miovision BNG

| APPROACH | MOVEMENT | AM PEAK HOURS 7:00 AM BK | PC | HV | 7:15 AM BK | PC | HV | 7:30 AM BK | PC | HV | 7:45 AM BK | PC | HV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 138 | 2 | 0 | 172 | 4 | 0 | 234 | 2 | 0 | 150 | 3 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 138 | 2 | 0 | 172 | 4 | 0 | 234 | 2 | 0 | 150 | 3 |
| | Pct HV | | 1% | | | 2% | | | 1% | | | 2% | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 19 | 0 | 0 | 39 | 0 | 0 | 25 | 0 | 0 | 22 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 19 | 0 | 0 | 39 | 0 | 0 | 25 | 0 | 0 | 22 | 0 |
| | Pct HV | | 0% | | | 0% | | | 0% | | | 0% | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | |
| Total Class Volume | | 0 | 157 | 2 | 0 | 211 | 4 | 0 | 259 | 2 | 0 | 172 | 3 |
| Total Interval Volume | | | 159 | | | 215 | | | 261 | | | 175 | |
| Intersection Pct Trucks | | | 1% | | | 2% | | | 1% | | | 2% | |

**Approach**

**Receiving**

| Mvmt | TOTAL HV | TOTAL Veh | PHF | Percentage of: HV | Percentage of: Approach |
|---|---|---|---|---|---|
| EBU | 0 | 0 | | | 0.00% |
| EBL | 11 | 705 | | 2% | 100.00% |
| EBR | 0 | 0 | | | 0.00% |
| Total | 11 | 705 | 0.75 | 2% | 100.00% |
| NBU | 0 | 0 | | | 0.00% |
| NBL | 0 | 105 | | 0% | 100.00% |
| NBT | 0 | 0 | | | 0.00% |
| Total | 0 | 105 | 0.67 | 0% | 100.00% |
| SBU | 0 | 0 | | | |
| SBT | 0 | 0 | | | |
| SBR | 0 | 0 | | | |
| Total | 0 | 0 | | | |
| **Total** | **11** | **810** | **0.78** | | |

**Departing**

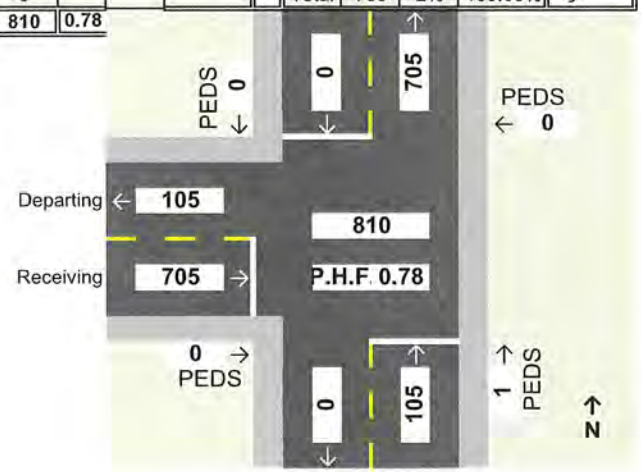
| Mvmt | Total | Percentage of: HV | Percentage of: Approach | App. |
|---|---|---|---|---|
| EBU | 0 | 0% | 0.00% | Eastbound |
| NBL | 105 | 0% | 100.00% | |
| SBR | 0 | 0% | 0.00% | |
| Total | 105 | 0% | 100.00% | |
| NBU | 0 | 0% | | Northbound |
| EBR | 0 | 0% | | |
| SBT | 0 | 0% | | |
| Total | 0 | | | |
| SBU | 0 | 0% | 0.00% | Southbound |
| NBT | 0 | 0% | 0.00% | |
| EBL | 705 | #### | 100.00% | |
| Total | 705 | 2% | 100.00% | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 7:00 | 7:15 | 7:30 | 7:45 | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 1 | 0 | 0 | 1 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 1 | 0 | 0 | |

Movement = Mvmt
Pedestrian = Ped
P.H.F.= Peak Hour Factor
App.= Approach
Pct= Percent

Traffic Counts & Surveys Inc.



# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Marshal Creek
JOB NO. 21-46
DATE OF COUNT: 5/8/2019
Counter Analyst
Miovision BNG

Cheney-Spokane Road
&
SR 195 NB Ramps

PM PEAK HOURS
15 Minute Period Beginning @

Traffic Counts & Surveys Inc.

| APPROACH | Movement | 3:30 PM | | | 3:45 PM | | | 4:00 PM | | | 4:15 PM | | | 4:30 PM | | | 4:45 PM | | | 5:00 PM | | | 5:15 PM | | | 5:30 PM | | | 5:45 PM | | | 6:00 PM | | | 6:15 PM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV |
| Eastbound | U-Turn | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 73 | 3 | 0 | 76 | 1 | 0 | 76 | 1 | 0 | 78 | 2 | 0 | 81 | 0 | 0 | 84 | 1 | 0 | 91 | 2 | 0 | 93 | 1 | 0 | 81 | 1 | 0 | 69 | 1 | 0 | 72 | 0 | 0 | 68 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 73 | 3 | 0 | 77 | 1 | 0 | 76 | 1 | 0 | 78 | 2 | 0 | 81 | 0 | 0 | 84 | 1 | 0 | 91 | 2 | 0 | 93 | 1 | 0 | 81 | 1 | 0 | 69 | 1 | 0 | 72 | 0 | 0 | 68 | 0 |
| | Pct HV | | 4% | | | 1% | | | 1% | | | 3% | | | 0% | | | 1% | | | 2% | | | 1% | | | 1% | | | 1% | | | 0% | | | 0% | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 30 | 0 | 0 | 29 | 1 | 0 | 23 | 1 | 0 | 16 | 0 | 0 | 34 | 0 | 0 | 28 | 0 | 0 | 34 | 0 | 0 | 26 | 0 | 0 | 30 | 0 | 0 | 25 | 1 | 0 | 24 | 0 | 0 | 20 | 0 |
| | Through | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 31 | 0 | 0 | 30 | 1 | 0 | 23 | 1 | 0 | 16 | 0 | 0 | 34 | 0 | 0 | 28 | 0 | 0 | 34 | 0 | 0 | 27 | 0 | 0 | 30 | 0 | 0 | 25 | 1 | 0 | 24 | 0 | 0 | 20 | 0 |
| | Pct HV | | 0% | | | 3% | | | 4% | | | 0% | | | 0% | | | 0% | | | 0% | | | 0% | | | 0% | | | 4% | | | 0% | | | 0% | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | 0% | | | | | | | | | 0% | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Class Volume | | 0 | 105 | 3 | 0 | 107 | 2 | 0 | 99 | 2 | 0 | 95 | 2 | 0 | 115 | 0 | 0 | 112 | 1 | 0 | 125 | 2 | 0 | 120 | 1 | 0 | 81 | 1 | 0 | 94 | 2 | 0 | 96 | 0 | 0 | 88 | 0 |
| Total Interval Volume | | | 108 | | | 109 | | | 101 | | | 97 | | | 115 | | | 113 | | | 127 | | | 121 | | | 82 | | | 96 | | | 96 | | | 88 | |
| Intersection Pct HV | | | 3% | | | 2% | | | 2% | | | 2% | | | 0% | | | 1% | | | 2% | | | 1% | | | 1% | | | 2% | | | 0% | | | 0% | |

Pedestrian Volumes

| APPROACH | Movement | 15 Minute Period Beginning @ | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3:30 | 3:45 | 4:00 | 4:15 | 4:30 | 4:45 | 5:00 | 5:15 | 5:30 | 5:45 | 6:00 | 6:15 |
| Eastbound | Crosswalk | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 2 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 1 | 3 | 2 |

Miovision Vehicle Classification

Bike (BK) | Passenger Car (PC) | Heavy Vehicle (HV)


| Intersection Total One Hour Volumes | | Pct HV |
|---|---|---|
| 3:30 AM | 415 | 2.2% |
| 3:45 AM | 422 | 1.4% |
| 4:00 AM | 426 | 1.2% |
| 4:15 AM | 452 | 1.1% |
| **4:30 AM** | **476** | **0.8%** |
| 4:45 AM | 443 | 1.1% |
| 5:00 AM | 426 | 1.4% |
| 5:15 AM | 395 | 1.0% |
| 5:30 AM | 362 | 0.8% |

App.= Approach
Pct= Percent

# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Marshal Creek Cheney-Spokane Road & SR 195 NB Ramps
JOB NO. 21-46
DATE OF COUNT: 5/8/2019
Counter Analyst
Miovision BNG

| APPROACH | MOVEMENT | PM PEAK HOURS 4:30 PM BK | PC | HV | 4:45 PM BK | PC | HV | 5:00 PM BK | PC | HV | 5:15 PM BK | PC | HV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 81 | 0 | 0 | 84 | 1 | 0 | 91 | 2 | 0 | 93 | 1 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 81 | 0 | 0 | 84 | 1 | 0 | 91 | 2 | 0 | 93 | 1 |
| | Pct HV | | 0% | | | 1% | | | 2% | | | 1% | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 34 | 0 | 0 | 28 | 0 | 0 | 34 | 0 | 0 | 26 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| | App. Total | 0 | 34 | 0 | 0 | 28 | 0 | 0 | 34 | 0 | 0 | 27 | 0 |
| | Pct HV | | 0% | | | 0% | | | 0% | | | 0% | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | |
| Total Class Volume | | 0 | 115 | 0 | 0 | 112 | 1 | 0 | 125 | 2 | 0 | 120 | 1 |
| Total Interval Volume | | | 115 | | | 113 | | | 127 | | | 121 | |
| Intersection Pct Trucks | | | 0% | | | 1% | | | 2% | | | 1% | |

**Approach**

**Receiving**

| Mvmt | TOTAL HV | TOTAL Veh | PHF | Percentage of: HV | Percentage of: Approach |
|---|---|---|---|---|---|
| EBU | 0 | 0 | | | 0.00% |
| EBL | 4 | 353 | | 1% | 100.00% |
| EBR | 0 | 0 | | | 0.00% |
| Total | 4 | 353 | 0.94 | 1% | 100.00% |
| NBU | 0 | 0 | | | 0.00% |
| NBL | 0 | 122 | | 0% | 99.19% |
| NBT | 0 | 1 | | 0% | 0.81% |
| Total | 0 | 123 | 0.90 | 0% | 100.00% |
| SBU | 0 | 0 | | | |
| SBT | 0 | 0 | | | |
| SBR | 0 | 0 | | | |
| Total | 0 | 0 | | | |
| **Total** | **4** | **476** | **0.94** | | |

**Departing**

| Mvmt | Total | Percentage of: HV | Percentage of: Approach | App. |
|---|---|---|---|---|
| EBU | 0 | 0% | 0.00% | Eastbound |
| NBL | 122 | 0% | 100.00% | |
| SBR | 0 | 0% | 0.00% | |
| Total | 122 | 0% | 100.00% | |
| NBU | 0 | 0% | | Northbound |
| EBR | 0 | 0% | | |
| SBT | 0 | 0% | | |
| Total | 0 | | | |
| SBU | 0 | 0% | 0.00% | Southbound |
| NBT | 1 | 0% | 0.28% | |
| EBL | 353 | 400% | 99.72% | |
| Total | 354 | 1% | 100.00% | |

| Pedestrian Volumes APPROACH | MOVEMENT | 4:30 | 4:45 | 5:00 | 5:15 | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 1 | 0 | 1 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 1 | 0 | 0 | 0 | 1 |
| | Total | 1 | 0 | 1 | 0 | |


Movement = Mvmt
Pedestrian = Ped
P.H.F.= Peak Hour Factor
App.= Approach
Pct= Percent

Traffic Counts & Surveys Inc.

# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Marshal Creek
JOB NO. 21-46
DATE OF COUNT: 5/7/2019
Counter Analyst
Miovision BNG

Cheney-Spokane Rd
&
SR 195 SB Ramps

AM PEAK HOURS
15 Minute Period Beginning @

Traffic Counts & Surveys Inc.

| APPROACH | Movement | 6:30 AM | | | 6:45 AM | | | 7:00 AM | | | 7:15 AM | | | 7:30 AM | | | 7:45 AM | | | 8:00 AM | | | 8:15 AM | | | 8:30 AM | | | 8:45 AM | | | 9:00 AM | | | 9:15 AM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV |
| Eastbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 101 | 0 | 0 | 116 | 1 | 0 | 125 | 4 | 0 | 151 | 4 | 0 | 206 | 1 | 0 | 125 | 2 | 0 | 98 | 3 | 0 | 111 | 2 | 0 | 103 | 3 | 0 | 99 | 3 | 0 | 80 | 5 | 0 | 75 | 4 |
| | Right | 0 | 9 | 0 | 0 | 5 | 0 | 0 | 11 | 2 | 0 | 8 | 1 | 0 | 11 | 0 | 0 | 15 | 0 | 0 | 11 | 0 | 0 | 13 | 0 | 0 | 15 | 1 | 0 | 15 | 1 | 0 | 15 | 0 | 0 | 8 | 0 |
| | App. Total | 0 | 110 | 0 | 0 | 121 | 1 | 0 | 136 | 6 | 0 | 159 | 5 | 0 | 217 | 1 | 0 | 140 | 2 | 0 | 109 | 3 | 0 | 124 | 2 | 0 | 118 | 4 | 0 | 114 | 4 | 0 | 95 | 5 | 0 | 83 | 4 |
| | Pct HV | | 0% | | | 1% | | | 4% | | | 3% | | | 0% | | | 1% | | | 3% | | | 2% | | | 3% | | | 3% | | | 5% | | | 5% | |
| Westbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| | Through | 0 | 10 | 1 | 0 | 21 | 2 | 0 | 25 | 1 | 0 | 26 | 1 | 0 | 38 | 0 | 0 | 27 | 0 | 0 | 30 | 1 | 0 | 22 | 1 | 0 | 32 | 1 | 0 | 24 | 0 | 0 | 21 | 0 | 0 | 22 | 1 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 10 | 1 | 0 | 23 | 2 | 0 | 26 | 1 | 0 | 26 | 1 | 0 | 39 | 0 | 0 | 27 | 0 | 0 | 31 | 1 | 0 | 23 | 1 | 0 | 33 | 1 | 0 | 24 | 0 | 0 | 22 | 0 | 0 | 23 | 1 |
| | Pct HV | | 9% | | | 8% | | | 4% | | | 4% | | | 0% | | | 0% | | | 3% | | | 4% | | | 3% | | | 0% | | | 0% | | | 4% | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 5 | 0 | 0 | 4 | 2 | 0 | 4 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | 5 | 0 | 0 | 1 | 1 | 0 | 4 | 1 | 0 | 4 | 0 | 0 | 3 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 3 | 0 | 0 | 2 | 1 | 0 | 5 | 0 | 0 | 4 | 2 | 0 | 4 | 1 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | 5 | 0 | 0 | 1 | 1 | 0 | 4 | 1 | 0 | 4 | 0 | 0 | 3 | 0 |
| | Pct HV | | 0% | | | 33% | | | 0% | | | 33% | | | 20% | | | 50% | | | 0% | | | 0% | | | 50% | | | 20% | | | 0% | | | 0% | |
| Total Class Volume | | 0 | 123 | 1 | 0 | 146 | 4 | 0 | 167 | 7 | 0 | 189 | 8 | 0 | 260 | 2 | 0 | 168 | 3 | 0 | 143 | 4 | 0 | 152 | 3 | 0 | 152 | 6 | 0 | 142 | 5 | 0 | 121 | 5 | 0 | 109 | 5 |
| Total Interval Volume | | | 124 | | | 150 | | | 174 | | | 197 | | | 262 | | | 171 | | | 147 | | | 155 | | | 158 | | | 147 | | | 126 | | | 114 | |
| Intersection Pct HV | | | 1% | | | 3% | | | 4% | | | 4% | | | 1% | | | 2% | | | 3% | | | 2% | | | 4% | | | 3% | | | 4% | | | 4% | |

Pedestrian Volumes

| APPROACH | Movement | 15 Minute Period Beginning @ 6:30 | 6:45 | 7:00 | 7:15 | 7:30 | 7:45 | 8:00 | 8:15 | 8:30 | 8:45 | 9:00 | 9:15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Miovision Vehicle Classification

| Bike (BK) | Passenger Car (PC) | Heavy Vehicle (HV) |
|---|---|---|


| Intersection Total One Hour Volumes | | Pct HV |
|---|---|---|
| 6:30 AM | 645 | 3.1% |
| 6:45 AM | 783 | 2.7% |
| **7:00 AM** | **804** | **2.5%** |
| 7:15 AM | 777 | 2.2% |
| 7:30 AM | 735 | 1.6% |
| 7:45 AM | 631 | 2.5% |
| 8:00 AM | 607 | 3.0% |
| 8:15 AM | 586 | 3.2% |
| 8:30 AM | 545 | 3.9% |

App.= Approach
Pct= Percent

TRAFFIC COUNT REDUCTION WORKSHEET

# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Marshal Creek Cheney-Spokane Rd & SR 195 SB Ramps
JOB NO. 21-46
DATE OF COUNT: 5/7/2019
Counter Analyst
Miovision BNG

| APPROACH | MOVEMENT | AM PEAK HOURS 7:00 AM BK | PC | HV | 7:15 AM BK | PC | HV | 7:30 AM BK | PC | HV | 7:45 AM BK | PC | HV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 125 | 4 | 0 | 151 | 4 | 0 | 206 | 1 | 0 | 125 | 2 |
| | Right | 0 | 11 | 2 | 0 | 8 | 1 | 0 | 11 | 0 | 0 | 15 | 0 |
| | App. Total | 0 | 136 | 6 | 0 | 159 | 5 | 0 | 217 | 1 | 0 | 140 | 2 |
| | Pct HV | | 4% | | | 3% | | | 0% | | | 1% | |
| Westbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| | Through | 0 | 25 | 1 | 0 | 26 | 1 | 0 | 38 | 0 | 0 | 27 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 26 | 1 | 0 | 26 | 1 | 0 | 39 | 0 | 0 | 27 | 0 |
| | Pct HV | | 4% | | | 4% | | | 0% | | | 0% | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 5 | 0 | 0 | 4 | 2 | 0 | 4 | 0 | 0 | 1 | 1 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 5 | 0 | 0 | 4 | 2 | 0 | 4 | 1 | 0 | 1 | 1 |
| | Pct HV | | 0% | | | 33% | | | 20% | | | 50% | |
| Total Class Volume | | 0 | 167 | 7 | 0 | 189 | 8 | 0 | 260 | 2 | 0 | 168 | 3 |
| Total Interval Volume | | | 174 | | | 197 | | | 262 | | | 171 | |
| Intersection Pct Trucks | | | 4% | | | 4% | | | 1% | | | 2% | |

**Approach**

**Receiving**

| Mvmt | TOTAL HV | TOTAL Veh | PHF | Percentage of: HV | Percentage of: Approach |
|---|---|---|---|---|---|
| EBU | 0 | 0 | | | 0.00% |
| EBL | 0 | 0 | | | 0.00% |
| EBT | 11 | 618 | | 2% | 92.79% |
| EBR | 3 | 48 | | 6% | 7.21% |
| Total | 14 | 666 | 0.76 | 2% | 100.00% |
| WBU | 0 | 0 | | | 0.00% |
| WBL | 0 | 2 | | 0% | 1.67% |
| WBT | 2 | 118 | | 2% | 98.33% |
| WBR | 0 | 0 | | | 0.00% |
| Total | 2 | 120 | 0.77 | 2% | 100.00% |
| NBU | 0 | 0 | | | |
| NBL | 0 | 0 | | | |
| NBT | 0 | 0 | | | |
| NBR | 0 | 0 | | | |
| Total | 0 | 0 | | | |
| SBU | 0 | 0 | | | 0.00% |
| SBL | 3 | 17 | | 18% | 94.44% |
| SBT | 1 | 1 | | 100% | 5.56% |
| SBR | 0 | 0 | | | 0.00% |
| Total | 4 | 18 | 0.75 | 22% | 100.00% |
| Total | 20 | 804 | 0.77 | | |

**Departing**

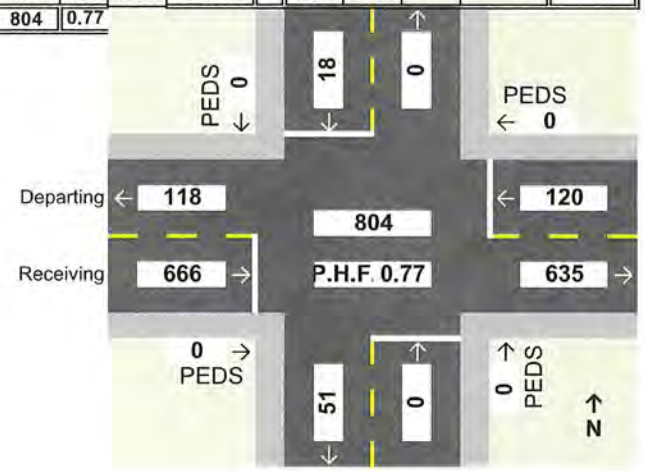
| Mvmt | Total | Percentage of: HV | Percentage of: Approach | App. |
|---|---|---|---|---|
| EBU | 0 | | 0.00% | Eastbound |
| NBL | 0 | | 0.00% | |
| WBT | 118 | 2% | 100.00% | |
| SBR | 0 | | 0.00% | |
| Total | 118 | 2% | 100.00% | |
| WBU | 0 | | 0.00% | Westbound |
| SBL | 17 | 18% | 2.68% | |
| EBT | 618 | 2% | 97.32% | |
| NBR | 0 | | 0.00% | |
| Total | 635 | 2% | 100.00% | |
| NBU | 0 | | 0.00% | Northbound |
| WBL | 2 | 0% | 3.92% | |
| SBT | 1 | 100% | 1.96% | |
| EBR | 48 | 6% | 94.12% | |
| Total | 51 | 8% | 100.00% | |
| SBU | 0 | | | Southbound |
| EBL | 0 | | | |
| NBT | 0 | | | |
| WBR | 0 | | | |
| Total | 0 | | | |

Total 804

2%

| Pedestrian Volumes APPROACH | MOVEMENT | 7:00 | 7:15 | 7:30 | 7:45 | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 0 | 0 | |

Traffic Counts & Surveys Inc.




Movement = Mvmt
Pedestrian = Ped
P.H.F.= Peak Hour Factor
App.= Approach
Pct= Percent

Phone: (509) 951-1851
email: beng@trfcnts.com

# INTERSECTION

PROJECT: WCE Marshal Creek
JOB NO. 21-46
DATE OF COUNT: ~~1/1/2020~~ 5/9/2019
Counter Miovision Analyst BNG

Cheney-Spokane Rd
&
SR 195 SB Ramps

PM PEAK HOURS
15 Minute Period Beginning @

Traffic Counts & Surveys Inc.

| APPROACH | Movement | 3:30 PM | | | 3:45 PM | | | 4:00 PM | | | 4:15 PM | | | 4:30 PM | | | 4:45 PM | | | 5:00 PM | | | 5:15 PM | | | 5:30 PM | | | 5:45 PM | | | 6:00 PM | | | 6:15 PM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV |
| Eastbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 64 | 1 | 0 | 66 | 0 | 0 | 84 | 0 | 0 | 74 | 2 | 0 | 69 | 5 | 0 | 76 | 1 | 0 | 77 | 2 | 0 | 92 | 0 | 0 | 63 | 0 | 0 | 78 | 1 | 0 | 72 | 3 | 0 | 57 | 0 |
| | Right | 0 | 29 | 0 | 0 | 26 | 1 | 0 | 23 | 1 | 0 | 29 | 0 | 0 | 26 | 0 | 0 | 36 | 0 | 0 | 25 | 0 | 0 | 44 | 1 | 0 | 37 | 0 | 0 | 38 | 0 | 0 | 24 | 0 | 0 | 26 | 1 |
| | App. Total | 0 | 93 | 1 | 0 | 92 | 1 | 0 | 107 | 1 | 0 | 103 | 2 | 0 | 95 | 5 | 0 | 112 | 1 | 0 | 102 | 2 | 0 | 136 | 1 | 0 | 100 | 0 | 0 | 116 | 1 | 0 | 96 | 3 | 0 | 83 | 1 |
| | Pct HV | | 1% | | | 1% | | | 1% | | | 2% | | | 5% | | | 1% | | | 2% | | | 1% | | | 0% | | | 1% | | | 3% | | | 1% | |
| Westbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 4 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 2 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| | Through | 0 | 28 | 0 | 0 | 25 | 1 | 0 | 23 | 0 | 0 | 30 | 0 | 0 | 31 | 2 | 0 | 26 | 0 | 0 | 14 | 0 | 0 | 37 | 1 | 0 | 19 | 0 | 0 | 20 | 0 | 0 | 23 | 0 | 0 | 20 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 29 | 0 | 0 | 30 | 1 | 0 | 27 | 0 | 0 | 32 | 0 | 0 | 32 | 2 | 0 | 27 | 0 | 0 | 15 | 0 | 0 | 42 | 1 | 0 | 21 | 0 | 0 | 25 | 0 | 0 | 24 | 0 | 0 | 21 | 0 |
| | Pct HV | | 0% | | | 3% | | | 0% | | | 0% | | | 6% | | | 0% | | | 0% | | | 2% | | | 0% | | | 0% | | | 0% | | | 0% | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| | Pct HV | | 67% | | | 100% | | | 100% | | | 0% | | | 0% | | | | | | 0% | | | 0% | | | 0% | | | | | | | | | 0% | |
| Total Class Volume | | 0 | 123 | 3 | 0 | 122 | 3 | 0 | 134 | 2 | 0 | 136 | 2 | 0 | 128 | 7 | 0 | 139 | 1 | 0 | 124 | 2 | 0 | 181 | 2 | 0 | 123 | 0 | 0 | 141 | 1 | 0 | 120 | 3 | 0 | 106 | 1 |
| Total Interval Volume | | | 126 | | | 125 | | | 136 | | | 138 | | | 135 | | | 140 | | | 126 | | | 183 | | | 123 | | | 142 | | | 123 | | | 107 | |
| Intersection Pct HV | | | 2% | | | 2% | | | 1% | | | 1% | | | 5% | | | 1% | | | 2% | | | 1% | | | 0% | | | 1% | | | 2% | | | 1% | |

Pedestrian Volumes

| APPROACH | Movement | 15 Minute Period Beginning @ 3:30 | 3:45 | 4:00 | 4:15 | 4:30 | 4:45 | 5:00 | 5:15 | 5:30 | 5:45 | 6:00 | 6:15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |

Miovision Vehicle Classification

Bike (BK) | Passenger Car (PC) | Heavy Vehicle (HV)


| Intersection Total One Hour Volumes | | Pct HV |
|---|---|---|
| 3:30 AM | 525 | 1.9% |
| 3:45 AM | 534 | 2.6% |
| 4:00 AM | 549 | 2.2% |
| 4:15 AM | 539 | 2.2% |
| **4:30 AM** | **584** | **2.1%** |
| 4:45 AM | 572 | 0.9% |
| 5:00 AM | 574 | 0.9% |
| 5:15 AM | 571 | 1.1% |
| 5:30 AM | 495 | 1.0% |

App.= Approach
Pct= Percent

Phone: (509) 951-1851
email: beng@trfcnts.com

# INTERSECTION

PROJECT: WCE Marshal Creek Cheney-Spokane Rd & SR 195 SB Ramps
JOB NO. 21-46
DATE OF COUNT: ~~1/1/2020~~ 5/1/2019
Counter Analyst
Miovision BNG

PM PEAK HOURS

| APPROACH | MOVEMENT | 4:30 PM | | | 4:45 PM | | | 5:00 PM | | | 5:15 PM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV |
| Eastbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 69 | 5 | 0 | 76 | 1 | 0 | 77 | 2 | 0 | 92 | 0 |
| | Right | 0 | 26 | 0 | 0 | 36 | 0 | 0 | 25 | 0 | 0 | 44 | 1 |
| | App. Total | 0 | 95 | 5 | 0 | 112 | 1 | 0 | 102 | 2 | 0 | 136 | 1 |
| | Pct HV | | 5% | | | 1% | | | 2% | | | 1% | |
| Westbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 5 | 0 |
| | Through | 0 | 31 | 2 | 0 | 26 | 0 | 0 | 14 | 0 | 0 | 37 | 1 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 32 | 2 | 0 | 27 | 0 | 0 | 15 | 0 | 0 | 42 | 1 |
| | Pct HV | | 6% | | | 0% | | | 0% | | | 2% | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 3 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 3 | 0 |
| | Pct HV | | 0% | | | | | | 0% | | | 0% | |
| Total Class Volume | | 0 | 128 | 7 | 0 | 139 | 1 | 0 | 124 | 2 | 0 | 181 | 2 |
| Total Interval Volume | | | 135 | | | 140 | | | 126 | | | 183 | |
| Intersection Pct Trucks | | | 5% | | | 1% | | | 2% | | | 1% | |

**Approach**

**Receiving**

| Mvmt | TOTAL HV | TOTAL Veh | PHF | Percentage of: HV | Percentage of: Approach |
|---|---|---|---|---|---|
| EBU | 0 | 0 | | | 0.00% |
| EBL | 0 | 0 | | | 0.00% |
| EBT | 8 | 322 | | 2% | 70.93% |
| EBR | 1 | 132 | | 1% | 29.07% |
| Total | 9 | 454 | 0.83 | 2% | 100.00% |
| WBU | 0 | 0 | | | 0.00% |
| WBL | 0 | 8 | | 0% | 6.72% |
| WBT | 3 | 111 | | 3% | 93.28% |
| WBR | 0 | 0 | | | 0.00% |
| Total | 3 | 119 | 0.69 | 3% | 100.00% |
| NBU | 0 | 0 | | | |
| NBL | 0 | 0 | | | |
| NBT | 0 | 0 | | | |
| NBR | 0 | 0 | | | |
| Total | 0 | 0 | | | |
| SBU | 0 | 0 | | | 0.00% |
| SBL | 0 | 10 | | 0% | 90.91% |
| SBT | 0 | 1 | | 0% | 9.09% |
| SBR | 0 | 0 | | | 0.00% |
| Total | 0 | 11 | 0.39 | 0% | 100.00% |
| **Total** | **12** | **584** | **0.80** | | |

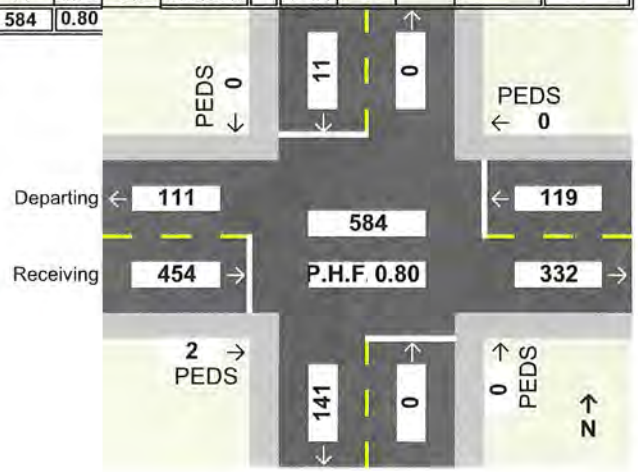
**Departing**

| Mvmt | Total | Percentage of: HV | Percentage of: Approach | App. |
|---|---|---|---|---|
| EBU | 0 | | 0.00% | Eastbound |
| NBL | 0 | | 0.00% | |
| WBT | 111 | 3% | 100.00% | |
| SBR | 0 | | 0.00% | |
| Total | 111 | 3% | 100.00% | |
| WBU | 0 | | 0.00% | Westbound |
| SBL | 10 | 0% | 3.01% | |
| EBT | 322 | 2% | 96.99% | |
| NBR | 0 | | 0.00% | |
| Total | 332 | 2% | 100.00% | |
| NBU | 0 | | 0.00% | Northbound |
| WBL | 8 | 0% | 5.67% | |
| SBT | 1 | 0% | 0.71% | |
| EBR | 132 | 1% | 93.62% | |
| Total | 141 | 1% | 100.00% | |
| SBU | 0 | | | Southbound |
| EBL | 0 | | | |
| NBT | 0 | | | |
| WBR | 0 | | | |
| Total | 0 | | | |

| Pedestrian Volumes | | 4:30 | 4:45 | 5:00 | 5:15 | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| APPROACH | MOVEMENT | | | | | |
| Eastbound | Crosswalk | 0 | 0 | 1 | 1 | **2** |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | **0** |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | **0** |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | **0** |
| | Total | 0 | 0 | 1 | 1 | |

Movement = Mvmt
Pedestrian = Ped
P.H.F.= Peak Hour Factor
App.= Approach
Pct= Percent

Traffic Counts & Surveys Inc.



TRAFFIC COUNT REDUCTION WORKSHEET

# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Marshal Creek
JOB NO. 21-46
DATE OF COUNT: 5/7/2019
Counter Miovision
Analyst BNG

Cheney Spokane Rd
&
SR 195 SB Slip Ramp
AM PEAK HOURS
15 Minute Period Beginning @

Traffic Counts & Surveys Inc.

| APPROACH | Movement | 6:30 AM | | | 6:45 AM | | | 7:00 AM | | | 7:15 AM | | | 7:30 AM | | | 7:45 AM | | | 8:00 AM | | | 8:15 AM | | | 8:30 AM | | | 8:45 AM | | | 9:00 AM | | | 9:15 AM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV |
| Westbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 11 | 1 | 0 | 21 | 2 | 0 | 25 | 1 | 0 | 26 | 1 | 0 | 38 | 0 | 0 | 26 | 1 | 0 | 29 | 2 | 0 | 22 | 1 | 0 | 32 | 1 | 0 | 24 | 0 | 0 | 21 | 0 | 0 | 22 | 1 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 11 | 1 | 0 | 21 | 2 | 0 | 25 | 1 | 0 | 26 | 1 | 0 | 38 | 0 | 0 | 26 | 1 | 0 | 29 | 2 | 0 | 22 | 1 | 0 | 32 | 1 | 0 | 24 | 0 | 0 | 21 | 0 | 0 | 22 | 9 |
| | Pct HV | 8% | | | 9% | | | 4% | | | 4% | | | 0% | | | 4% | | | 6% | | | 4% | | | 3% | | | 0% | | | 0% | | | 29% | | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 30 | 1 | 0 | 37 | 3 | 0 | 37 | 5 | 0 | 47 | 2 | 0 | 47 | 3 | 0 | 43 | 5 | 0 | 50 | 5 | 0 | 64 | 3 | 0 | 51 | 3 | 0 | 55 | 6 | 0 | 32 | 4 | 0 | 54 | 3 |
| | App. Total | 0 | 30 | 1 | 0 | 37 | 3 | 0 | 37 | 5 | 0 | 47 | 2 | 0 | 47 | 3 | 0 | 43 | 5 | 0 | 50 | 5 | 0 | 64 | 3 | 0 | 51 | 3 | 0 | 55 | 6 | 0 | 32 | 4 | 0 | 54 | 3 |
| | Pct HV | 3% | | | 8% | | | 12% | | | 4% | | | 6% | | | 10% | | | 9% | | | 4% | | | 6% | | | 10% | | | 11% | | | 5% | | |
| Total Class Volume | | 0 | 41 | 2 | 0 | 58 | 5 | 0 | 62 | 6 | 0 | 73 | 3 | 0 | 85 | 3 | 0 | 69 | 6 | 0 | 79 | 7 | 0 | 86 | 4 | 0 | 83 | 4 | 0 | 79 | 6 | 0 | 53 | 4 | 0 | 76 | 12 |
| Total Interval Volume | | 43 | | | 63 | | | 68 | | | 76 | | | 88 | | | 75 | | | 86 | | | 90 | | | 87 | | | 85 | | | 57 | | | 88 | | |
| Intersection Pct HV | | 5% | | | 8% | | | 9% | | | 4% | | | 3% | | | 8% | | | 8% | | | 4% | | | 5% | | | 7% | | | 7% | | | 14% | | |

Pedestrian Volumes

| APPROACH | Movement | 15 Minute Period Beginning @ 6:30 | 6:45 | 7:00 | 7:15 | 7:30 | 7:45 | 8:00 | 8:15 | 8:30 | 8:45 | 9:00 | 9:15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Miovision Vehicle Classification

| Bike (BK) | Passenger Car (PC) | Heavy Vehicle (HV) |
|---|---|---|


| Intersection Total One Hour Volumes | | Pct HV |
|---|---|---|
| 6:30 AM | 250 | 0.0% |
| 6:45 AM | 295 | 0.0% |
| **7:00 AM** | **307** | **0.0%** |
| 7:15 AM | 325 | 0.0% |
| 7:30 AM | 339 | 0.0% |
| 7:45 AM | 338 | 0.0% |
| 8:00 AM | 348 | 0.0% |
| 8:15 AM | 319 | 0.0% |
| 8:30 AM | 317 | 0.0% |

App.= Approach
Pct= Percent

# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Marshal Creek Cheney Spokane Rd & SR 195 SB Slip Ramp
JOB NO. 21-46
DATE OF COUNT: 5/7/2019
Counter Analyst
Miovision BNG

| APPROACH | MOVEMENT | AM PEAK HOURS 7:00 AM BK | PC | HV | 7:15 AM BK | PC | HV | 7:30 AM BK | PC | HV | 7:45 AM BK | PC | HV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Westbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 25 | 1 | 0 | 26 | 1 | 0 | 38 | 0 | 0 | 26 | 1 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 25 | 1 | 0 | 26 | 1 | 0 | 38 | 0 | 0 | 26 | 1 |
| | Pct HV | | 4% | | | 4% | | | 0% | | | 4% | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 37 | 5 | 0 | 47 | 2 | 0 | 47 | 3 | 0 | 43 | 5 |
| | App. Total | 0 | 37 | 5 | 0 | 47 | 2 | 0 | 47 | 3 | 0 | 43 | 5 |
| | Pct HV | | 12% | | | 4% | | | 6% | | | 10% | |
| Total Class Volume | | 0 | 62 | 6 | 0 | 73 | 3 | 0 | 85 | 3 | 0 | 69 | 6 |
| Total Interval Volume | | | 68 | | | 76 | | | 88 | | | 75 | |
| Intersection Pct Trucks | | | 9% | | | 4% | | | 3% | | | 8% | |

**Approach**

**Departing**

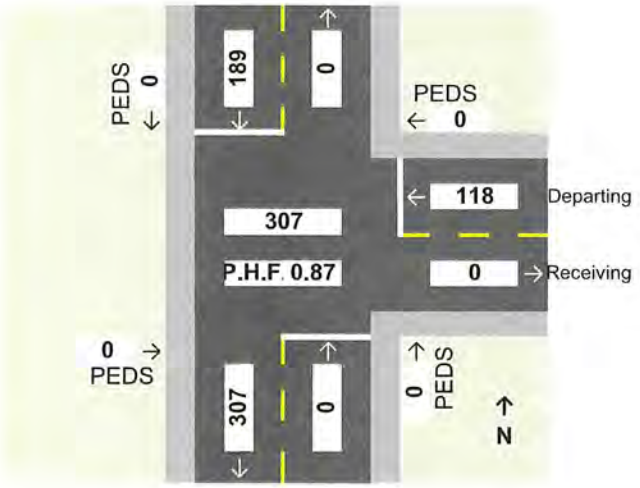
| Mvmt | TOTAL HV | TOTAL Veh | PHF | Percentage of: HV | Percentage of: Approach |
|---|---|---|---|---|---|
| WBU | 0 | 0 | | | 0.00% |
| WBL | 3 | 118 | | 3% | 100.00% |
| WBR | 0 | 0 | | | 0.00% |
| Total | 3 | 118 | 0.78 | 3% | 100.00% |
| NBU | 0 | 0 | | | |
| NBT | 0 | 0 | | | |
| NBR | 0 | 0 | | | |
| Total | 0 | 0 | | | |
| SBU | 0 | 0 | | | 0.00% |
| SBL | 0 | 0 | | | 0.00% |
| SBT | 15 | 189 | | 8% | 100.00% |
| Total | 15 | 189 | 0.95 | 8% | 100.00% |
| Total | 18 | 307 | 0.87 | | |

**Receiving**

| Mvmt | Total | Percentage of: HV | Percentage of: Approach | App. |
|---|---|---|---|---|
| WBU | 0 | | | Westbound |
| SBL | 0 | | | |
| NBR | 0 | | | |
| Total | 0 | | | |
| | | | | |
| NBU | 0 | | 0.00% | Northbound |
| SBT | 189 | 8% | 61.56% | |
| WBL | 118 | 3% | 38.44% | |
| Total | 307 | 6% | 100.00% | |
| | | | | |
| SBU | 0 | | | Southbound |
| WBR | 0 | | | |
| NBT | 0 | | | |
| Total | 0 | | | |

| Pedestrian Volumes APPROACH | MOVEMENT | 7:00 | 7:15 | 7:30 | 7:45 | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 0 | 0 | |

Movement = Mvmt
Pedestrian = Ped
P.H.F.= Peak Hour Factor
App.= Approach
Pct= Percent



TRAFFIC COUNT REDUCTION WORKSHEET

# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Marshal Creek
JOB NO. 21-46
DATE OF COUNT: 5/7/2019
Counter Miovision Analyst BNG

Cheney Spokane Rd
&
SR 195 SB Slip Ramp
PM PEAK HOURS
15 Minute Period Beginning @

Traffic Counts & Surveys Inc.

| APPROACH | Movement | 3:30 PM | | | 3:45 PM | | | 4:00 PM | | | 4:15 PM | | | 4:30 PM | | | 4:45 PM | | | 5:00 PM | | | 5:15 PM | | | 5:30 PM | | | 5:45 PM | | | 6:00 PM | | | 6:15 PM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV | BK | PC | HV |
| Westbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 28 | 0 | 0 | 27 | 1 | 0 | 19 | 1 | 0 | 14 | 0 | 0 | 28 | 1 | 0 | 29 | 0 | 0 | 28 | 0 | 0 | 25 | 0 | 0 | 26 | 0 | 0 | 22 | 0 | 0 | 21 | 0 | 0 | 19 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 28 | 0 | 0 | 27 | 1 | 0 | 19 | 1 | 0 | 14 | 0 | 0 | 28 | 1 | 0 | 29 | 0 | 0 | 28 | 0 | 0 | 25 | 0 | 0 | 26 | 0 | 0 | 22 | 0 | 0 | 21 | 0 | 0 | 19 | 0 |
| | Pct HV | | 0% | | | 4% | | | 5% | | | 0% | | | 3% | | | 0% | | | 0% | | | 0% | | | 0% | | | 0% | | | 0% | | | 0% | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 106 | 3 | 0 | 122 | 1 | 0 | 126 | 1 | 0 | 141 | 0 | 0 | 150 | 2 | 0 | 136 | 3 | 0 | 115 | 0 | 0 | 128 | 3 | 0 | 115 | 0 | 0 | 112 | 4 | 0 | 85 | 1 | 0 | 73 | 0 |
| | App. Total | 0 | 106 | 3 | 0 | 122 | 1 | 0 | 126 | 1 | 0 | 141 | 0 | 0 | 150 | 2 | 0 | 136 | 3 | 0 | 115 | 0 | 0 | 128 | 3 | 0 | 115 | 0 | 0 | 112 | 4 | 0 | 85 | 1 | 0 | 73 | 0 |
| | Pct HV | | 3% | | | 1% | | | 1% | | | 0% | | | 1% | | | 2% | | | 0% | | | 2% | | | 0% | | | 3% | | | 1% | | | 0% | |
| Total Class Volume | | 0 | 134 | 3 | 0 | 149 | 2 | 0 | 145 | 2 | 0 | 155 | 0 | 0 | 178 | 3 | 0 | 165 | 3 | 0 | 143 | 0 | 0 | 153 | 3 | 0 | 141 | 0 | 0 | 134 | 4 | 0 | 106 | 1 | 0 | 92 | 0 |
| Total Interval Volume | | | 137 | | | 151 | | | 147 | | | 155 | | | 181 | | | 168 | | | 143 | | | 156 | | | 141 | | | 138 | | | 107 | | | 92 | |
| Intersection Pct HV | | | 2% | | | 1% | | | 1% | | | 0% | | | 2% | | | 2% | | | 0% | | | 2% | | | 0% | | | 3% | | | 1% | | | 0% | |

Pedestrian Volumes

| APPROACH | Movement | 15 Minute Period Beginning @ 3:30 | 3:45 | 4:00 | 4:15 | 4:30 | 4:45 | 5:00 | 5:15 | 5:30 | 5:45 | 6:00 | 6:15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |

Miovision Vehicle Classification

Bike (BK) | Passenger Car (PC) | Heavy Vehicle (HV)


| Intersection Total One Hour Volumes | | Pct HV |
|---|---|---|
| 3:30 AM | 590 | 1.2% |
| 3:45 AM | 634 | 1.1% |
| 4:00 AM | 651 | 1.2% |
| 4:15 AM | 647 | 0.9% |
| **4:30 AM** | **648** | **1.4%** |
| 4:45 AM | 608 | 1.0% |
| 5:00 AM | 578 | 1.2% |
| 5:15 AM | 542 | 1.5% |
| 5:30 AM | 478 | 1.0% |

App.= Approach
Pct= Percent

# INTERSECTION

Phone: (509) 951-1851
email: beng@trfcnts.com

PROJECT: WCE Marshal Creek Cheney Spokane Rd & SR 195 SB Slip Ramp
JOB NO. 21-46
DATE OF COUNT: 5/7/2019
Counter Analyst
Miovision BNG

| APPROACH | MOVEMENT | PM PEAK HOURS 4:30 PM BK | PC | HV | 4:45 PM BK | PC | HV | 5:00 PM BK | PC | HV | 5:15 PM BK | PC | HV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Westbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 28 | 1 | 0 | 29 | 0 | 0 | 28 | 0 | 0 | 25 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 28 | 1 | 0 | 29 | 0 | 0 | 28 | 0 | 0 | 25 | 0 |
| | Pct HV | | 3% | | | 0% | | | 0% | | | 0% | |
| Northbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Pct HV | | | | | | | | | | | | |
| Southbound | U-Turn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Through | 0 | 150 | 2 | 0 | 136 | 3 | 0 | 115 | 0 | 0 | 128 | 3 |
| | App. Total | 0 | 150 | 2 | 0 | 136 | 3 | 0 | 115 | 0 | 0 | 128 | 3 |
| | Pct HV | | 1% | | | 2% | | | 0% | | | 2% | |
| Total Class Volume | | 0 | 178 | 3 | 0 | 165 | 3 | 0 | 143 | 0 | 0 | 153 | 3 |
| Total Interval Volume | | | 181 | | | 168 | | | 143 | | | 156 | |
| Intersection Pct Trucks | | | 2% | | | 2% | | | 0% | | | 2% | |

**Approach**

**Departing**

| Mvmt | TOTAL HV | TOTAL Veh | PHF | Percentage of: HV | Percentage of: Approach |
|---|---|---|---|---|---|
| WBU | 0 | 0 | | | 0.00% |
| WBL | 1 | 111 | | 1% | 100.00% |
| WBR | 0 | 0 | | | 0.00% |
| Total | 1 | 111 | 0.96 | 1% | 100.00% |
| NBU | 0 | 0 | | | |
| NBT | 0 | 0 | | | |
| NBR | 0 | 0 | | | |
| Total | 0 | 0 | | | |
| SBU | 0 | 0 | | | 0.00% |
| SBL | 0 | 0 | | | 0.00% |
| SBT | 8 | 537 | | 1% | 100.00% |
| Total | 8 | 537 | 0.88 | 1% | 100.00% |
| Total | 9 | 648 | 0.90 | | |

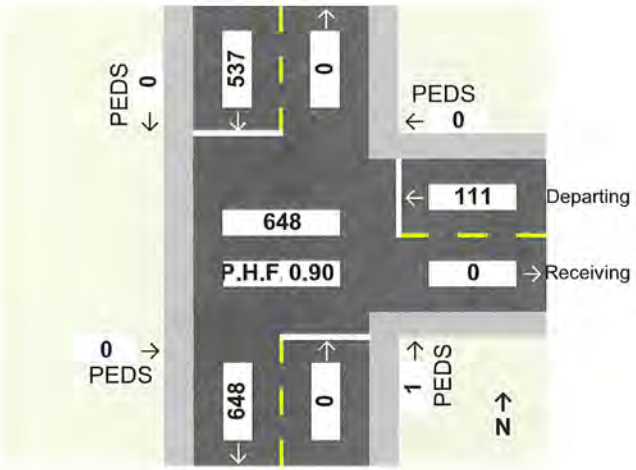
**Receiving**

| Mvmt | Total | Percentage of: HV | Percentage of: Approach | App. |
|---|---|---|---|---|
| WBU | 0 | | | Westbound |
| SBL | 0 | | | |
| NBR | 0 | | | |
| Total | 0 | | | |
| NBU | 0 | | 0.00% | Northbound |
| SBT | 537 | 1% | 82.87% | |
| WBL | 111 | 1% | 17.13% | |
| Total | 648 | 1% | 100.00% | |
| SBU | 0 | | | Southbound |
| WBR | 0 | | | |
| NBT | 0 | | | |
| Total | 0 | | | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 4:00 | 4:15 | 4:30 | 4:45 | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 1 | 0 | 1 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 1 | 0 | |

Movement = Mvmt
Pedestrian = Ped
P.H.F.= Peak Hour Factor
App.= Approach
Pct= Percent



PROJECT: WCE The Summit
JOB NO. 18-02
INTERSECTION: Meadowlane & SR 195

# TRAFFIC COUNT REDUCTION WORKSHEET

Traffic Counts & Surveys Inc.
Phone: (509) 951-1851
email: beng@trfcnts.com

DATE OF COUNT: 11/7/2018
Counter: Miovision
Analyst: BNG

AM PEAK HOURS

| | | 15 Minute Period Beginning @ | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APPROACH | MOVEMENT | 6:30 AM | | 6:45 AM | | 7:00 AM | | 7:15 AM | | 7:30 AM | | 7:45 AM | | 8:00 AM | | 8:15 AM | | 8:30 AM | | 8:45 AM | | 9:00 AM | | 9:15 AM | |
| | | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk |
| Eastbound | Left | 37 | 0 | 66 | 0 | 33 | 0 | 56 | 1 | 53 | 0 | 38 | 0 | 33 | 0 | 25 | 0 | 27 | 0 | 27 | 1 | 0 | 0 | 0 | 0 |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| | Right | 12 | 0 | 8 | 1 | 17 | 1 | 18 | 1 | 19 | 1 | 17 | 3 | 32 | 1 | 24 | 1 | 26 | 0 | 19 | 1 | 0 | 0 | 0 | 0 |
| | App. Total | 49 | 0 | 74 | 1 | 50 | 1 | 74 | 2 | 72 | 1 | 55 | 3 | 66 | 1 | 49 | 1 | 53 | 0 | 47 | 3 | 0 | 0 | 0 | 0 |
| | Pct Trucks | | 0 | | 0.013 | | 0.02 | | 0.026 | | 0.014 | | 0.052 | | 0.015 | | 0.02 | | 0 | | 0.06 | | | | |
| Westbound | Left | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| | Through | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| | Right | 7 | 0 | 6 | 0 | 2 | 0 | 6 | 0 | 4 | 1 | 2 | 0 | 3 | 0 | 7 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 8 | 0 | 7 | 0 | 3 | 0 | 6 | 0 | 4 | 2 | 2 | 1 | 3 | 0 | 9 | 0 | 3 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| | Pct Trucks | | 0 | | 0 | | 0 | | 0 | | 0.333 | | 0.333 | | 0 | | 0 | | 0 | | 0 | | 1 | | |
| Northbound | Left | 3 | 0 | 3 | 0 | 2 | 1 | 5 | 0 | 6 | 1 | 6 | 0 | 9 | 0 | 16 | 1 | 15 | 2 | 16 | 1 | 0 | 0 | 0 | 0 |
| | Through | 145 | 5 | 160 | 0 | 167 | 0 | 209 | 3 | 204 | 5 | 175 | 5 | 186 | 5 | 175 | 4 | 157 | 9 | 142 | 5 | 0 | 1 | 0 | 0 |
| | Right | 1 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 149 | 5 | 166 | 0 | 171 | 1 | 214 | 3 | 211 | 7 | 181 | 5 | 196 | 5 | 191 | 5 | 173 | 11 | 160 | 6 | 0 | 1 | 0 | 0 |
| | Pct Trucks | | 0.032 | | 0 | | 0.006 | | 0.014 | | 0.032 | | 0.027 | | 0.025 | | 0.026 | | 0.06 | | 0.036 | | 1 | | |
| Southbound | Left | 0 | 0 | 4 | 0 | 1 | 1 | 4 | 0 | 0 | 0 | 3 | 1 | 3 | 0 | 5 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| | Through | 55 | 11 | 61 | 8 | 74 | 9 | 87 | 11 | 94 | 7 | 93 | 4 | 91 | 13 | 91 | 12 | 87 | 16 | 102 | 11 | 0 | 1 | 0 | 0 |
| | Right | 3 | 1 | 9 | 3 | 5 | 2 | 10 | 1 | 16 | 1 | 11 | 1 | 24 | 1 | 22 | 0 | 22 | 2 | 11 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 58 | 12 | 74 | 11 | 80 | 12 | 101 | 12 | 110 | 8 | 107 | 6 | 118 | 14 | 118 | 12 | 110 | 18 | 116 | 11 | 0 | 1 | 0 | 0 |
| | Pct Trucks | | 0.171 | | 0.129 | | 0.13 | | 0.106 | | 0.068 | | 0.053 | | 0.106 | | 0.092 | | 0.141 | | 0.087 | | 1 | | |
| Total Intersection Volume | | 264 | 17 | 321 | 12 | 304 | 14 | 395 | 17 | 397 | 18 | 345 | 15 | 383 | 20 | 367 | 18 | 339 | 29 | 324 | 20 | 0 | 3 | 0 | 0 |
| Intersection Pct Trucks | | 6.0% | | 3.6% | | 4.4% | | 4.1% | | 4.3% | | 4.2% | | 5.0% | | 4.7% | | 7.9% | | 5.8% | | 100.0% | | | |

Pedestrian Volumes

| | | 15 Minute Period Beginning @ | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APPROACH | MOVEMENT | 6:30 | 6:45 | 7:00 | 7:15 | 7:30 | 7:45 | 8:00 | 8:15 | 8:30 | 8:45 | 9:00 | 9:15 |
| | | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped |
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Bicycle Volumes

| | | 15 Minute Period Beginning @ | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APPROACH | MOVEMENT | 6:30 | 6:45 | 7:00 | 7:15 | 7:30 | 7:45 | 8:00 | 8:15 | 8:30 | 8:45 | 9:00 | 9:15 |
| | | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike |
| Eastbound | Through | | | | | | | | | | | | |
| Westbound | Through | | | | | | | | | | | | |
| Northbound | Through | | | | | | | | | | | | |
| Southbound | Through | | | | | | | | | | | | |
| | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Intersection Total | | Pct |
|---|---|---|
| One Hour Volumes | | Trucks |
| 6:30 AM | 1344 | 4.5% |
| 6:45 AM | 1478 | 4.1% |
| 7:00 AM | 1505 | 4.3% |
| 7:15 AM | 1590 | 4.4% |
| 7:30 AM | 1563 | 4.5% |
| 7:45 AM | 1516 | 5.4% |
| 8:00 AM | 1500 | 5.8% |
| 8:15 AM | 1100 | 6.4% |
| 8:30 AM | 715 | 7.3% |

PROJECT: WCE The Summit
JOB NO. 18-02
INTERSECTION: Meadowlane & SR 195

Data Transfer
Intersection No. 1

DATE OF COUNT: 11/7/2018
Counter Analyst
Miovision BNG

TRAFFIC COUNT REDUCTION WORKSHEET
AM PEAK HOUR BREAKDOWN

Phone: (509) 951-1851
email: beng@trfcnts.com

Traffic Counts & Surveys INC.

| APPROACH | MOVEMENT | 7:15 AM | | 7:30 AM | | 7:45 AM | | 8:00 AM | | TOTAL | P.H.F. | Pct Trucks | | App Dist |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | pass | trk | pass | trk | pass | trk | pass | trk | | | | | |
| Eastbound | Left | 56 | 1 | 53 | 0 | 38 | 0 | 33 | 0 | 181 | 0.79 | 1% | | 66.06% |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0.25 | 0% | | 0.36% |
| | Right | 18 | 1 | 19 | 1 | 17 | 3 | 32 | 1 | 92 | 0.70 | 7% | | 33.58% |
| | App. Total | 74 | 2 | 72 | 1 | 55 | 3 | 66 | 1 | 274 | 0.90 | | | |
| | Pct Trucks | | 0.026316 | | 0.013699 | | 0.051724 | | 0.014925 | | | | | |
| Westbound | Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0.00% |
| | Through | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0.50 | 100% | | 11.11% |
| | Right | 6 | 0 | 4 | 1 | 2 | 0 | 3 | 0 | 16 | 0.67 | 6% | | 88.89% |
| | App. Total | 6 | 0 | 4 | 2 | 2 | 1 | 3 | 0 | 18 | 0.75 | | | |
| | Pct Trucks | | 0 | | 0.333333 | | 0.333333 | | 0 | | | | | |
| Northbound | Left | 5 | 0 | 6 | 1 | 6 | 0 | 9 | 0 | 27 | 0.75 | 4% | | 3.28% |
| | Through | 209 | 3 | 204 | 5 | 175 | 5 | 186 | 5 | 792 | 0.93 | 2% | | 96.35% |
| | Right | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 3 | 0.38 | 33% | | 0.36% |
| | App. Total | 214 | 3 | 211 | 7 | 181 | 5 | 196 | 5 | 822 | 0.94 | | | |
| | Pct Trucks | | 0.013825 | | 0.03211 | | 0.026882 | | 0.024876 | | | | | |
| Southbound | Left | 4 | 0 | 0 | 0 | 3 | 1 | 3 | 0 | 11 | 0.69 | 9% | | 2.31% |
| | Through | 87 | 11 | 94 | 7 | 93 | 4 | 91 | 13 | 400 | 0.96 | 9% | | 84.03% |
| | Right | 10 | 1 | 16 | 1 | 11 | 1 | 24 | 1 | 65 | 0.65 | 6% | | 13.66% |
| | App. Total | 101 | 12 | 110 | 8 | 107 | 6 | 118 | 14 | 476 | 0.90 | | | |
| | Pct Trucks | | 0.106195 | | 0.067797 | | 0.053097 | | 0.106061 | | | | | |
| Total Intersection Volume | | 395 | 17 | 397 | 18 | 345 | 15 | 383 | 20 | **1590** | **0.96** | **4%** | | |
| Intersection Pct Trucks | | | 4.1% | | 4.3% | | 4.2% | | 5.0% | | | | | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 7:15 Ped | 7:30 Ped | 7:45 Ped | 8:00 Ped | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 0 | 0 | |

Bicycles Volumes

| APPROACH | MOVEMENT | 7:15 bike | 7:30 bike | 7:45 bike | 8:00 bike | Confli. Bike TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Through | | | | | 0 |
| Westbound | Through | | | | | 0 |
| Northbound | Through | | | | | 0 |
| Southbound | Through | | | | | 0 |
| | Total | 0 | 0 | 0 | 0 | |

Notes

| Miovision Vehicle classification | |
|---|---|
| Passenger Vehicle | Truck Vehicle |

PROJECT: WCE The Summit
JOB NO. 18-02
INTERSECTION: Meadowlane & SR 195

# TRAFFIC COUNT REDUCTION WORKSHEET

DATE OF COUNT: 11/7/2018
Counter: Miovision
Analyst: BNG

PM PEAK HOURS

Phone: (509) 951-1851
email: beng@trfcnts.com

Traffic Counts & Surveys Inc.

| APPROACH | MOVEMENT | 15 Minute Period Beginning @ | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3:30 PM | | 3:45 PM | | 4:00 PM | | 4:15 PM | | 4:30 PM | | 4:45 PM | | 5:00 PM | | 5:15 PM | | 5:30 PM | | 5:45 PM | | 6:00 PM | | 6:15 PM | |
| | | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk | pass | trk |
| Eastbound | Left | 14 | 1 | 34 | 0 | 16 | 3 | 10 | 0 | 12 | 1 | 16 | 0 | 13 | 0 | 9 | 1 | 6 | 1 | 13 | 0 | 10 | 2 | 13 | 0 |
| | Through | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 16 | 1 | 18 | 1 | 17 | 0 | 11 | 0 | 12 | 0 | 18 | 0 | 13 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 31 | 2 | 52 | 2 | 33 | 3 | 21 | 0 | 24 | 1 | 34 | 0 | 26 | 0 | 19 | 1 | 6 | 1 | 13 | 0 | 10 | 2 | 13 | 0 |
| | Pct Trucks | | 0.061 | | 0.037 | | 0.083 | | 0 | | 0.04 | | 0 | | 0 | | 0.05 | | 0.143 | | 0 | | 0.167 | | 0 |
| Westbound | Left | 3 | 0 | 3 | 0 | 5 | 0 | 2 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 |
| | Through | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Right | 5 | 0 | 1 | 0 | 4 | 0 | 5 | 0 | 11 | 0 | 6 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 1 | 0 |
| | App. Total | 10 | 0 | 5 | 1 | 9 | 0 | 7 | 0 | 13 | 1 | 8 | 0 | 2 | 0 | 3 | 0 | 2 | 0 | 2 | 0 | 4 | 0 | 3 | 0 |
| | Pct Trucks | | 0 | | 0.167 | | 0 | | 0 | | 0.071 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 |
| Northbound | Left | 25 | 2 | 26 | 0 | 28 | 0 | 16 | 2 | 13 | 0 | 31 | 0 | 27 | 0 | 24 | 0 | 35 | 0 | 18 | 0 | 22 | 0 | 22 | 0 |
| | Through | 117 | 12 | 104 | 16 | 125 | 11 | 104 | 10 | 105 | 7 | 117 | 4 | 111 | 6 | 112 | 5 | 94 | 5 | 83 | 5 | 78 | 6 | 91 | 6 |
| | Right | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | App. Total | 143 | 14 | 131 | 17 | 154 | 11 | 121 | 12 | 118 | 7 | 148 | 4 | 139 | 6 | 139 | 5 | 129 | 5 | 101 | 5 | 100 | 6 | 113 | 6 |
| | Pct Trucks | | 0.089 | | 0.115 | | 0.067 | | 0.09 | | 0.056 | | 0.026 | | 0.041 | | 0.035 | | 0.037 | | 0.047 | | 0.057 | | 0.05 |
| Southbound | Left | 1 | 0 | 8 | 0 | 1 | 0 | 4 | 0 | 1 | 0 | 4 | 0 | 7 | 0 | 7 | 0 | 6 | 0 | 9 | 0 | 7 | 0 | 3 | 0 |
| | Through | 169 | 0 | 191 | 3 | 161 | 4 | 185 | 3 | 192 | 5 | 194 | 2 | 183 | 3 | 207 | 1 | 186 | 1 | 172 | 1 | 133 | 4 | 105 | 0 |
| | Right | 15 | 1 | 20 | 1 | 32 | 0 | 32 | 0 | 40 | 0 | 28 | 0 | 36 | 0 | 45 | 1 | 34 | 0 | 33 | 0 | 23 | 0 | 26 | 0 |
| | App. Total | 185 | 1 | 219 | 4 | 194 | 4 | 221 | 3 | 233 | 5 | 226 | 2 | 226 | 3 | 259 | 2 | 226 | 1 | 214 | 1 | 163 | 4 | 134 | 0 |
| | Pct Trucks | | 0.005 | | 0.018 | | 0.02 | | 0.013 | | 0.021 | | 0.009 | | 0.013 | | 0.008 | | 0.004 | | 0.005 | | 0.024 | | 0 |
| Total Intersection Volume | | 369 | 17 | 407 | 24 | 390 | 18 | 370 | 15 | 388 | 14 | 416 | 6 | 393 | 9 | 420 | 8 | 363 | 7 | 330 | 6 | 277 | 12 | 263 | 6 |
| Intersection Pct Trucks | | 4.4% | | 5.6% | | 4.4% | | 3.9% | | 3.5% | | 1.4% | | 2.2% | | 1.9% | | 1.9% | | 1.8% | | 4.2% | | 2.2% | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 15 Minute Period Beginning @ | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3:30 | 3:45 | 4:00 | 4:15 | 4:30 | 4:45 | 5:00 | 5:15 | 5:30 | 5:45 | 6:00 | 6:15 |
| | | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped | Ped |
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Bicycle Volumes

| APPROACH | MOVEMENT | 15 Minute Period Beginning @ | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3:30 | 3:45 | 4:00 | 4:15 | 4:30 | 4:45 | 5:00 | 5:15 | 5:30 | 5:45 | 6:00 | 6:15 |
| | | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike | bike |
| Eastbound | Through | | | | | | | | | | | | |
| Westbound | Through | | | | | | | | | | | | |
| Northbound | Through | | | | | | | | | | | | |
| Southbound | Through | | | | | | | | | | | | |
| | Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Intersection Total | | Pct |
|---|---|---|
| One Hour Volumes | | Trucks |
| 3:30 PM | 1610 | 4.6% |
| 3:45 PM | 1626 | 4.4% |
| 4:00 PM | 1617 | 3.3% |
| 4:15 PM | 1611 | 2.7% |
| 4:30 PM | 1654 | 2.2% |
| 4:45 PM | 1622 | 1.8% |
| 5:00 PM | 1536 | 2.0% |
| 5:15 PM | 1423 | 2.3% |
| 5:30 PM | 1264 | 2.5% |

PROJECT: WCE The Summit
JOB NO. 18-02
INTERSECTION: Meadowlane & SR 195

Data Transfer
Intersection No. 1

DATE OF COUNT: 11/7/2018
Counter Analyst
Miovision BNG

TRAFFIC COUNT REDUCTION WORKSHEET
PM PEAK HOUR BREAKDOWN

Phone: (509) 951-1851
email: beng@trfcnts.com

Traffic Counts & Surveys Inc.

| APPROACH | MOVEMENT | 4:30 PM | | 4:45 PM | | 5:00 PM | | 5:15 PM | | TOTAL | P.H.F. | Pct Trucks | | App Dist |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | pass | trk | pass | trk | pass | trk | pass | trk | | | | | |
| Eastbound | Left | 12 | 1 | 16 | 0 | 13 | 0 | 9 | 1 | 52 | 0.81 | 4% | | 49.52% |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0.00% |
| | Right | 12 | 0 | 18 | 0 | 13 | 0 | 10 | 0 | 53 | 0.74 | 0% | | 50.48% |
| | App. Total | 24 | 1 | 34 | 0 | 26 | 0 | 19 | 1 | 105 | 0.77 | | | |
| | Pct Trucks | | 0.04 | | 0 | | 0 | | 0.05 | | | | | |
| Westbound | Left | 2 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 7 | 0.58 | 14% | | 25.93% |
| | Through | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | 0.00% |
| | Right | 11 | 0 | 6 | 0 | 2 | 0 | 1 | 0 | 20 | 0.45 | 0% | | 74.07% |
| | App. Total | 13 | 1 | 8 | 0 | 2 | 0 | 3 | 0 | 27 | 0.48 | | | |
| | Pct Trucks | | 0.071429 | | 0 | | 0 | | 0 | | | | | |
| Northbound | Left | 13 | 0 | 31 | 0 | 27 | 0 | 24 | 0 | 95 | 0.77 | 0% | | 16.78% |
| | Through | 105 | 7 | 117 | 4 | 111 | 6 | 112 | 5 | 467 | 0.96 | 5% | | 82.51% |
| | Right | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 4 | 0.33 | 0% | | 0.71% |
| | App. Total | 118 | 7 | 148 | 4 | 139 | 6 | 139 | 5 | 566 | 0.93 | | | |
| | Pct Trucks | | 0.056 | | 0.026316 | | 0.041379 | | 0.034722 | | | | | |
| Southbound | Left | 1 | 0 | 4 | 0 | 7 | 0 | 7 | 0 | 19 | 0.68 | 0% | | 1.99% |
| | Through | 192 | 5 | 194 | 2 | 183 | 3 | 207 | 1 | 787 | 0.95 | 1% | | 82.32% |
| | Right | 40 | 0 | 28 | 0 | 36 | 0 | 45 | 1 | 150 | 0.82 | 1% | | 15.69% |
| | App. Total | 233 | 5 | 226 | 2 | 226 | 3 | 259 | 2 | 956 | 0.92 | | | |
| | Pct Trucks | | 0.021008 | | 0.008772 | | 0.0131 | | 0.007663 | | | | | |
| Total Intersection Volume | | 388 | 14 | 416 | 6 | 393 | 9 | 420 | 8 | **1654** | **0.97** | **2%** | | |
| Intersection Pct Trucks | | | 3.5% | | 1.4% | | 2.2% | | 1.9% | | | | | |

Pedestrian Volumes

| APPROACH | MOVEMENT | 4:30 Ped | 4:45 Ped | 5:00 Ped | 5:15 Ped | Confli. Ped TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Westbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Northbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| Southbound | Crosswalk | 0 | 0 | 0 | 0 | 0 |
| | Total | 0 | 0 | 0 | 0 | |

Bicycles Volumes

| APPROACH | MOVEMENT | 5:00 bike | 5:15 bike | 5:30 bike | 5:45 bike | Confli. Bike TOTAL |
|---|---|---|---|---|---|---|
| Eastbound | Through | | | | | 0 |
| Westbound | Through | | | | | 0 |
| Northbound | Through | | | | | 0 |
| Southbound | Through | | | | | 0 |
| | Total | 0 | 0 | 0 | 0 | |

Notes

Miovision Vehicle classification

| Passenger Vehicle | Truck Vehicle |
|---|---|

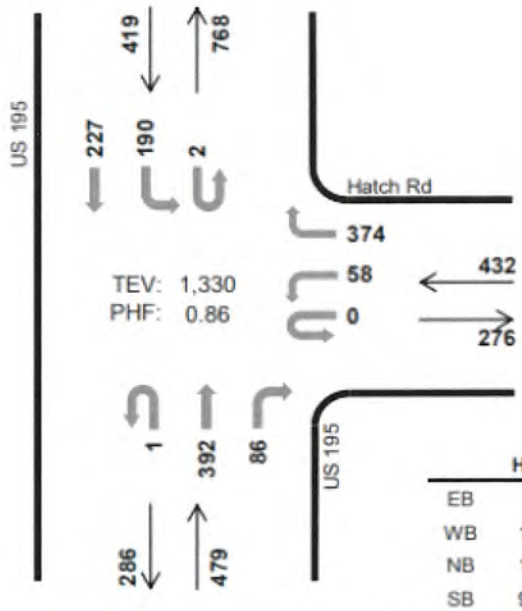
# US 195
# Hatch Rd

idax

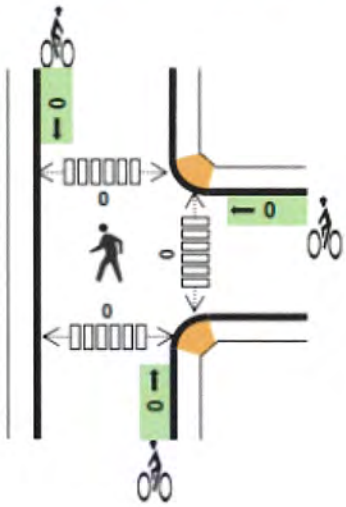
**Date: Tue, Feb 11, 2020**
**Count Period: 7:00 AM to 9:00 AM**
**Peak Hour: 7:00 AM to 8:00 AM**

N

Peak Hour




| | HV %: | PHF |
|---|---|---|
| EB | - | - |
| WB | 1.2% | 0.89 |
| NB | 1.9% | 0.78 |
| SB | 9.3% | 0.90 |
| TOTAL | 4.0% | 0.86 |




## Two-Hour Count Summaries

| Interval Start | 0 | | | | Hatch Rd | | | | US 195 | | | | US 195 | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| **7:00 AM** | **0** | **0** | **0** | **0** | **0** | **16** | **0** | **75** | **0** | **0** | **91** | **13** | **1** | **35** | **54** | **0** | **285** | 0 |
| **7:15 AM** | **0** | **0** | **0** | **0** | **0** | **17** | **0** | **99** | **1** | **0** | **102** | **26** | **0** | **59** | **58** | **0** | **362** | 0 |
| **7:30 AM** | **0** | **0** | **0** | **0** | **0** | **13** | **0** | **109** | **0** | **0** | **130** | **23** | **0** | **49** | **61** | **0** | **385** | 0 |
| **7:45 AM** | **0** | **0** | **0** | **0** | **0** | **12** | **0** | **91** | **0** | **0** | **69** | **24** | **1** | **47** | **54** | **0** | **298** | **1,330** |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 79 | 0 | 0 | 64 | 16 | 0 | 63 | 48 | 0 | 277 | 1,322 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 57 | 0 | 0 | 72 | 25 | 0 | 64 | 57 | 0 | 281 | 1,241 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 85 | 2 | 0 | 78 | 17 | 0 | 70 | 56 | 0 | 320 | 1,176 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 64 | 0 | 0 | 73 | 10 | 0 | 54 | 60 | 0 | 268 | 1,146 |
| Count Total | 0 | 0 | 0 | 0 | 0 | 90 | 0 | 659 | 3 | 0 | 679 | 154 | 2 | 441 | 448 | 0 | 2,476 | 0 |
| **Peak Hour** | **0** | **0** | **0** | **0** | **0** | **58** | **0** | **374** | **1** | **0** | **392** | **86** | **2** | **190** | **227** | **0** | **1,330** | **0** |

*Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

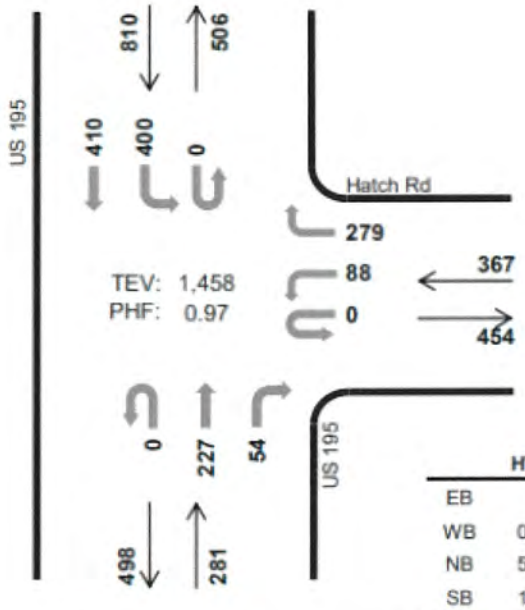
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| **7:00 AM** | **0** | **2** | **1** | **12** | ***15*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** |
| **7:15 AM** | **0** | **1** | **1** | **8** | ***10*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** |
| **7:30 AM** | **0** | **2** | **5** | **8** | ***15*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** |
| **7:45 AM** | **0** | **0** | **2** | **11** | ***13*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** |
| 8:00 AM | 0 | 0 | 0 | 7 | *7* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 8:15 AM | 0 | 2 | 3 | 12 | *17* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 8:30 AM | 0 | 0 | 2 | 8 | *10* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 8:45 AM | 0 | 0 | 3 | 7 | *10* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |

# US 195
# Hatch Rd

idax

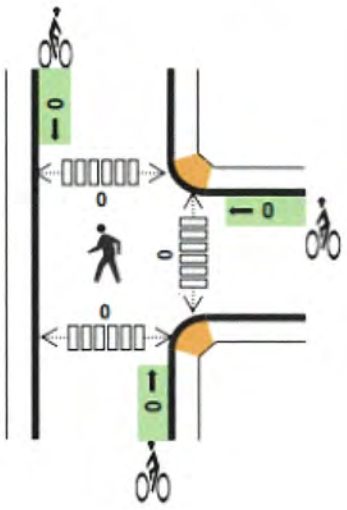
N

Peak Hour




| | HV %: | PHF |
|---|---|---|
| EB | - | - |
| WB | 0.8% | 0.87 |
| NB | 5.0% | 0.86 |
| SB | 1.9% | 0.94 |
| TOTAL | 2.2% | 0.97 |

**Date: Tue, Feb 11, 2020**
**Count Period: 4:00 PM to 6:00 PM**
**Peak Hour: 4:30 PM to 5:30 PM**




## Two-Hour Count Summaries

| Interval Start | 0 Eastbound | | | | Hatch Rd Westbound | | | | US 195 Northbound | | | | US 195 Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 60 | 0 | 0 | 57 | 29 | 1 | 78 | 99 | 0 | 350 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 65 | 0 | 0 | 48 | 25 | 0 | 99 | 98 | 0 | 351 | 0 |
| **4:30 PM** | **0** | **0** | **0** | **0** | **0** | **25** | **0** | **81** | **0** | **0** | **54** | **16** | **0** | **89** | **87** | **0** | **352** | 0 |
| **4:45 PM** | **0** | **0** | **0** | **0** | **0** | **18** | **0** | **57** | **0** | **0** | **66** | **16** | **0** | **112** | **104** | **0** | **373** | 1,426 |
| **5:00 PM** | **0** | **0** | **0** | **0** | **0** | **27** | **0** | **66** | **0** | **0** | **47** | **10** | **0** | **104** | **103** | **0** | **357** | 1,433 |
| **5:15 PM** | **0** | **0** | **0** | **0** | **0** | **18** | **0** | **75** | **0** | **0** | **60** | **12** | **0** | **95** | **116** | **0** | **376** | **1,458** |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 64 | 0 | 0 | 57 | 19 | 0 | 101 | 85 | 0 | 346 | 1,452 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 65 | 0 | 0 | 47 | 18 | 0 | 85 | 95 | 0 | 333 | 1,412 |
| Count Total | 0 | 0 | 0 | 0 | 0 | 173 | 0 | 533 | 0 | 0 | 436 | 145 | 1 | 763 | 787 | 0 | 2,838 | 0 |
| **Peak Hour** | **0** | **0** | **0** | **0** | **0** | **88** | **0** | **279** | **0** | **0** | **227** | **54** | **0** | **400** | **410** | **0** | **1,458** | **0** |

*Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 4:00 PM | 0 | 0 | 7 | 4 | *11* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 4:15 PM | 0 | 1 | 4 | 2 | *7* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| **4:30 PM** | **0** | **2** | **5** | **3** | ***10*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | *0* |
| **4:45 PM** | **0** | **0** | **4** | **6** | ***10*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | *0* |
| **5:00 PM** | **0** | **0** | **5** | **4** | ***9*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | *0* |
| **5:15 PM** | **0** | **1** | **0** | **2** | ***3*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** |
| 5:30 PM | 0 | 0 | 2 | 5 | *7* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 5:45 PM | 0 | 0 | 2 | 5 | *7* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| Count Total | 0 | 4 | 29 | 31 | *64* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| **Peak Hr** | **0** | **3** | **14** | **15** | ***32*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** |

# ADJUSTMENT TRAFFIC FACTOR CALCULATION

2021 Traffic Factor For Covid Pandemic AM

PROJECT NUMBER: Project Na Latah Glen Residential
2 **INTERSEC** SR 195 & Thorpe Avenue

**AM PEAK HOUR**
2021 Adjstment Factor

| | |
|---|---|
| INITIAL COUNT DATE | 11/6/2018 |
| COUNT RATE TO EX | **1.00%** |
| N/S GROWTH RATE | **1.00%** |
| E/W GROWTH RATE | **1.00%** |
| PEAK HOUR FACTOR | 0.85 |

1.030

| | |
|---|---|
| **EB** | 1.030 |
| **WB** | 1.030 |
| **NB** | 1.030 |
| **SB** | 1.030 |

| | | |
|---|---|---|
| YRS TO EXISTING | 3 | |
| YRS TO PHZ 1 | 5 | Horizon Year |
| YRS TO PHZ 2 | | 5 |

| | N/S | |
|---|---|---|
| PHASE I GROWTH F | 1.051 | Horizon Year Growth F |
| PHASE 2 GROWTH F | 1.000 | 1.051 |

| TRK % | 2018 INITIAL COUNT | MOVEMEN | 2021 CURRENT TRAFFIC VC | 2026 BACKGRO GROWTH | 2026 BACKGRO GROWTH | 2026 ACKGROU TRAFFIC | 2026 ACKGROU TRAFFIC | 2026 W/ BKGRN W/O PROJ | 2026 W/ BKGRN W/O PROJ | Project Trips | Project Trips | 2026 W/ BKGRD W/ Project | 2026 W/ BKGRD W/ Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3% | 94 | EB LT | 97 | 102 | 97 | 0 | 0 | 102 | 97 | | | 102 | 97 |
| 3% | 11 | EB THRU | 11 | 12 | 11 | 0 | 0 | 12 | 11 | | | 12 | 11 |
| 3% | 55 | EB RT | 57 | 60 | 57 | 2 | 2 | 62 | 59 | | | 62 | 59 |
| 5% | 17 | WB LT | 18 | 18 | 18 | 0 | 0 | 18 | 18 | | | 18 | 18 |
| 5% | 3 | WB THRU | 3 | 3 | 3 | 0 | 0 | 3 | 3 | | | 3 | 3 |
| 5% | 20 | WB RT | 21 | 22 | 21 | 2 | 2 | 24 | 23 | 2 | | 26 | 23 |
| 8% | 38 | NB LT | 39 | 41 | 39 | 0 | 0 | 41 | 39 | | | 41 | 39 |
| 1% | 1379 | NB THRU | 1421 | 1493 | 1421 | 117 | 123 | 1610 | 1544 | 12 | | 1622 | 1544 |
| 1% | 117 | NB RT | 121 | 127 | 121 | 8 | 8 | 135 | 129 | 4 | | 139 | 129 |
| 13% | 15 | SB LT | 15 | 16 | 15 | 0 | 0 | 16 | 15 | | | 16 | 15 |
| 12% | 498 | SB THRU | 513 | 539 | 513 | 40 | 42 | 579 | 555 | 7 | | 586 | 555 |
| 12% | 21 | SB RT | 22 | 23 | 22 | 4 | 4 | 27 | 26 | | | 27 | 26 |
| | 2268 | | 2337 | 2456 | 2337 | 173 | 182 | 2629 | 2519 | 25 | 0 | 2654 | 2519 |
| | | Existing LOS= | | | | | | | | | | | |
| | | LOS with IMP = | | | | | | | | | | | |

SB

EB RT + WB LT + SB Thru = 587

PROJECT NUMBER: Project Na Latah Glen Residential
3 **INTERSEC** SR 195 & Inland Empire Way

**AM PEAK HOUR**
2021 Adjstment Factor

| | |
|---|---|
| INITIAL COUNT DATE | 1/6/2021 |
| COUNT RATE TO EX | **1.00%** |
| N/S GROWTH RATE | **1.00%** |
| E/W GROWTH RATE | **1.00%** |
| PEAK HOUR FACTOR | 0.90 |

1.000

| | |
|---|---|
| **EB** | 1.000 |
| **WB** | 1.000 |
| **NB** | 1.000 |
| **SB** | 1.000 |

| | | |
|---|---|---|
| YRS TO EXISTING | 0 | |
| YRS TO PHZ 1 | 5 | Horizon Year |
| YRS TO PHZ 2 | | 5 |

| | N/S | |
|---|---|---|
| PHASE I GROWTH F | 1.051 | Horizon Year Growth F |
| PHASE 2 GROWTH F | 1.000 | 1.051 |

| TRK % | 2021 INITIAL COUNT | MOVEMEN | 2021 CURRENT TRAFFIC VC | 2026 BACKGRO GROWTH | 2026 BACKGRO GROWTH | 2026 ACKGROU TRAFFIC | 2026 ACKGROU TRAFFIC | 2026 W/ BKGRN W/O PROJ | 2026 W/ BKGRN W/O PROJ | Project Trips | Project Trips | 2026 W/ BKGRD W/ Project | 2026 W/ BKGRD W/ Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | EB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | EB THRU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 9% | 11 | EB RT | 11 | 12 | 11 | 0 | 0 | 12 | 11 | 23 | | 35 | 11 |
| | 0 | WB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | WB THRU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | WB RT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | NB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | NB THRU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | | 19 | 0 |
| | 0 | NB RT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | SB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 10% | 492 | SB THRU | 492 | 517 | 492 | 42 | 44 | 559 | 536 | | | 559 | 536 |
| 10% | 2 | SB RT | 2 | 2 | 2 | 0 | 0 | 2 | 2 | 10 | | 12 | 2 |
| | 505 | | 505 | 531 | 505 | 42 | 44 | 573 | 549 | 52 | 0 | 625 | 549 |
| | | Existing LOS= | | | | | | | | | | | |
| | | LOS with IMP = | | | | | | | | | | | |

SB

SB LT + SB Thru + SB RT = 494

Covid Factor for 2021 at SR 195 & Inland Empire Way

587/494 = 1.188809

2021 Traffic Factor For Covid Pandemic PM

PROJECT NUMBER: Project Nam Latah Glen Residential
2 INTERSEC SR 195 & Thorpe Avenue

**PM PEAK HOUR**
2021 Adjstment Factor

| | |
|---|---|
| INITIAL COUNT DATE | 11/13/2018 |
| COUNT RATE TO EX | 1.00% |
| N/S GROWTH RATE | 1.00% |
| E/W GROWTH RATE | 1.00% |
| PEAK HOUR FACTOR | 0.93 |

1.030

| | |
|---|---|
| EB | 1.030 |
| WB | 1.030 |
| NB | 1.030 |
| SB | 1.030 |

| | | |
|---|---|---|
| YRS TO EXISTING | 3 | |
| YRS TO PHZ 1 | 5 | Horizon Year |
| YRS TO PHZ 2 | | 5 |

| | N/S | |
|---|---|---|
| PHASE I GROWTH F | 1.051 | Horizon Year Growth Rate |
| PHASE 2 GROWTH F | 1.000 | 1.051 |

tate

| TRK % | 2018 INITIAL COUNT | MOVEMEN | 2021 CURRENT TRAFFIC VO | 2026 BACKGRO GROWTH | 2026 BACKGRO GROWTH | 2026 BACKGROU TRAFFIC | 2026 BACKGROU TRAFFIC | 2026 W/ BKGRN W/O PROJ | 2026 W/ BKGRN W/O PROJ | 2026 Project Trips | 2026 Project Trips | 2026 W/ BKGRD W/ Project | 2026 W/ BKGRD W/ Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0% | 41 | EB LT | 42 | 44 | 42 | 0 | 0 | 44 | 42 | | | 44 | 42 |
| 0% | 8 | EB THRU | 8 | 9 | 8 | 0 | 0 | 9 | 8 | | | 9 | 8 |
| 0% | 44 | EB RT | 45 | 48 | 45 | 5 | 5 | 53 | 51 | | | 53 | 51 |
| 1% | 30 | WB LT | 31 | 32 | 31 | 0 | 0 | 32 | 31 | | | 32 | 31 |
| 1% | 14 | WB THRU | 14 | 15 | 14 | 0 | 0 | 15 | 14 | | | 15 | 14 |
| 1% | 23 | WB RT | 24 | 25 | 24 | 8 | 8 | 33 | 32 | 5 | | 38 | 32 |
| 0% | 59 | NB LT | 61 | 64 | 61 | 0 | 0 | 64 | 61 | | | 64 | 61 |
| 4% | 578 | NB THRU | 596 | 626 | 596 | 78 | 82 | 704 | 677 | 7 | | 711 | 677 |
| 4% | 66 | NB RT | 68 | 71 | 68 | 5 | 5 | 76 | 73 | 3 | | 79 | 73 |
| 0% | 30 | SB LT | 31 | 32 | 31 | 0 | 0 | 32 | 31 | | | 32 | 31 |
| 1% | 1299 | SB THRU | 1338 | 1407 | 1338 | 135 | 142 | 1542 | 1480 | 18 | | 1560 | 1480 |
| 1% | 59 | SB RT | 61 | 64 | 61 | 2 | 2 | 66 | 63 | | | 66 | 63 |
| | 2251 | | 2319 | 2438 | 2319 | 233 | 245 | 2671 | 2564 | 33 | 0 | 2704 | 2564 |
| | | Existing LOS= | | | | | | | | | | | |
| | | LOS with IMP = | | | | | | | | | | | |

SB
EB RT + WB LT + SB Thru = 1415

PROJECT NUMBER: Project Nam Latah Glen Residential
3 INTERSEC SR 195 & Inland Empire Way

**PM PEAK HOUR**
2021 Adjstment Factor

| | |
|---|---|
| INITIAL COUNT DATE | 1/7/2021 |
| COUNT RATE TO EX | 1.00% |
| N/S GROWTH RATE | 1.00% |
| E/W GROWTH RATE | 1.00% |
| PEAK HOUR FACTOR | 0.94 |

1.000

| | |
|---|---|
| EB | 1.000 |
| WB | 1.000 |
| NB | 1.000 |
| SB | 1.000 |

| | | |
|---|---|---|
| YRS TO EXISTING | 0 | |
| YRS TO PHZ 1 | 5 | Horizon Year |
| YRS TO PHZ 2 | | 5 |

| | N/S | |
|---|---|---|
| PHASE I GROWTH F | 1.051 | Horizon Year Growth Rate |
| PHASE 2 GROWTH F | 1.000 | 1.051 |

tate

| TRK % | 2021 INITIAL COUNT | MOVEMEN | 2021 CURRENT TRAFFIC VO | 2026 BACKGRO GROWTH | 2026 BACKGRO GROWTH | 2026 BACKGROU TRAFFIC | 2026 BACKGROU TRAFFIC | 2026 W/ BKGRN W/O PROJ | 2026 W/ BKGRN W/O PROJ | 2026 Project Trips | 2026 Project Trips | 2026 W/ BKGRD W/ Project | 2026 W/ BKGRD W/ Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | EB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | | EB THRU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 0% | 3 | EB RT | 3 | 3 | 3 | 0 | 0 | 3 | 3 | 14 | | 17 | 3 |
| | | WB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | | WB THRU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | | WB RT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | | NB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | | NB THRU | 0 | 0 | 0 | 91 | 96 | 91 | 96 | 18 | | 109 | 96 |
| | | NB RT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | SB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 1% | 1038 | SB THRU | 1038 | 1091 | 1038 | 132 | 139 | 1223 | 1177 | | | 1223 | 1177 |
| 1% | 12 | SB RT | 12 | 13 | 12 | 0 | 0 | 13 | 12 | 26 | | 39 | 12 |
| | 1053 | | 1053 | 1107 | 1053 | 223 | 234 | 1330 | 1287 | 58 | 0 | 1388 | 1287 |
| | | Existing LOS= | | | | | | | | | | | |
| | | LOS with IMP = | | | | | | | | | | | |

SB
SB LT + SB Thru + SB RT = 1050

Covid Factor for 2021 at SR 195 & Inland Empire Way

1415/1050 = 1.347241

# BACKGROUND PROJECTS

Original Background Projects

1 INTERSECTION: SR 195 & 16th Avenue
AM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Addition | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | | | | | 0 |
| EB THRU | | | | | 0 |
| EB RT | | | 1 | | 1 |
| | | | | | 0 |
| WB LT | | | | | 0 |
| WB THRU | | | | | 0 |
| WB RT | | | | | 0 |
| | | | | | 0 |
| NB LT | | | 3 | | 3 |
| NB THRU | 29 | 22 | 9 | 50 | 110 |
| NB RT | | | | | 0 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | 10 | 8 | 3 | 16 | 37 |
| SB RT | | | | | 0 |

Original Background Projects

**2** INTERSECTION: SR 195 & Thorpe Avenue
AM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Addition | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | | | | | 0 |
| EB THRU | | | | | 0 |
| EB RT | | | 1 | 1 | 2 |
| | | | | | 0 |
| WB LT | | | | | 0 |
| WB THRU | | | | | 0 |
| WB RT | | | | 2 | 2 |
| | | | | | 0 |
| NB LT | | | | | 0 |
| NB THRU | 29 | 22 | 14 | 52 | 117 |
| NB RT | | | 1 | 7 | 8 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | 10 | 8 | 4 | 18 | 40 |
| SB RT | | | 2 | 2 | 4 |

Original Background Projects

3 INTERSECTION: SR 195 & Inland Empire Way
AM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Addition | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | | | | | 0 |
| EB THRU | | | | | 0 |
| EB RT | | | | | 0 |
| | | | | | 0 |
| WB LT | | | | | 0 |
| WB THRU | | | | | 0 |
| WB RT | | | | | 0 |
| | | | | | 0 |
| NB LT | | | | | 0 |
| NB THRU | | | | | 0 |
| NB RT | | | | | 0 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | 10 | 8 | 5 | 19 | 42 |
| SB RT | | | | | 0 |

Original Background Projects

**4** INTERSECTION: Cheney-Spokane Road & SR 195 NB on/off Ramps
AM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Addition | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | 6 | 16 | 3 | | 25 |
| EB THRU | | | | | 0 |
| EB RT | | | | | 0 |
| | | | | | 0 |
| WB LT | | | | | 0 |
| WB THRU | | | | | 0 |
| WB RT | | | | | 0 |
| | | | | | 0 |
| NB LT | | | | 2 | 2 |
| NB THRU | | | | | 0 |
| NB RT | | | | | 0 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | | | | | 0 |
| SB RT | | | | | 0 |

Original Background Projects

5 INTERSECTION: Cheney-Spokane Road & SR 195 SB on/off Ramps 1
AM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Addition | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | | | | | 0 |
| EB THRU | 6 | 16 | 3 | | 25 |
| EB RT | | | | 1 | 1 |
| | | | | | 0 |
| WB LT | | | | | 0 |
| WB THRU | | | | 2 | 2 |
| WB RT | | | | | 0 |
| | | | | | 0 |
| NB LT | | | | | 0 |
| NB THRU | | | | | 0 |
| NB RT | | | | | 0 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | | | | | 0 |
| SB RT | | | | | 0 |

Original Background Projects

**6** INTERSECTION: Cheney-Spokane Road & SR 195 SB on/off Ramps 2
AM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Addition | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | | | | | 0 |
| EB THRU | | | | | 0 |
| EB RT | | | | | 0 |
| | | | | | 0 |
| WB LT | | | | 2 | 2 |
| WB THRU | | | | | 0 |
| WB RT | | | | | 0 |
| | | | | | 0 |
| NB LT | | | | | 0 |
| NB THRU | | | | | 0 |
| NB RT | 6 | 16 | 3 | 1 | 26 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | 2 | 6 | 1 | | 9 |
| SB RT | | | | | 0 |

Original Background Projects

7 INTERSECTION: SR 195 & Meadowlane Drive
AM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Addition | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | 23 | 6 | 12 | | 41 |
| EB THRU | | | | | 0 |
| EB RT | 12 | 8 | 4 | | 24 |
| | | | | | 0 |
| WB LT | | | | | 0 |
| WB THRU | | | | | 0 |
| WB RT | | | | | 0 |
| | | | | | 0 |
| NB LT | 4 | 3 | 1 | | 8 |
| NB THRU | 23 | 6 | 12 | 61 | 102 |
| NB RT | | | | | 0 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | | | | 20 | 20 |
| SB RT | 8 | 2 | 4 | | 14 |

Original Background Projects

8 INTERSECTION: SR 195 & Hatch Road
AM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Addition | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | | | | | 0 |
| EB THRU | | | | | 0 |
| EB RT | | | | | 0 |
| | | | | | 0 |
| WB LT | | | | 4 | 4 |
| WB THRU | | | | | 0 |
| WB RT | 2 | 2 | 1 | | 5 |
| | | | | | 0 |
| NB LT | | | | | 0 |
| NB THRU | 2 | 1 | 0 | 16 | 19 |
| NB RT | | | | 11 | 11 |
| | | | | | 0 |
| SB LT | 6 | 4 | 2 | | 12 |
| SB THRU | 6 | 4 | 2 | 20 | 32 |
| SB RT | | | | | 0 |

Original Background Projects

1 INTERSECTION: SR 195 & 16th Avenue
PM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Additio | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | | | | | 0 |
| EB THRU | | | | | 0 |
| EB RT | | | 3 | | 3 |
| | | | | | 0 |
| WB LT | | | | | 0 |
| WB THRU | | | | | 0 |
| WB RT | | | | | 0 |
| | | | | | 0 |
| NB LT | | | 2 | | 2 |
| NB THRU | 17 | 17 | 6 | 34 | 74 |
| NB RT | | | | | 0 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | 29 | 28 | 10 | 56 | 123 |
| SB RT | | | | | 0 |

Original Background Projects

**2** INTERSECTION: SR 195 & Thorpe Avenue
PM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Additio | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | | | | | 0 |
| EB THRU | | | | | 0 |
| EB RT | | | 3 | 2 | 5 |
| | | | | | 0 |
| WB LT | | | | | 0 |
| WB THRU | | | | | 0 |
| WB RT | | | | 8 | 8 |
| | | | | | 0 |
| NB LT | | | | | 0 |
| NB THRU | 17 | 17 | 9 | 35 | 78 |
| NB RT | | | | 5 | 5 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | 29 | 28 | 14 | 64 | 135 |
| SB RT | | | 1 | 1 | 2 |

Original Background Projects

3 INTERSECTION: SR 195 & Inland Empire Way
PM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Additio | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | | | | | 0 |
| EB THRU | | | | | 0 |
| EB RT | | | | | 0 |
| | | | | | 0 |
| WB LT | | | | | 0 |
| WB THRU | | | | | 0 |
| WB RT | | | | | 0 |
| | | | | | 0 |
| NB LT | | | | | 0 |
| NB THRU | 17 | 17 | 17 | 40 | 91 |
| NB RT | | | | | 0 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | 29 | 28 | 9 | 66 | 132 |
| SB RT | | | | | 0 |

Original Background Projects

**4** INTERSECTION: Cheney-Spokane Road & SR 195 NB on/off Ramps
PM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Additio | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | 4 | 12 | 2 | | 18 |
| EB THRU | | | | | 0 |
| EB RT | | | | | 0 |
| | | | | | 0 |
| WB LT | | | | | 0 |
| WB THRU | | | | | 0 |
| WB RT | | | | | 0 |
| | | | | | 0 |
| NB LT | | | | 1 | 1 |
| NB THRU | | | | | 0 |
| NB RT | | | | | 0 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | | | | | 0 |
| SB RT | | | | | 0 |

Original Background Projects

5 INTERSECTION: Cheney-Spokane Road & SR 195 SB on/off Ramps 1
PM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Additio | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | | | | | 0 |
| EB THRU | 4 | 12 | 2 | | 18 |
| EB RT | | | | 2 | 2 |
| | | | | | 0 |
| WB LT | | | | | 0 |
| WB THRU | | | | 1 | 1 |
| WB RT | | | | | 0 |
| | | | | | 0 |
| NB LT | | | | | 0 |
| NB THRU | | | | | 0 |
| NB RT | | | | | 0 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | | | | | 0 |
| SB RT | | | | | 0 |

Original Background Projects

**6** INTERSECTION: Cheney-Spokane Road & SR 195 SB on/off Ramps 2
PM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Additic | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | | | | | 0 |
| EB THRU | | | | | 0 |
| EB RT | | | | | 0 |
| | | | | | 0 |
| WB LT | | | | 1 | 1 |
| WB THRU | | | | | 0 |
| WB RT | | | | | 0 |
| | | | | | 0 |
| NB LT | | | | | 0 |
| NB THRU | | | | | 0 |
| NB RT | 4 | 12 | 2 | 2 | 20 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | 6 | 18 | 4 | | 28 |
| SB RT | | | | | 0 |

Original Background Projects

7 INTERSECTION: SR 195 & Meadowlane Drive
PM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Additic | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | 13 | 5 | 7 | | 25 |
| EB THRU | | | | | 0 |
| EB RT | 10 | 4 | 3 | | 17 |
| | | | | | 0 |
| WB LT | | | | | 0 |
| WB THRU | | | | | 0 |
| WB RT | | | | | 0 |
| | | | | | 0 |
| NB LT | 16 | 6 | 4 | | 26 |
| NB THRU | 13 | 5 | 7 | 41 | 66 |
| NB RT | | | | | 0 |
| | | | | | 0 |
| SB LT | | | | | 0 |
| SB THRU | | | | 68 | 68 |
| SB RT | 23 | 10 | 13 | | 46 |

Original Background Projects

8 INTERSECTION: SR 195 & Hatch Road
PM PEAK HOUR
Background

| Trips | Eagle Ridge 13th Additio | The Summit | Tangle Ridge | Wheatland Estates | Total |
|---|---|---|---|---|---|
| EB LT | | | | | 0 |
| EB THRU | | | | | 0 |
| EB RT | | | | | 0 |
| | | | | | 0 |
| WB LT | | | | 13 | 13 |
| WB THRU | | | | | 0 |
| WB RT | 8 | 3 | 2 | | 13 |
| | | | | | 0 |
| NB LT | | | | | 0 |
| NB THRU | 8 | 3 | 2 | 41 | 54 |
| NB RT | | | | 7 | 7 |
| | | | | | 0 |
| SB LT | 5 | 2 | 2 | | 9 |
| SB THRU | 5 | 2 | 1 | 68 | 76 |
| SB RT | | | | | 0 |

2021 Traffic Factor For Covid Pandemic AM

PROJECT NUMBER: Project Na Latah Glen Residential
2 INTERSEC SR 195 & Thorpe Avenue

**AM PEAK HOUR**
2021 Adjstment Factor

| | | | |
|---|---|---|---|
| INITIAL COUNT DATE | 11/6/2018 | | |
| COUNT RATE TO EX | 1.00% | 1.030 | |
| N/S GROWTH RATE | 1.00% | | |
| E/W GROWTH RATE | 1.00% | | |
| PEAK HOUR FACTOI | 0.85 | | |

| | |
|---|---|
| EB | 1.030 |
| WB | 1.030 |
| NB | 1.030 |
| SB | 1.030 |

| | | |
|---|---|---|
| YRS TO EXISTING | 3 | |
| YRS TO PHZ 1 | 5 | Horizon Year |
| YRS TO PHZ 2 | | 5 |

| | N/S | |
|---|---|---|
| PHASE I GROWTH F | 1.051 | Horizon Year Growth F |
| PHASE 2 GROWTH F | 1.000 | 1.051 |

| TRK % | 2018 INITIAL COUNT | MOVEMEN | 2021 CURRENT TRAFFIC VO | 2026 BACKGRO GROWTH | 2026 BACKGRO GROWTH | 2026 ACKGROU TRAFFIC | 2026 ACKGROU TRAFFIC | 2026 W/ BKGRN W/O PROJ | 2026 W/ BKGRN W/O PROJ | Project Trips | Project Trips | 2026 W/ BKGRD W/ Project | 2026 W/ BKGRD W/ Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3% | 94 | EB LT | 97 | 102 | 97 | 0 | 0 | 102 | 97 | | | 102 | 97 |
| 3% | 11 | EB THRU | 11 | 12 | 11 | 0 | 0 | 12 | 11 | | | 12 | 11 |
| 3% | 55 | EB RT | 57 | 60 | 57 | 2 | 2 | 62 | 59 | | | 62 | 59 |
| 5% | 17 | WB LT | 18 | 18 | 18 | 0 | 0 | 18 | 18 | | | 18 | 18 |
| 5% | 3 | WB THRU | 3 | 3 | 3 | 0 | 0 | 3 | 3 | | | 3 | 3 |
| 5% | 20 | WB RT | 21 | 22 | 21 | 2 | 2 | 24 | 23 | 2 | | 26 | 23 |
| 8% | 38 | NB LT | 39 | 41 | 39 | 0 | 0 | 41 | 39 | | | 41 | 39 |
| 1% | 1379 | NB THRU | 1421 | 1493 | 1421 | 117 | 123 | 1610 | 1544 | 12 | | 1622 | 1544 |
| 1% | 117 | NB RT | 121 | 127 | 121 | 8 | 8 | 135 | 129 | 4 | | 139 | 129 |
| 13% | 15 | SB LT | 15 | 16 | 15 | 0 | 0 | 16 | 15 | | | 16 | 15 |
| 12% | 498 | SB THRU | 513 | 539 | 513 | 40 | 42 | 579 | 555 | 7 | | 586 | 555 |
| 12% | 21 | SB RT | 22 | 23 | 22 | 4 | 4 | 27 | 26 | | | 27 | 26 |
| | 2268 | | 2337 | 2456 | 2337 | 173 | 182 | 2629 | 2519 | 25 | 0 | 2654 | 2519 |
| | | Existing LOS= | | | | | | | | | | | |
| | | LOS with IMP = | | | | | | | | | | | |

SB

EB RT + WB LT + SB Thru = 587

PROJECT NUMBER: Project Na Latah Glen Residential
3 INTERSEC SR 195 & Inland Empire Way

**AM PEAK HOUR**
2021 Adjstment Factor

| | | | |
|---|---|---|---|
| INITIAL COUNT DATE | 1/6/2021 | | |
| COUNT RATE TO EX | 1.00% | 1.000 | |
| N/S GROWTH RATE | 1.00% | | |
| E/W GROWTH RATE | 1.00% | | |
| PEAK HOUR FACTOI | 0.90 | | |

| | |
|---|---|
| EB | 1.000 |
| WB | 1.000 |
| NB | 1.000 |
| SB | 1.000 |

| | | |
|---|---|---|
| YRS TO EXISTING | 0 | |
| YRS TO PHZ 1 | 5 | Horizon Year |
| YRS TO PHZ 2 | | 5 |

| | N/S | |
|---|---|---|
| PHASE I GROWTH F | 1.051 | Horizon Year Growth F |
| PHASE 2 GROWTH F | 1.000 | 1.051 |

| TRK % | 2021 INITIAL COUNT | MOVEMEN | 2021 CURRENT TRAFFIC VO | 2026 BACKGRO GROWTH | 2026 BACKGRO GROWTH | 2026 ACKGROU TRAFFIC | 2026 ACKGROU TRAFFIC | 2026 W/ BKGRN W/O PROJ | 2026 W/ BKGRN W/O PROJ | Project Trips | Project Trips | 2026 W/ BKGRD W/ Project | 2026 W/ BKGRD W/ Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | EB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | EB THRU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 9% | 11 | EB RT | 11 | 12 | 11 | 0 | 0 | 12 | 11 | 23 | | 35 | 11 |
| | 0 | WB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | WB THRU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | WB RT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | NB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | NB THRU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | | 19 | 0 |
| | 0 | NB RT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | SB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 10% | 492 | SB THRU | 492 | 517 | 492 | 42 | 44 | 559 | 536 | | | 559 | 536 |
| 10% | 2 | SB RT | 2 | 2 | 2 | 0 | 0 | 2 | 2 | 10 | | 12 | 2 |
| | 505 | | 505 | 531 | 505 | 42 | 44 | 573 | 549 | 52 | 0 | 625 | 549 |
| | | Existing LOS= | | | | | | | | | | | |
| | | LOS with IMP = | | | | | | | | | | | |

SB

SB LT + SB Thru + SB RT = 494

Covid Factor for 2021 at SR 195 & Inland Empire Way

587/494 = 1.188809

2021 Traffic Factor For Covid Pandemic PM

PROJECT NUMBER: Project Nam Latah Glen Residential
2 **INTERSEC** SR 195 & Thorpe Avenue

| | | | |
|---|---|---|---|
| INITIAL COUNT DATE | 11/13/2018 | | |
| COUNT RATE TO EX | **1.00%** | 1.030 | |
| N/S GROWTH RATE | **1.00%** | | |
| E/W GROWTH RATE | **1.00%** | | |
| PEAK HOUR FACTOR | 0.93 | | |

**PM PEAK HOUR**
2021 Adjstment Factor

| | |
|---|---|
| **EB** | 1.030 |
| **WB** | 1.030 |
| **NB** | 1.030 |
| **SB** | 1.030 |

| | | |
|---|---|---|
| YRS TO EXISTING | 3 | |
| YRS TO PHZ 1 | 5 | Horizon Year |
| YRS TO PHZ 2 | | 5 |
| | N/S | |
| PHASE I GROWTH F | 1.051 | Horizon Year Growth Rate |
| PHASE 2 GROWTH F | 1.000 | 1.051 |

| TRK % | 2018 INITIAL COUNT | MOVEMEN | 2021 CURRENT TRAFFIC VO | 2026 BACKGRO GROWTH | 2026 BACKGRO GROWTH | 2026 BACKGROU TRAFFIC | 2026 BACKGROU TRAFFIC | 2026 W/ BKGRN W/O PROJ | 2026 W/ BKGRN W/O PROJ | Project Trips | Project Trips | 2026 W/ BKGRD W/ Project | 2026 W/ BKGRD W/ Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0% | 41 | EB LT | 42 | 44 | 42 | 0 | 0 | 44 | 42 | | | 44 | 42 |
| 0% | 8 | EB THRU | 8 | 9 | 8 | 0 | 0 | 9 | 8 | | | 9 | 8 |
| 0% | 44 | EB RT | 45 | 48 | 45 | 5 | 5 | 53 | 51 | | | 53 | 51 |
| 1% | 30 | WB LT | 31 | 32 | 31 | 0 | 0 | 32 | 31 | | | 32 | 31 |
| 1% | 14 | WB THRU | 14 | 15 | 14 | 0 | 0 | 15 | 14 | | | 15 | 14 |
| 1% | 23 | WB RT | 24 | 25 | 24 | 8 | 8 | 33 | 32 | 5 | | 38 | 32 |
| 0% | 59 | NB LT | 61 | 64 | 61 | 0 | 0 | 64 | 61 | | | 64 | 61 |
| 4% | 578 | NB THRU | 596 | 626 | 596 | 78 | 82 | 704 | 677 | 7 | | 711 | 677 |
| 4% | 66 | NB RT | 68 | 71 | 68 | 5 | 5 | 76 | 73 | 3 | | 79 | 73 |
| 0% | 30 | SB LT | 31 | 32 | 31 | 0 | 0 | 32 | 31 | | | 32 | 31 |
| 1% | 1299 | SB THRU | 1338 | 1407 | 1338 | 135 | 142 | 1542 | 1480 | 18 | | 1560 | 1480 |
| 1% | 59 | SB RT | 61 | 64 | 61 | 2 | 2 | 66 | 63 | | | 66 | 63 |
| | 2251 | | 2319 | 2438 | 2319 | 233 | 245 | 2671 | 2564 | 33 | 0 | 2704 | 2564 |
| | | Existing LOS= | | | | | | | | | | | |
| | | LOS with IMP = | | | | | | | | | | | |

SB

EB RT + WB LT + SB Thru = 1415

PROJECT NUMBER: Project Nam Latah Glen Residential
3 **INTERSEC** SR 195 & Inland Empire Way

| | | | |
|---|---|---|---|
| INITIAL COUNT DATE | 1/7/2021 | | |
| COUNT RATE TO EX | **1.00%** | 1.000 | |
| N/S GROWTH RATE | **1.00%** | | |
| E/W GROWTH RATE | **1.00%** | | |
| PEAK HOUR FACTOR | 0.94 | | |

**PM PEAK HOUR**
2021 Adjstment Factor

| | |
|---|---|
| **EB** | 1.000 |
| **WB** | 1.000 |
| **NB** | 1.000 |
| **SB** | 1.000 |

| | | |
|---|---|---|
| YRS TO EXISTING | 0 | |
| YRS TO PHZ 1 | 5 | Horizon Year |
| YRS TO PHZ 2 | | 5 |
| | N/S | |
| PHASE I GROWTH F | 1.051 | Horizon Year Growth Rate |
| PHASE 2 GROWTH F | 1.000 | 1.051 |

| TRK % | 2021 INITIAL COUNT | MOVEMEN | 2021 CURRENT TRAFFIC VO | 2026 BACKGRO GROWTH | 2026 BACKGRO GROWTH | 2026 BACKGROU TRAFFIC | 2026 BACKGROU TRAFFIC | 2026 W/ BKGRN W/O PROJ | 2026 W/ BKGRN W/O PROJ | Project Trips | Project Trips | 2026 W/ BKGRD W/ Project | 2026 W/ BKGRD W/ Project |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | EB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | | EB THRU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 0% | 3 | EB RT | 3 | 3 | 3 | 0 | 0 | 3 | 3 | 14 | | 17 | 3 |
| | | WB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | | WB THRU | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | | WB RT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | | NB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | | NB THRU | 0 | 0 | 0 | 91 | 96 | 91 | 96 | 18 | | 109 | 96 |
| | | NB RT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| | 0 | SB LT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 1% | 1038 | SB THRU | 1038 | 1091 | 1038 | 132 | 139 | 1223 | 1177 | | | 1223 | 1177 |
| 1% | 12 | SB RT | 12 | 13 | 12 | 0 | 0 | 13 | 12 | 26 | | 39 | 12 |
| | 1053 | | 1053 | 1107 | 1053 | 223 | 234 | 1330 | 1287 | 58 | 0 | 1388 | 1287 |
| | | Existing LOS= | | | | | | | | | | | |
| | | LOS with IMP = | | | | | | | | | | | |

SB

SB LT + SB Thru + SB RT = 1050

Covid Factor for 2021 at SR 195 & Inland Empire Way

1415/1050 = 1.347241

Original Background Projects

INTERSECTION: ramp
AM PEAK HOUR
Background

| Trips | Amazon | The Summit | Eagle Ridge | Tangle Ridge | Wheatland Estated | Total |
|---|---|---|---|---|---|---|
| I-90 Main | 8 | | 0 | | | 8 |
| US 195 EB | | 17 | 23 | 6 | 35 | 40 |

Original Background Projects

INTERSECTION: ramp
PM PEAK HOUR
Background

| Trips | Amazon | The Summit | Eagle Ridge | Tangle Ridge | Wheatland Estated | Total |
|---|---|---|---|---|---|---|
| I-90 Main | 719 | | 0 | | | 719 |
| US 195 EB | | 13 | 13 | 4 | 24 | 26 |

## BACKGROUND TRAFFIC GROWTH & BACKGROUND PROJECTS

### *Background Traffic Growth*

Background traffic growth is an anticipated increase in traffic volume from year to year. As the existing land uses that surround a transportation facility mature, an increase in traffic results and may be due to either an increase in drivers per household or a household's purchase of an additional vehicle. Many things can cause an increase in the traffic volumes of a facility. The objective of the background traffic growth rate is to anticipate what the traffic volumes may be in the future. The background traffic growth rate for an area or street is determined by means of physical counts collected by local governmental agencies. The counts are compared on a yearly basis and a rate of increase is calculated from the data.

The background growth rate was determined to be 1.0% per year. Based on a seven-year build out, compounded annually, the total increase in traffic rate for the year 2025 is anticipated to be 1.072.

### *Background Project Traffic*

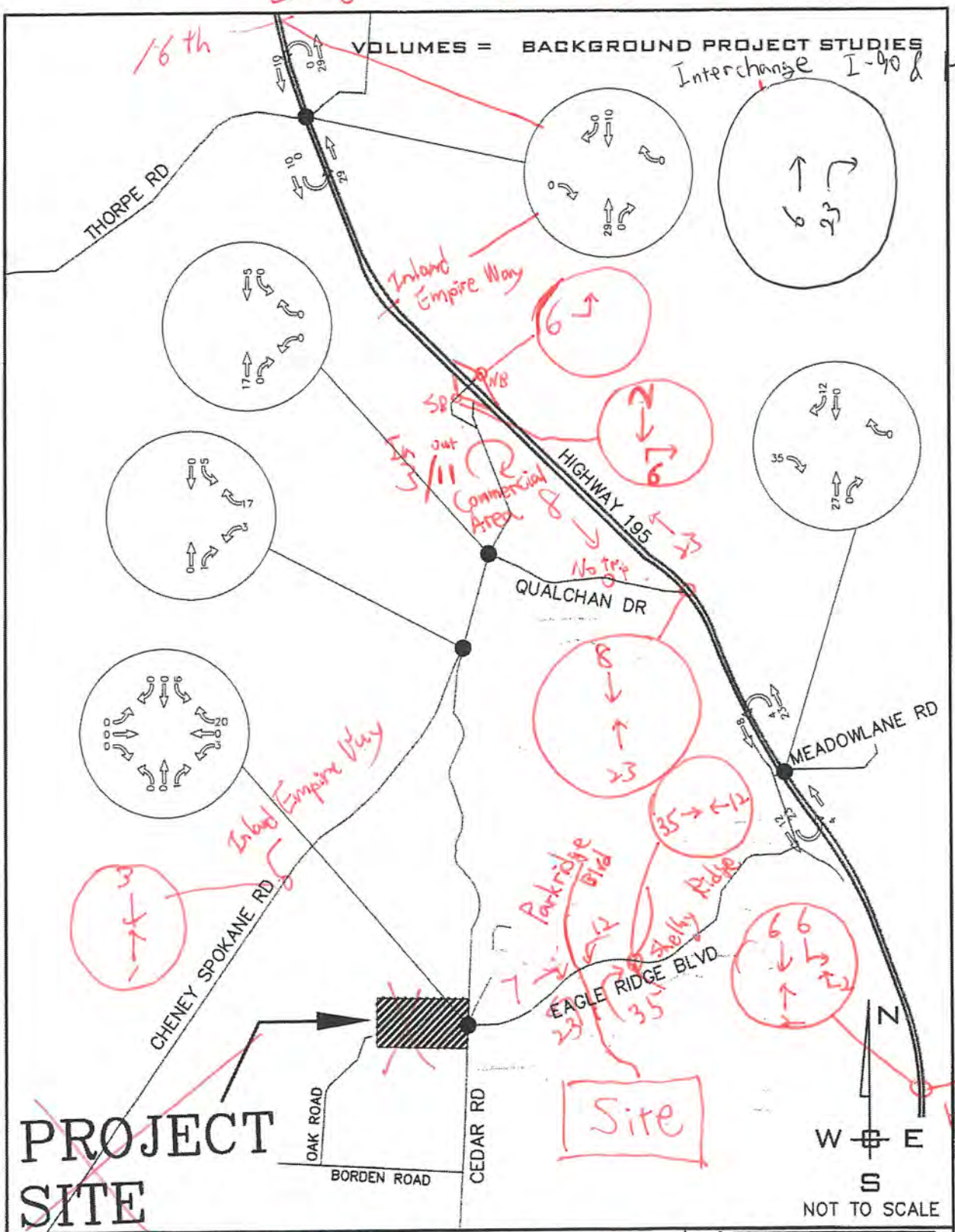
In addition to the natural increase in background growth, background projects that have already been approved or have made application and have been vested before this project have been included. The background projects scoped for this analysis are shown in Table 3. The background project traffic volumes used for this report are shown on Figure 5 and Figure 6.

**Table 3 – Background Projects and Vested AM & PM Trips**

| Background Project | Remaining Lots/ units | AM Peak Hour Trips | | | PM Peak Hour Trips | | |
|---|---|---|---|---|---|---|---|
| | | Total | In | Out | Total | In | Out |
| Eagle Ridge | 104 | 77 | 19 | 58 | 103 | 65 | 38 |
| **Total Vested** | **104** | **77** | **19** | **58** | **103** | **65** | **38** |

Note: all of the trips shown are not anticipated to travel through the scoped intersections.

Eagle Ridge 13th Edition




| | |
|---|---|
| PROJ #: | 18-2178 |
| DATE: | 3/19/19 |
| DRAWN: | TAE |
| APPROVED: | TRW |

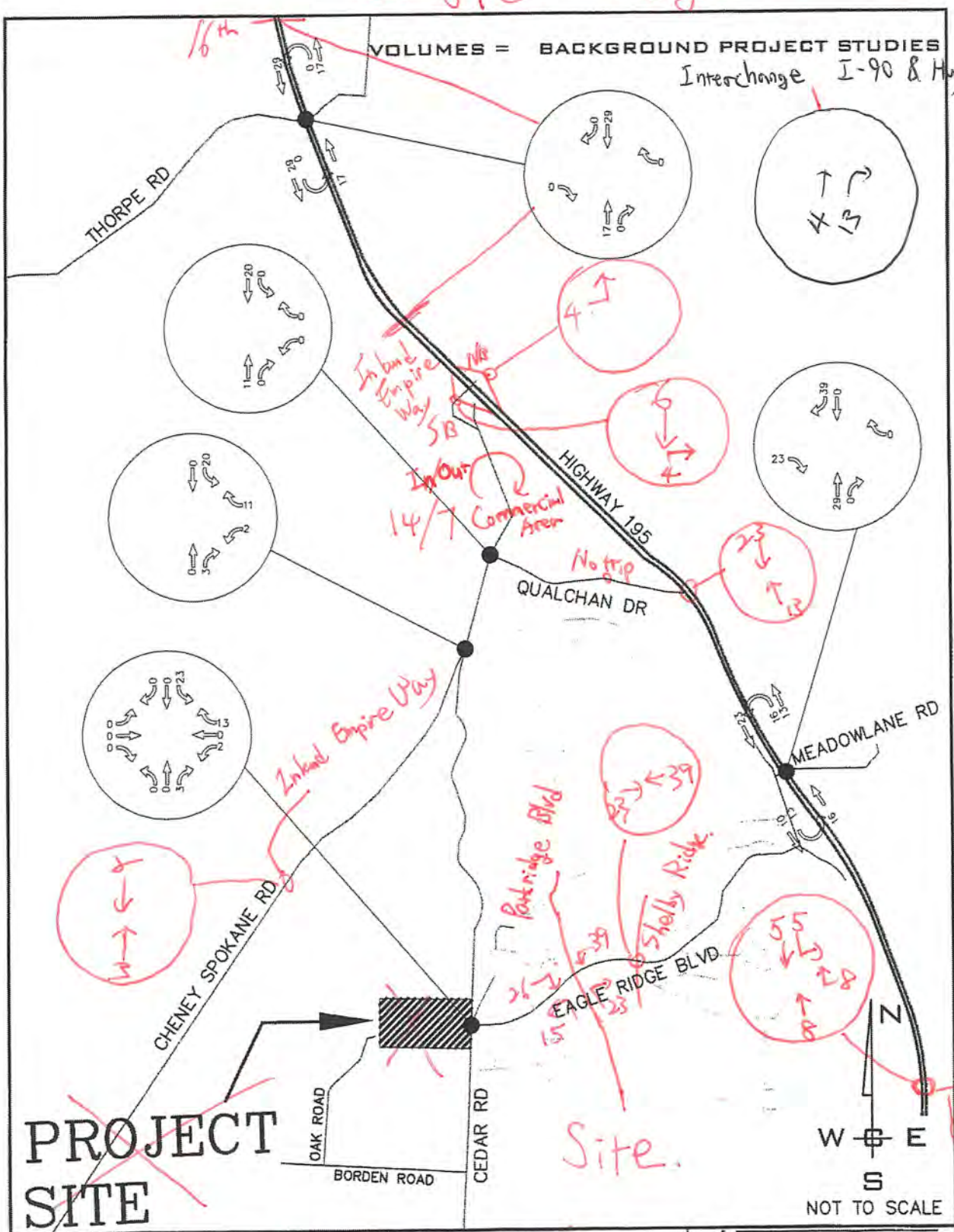
TRAFFIC IMPACT ANALYSIS
THE SUMMIT
EAGLE RIDGE BLVD & CEDAR RD
SPOKANE, WASHINGTON

FIGURE 5 — AM BACKGROUND TRIPS


WCE
WHIPPLE CONSULTING ENGINEERS
CIVIL AND TRANSPORTATION ENGINEERING
21 S. PINES ROAD
SPOKANE VALLEY, WASHINGTON 99206
PH: 509-893-2617 FAX: 509-926-0227


| Total | In | Out |
|---|---|---|
| 77 | 19 | 58 |

Eagle Ridge 13th Edition




| | | |
|---|---|---|
| PROJ #: 18-2178<br>DATE: 3/19/19<br>DRAWN: TAE<br>APPROVED: TRW | TRAFFIC IMPACT ANALYSIS<br>THE SUMMIT<br>EAGLE RIDGE BLVD & CEDAR RD<br>SPOKANE, WASHINGTON | WCE<br>WHIPPLE CONSULTING ENGINEERS<br>CIVIL AND TRANSPORTATION ENGINEERING<br>21 S. PINES ROAD<br>SPOKANE VALLEY, WASHINGTON 99206<br>PH: 509-893-2617 FAX: 509-926-0227 |
| FIGURE 6 | PM BACKGROUND TRIPS | |

| Total | In | Out |
|---|---|---|
| | | |

## TRIP GENERATION AND DISTRIBUTION

As noted earlier, trip generation rates for the AM and PM peak hours are determined by the use of the *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE). The purpose of the *Trip Generation Manual* is to compile and quantify empirical data into trip generation rates for specific land uses within the US, UK and Canada.

For the proposed plat, the 99 Single Family lots, Land Use Code (LUC) # 210 Single Family Detached Housing was used to establish the number of potential trips generated by the land use. The trip generation rates and the anticipated number of AM and PM peak hour trips for the land use of the proposed project are shown on Table 4.

**Table 4-Trip Generation Rates for LUC # 210 – Single Family Detached Housing**

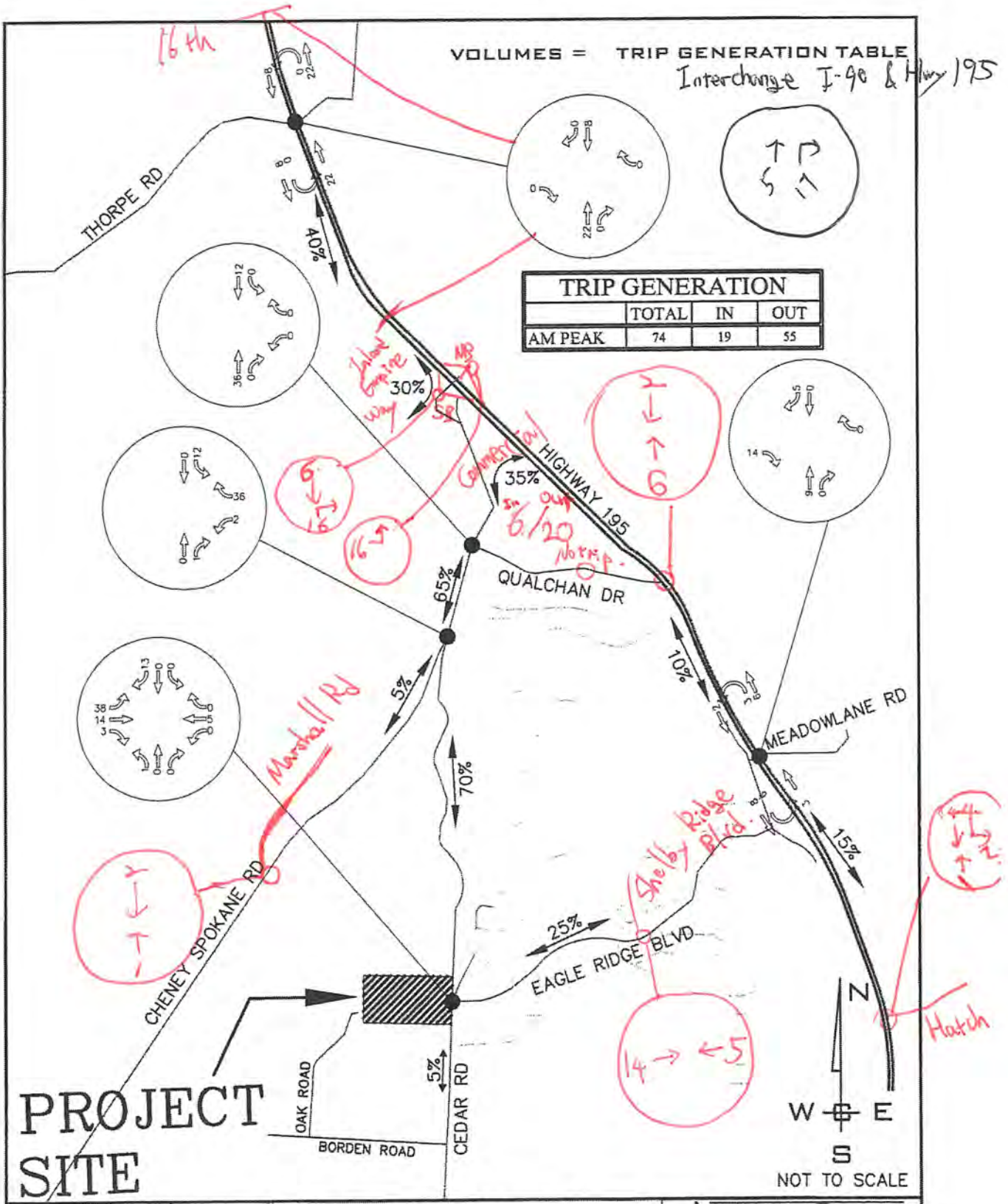
| Dwelling Units | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | Vol. @ 0.74 trips per Unit | Directional Distribution | | Vol. @ 0.99 trips per Unit | Directional Distribution | |
| | | 25% In | 75% Out | | 63% In | 37% Out |
| 99 | 74 | 19 | 55 | 99 | 62 | 37 |

| Average Daily Trip Ends (ADT) | | |
|---|---|---|
| Units | Rate | ADT |
| 99 | 9.44 | 935 |

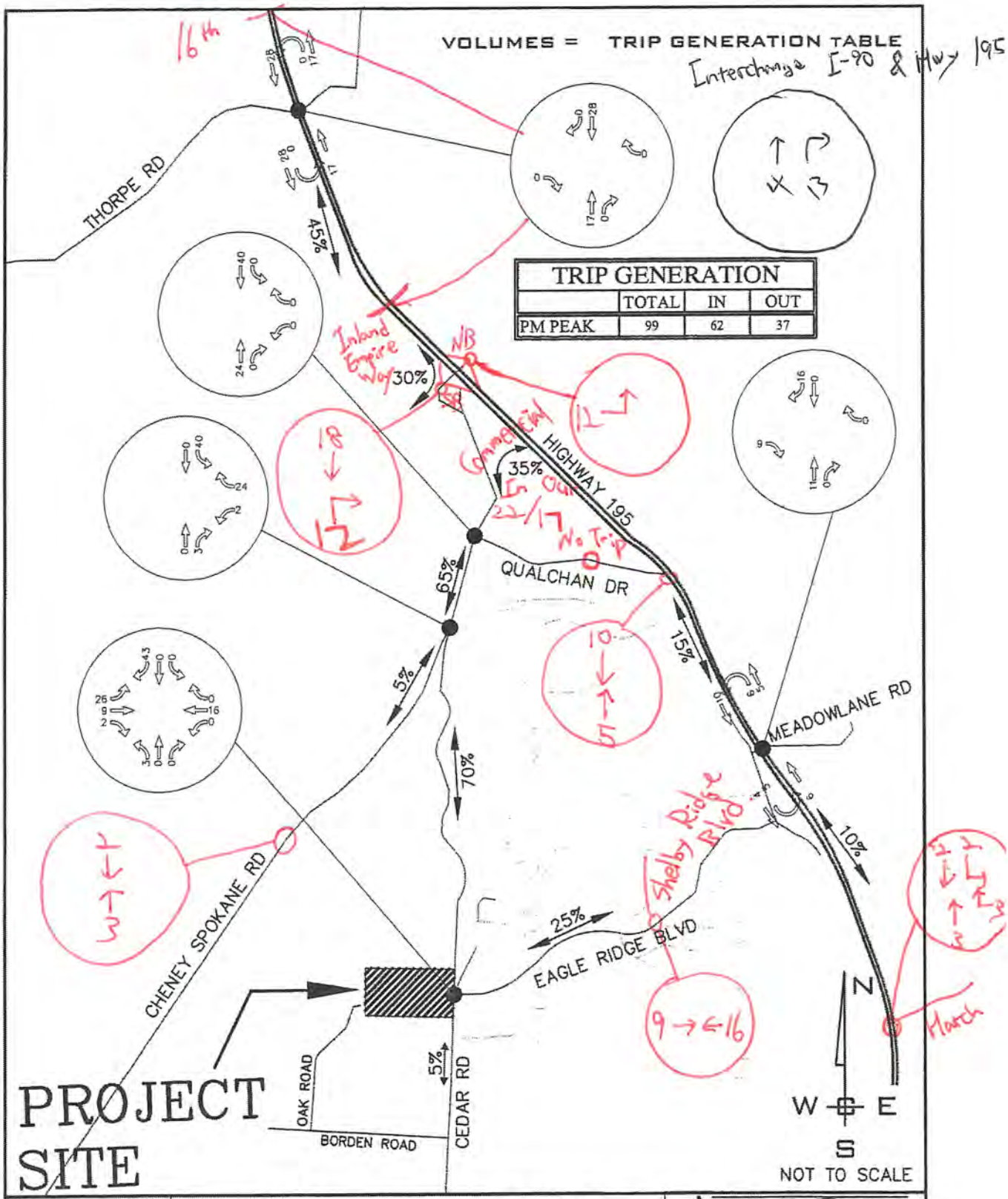
As shown in Table 4, the proposed residential development is anticipated to generate 74 trips in the AM peak hour with 19 trips entering the site and 55 trips exiting the site. In the PM peak hour, the land use of the development is anticipated to generate 99 trips with 62 trips entering the site and 37 trips exiting the site. The land use of the development is anticipated to generate 935 average daily trips to/from the project over a 24-hour period.

### Trip Distribution Characteristics of the Proposed Project

Considering many factors such as the surrounding transportation facilities, typical commuting patterns, existing development in the area, and Average Daily Traffic counts, traffic for the proposed development is anticipated as follows: 70% of trips are anticipated to travel to/from the north via Cedar Road, 5% of trips are anticipated to travel to/from the south via Cedar Road and 25% of trips are anticipated to travel to/from the east via Eagle Ridge Boulevard. Please see Figures 3 & 4 to see a graphical representation of these distribution.




| | | |
|---|---|---|
| PROJ #: 18-2178<br>DATE: 3/19/19<br>DRAWN: TAE<br>APPROVED: TRW | TRAFFIC IMPACT ANALYSIS<br>**THE SUMMIT**<br>EAGLE RIDGE BLVD & CEDAR RD<br>SPOKANE, WASHINGTON | WCE<br>WHIPPLE CONSULTING ENGINEERS<br>CIVIL AND TRANSPORTATION ENGINEERING<br>21 S. PINES ROAD<br>SPOKANE VALLEY, WASHINGTON 99206<br>PH: 509-893-2617 FAX: 509-926-0227 |
| FIGURE 7 | AM PROJECT TRIP DISTRIBUTION | |




| TRIP GENERATION | | | |
|---|---|---|---|
| | TOTAL | IN | OUT |
| PM PEAK | 99 | 62 | 37 |

PROJ #: 18-2178
DATE: 3/19/19
DRAWN: TAE
APPROVED: TRW

TRAFFIC IMPACT ANALYSIS
**THE SUMMIT**
EAGLE RIDGE BLVD & CEDAR RD
SPOKANE, WASHINGTON

FIGURE 8

PM PROJECT TRIP DISTRIBUTION

WCE
WHIPPLE CONSULTING ENGINEERS
CIVIL AND TRANSPORTATION ENGINEERING
21 S. PINES ROAD
SPOKANE VALLEY, WASHINGTON 99206
PH: 509-893-2617 FAX: 509-926-0227

**Trip Generation Characteristics for the Proposed Project**

As noted earlier, trip generation rates are determined by use of the *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE) to determine the number of trips generated during the AM & PM Peak Hour. The purpose of the *Trip Generation Manual* is to compile and quantify empirical trip generation rates for specific land uses within the US, UK and Canada.

Proposed Land Use

For the proposed 45 lot development, Land Use Code LUC#210, Single Family Detached Housing was used to establish the number of additional potential trips generated by the proposed land use. The trip generation rates and the anticipated number of AM & PM peak hour trips for the proposed land use are shown on Table 1.

**Table 1 - Trip Generation Rates for LUC # 210 – Single Family Detached Housing**

| No. of Dwelling Units | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | Vol. @ 0.74 trips per Unit | Directional Distribution | | Vol. @ 0.99 trips per Unit | Directional Distribution | |
| | | 25% In | 75% Out | | 63% In | 37% Out |
| 45 | 34 | 8 | 26 | 45 | 28 | 17 |

| Average Daily Trip Ends (ADT) | | |
|---|---|---|
| Units | Rate | ADT |
| 45 | 9.44 | 425 |

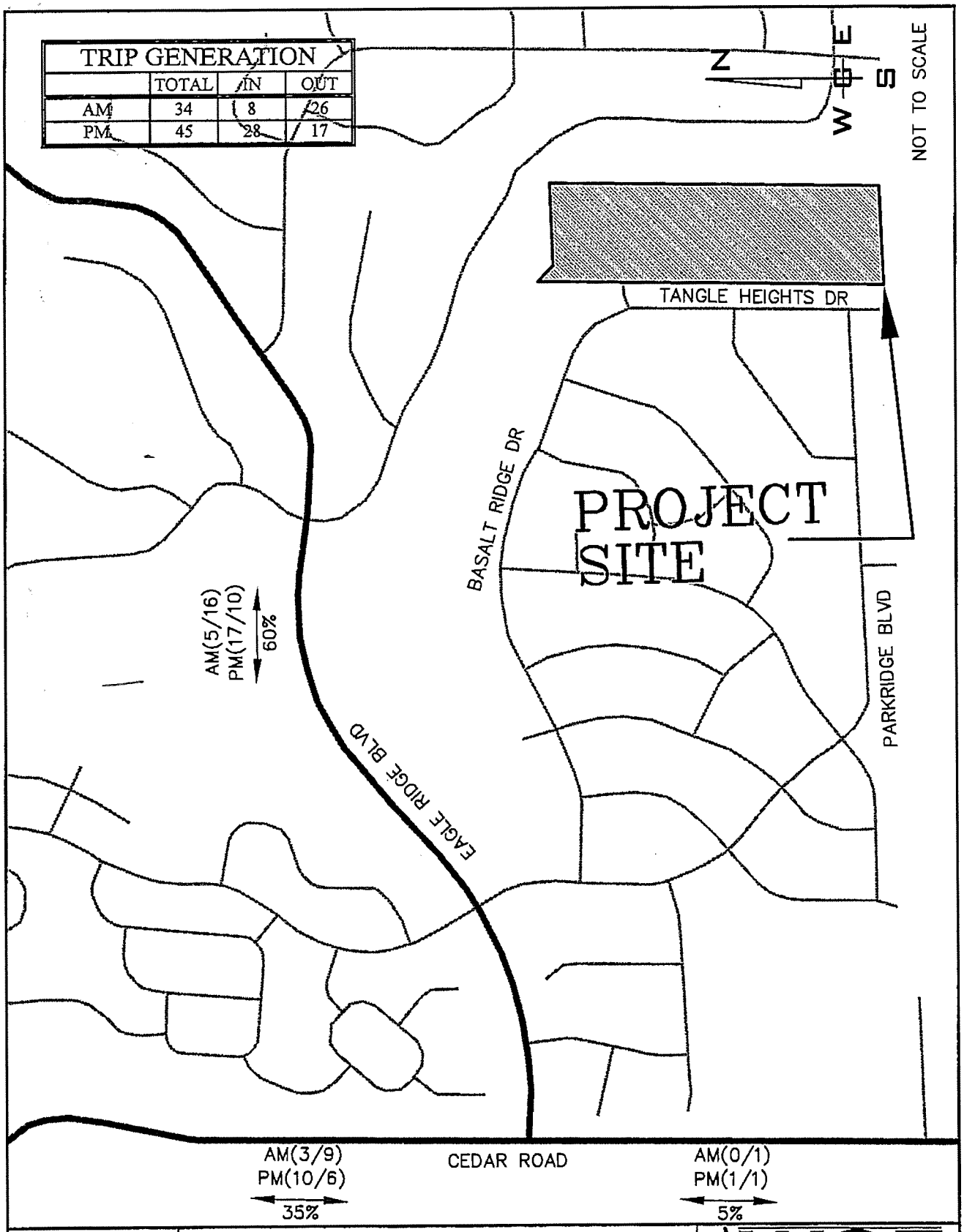
As shown in Table 1, the land use of the development is anticipated to generate 34 trips in the AM peak hour with 8 trips entering the site and 26 trips exiting the site. In the PM peak hour, the land use of the development is anticipated to generate 45 trips with 28 trips entering the site and 17 trips exiting the site. The land use of the development is anticipated to generate 425 average daily trips to/from the project.

## TRIP DISTRIBUTION

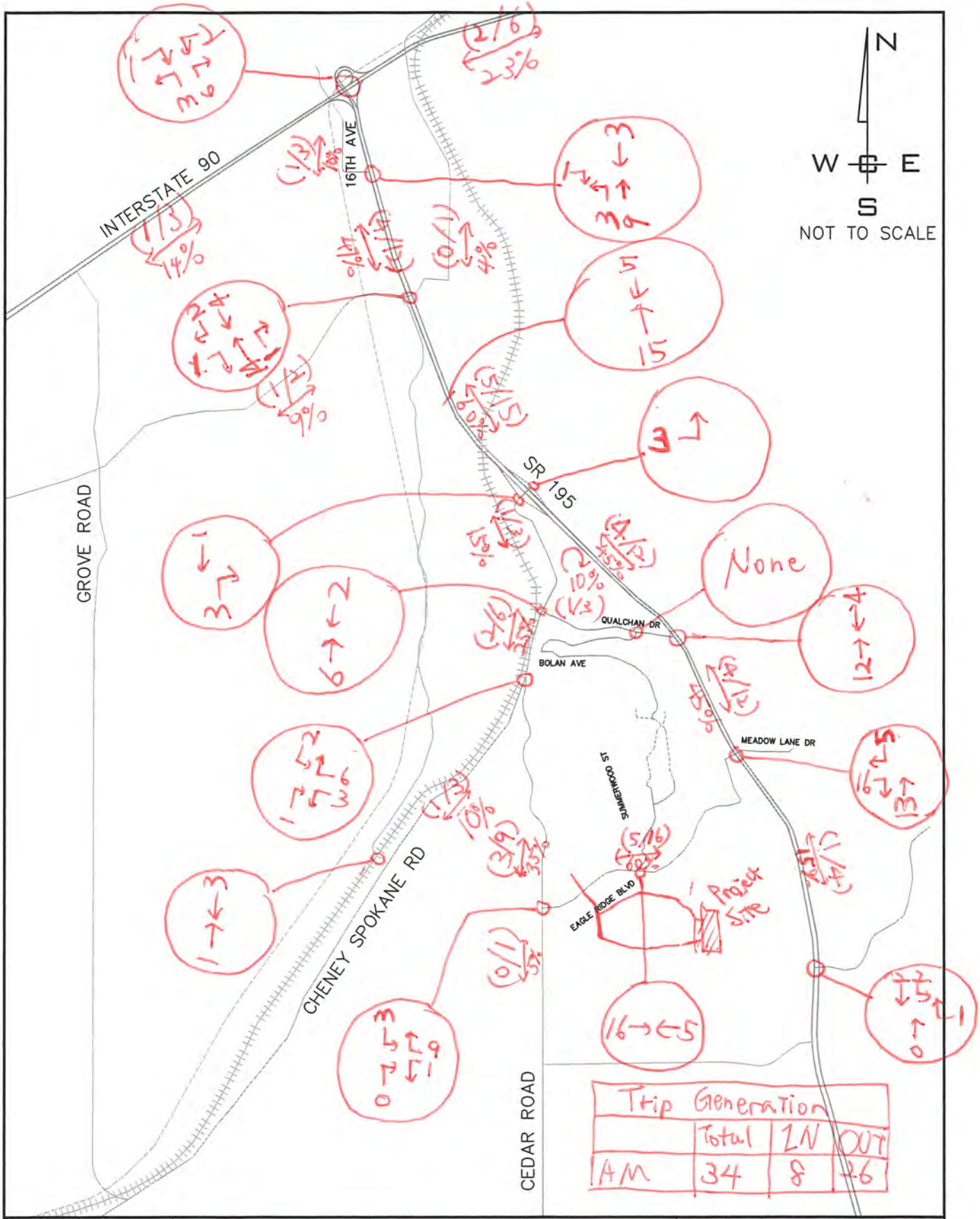
As shown on the site plan, the site will be accessed by Boulder Ridge Drive (please see Figure 2, Site Plan). It is anticipated that the residents of the site will generally use the following roadways:

**Parkridge Boulevard** is generally a north-south, two-way, 2-lane local access road that extends south from Eagle Ridge Boulevard through Basalt Ridge Drive, Pheasant Ridge Drive Woodhaven Drive, and Siena Peak Drive before curving east and intersecting with Tangle Heights Drive. Parkridge Boulevard primarily serves residential land uses. The speed limit on Parkridge Boulevard is 25 MPH

**Basalt Ridge Drive** is an east-west, two-way, 2-lane local access road that extends east from Parkridge Boulevard through Pheasant Ridge Drive, Woodhaven Drive, Siena Peak Drive, and Forest Ridge Drive before curving south, going through Boulder Ridge Drive and transitioning into Tangle Heights Drive. Basalt Ridge Drive primarily serves residential land uses. The speed limit on Basalt Ridge Drive is 25 MPH.




| | | |
|---|---|---|
| PROJ #: 19-2394<br>DATE: 02/06/20<br>DRAWN: KMK<br>APPROVED: TRW | TRIP GENERATION & DISTRIBUTION<br>**TANGLE RIDGE**<br>BOULDER RIDGE DR. & TANGLE HEIGHTS DR.<br>SPOKANE, WASHINGTON | WCE<br>WHIPPLE CONSULTING ENGINEERS<br>CIVIL AND TRANSPORTATION ENGINEERING<br>21 S. PINES ROAD<br>SPOKANE VALLEY, WASHINGTON 99206<br>PH: 509-893-2617 FAX: 509-926-0227 |
| FIGURE 3 | PROJECT TRIP DISTRIBUTION | |



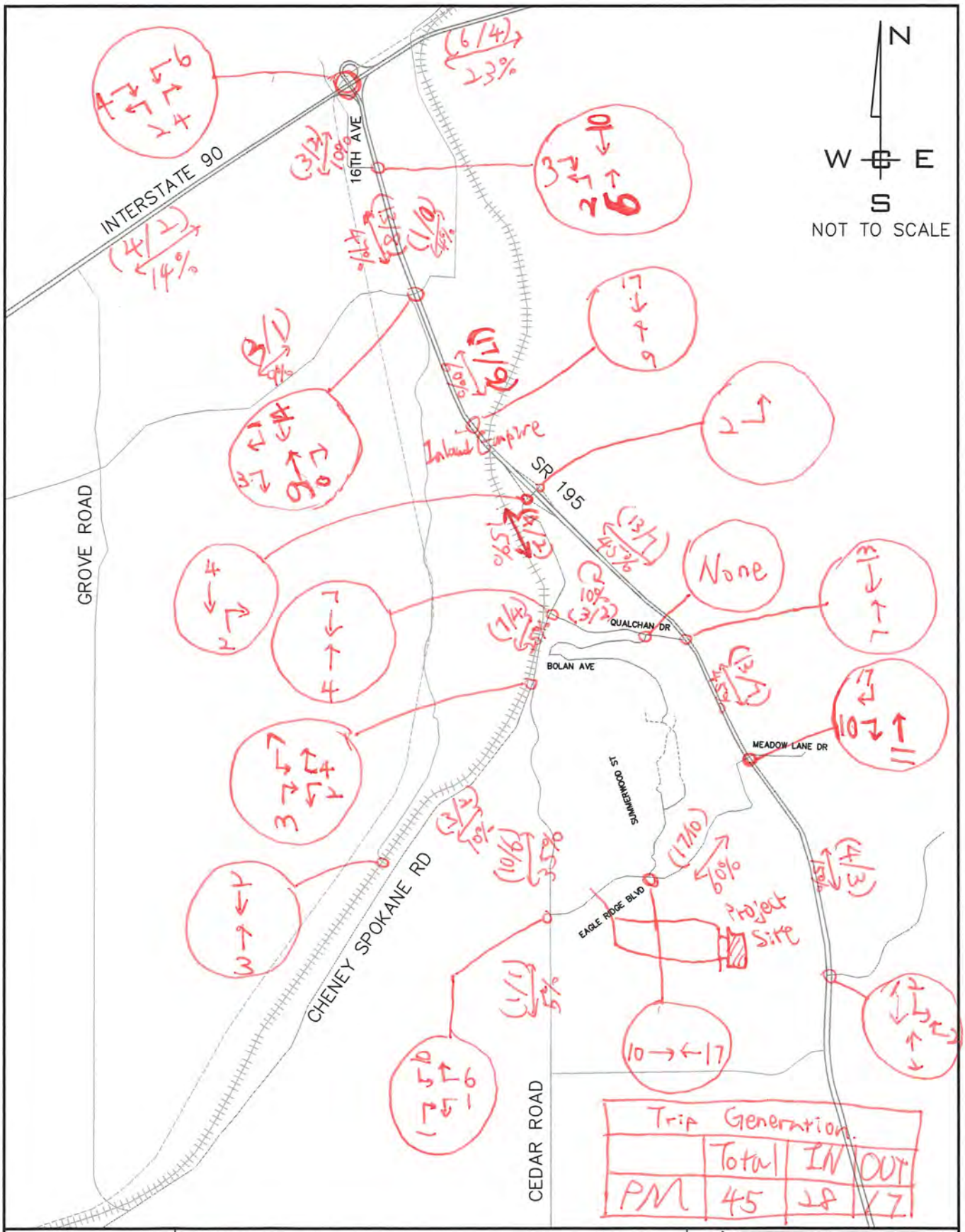

| Trip Generation | | | |
|---|---|---|---|
| | Total | IN | OUT |
| AM | 34 | 8 | 26 |

PROJ #:
DATE:
DRAWN:
APPROVED:

# Tangle Ridge

AM Background Project

WCE
WHIPPLE CONSULTING ENGINEERS
CIVIL AND TRANSPORTATION ENGINEERING
21 SOUTH PINES ROAD
SPOKANE VALLEY, WASHINGTON 99206
PH: 509-893-2617 FAX: 509-926-0227



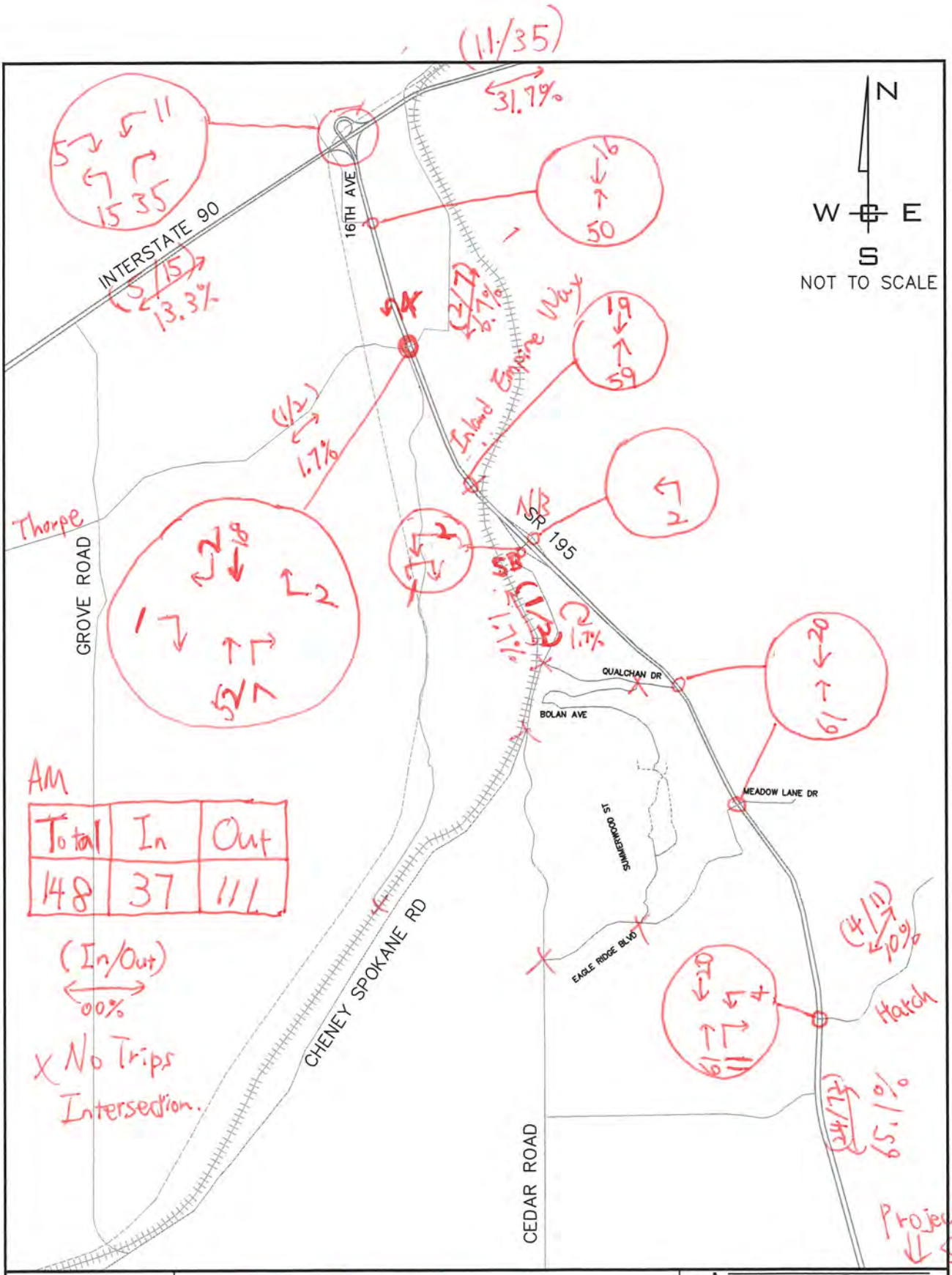

| Trip Generation | | | |
|---|---|---|---|
| | Total | IN | OUT |
| PM | 45 | 28 | 17 |

PROJ #:
DATE:
DRAWN:
APPROVED:

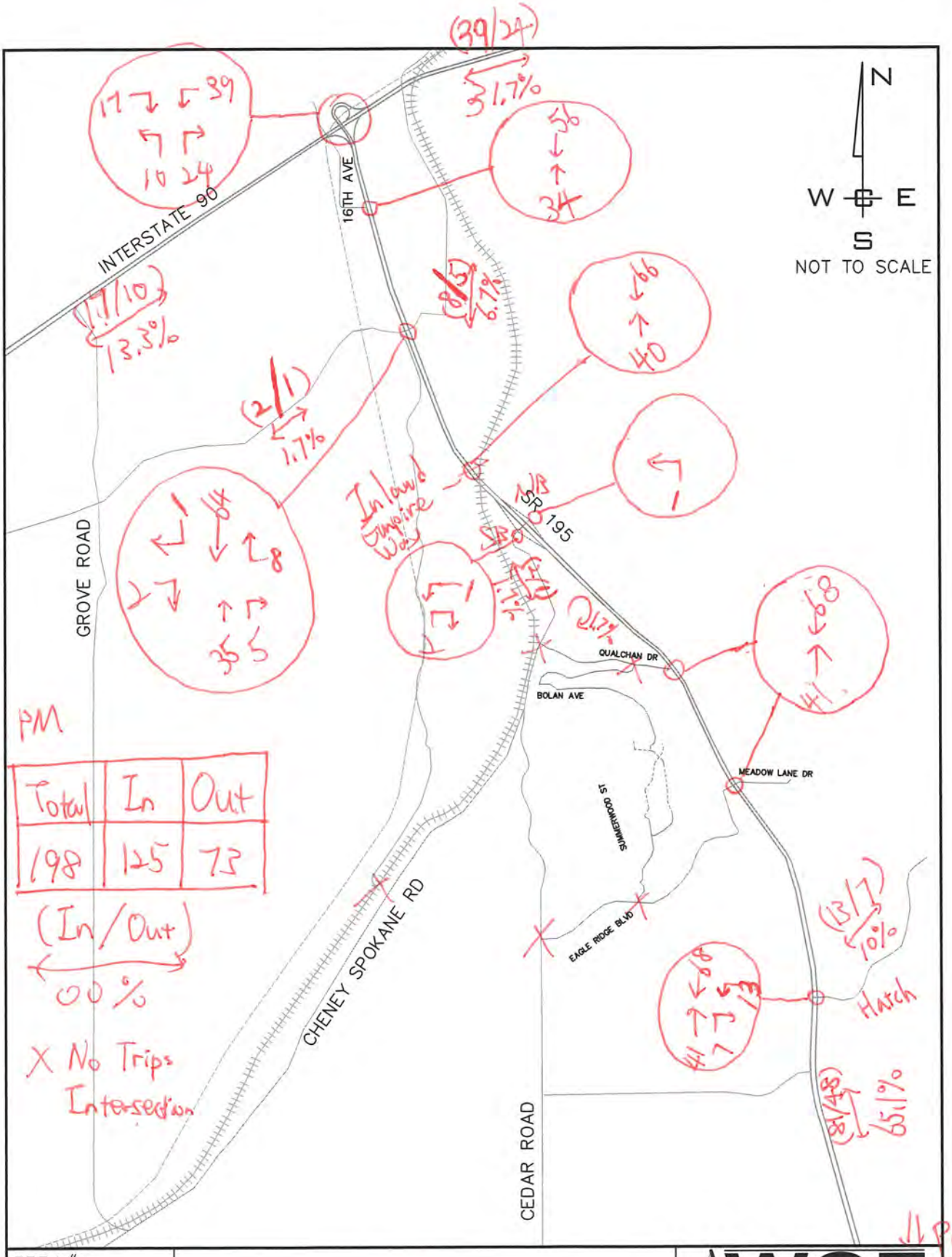
# Tangle Ridge

PM Background Project

WCE
WHIPPLE CONSULTING ENGINEERS
CIVIL AND TRANSPORTATION ENGINEERING
21 SOUTH PINES ROAD
SPOKANE VALLEY, WASHINGTON 99206
PH: 509-893-2617 FAX: 509-926-0227




| | | |
|---|---|---|
| PROJ #:<br>DATE:<br>DRAWN:<br>APPROVED: | Wheatland Estates | WCE<br>WHIPPLE CONSULTING ENGINEERS<br>CIVIL AND TRANSPORTATION ENGINEERING<br>21 SOUTH PINES ROAD<br>SPOKANE VALLEY, WASHINGTON 99206<br>PH: 509-893-2617 FAX: 509-926-0227 |
| | AM Background Project | |




PM

| Total | In | Out |
|---|---|---|
| 198 | 125 | 73 |

(In/Out)

00%

X No Trips Intersection

| | | |
|---|---|---|
| PROJ #:<br>DATE:<br>DRAWN:<br>APPROVED: | Wheatland Estates | WCE<br>WHIPPLE CONSULTING ENGINEERS<br>CIVIL AND TRANSPORTATION ENGINEERING<br>21 SOUTH PINES ROAD<br>SPOKANE VALLEY, WASHINGTON 99206<br>PH: 509-893-2617 FAX: 509-926-0227 |
| | PM Background Project | |

// Project Site

Whipple Consulting Engineers, Inc.

WCE No. 18-2224
March 2, 2021

Washington State Department of Transportation
2714 N Mayfair
Spokane WA 99207

Attn: Greg Figg, WSDOT Planner

**Re: Wheatland Estates Proposed Traffic / Transportation Conditions of Approval.**

Dear Greg

We understand that WSDOT is looking for a net value of no new trips at the eastbound on ramp of the I-90/SR 195 interchange, due to level of service concerns on I-90. Attached to this letter is a trip distribution for the anticipated PM Peak hour trips to/from the Wheatland Estates Development. The distribution is based upon the Street Light analysis for the town of Spangle to/from the corridor that was established within TIA Addendum.

As shown in the expanded distribution figures of the 110 AM and 73 PM outbound trips, it is anticipated that 35 AM trips and 24 PM trips have the potential to use the I-90/SR195 interchange.

In order to achieve a net value of zero trips at the interchange ramp. We propose that the project construct the 16th Avenue island project and participate in the Meadowlane Road ½ J-turn project. Given the small number of trips that need to be redirected we believe that these two projects will redirect more trips than the Spangle - Wheatland Estates project will need to meet its net zero requirement.

We propose that the following conditions be accepted by WSDOT, the Town of Spangle and Spokane County:

> That the proposed land development project is outside of the City of Spokane and in the Town of Spangle, WA. While not in the City of Spokane, like most projects in a joint planning area, it is estimated that most if not all the 196 PM Peak hour generated trips will go to and from the City of Spokane for commerce, employment, culture or recreation. As has been the case in joint planning areas within Spokane County that have a direct impact to City of Spokane facilities, it has been demonstrated that this project will have a direct impact to the SR-195 and Meadowlane Intersection, which is currently at Level of Service F. In order to pay a proportionate share of the impacts within this corridor to the SR-195 and I-90 Interchange and the SR-195 and Meadowlane Intersection, the following conditions are proposed to adequately mitigate the impacts from this development.

1. Within the City of Spokane South Service Area, the current transportation impact fee is $1,160.64 / PM Peak trip paid at time of building permit. As this project is in the Town of Spangle and there exists no inter-local agreement between the City and the Town, respectively the Spangle-Wheatland project shall participate in the Meadowlane ½ J-turn project for a value of $1,160.64 x 197 lots = $228,646.08 less the cost of the 16th Avenue Improvements.
2. The Spangle-Wheatland project will construct the 16th Avenue and SR-195 Island Project at the noted intersection. The cost of this improvement has been estimated at $50,000.
3. Based on the cost of the 16th Avenue and SR-195 Island Project, it is anticipated that the Spangle-Wheatland project would contribute $228,646.08- $50,000 = $178,646.08 toward the Meadowlane and SR-195 ½ J-Turn project.
4. Based on previous projects within this corridor it would be expected that the Spangle-Wheatland project would post two bonds, one for the 16th Avenue Island Project and one for the Meadowlane ½ J-Turn project at the time of final plat of the first phase in addition to any bonds required to the Town of Spangle for said phase. These bonds would be in the name of both the Town of Spangle and the City of Spokane, these bonds can be released upon acceptance of the constructed projects by the WSDOT.
5. That the Spangle-Wheatland project accepts a condition to be a member of the LLC or other entity that will be created to construct the Meadowlane ½ J-Turn and that the project agrees to be responsible for its proportionate share even in the event that the value exceeds the $178,646.08, conversely, if the project is constructed and the value is less no additional payments to any public corporation would be required.
6. It would be the intent that the bond could be in effect for as many as 5 years from the time of preliminary plat approval, with the element being constructed prior to any plat extensions.

A follow-up assessment of the effectiveness of the 16th Avenue improvement or lack of increase in traffic at the SR-195 and I-90 Interchange, is required 120 days after final platting of the last lot. That assessment will include a pre- vs post-improvement analysis prepared by the applicant's traffic engineer. The purpose of the analysis is to determine to what extent, the proposed improvement results in the diversion of traffic from the SR 195 and I-90 Interchange northbound to eastbound ramp as a result of changes at the 16th Avenue Island project. The Meadowlane ½ J-turn would be exempt from any future analysis as this was an impact and LOS mitigatory contribution.

The effective analysis shall be based upon traffic data collected between 14 to 30 days prior (pre) to and after (post) the installation of the improvement, and opening of 16th Avenue.

During the period that data is being collected for the Pre- to Post-improvement analysis WSDOT will not change its ramp metering protocol for the I-90/SR 195 ramp interchange, in order to ensure that the results of the post-improvement analysis are not

affected by such changes. The applicant's traffic engineer is responsible for notifying WSDOT of the study dates. Notification is to be by email as well as by phone.

The Pre- vs Post- improvement assessment, will be submitted to WSDOT for information only, the development of the project is not conditioned upon the effectiveness of the improvement projects, given that match funds will have been spent, and that mitigation is consistent with the project impacts.

We believe that these proposed changes, along with other changes in the corridor, will reduce trips to the NB to EB ramp thereby positively impacting the ramp metered facility. Additionally, the improvements and participation at the Meadowlane ½ J-Turn will significantly improve Level of Service and Safety within the SR-195 Corridor by continuing to minimize conflicting movements. We would accept these as appropriate conditions to mitigate the peak hour trip impacts from this proposal.

For reference related to the Meadowland ½ J-Turn, LLC or constructed entity the following should apply.

**TABLE 1 – MEADOW LANE ½ J-TURN INTIAL CONTRIBUTION BY PROJECT**

| SR-195 DEVELOMENT IMPACTING MEADOWLANE | NUMBER OF LOTS | City Impact Fee CONTIBUTION AT $1,160.64 / LOT | CONTRIBUTION BY PROJECT AT $1,802.38 |
|---|---|---|---|
| Spangle – Wheatland Estates (less $50k for 16th Avenue) | 197 | $228,646.08<br>- $50,000.00<br>$178,646.08 | $178,646.08 |
| Tangle Ridge | 45 | $52,228.80 | $81,107.10 |
| Paras – Short Course | 32 | $37,140.48 | $57,676.16 |
| Talon / Qualchan View | 160 | $185.702.40 | $288,380.80 |
| Summit | 80 | $95,851.20 | $144,190.40 |
| Total | 514 | $546,568.96 | $750,000.54 |
| Estimated Improvement Cost | | $750,000.00 | |
| Estimated Short Fall | | $203,431.04 | ~ |
| Difference from Standard Impact Fee (Spangle does not have a waiver available) | 317 | $641.74 / lot extra | |
| Total Fee per lot ($1,160.64 + 641.74) | | $1,802.38/lot | |

We would accept this as mitigation for the Wheatland Estates project and will incorporate this into an updated and final TIA as this would then allow this project to proceed to hearing.
If you have any questions or comments in regard to this letter pleased feel free to contact us at (509) 893-2617.

Thank you

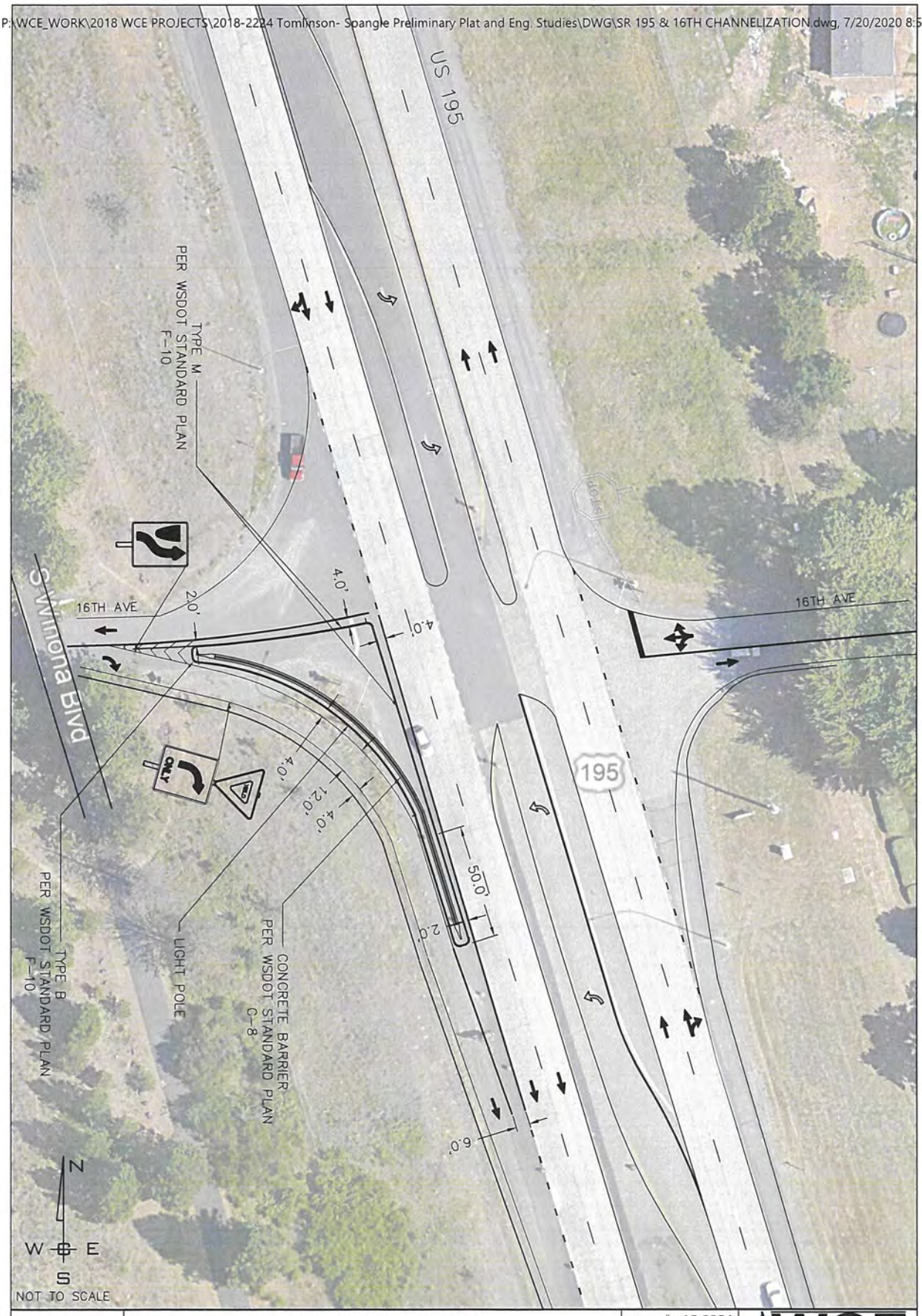

Todd R. Whipple, P.E.

TRW/bng

Encl: 16th Avenue Concept Raised Island and Barrier Figure A, B & C.
Meadowlane ½ J-turn Draft Intersection Plan for Approval (IPA)

CC: Barry Greene, P.E. Spokane County, Engineering and Roads
Inga Note, P.E. City of Spokane, Transportation Engineer

P:\WCE_WORK\2018 WCE PROJECTS\2018-2224 Tomlinson- Spangle Preliminary Plat and Eng. Studies\DWG\SR 195 & 16TH CHANNELIZATION.dwg, 7/20/2020 8:50:4




TRAFFIC IMPACT ANALYSIS
**WHEATLAND ESTATES**
CHENEY SPANGLE RD. & US195
SPANGLE, WASHINGTON

**ISLAND & BARRIER EXHIBIT**

FIGURE A

PROJ #: 18-2224
DATE: 05/12/20
DRAWN: BNG
APPROVED: TRW


WCE
WHIPPLE CONSULTING ENGINEERS
CIVIL, STRUCTURAL AND
TRANSPORTATION ENGINEERING
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WASHINGTON 99216
PH 509-893-2617 FAX 509-926-0227

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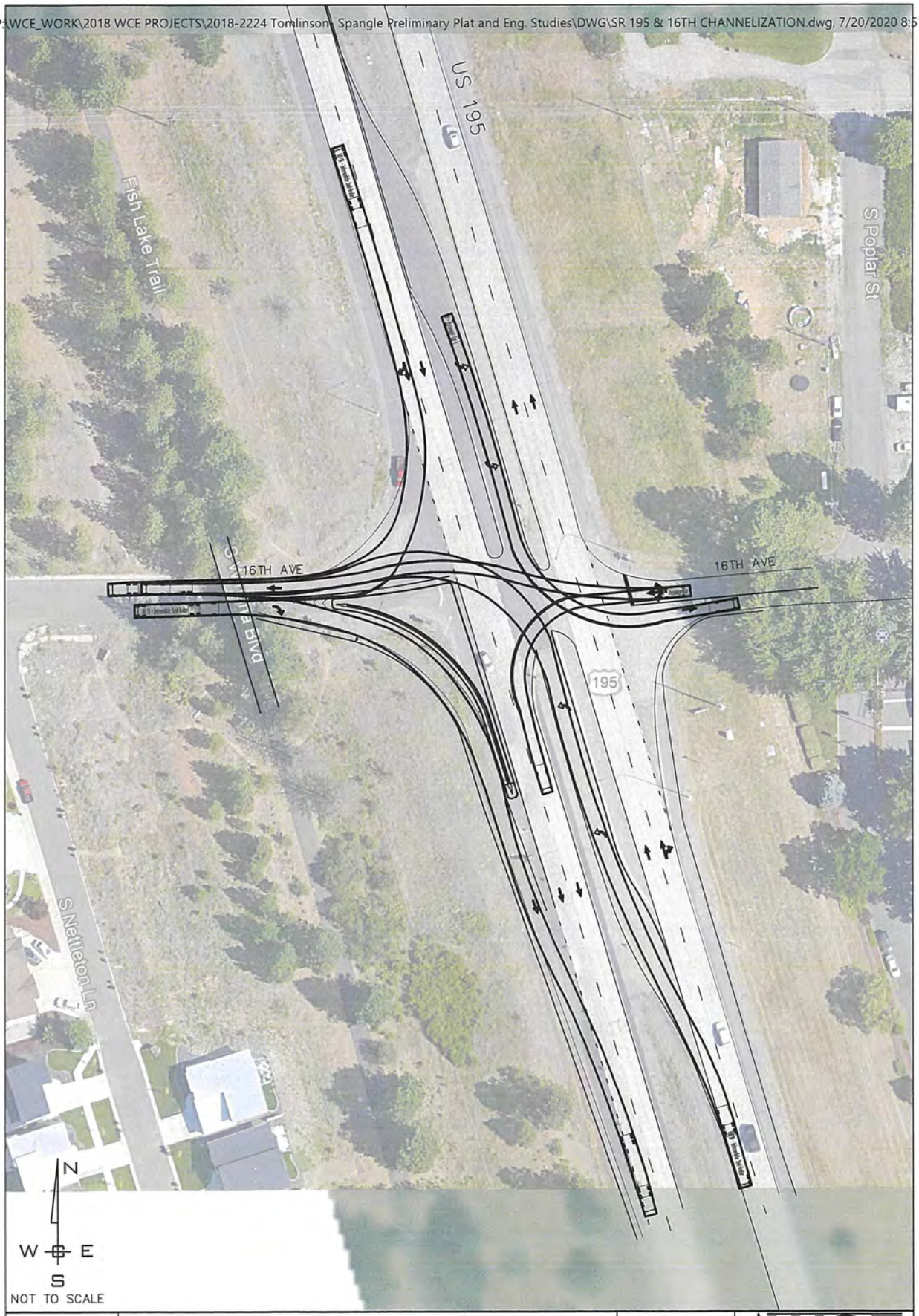


NOT TO SCALE

FIGURE B

TRAFFIC IMPACT ANALYSIS
WHEATLAND ESTATES
CHENEY SPANGLE RD. & US195
SPANGLE, WASHINGTON

VEHICLE TURNS EXHIBIT

PROJ #: 18-2224
DATE: 05/12/20
DRAWN: BNG
APPROVED: TRW

WCE
WHIPPLE CONSULTING ENGINEERS
CIVIL, STRUCTURAL AND
TRANSPORTATION ENGINEERING
2508 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WASHINGTON 99216
PH. 509-893-2617 FAX 509-926-0227

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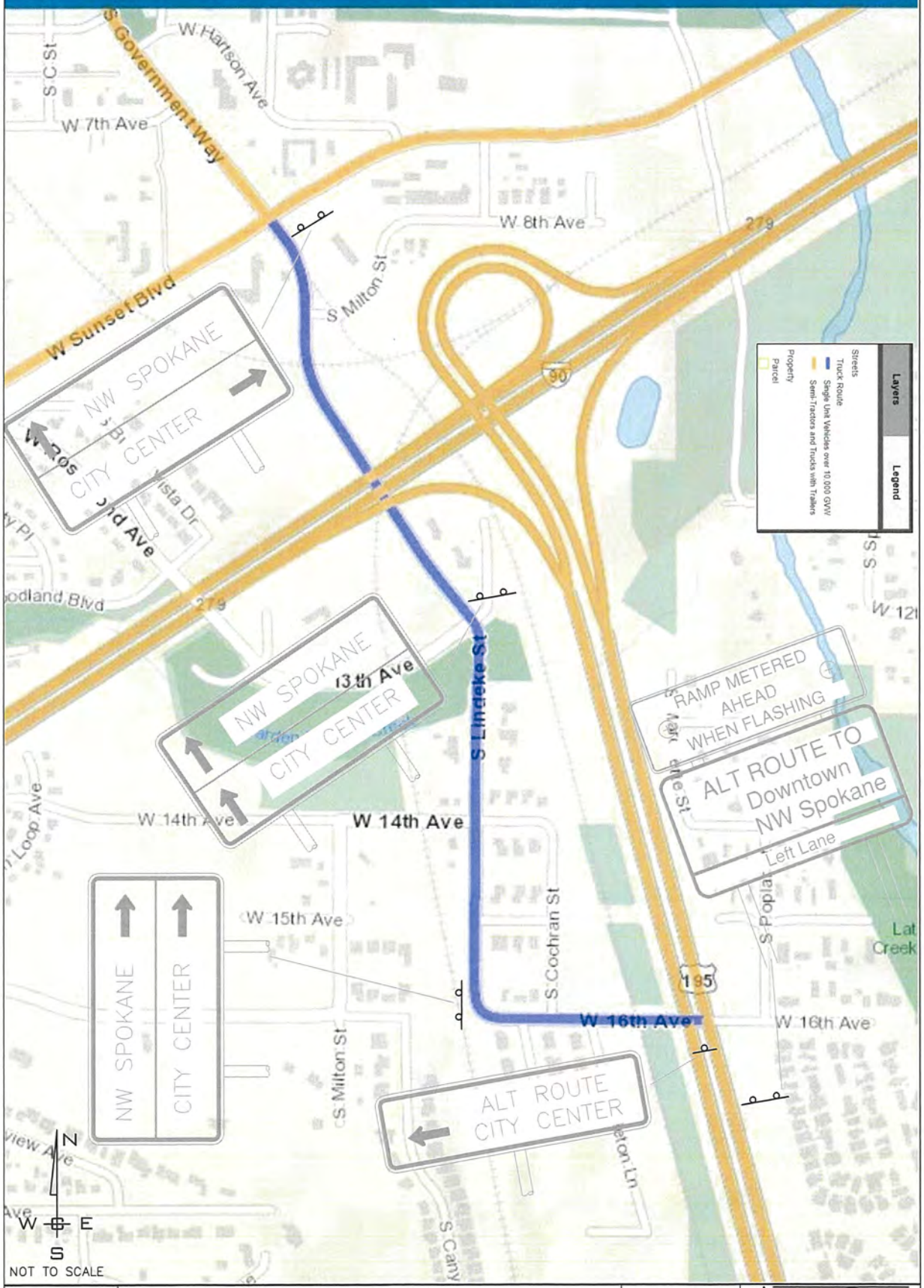


FIGURE 3

TRAFFIC IMPACT ANALYSIS
WHEATLAND ESTATES
CHENEY SPANGLE RD. & US195
SPANGLE, WASHINGTON

DIRECTIONAL SIGNS

PROJ #: 18-2224
DATE: 05/12/20
DRAWN: BNG
APPROVED: TRW

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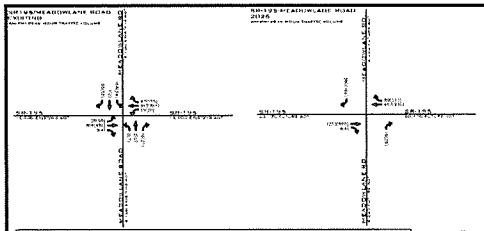
CIVIL, STRUCTURAL AND
TRANSPORTATION ENGINEERING
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WASHINGTON 99216
PH. 509-893-2617 FAX. 509-926-0227

NW¼, SEC. 4, T.24N., R.43E., W.M.

# INTERSECTION PLAN FOR APPROVAL
# SR195 MEADOWLANE INTERSETION MODIFICATION & 1/2 J-TURN
## LOCATED IN A PORTION OF
## NW 1/4, SEC. 4 T. 24 N., R.43 E., W.M.
## SPOKANE COUNTY, WA



UNDERGROUND SERVICE ALERT ONE-CALL NUMBER 811 CALL TWO BUSINESS DAYS BEFORE YOU DIG

CONCURRENCE _____ DATE _____
EASTERN REGION TRAFFIC ENGINEER

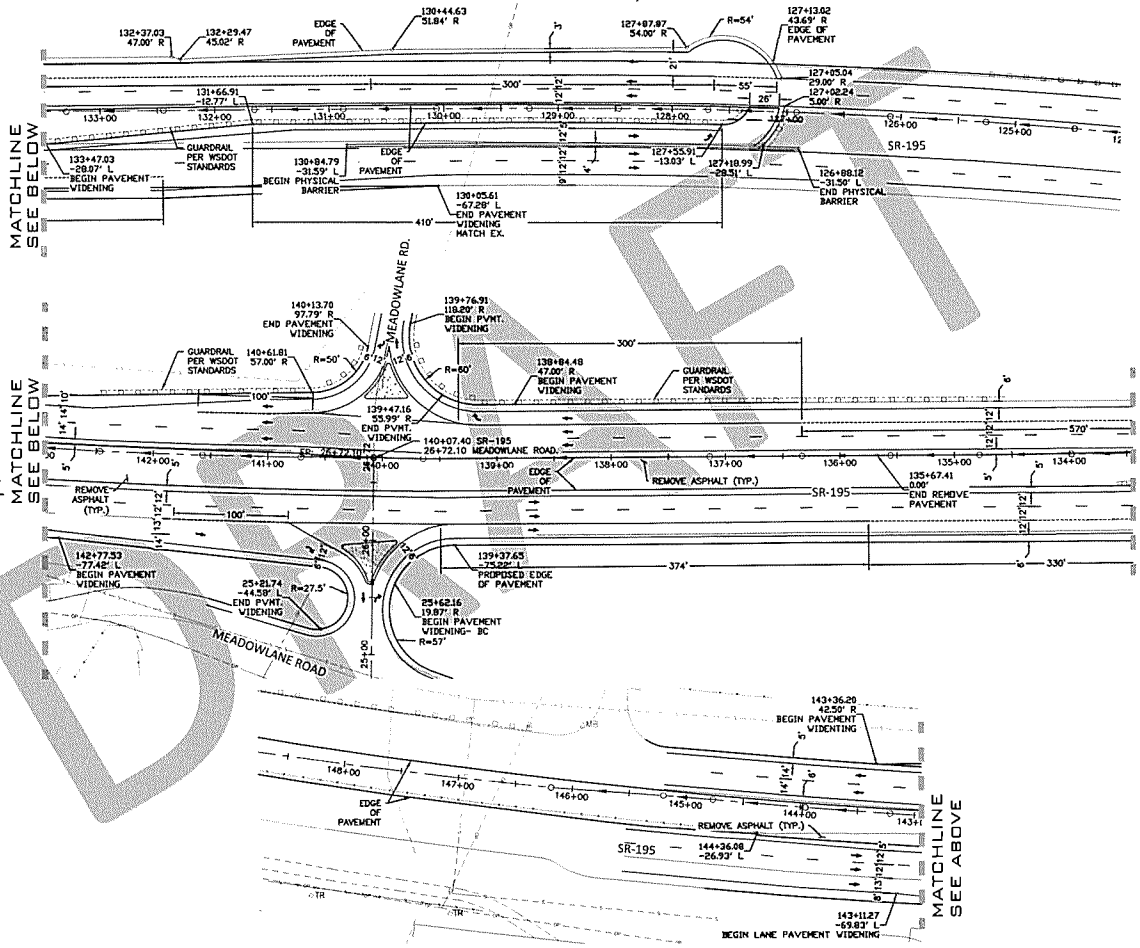
APPROVED _____ DATE _____
EASTERN REGION ASSISTANT REGION ADMINISTRATOR FOR DEVELOPMENT

*WSDOT APPROVAL IS ONLY FOR THE ROADWAY GEOMETRIC DESIGN WITHIN THE RIGHT OF WAY ALONG STATE ROUTE 290 WITHIN THE WSDOT BOUNDARY. RIGHT OF WAY LINES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY.*

| DESIGN ELEMENTS | | |
|---|---|---|
| ALIGNMENT | SR-195 | MEADOWLANE ROAD |
| ROADWAY CLASSIFICATION | MINOR ARTERIAL | MINOR ARTERIAL |
| ACCESS CONTROL | LIMITED ACCESS FULL CONTROL | N/A |
| LAND USE | URBAN | URBAN |
| ADT (EXISTING) | 15,000 | 4,100 |
| ADT (2026) | 20,170 | 4,220 |
| PERCENT TRUCKS (PM PEAK) | 3% | 3% |
| DESIGN VEHICLE | WB-50 | WB-50 |
| DESIGN SPEED (MPH) | 60 | 30 |
| POSTED SPEED (EXISTING) | 55 | 30 |

### INTERSECTION REVISIONS
THIS PLAN AMENDS THE EXISTING INTERSECTION OF SR-195 & MEADOWLANE ROAD

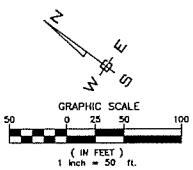
### SHEET INDEX

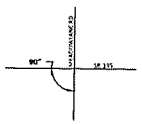




### LEGEND
- EXISTING RIGHT OF WAY
- EXISTING EDGE OF PAVEMENT
- EXISTING STREET LIGHT
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING OVERHEAD POWER LINE
- EXISTING TRAFFIC SIGN
- EXISTING STORM DRAINAGE MANHOLE
- EXISTING DRYWELL
- EXISTING CATCH BASIN
- EXISTING CULVERT
- EXISTING UTILITY MANHOLE
- EXISTING UTILITY JUNCTION BOX
- EXISTING TELEPHONE JUNCTION BOX
- PROPOSED SIDEWALK
- PROPOSED PAVEMENT
- PROPOSED ROAD SHOULDER
- PROPOSED CURB AND GUTTER
- PROPOSED CURB CUT
- PROPOSED STREET LIGHT
- PROPOSED RAISED ISLAND
- PROPOSED CENTER ISLAND

NOTE:
SEE SHEET 2 FOR ISLAND CONSTRUCTION STATIONING AND DATA TABLES.

PAVEMENT MARKINGS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. SEE CONTRACT PLANS FOR PAVEMENT MARKINGS.




NAVD - 88
XXXX

## SR-195 & MEADOWLANE ROAD INTERSECTION PLAN FOR APPROVAL
SCALE: 1"=50'

PLANS NOT APPROVED BY AGENCY

TODD R. WHITE EXPIRES 9/30/2020 PRELIMINARY

| NO | DATE | BY | REVISIONS |
|---|---|---|---|

| SCALE: | | PROJ #: | 19-2305 |
|---|---|---|---|
| HORIZONTAL: | AS SHOWN | DATE: | 12/17/19 |
| VERTICAL: | N/A | DRAWN: | STT |
| | | REVIEWED: | TRW |

CIVIL / STRUCTURAL / SURVEYING / TRAFFIC / X PLANNING / LANDSCAPE / OTHER


WCE
WHITLEE CONSULTING ENGINEERS
215 S. RIVER ROAD
SPOKANE VALLEY, WA 99206
PH 509-893-7617 FAX 509-905-0277


**MEADOWLANE ROAD.**
**SR-195 & MEADOWLANE ROAD**
**MP 92.20 VICINITY**
**SPOKANE COUNTY, WASHINGTON**

SHEET 1 OF 5

JOB NUMBER 19-2318

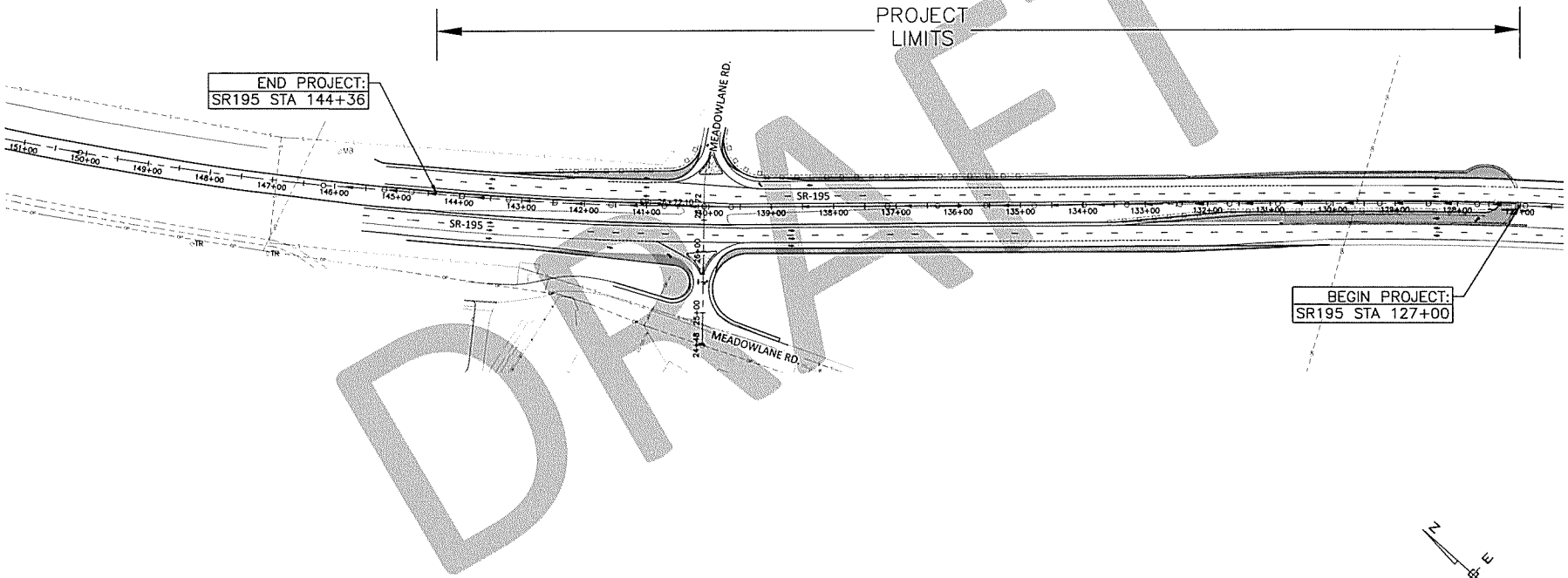
NW¼, SEC. 4, T.24N., R.43E., W.M.

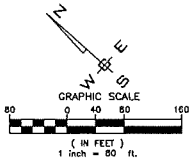
UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

# INTERSECTION PLAN FOR APPROVAL
# SR195 MEADOWLANE INTERSETION MODIFICATION & 1/2 J-TURN

LOCATED IN A PORTION OF
NW 1/4, SEC. 4 T. 24 N., R.43 E., W.M.
SPOKANE COUNTY, WA






PLANS NOT APPROVED BY AGENCY

TODD R. WHITE — STATE OF WASHINGTON — 32462 — REGISTERED PROFESSIONAL ENGINEER — PRELIMINARY

NAVD - 88
XXXX

| NO | DATE | BY | REVISIONS |
|---|---|---|---|

| SCALE: | PROJ #: | 19-2305 |
|---|---|---|
| HORIZONTAL: AS SHOWN | DATE: | 12/17/19 |
| VERTICAL: N/A | DRAWN: | GTT |
| | REVIEWED: | TRW |

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
21 N. PINES ROAD
SPOKANE VALLEY, WA. 99206
PH 509.893.2617 FAX 509.926.2277

**MEADOWLANE ROAD,**
**OVERALL SITE PLAN**
**SPOKANE COUNTY, WASHINGTON**

SHEET 2 OF 5

JOB NUMBER 19-2318

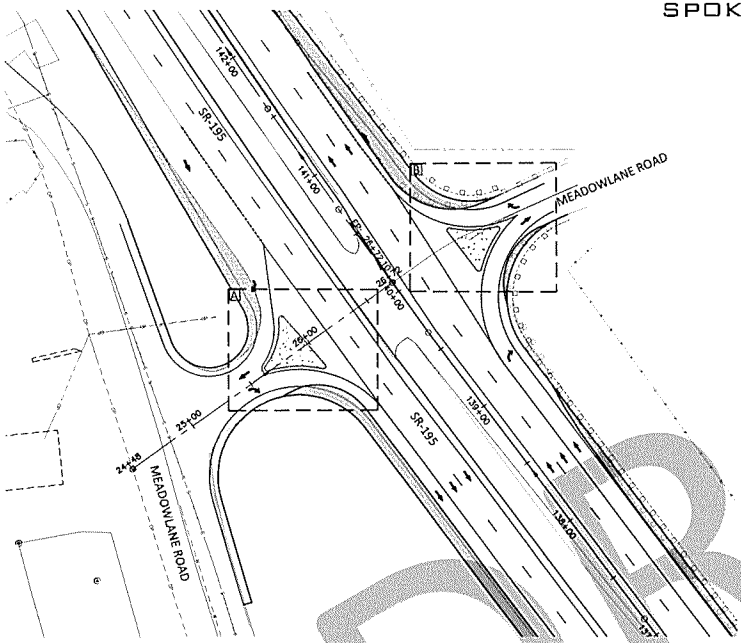
NW¼, SEC. 4, T.24N., R.43E., W.M.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

# INTERSECTION PLAN FOR APPROVAL
# SR195 MEADOWLANE INTERSETION
# MODIFICATION & 1/2 J-TURN

LOCATED IN A PORTION OF
NW 1/4, SEC. 4 T. 24 N., R.43 E., W.M.
SPOKANE COUNTY, WA

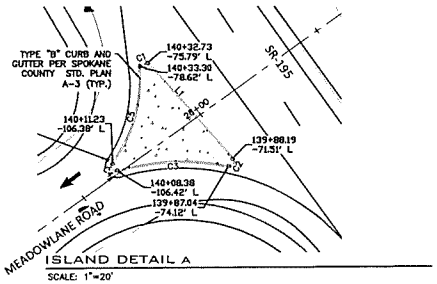




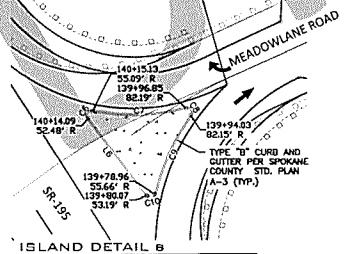

RAISED ISLAND DETAIL KEY MAP
SCALE: 1"=50'

LEGEND
RAISED ISLAND

N
W E
S
GRAPHIC SCALE
40 0 20 40 80
( IN FEET )
1 inch = 40 ft.




ISLAND DETAIL A
SCALE: 1"=20'




ISLAND DETAIL B
SCALE: 1"=20'

N
W E
S
GRAPHIC SCALE
20 0 10 20 40
( IN FEET )
1 inch = 20 ft.

| Line Table | | |
|---|---|---|
| Line # | Length | Direction |
| L1 | 44.71 | S41° 16' 03"E |
| L6 | 34.02 | N36° 54' 19"W |

| Curve Table | | | |
|---|---|---|---|
| Curve # | Length | Radius | Delta |
| C1 | 3.77 | 1.50 | 144.15 |
| C2 | 3.76 | 1.50 | 143.47 |
| C3 | 39.13 | 77.50 | 28.93 |
| C4 | 3.76 | 1.50 | 143.74 |
| C5 | 36.28 | 49.00 | 42.42 |
| C6 | 3.63 | 1.50 | 138.59 |
| C7 | 32.99 | 70.50 | 26.81 |
| C8 | 3.68 | 1.50 | 140.68 |
| C9 | 30.65 | 80.50 | 21.82 |
| C10 | 3.39 | 1.50 | 129.36 |

N
W E
S
GRAPHIC SCALE
20 0 10 20 40
( IN FEET )
1 inch = 20 ft.

PLANS NOT APPROVED BY AGENCY

TODD R. WHITE — STATE OF WASHINGTON — 24462 — REGISTERED PROFESSIONAL ENGINEER — PRELIMINARY

NAVD - 88
XXXX

| NO | DATE | BY | REVISIONS |
|---|---|---|---|

| SCALE: | |
|---|---|
| HORIZONTAL: | AS SHOWN |
| VERTICAL: | N/A |

| | |
|---|---|
| PROJ #: | 19-2305 |
| DATE: | 12/17/19 |
| DRAWN: | STT |
| REVIEWED: | TRW |

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

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21 S. PINES ROAD
SPOKANE VALLEY, WA 99206
PH 509.893.2617 FAX 509.926.0227

MEADOWLANE ROAD.
ISLAND DETAILS
SPOKANE COUNTY, WASHINGTON

SHEET
3 OF 5

JOB NUMBER
19-2318

# YEAR 2021

# LEVEL OF SERVICE CALCULATIONS

# AM & PM EXISTING CONDITIONS

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | | | ↑↑ | |
| Traffic Vol, veh/h | 60 | 2 | 51 | 2 | 2 | 14 | 79 | 1078 | 3 | 5 | 518 | 20 |
| Future Vol, veh/h | 60 | 2 | 51 | 2 | 2 | 14 | 79 | 1078 | 3 | 5 | 518 | 20 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 11 | 11 |
| Mvmt Flow | 67 | 2 | 57 | 2 | 2 | 16 | 88 | 1198 | 3 | 6 | 576 | 22 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1364 | 1965 | 288 | 1675 | 1984 | 599 | 598 | 0 | 0 | 1201 | 0 | 0 |
| Stage 1 | 588 | 588 | - | 1374 | 1374 | - | - | - | - | - | - | - |
| Stage 2 | 776 | 1377 | - | 301 | 610 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 108 | 64 | 715 | 64 | 62 | 450 | 989 | - | - | 588 | - | - |
| Stage 1 | 467 | 499 | - | 156 | 215 | - | - | - | - | - | - | - |
| Stage 2 | 361 | 214 | - | 689 | 488 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 95 | 58 | 715 | 54 | 56 | 450 | 989 | - | - | 588 | - | - |
| Mov Cap-2 Maneuver | 205 | 145 | - | 117 | 142 | - | - | - | - | - | - | - |
| Stage 1 | 425 | 494 | - | 142 | 196 | - | - | - | - | - | - | - |
| Stage 2 | 314 | 195 | - | 625 | 483 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 25.5 | 18.4 | 0.6 | 0.1 |
| HCM LOS | D | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 989 | - | - | 299 | 289 | 588 | - | - |
| HCM Lane V/C Ratio | 0.089 | - | - | 0.42 | 0.069 | 0.009 | - | - |
| HCM Control Delay (s) | 9 | - | - | 25.5 | 18.4 | 11.2 | - | - |
| HCM Lane LOS | A | - | - | D | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 2 | 0.2 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | ↰ | ↑↑ | ↱ | ↰ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 165 | 0 | 0 | 41 | 39 | 1518 | 132 | 15 | 531 | 25 |
| Future Vol, veh/h | 0 | 0 | 165 | 0 | 0 | 41 | 39 | 1518 | 132 | 15 | 531 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | Stop | - | - | None | - | - | Yield |
| Storage Length | - | - | 0 | - | - | 0 | 217 | - | 25 | 217 | - | 600 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| Heavy Vehicles, % | 3 | 3 | 3 | 5 | 5 | 5 | 8 | 1 | 1 | 13 | 12 | 12 |
| Mvmt Flow | 0 | 0 | 194 | 0 | 0 | 48 | 46 | 1786 | 155 | 18 | 625 | 29 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 313 | - | - | 893 | 625 | 0 | 0 | 1941 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | - | - | 7 | 4.26 | - | - | 4.36 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | - | - | 3.35 | 2.28 | - | - | 2.33 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 680 | 0 | 0 | 279 | 913 | - | - | 259 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 680 | - | - | 279 | 913 | - | - | 259 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 12.4 | 20.6 | 0.2 | 0.5 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 913 | - | - | 680 | 279 | 259 | - | - |
| HCM Lane V/C Ratio | 0.05 | - | - | 0.285 | 0.173 | 0.068 | - | - |
| HCM Control Delay (s) | 9.2 | - | - | 12.4 | 20.6 | 19.9 | - | - |
| HCM Lane LOS | A | - | - | B | C | C | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 1.2 | 0.6 | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↱ | | | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 13 | 0 | 0 | 585 | 2 |
| Future Vol, veh/h | 0 | 13 | 0 | 0 | 585 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | - | 25 |
| Veh in Median Storage, # | 0 | - | - | 16974 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 9 | 9 | 0 | 0 | 10 | 10 |
| Mvmt Flow | 0 | 14 | 0 | 0 | 650 | 2 |

| Major/Minor | Minor2 | | | Major2 | |
|---|---|---|---|---|---|
| Conflicting Flow All | - | 325 | | - | 0 |
| Stage 1 | - | - | | - | - |
| Stage 2 | - | - | | - | - |
| Critical Hdwy | - | 7.08 | | - | - |
| Critical Hdwy Stg 1 | - | - | | - | - |
| Critical Hdwy Stg 2 | - | - | | - | - |
| Follow-up Hdwy | - | 3.39 | | - | - |
| Pot Cap-1 Maneuver | 0 | 651 | | - | - |
| Stage 1 | 0 | - | | - | - |
| Stage 2 | 0 | - | | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | - | 651 | | - | - |
| Mov Cap-2 Maneuver | - | - | | - | - |
| Stage 1 | - | - | | - | - |
| Stage 2 | - | - | | - | - |

| Approach | EB | SB |
|---|---|---|
| HCM Control Delay, s | 10.7 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|---|---|---|---|
| Capacity (veh/h) | 651 | - | - |
| HCM Lane V/C Ratio | 0.022 | - | - |
| HCM Control Delay (s) | 10.7 | - | - |
| HCM Lane LOS | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 719 | 0 | 0 | 0 | 0 | 0 | 107 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 719 | 0 | 0 | 0 | 0 | 0 | 107 | 0 | 0 | 0 | 0 | 0 |
| 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 | 0 | - | - | - | - | - | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 2 | 2 | 0 | 0 |
| Mvmt Flow | 922 | 0 | 0 | 0 | 0 | 0 | 137 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 0 | 1 | 1 | - | - | - | 1 |
| Stage 1 | - | - | - | 0 | 0 | - | - | - | - |
| Stage 2 | - | - | - | 1 | 1 | - | - | - | - |
| Critical Hdwy | - | - | - | 7.1 | 6.5 | - | - | - | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.1 | 5.5 | - | - | - | - |
| Follow-up Hdwy | - | - | - | 3.5 | 4 | - | - | - | 3.3 |
| Pot Cap-1 Maneuver | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | 1090 |
| Stage 1 | 0 | - | 0 | - | - | 0 | 0 | 0 | - |
| Stage 2 | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | - |
| Platoon blocked, % | | - | | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 1027 | 899 | - | - | - | 1090 |
| Mov Cap-2 Maneuver | - | - | - | 1027 | 899 | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 1027 | 899 | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 9 | 0 |
| HCM LOS | | A | A |

| Minor Lane/Major Mvmt | NBLn1 | WBT | SBLn1 |
|---|---|---|---|
| Capacity (veh/h) | 1027 | - | - |
| HCM Lane V/C Ratio | 0.134 | - | - |
| HCM Control Delay (s) | 9 | - | 0 |
| HCM Lane LOS | A | - | A |
| HCM 95th %tile Q(veh) | 0.5 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 630 | 49 | 2 | 120 | 0 | 0 | 0 | 0 | 17 | 1 | 0 |
| Future Vol, veh/h | 0 | 630 | 49 | 2 | 120 | 0 | 0 | 0 | 0 | 17 | 1 | 0 |
| 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 | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 22 | 22 | 22 |
| Mvmt Flow | 0 | 818 | 64 | 3 | 156 | 0 | 0 | 0 | 0 | 22 | 1 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | 0 | 882 | 0 | 0 | 1012 | 1044 | - |
| Stage 1 | - | - | - | - | - | - | 162 | 162 | - |
| Stage 2 | - | - | - | - | - | - | 850 | 882 | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | 6.62 | 6.72 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 5.62 | 5.72 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 5.62 | 5.72 | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | 3.698 | 4.198 | - |
| Pot Cap-1 Maneuver | 0 | - | - | 767 | - | 0 | 243 | 211 | 0 |
| Stage 1 | 0 | - | - | - | - | 0 | 821 | 728 | 0 |
| Stage 2 | 0 | - | - | - | - | 0 | 387 | 338 | 0 |
| Platoon blocked, % | | - | - | | - | | | | |
| Mov Cap-1 Maneuver | - | - | - | 767 | - | - | 242 | 0 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 242 | 0 | - |
| Stage 1 | - | - | - | - | - | - | 821 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 385 | 0 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.2 | 21.5 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 767 | - | 242 |
| HCM Lane V/C Ratio | - | - | 0.003 | - | 0.097 |
| HCM Control Delay (s) | - | - | 9.7 | 0 | 21.5 |
| HCM Lane LOS | - | - | A | A | C |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 120 | 0 | 0 | 679 | 0 | 193 |
| Future Vol, veh/h | 120 | 0 | 0 | 679 | 0 | 193 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Free | - | None |
| Storage Length | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | 0 | - | 16974 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 3 | 3 | 0 | 0 | 8 | 8 |
| Mvmt Flow | 138 | 0 | 0 | 780 | 0 | 222 |

| Major/Minor | Minor1 | | Major2 | |
|---|---|---|---|---|
| Conflicting Flow All | 222 | - | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 222 | - | - | - |
| Critical Hdwy | 6.43 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.43 | - | - | - |
| Follow-up Hdwy | 3.527 | - | - | - |
| Pot Cap-1 Maneuver | 764 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 813 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 764 | - | - | - |
| Mov Cap-2 Maneuver | 764 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 813 | - | - | - |

| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 10.7 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | WBLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 764 | - |
| HCM Lane V/C Ratio | 0.181 | - |
| HCM Control Delay (s) | 10.7 | - |
| HCM Lane LOS | B | - |
| HCM 95th %tile Q(veh) | 0.7 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 186 | 1 | 95 | 0 | 2 | 16 | 28 | 816 | 3 | 11 | 412 | 67 |
| Future Vol, veh/h | 186 | 1 | 95 | 0 | 2 | 16 | 28 | 816 | 3 | 11 | 412 | 67 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 25 | - | - | - | 200 | - | 25 | 200 | - | 525 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 3 | 3 | 3 | 17 | 17 | 17 | 4 | 2 | 2 | 9 | 9 | 6 |
| Mvmt Flow | 194 | 1 | 99 | 0 | 2 | 17 | 29 | 850 | 3 | 11 | 429 | 70 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 935 | 1362 | 215 | 1145 | 1429 | 425 | 499 | 0 | 0 | 853 | 0 | 0 |
| Stage 1 | 451 | 451 | - | 908 | 908 | - | - | - | - | - | - | - |
| Stage 2 | 484 | 911 | - | 237 | 521 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.84 | 6.84 | 7.24 | 4.18 | - | - | 4.28 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.84 | 5.84 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.84 | 5.84 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.67 | 4.17 | 3.47 | 2.24 | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver | 219 | 146 | 787 | 137 | 117 | 538 | 1047 | - | - | 739 | - | - |
| Stage 1 | 555 | 567 | - | 268 | 320 | - | - | - | - | - | - | - |
| Stage 2 | 530 | 349 | - | 704 | 494 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 204 | 140 | 787 | 115 | 112 | 538 | 1047 | - | - | 739 | - | - |
| Mov Cap-2 Maneuver | 326 | 246 | - | 206 | 218 | - | - | - | - | - | - | - |
| Stage 1 | 539 | 558 | - | 260 | 311 | - | - | - | - | - | - | - |
| Stage 2 | 496 | 339 | - | 605 | 487 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 24.3 | 13.1 | 0.3 | 0.2 |
| HCM LOS | C | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1047 | - | - | 325 | 787 | 463 | 739 | - | - |
| HCM Lane V/C Ratio | 0.028 | - | - | 0.599 | 0.126 | 0.04 | 0.016 | - | - |
| HCM Control Delay (s) | 8.5 | - | - | 31.4 | 10.2 | 13.1 | 9.9 | - | - |
| HCM Lane LOS | A | - | - | D | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 3.7 | 0.4 | 0.1 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.7 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 59 | 378 | 397 | 87 | 194 | 229 |
| Future Vol, veh/h | 59 | 378 | 397 | 87 | 194 | 229 |
| 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 | 25 | - | 25 | 350 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 1 | 1 | 2 | 2 | 9 | 9 |
| Mvmt Flow | 69 | 440 | 462 | 101 | 226 | 266 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1047 | 231 | 0 | 0 | 563 | 0 |
| Stage 1 | 462 | - | - | - | - | - |
| Stage 2 | 585 | - | - | - | - | - |
| Critical Hdwy | 6.82 | 6.92 | - | - | 4.28 | - |
| Critical Hdwy Stg 1 | 5.82 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.82 | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 3.31 | - | - | 2.29 | - |
| Pot Cap-1 Maneuver | 225 | 774 | - | - | 958 | - |
| Stage 1 | 604 | - | - | - | - | - |
| Stage 2 | 523 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 172 | 774 | - | - | 958 | - |
| Mov Cap-2 Maneuver | 293 | - | - | - | - | - |
| Stage 1 | 604 | - | - | - | - | - |
| Stage 2 | 400 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 16.3 | 0 | 4.5 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 293 | 774 | 958 | - |
| HCM Lane V/C Ratio | - | - | 0.234 | 0.568 | 0.235 | - |
| HCM Control Delay (s) | - | - | 21 | 15.6 | 9.9 | - |
| HCM Lane LOS | - | - | C | C | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.9 | 3.6 | 0.9 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | ↰ | ↑↑ | ↱ | ↰ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 22 | 2 | 141 | 4 | 2 | 15 | 86 | 596 | 10 | 22 | 1341 | 67 |
| Future Vol, veh/h | 22 | 2 | 141 | 4 | 2 | 15 | 86 | 596 | 10 | 22 | 1341 | 67 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 0 | 0 | 0 | 5 | 5 | 5 | 0 | 7 | 7 | 5 | 1 | 1 |
| Mvmt Flow | 23 | 2 | 148 | 4 | 2 | 16 | 91 | 627 | 11 | 23 | 1412 | 71 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1955 | 2278 | 706 | 1562 | 2338 | 314 | 1483 | 0 | 0 | 638 | 0 | 0 |
| Stage 1 | 1458 | 1458 | - | 809 | 809 | - | - | - | - | - | - | - |
| Stage 2 | 497 | 820 | - | 753 | 1529 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.6 | 6.6 | 7 | 4.1 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.55 | 4.05 | 3.35 | 2.2 | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver | 39 | 40 | 383 | 74 | 35 | 673 | 460 | - | - | 922 | - | - |
| Stage 1 | 138 | 196 | - | 334 | 385 | - | - | - | - | - | - | - |
| Stage 2 | 529 | 392 | - | 361 | 173 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 31 | 31 | 383 | 37 | 27 | 673 | 460 | - | - | 922 | - | - |
| Mov Cap-2 Maneuver | 88 | 119 | - | 90 | 64 | - | - | - | - | - | - | - |
| Stage 1 | 111 | 191 | - | 268 | 309 | - | - | - | - | - | - | - |
| Stage 2 | 412 | 314 | - | 213 | 169 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 42.9 | 23.8 | 1.8 | 0.1 |
| HCM LOS | E | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 460 | - | - | 260 | 214 | 922 | - | - |
| HCM Lane V/C Ratio | 0.197 | - | - | 0.668 | 0.103 | 0.025 | - | - |
| HCM Control Delay (s) | 14.7 | - | - | 42.9 | 23.8 | 9 | - | - |
| HCM Lane LOS | B | - | - | E | C | A | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | - | 4.3 | 0.3 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | ↰ | ↑↑ | ↱ | ↰ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 96 | 0 | 0 | 69 | 61 | 638 | 76 | 31 | 1369 | 75 |
| Future Vol, veh/h | 0 | 0 | 96 | 0 | 0 | 69 | 61 | 638 | 76 | 31 | 1369 | 75 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | Stop | - | - | None | - | - | Yield |
| Storage Length | - | - | 0 | - | - | 0 | 217 | - | 25 | 217 | - | 600 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 4 | 4 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 0 | 103 | 0 | 0 | 74 | 66 | 686 | 82 | 33 | 1472 | 81 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 736 | - | - | 343 | 1472 | 0 | 0 | 768 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.9 | - | - | 6.92 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.3 | - | - | 3.31 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 366 | 0 | 0 | 656 | 464 | - | - | 855 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 366 | - | - | 656 | 464 | - | - | 855 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 18.7 | 11.2 | 1.1 | 0.2 |
| HCM LOS | C | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 464 | - | - | 366 | 656 | 855 | - | - |
| HCM Lane V/C Ratio | 0.141 | - | - | 0.282 | 0.113 | 0.039 | - | - |
| HCM Control Delay (s) | 14 | - | - | 18.7 | 11.2 | 9.4 | - | - |
| HCM Lane LOS | B | - | - | C | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.5 | - | - | 1.1 | 0.4 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 4 | 0 | 0 | 1398 | 16 |
| Future Vol, veh/h | 0 | 4 | 0 | 0 | 1398 | 16 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | - | 25 |
| Veh in Median Storage, # | 0 | - | - | 16974 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 4 | 0 | 0 | 1487 | 17 |

| Major/Minor | Minor2 | | | Major2 | |
|---|---|---|---|---|---|
| Conflicting Flow All | - | 744 | | - | 0 |
| Stage 1 | - | - | | - | - |
| Stage 2 | - | - | | - | - |
| Critical Hdwy | - | 6.9 | | - | - |
| Critical Hdwy Stg 1 | - | - | | - | - |
| Critical Hdwy Stg 2 | - | - | | - | - |
| Follow-up Hdwy | - | 3.3 | | - | - |
| Pot Cap-1 Maneuver | 0 | 362 | | - | - |
| Stage 1 | 0 | - | | - | - |
| Stage 2 | 0 | - | | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | - | 362 | | - | - |
| Mov Cap-2 Maneuver | - | - | | - | - |
| Stage 1 | - | - | | - | - |
| Stage 2 | - | - | | - | - |

| Approach | EB | SB |
|---|---|---|
| HCM Control Delay, s | 15.1 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|---|---|---|---|
| Capacity (veh/h) | 362 | - | - |
| HCM Lane V/C Ratio | 0.012 | - | - |
| HCM Control Delay (s) | 15.1 | - | - |
| HCM Lane LOS | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 360 | 0 | 0 | 0 | 0 | 0 | 124 | 1 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 360 | 0 | 0 | 0 | 0 | 0 | 124 | 1 | 0 | 0 | 0 | 0 |
| 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 | 0 | - | - | - | - | - | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 383 | 0 | 0 | 0 | 0 | 0 | 132 | 1 | 0 | 0 | 0 | 0 |

| Major/Minor | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 0 | 1 | 1 | - | - | - | 1 |
| Stage 1 | - | - | - | 0 | 0 | - | - | - | - |
| Stage 2 | - | - | - | 1 | 1 | - | - | - | - |
| Critical Hdwy | - | - | - | 7.1 | 6.5 | - | - | - | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.1 | 5.5 | - | - | - | - |
| Follow-up Hdwy | - | - | - | 3.5 | 4 | - | - | - | 3.3 |
| Pot Cap-1 Maneuver | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | 1090 |
| Stage 1 | 0 | - | 0 | - | - | 0 | 0 | 0 | - |
| Stage 2 | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | - |
| Platoon blocked, % | | - | | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 1027 | 899 | - | - | - | 1090 |
| Mov Cap-2 Maneuver | - | - | - | 1027 | 899 | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 1027 | 899 | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 9 | 0 |
| HCM LOS | | A | A |

| Minor Lane/Major Mvmt | NBLn1 | WBT | SBLn1 |
|---|---|---|---|
| Capacity (veh/h) | 1026 | - | - |
| HCM Lane V/C Ratio | 0.13 | - | - |
| HCM Control Delay (s) | 9 | - | 0 |
| HCM Lane LOS | A | - | A |
| HCM 95th %tile Q(veh) | 0.4 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 328 | 135 | 8 | 113 | 0 | 0 | 0 | 0 | 10 | 1 | 0 |
| Future Vol, veh/h | 0 | 328 | 135 | 8 | 113 | 0 | 0 | 0 | 0 | 10 | 1 | 0 |
| 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 | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 410 | 169 | 10 | 141 | 0 | 0 | 0 | 0 | 13 | 1 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | 0 | 579 | 0 | 0 | 656 | 740 | - |
| Stage 1 | - | - | - | - | - | - | 161 | 161 | - |
| Stage 2 | - | - | - | - | - | - | 495 | 579 | - |
| Critical Hdwy | - | - | - | 4.13 | - | - | 6.4 | 6.5 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 5.4 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 5.4 | 5.5 | - |
| Follow-up Hdwy | - | - | - | 2.227 | - | - | 3.5 | 4 | - |
| Pot Cap-1 Maneuver | 0 | - | - | 990 | - | 0 | 433 | 347 | 0 |
| Stage 1 | 0 | - | - | - | - | 0 | 873 | 769 | 0 |
| Stage 2 | 0 | - | - | - | - | 0 | 617 | 504 | 0 |
| Platoon blocked, % | | - | - | | - | | | | |
| Mov Cap-1 Maneuver | - | - | - | 990 | - | - | 428 | 0 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 428 | 0 | - |
| Stage 1 | - | - | - | - | - | - | 873 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 610 | 0 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.6 | 13.7 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 990 | - | 428 |
| HCM Lane V/C Ratio | - | - | 0.01 | - | 0.032 |
| HCM Control Delay (s) | - | - | 8.7 | 0 | 13.7 |
| HCM Lane LOS | - | - | A | A | B |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.7 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 113 | 0 | 0 | 463 | 0 | 548 |
| Future Vol, veh/h | 113 | 0 | 0 | 463 | 0 | 548 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Free | - | None |
| Storage Length | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | 0 | - | 16974 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 1 | 1 | 0 | 0 | 1 | 1 |
| Mvmt Flow | 126 | 0 | 0 | 514 | 0 | 609 |

| Major/Minor | Minor1 | | | Major2 | |
|---|---|---|---|---|---|
| Conflicting Flow All | 609 | - | | - | - |
| Stage 1 | 0 | - | | - | - |
| Stage 2 | 609 | - | | - | - |
| Critical Hdwy | 6.41 | - | | - | - |
| Critical Hdwy Stg 1 | - | - | | - | - |
| Critical Hdwy Stg 2 | 5.41 | - | | - | - |
| Follow-up Hdwy | 3.509 | - | | - | - |
| Pot Cap-1 Maneuver | 460 | 0 | | 0 | - |
| Stage 1 | - | 0 | | 0 | - |
| Stage 2 | 545 | 0 | | 0 | - |
| Platoon blocked, % | | | | | - |
| Mov Cap-1 Maneuver | 460 | - | | - | - |
| Mov Cap-2 Maneuver | 460 | - | | - | - |
| Stage 1 | - | - | | - | - |
| Stage 2 | 545 | - | | - | - |

| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 15.7 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | WBLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 460 | - |
| HCM Lane V/C Ratio | 0.273 | - |
| HCM Control Delay (s) | 15.7 | - |
| HCM Lane LOS | C | - |
| HCM 95th %tile Q(veh) | 1.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 54 | 0 | 55 | 7 | 0 | 21 | 98 | 481 | 4 | 20 | 811 | 155 |
| Future Vol, veh/h | 54 | 0 | 55 | 7 | 0 | 21 | 98 | 481 | 4 | 20 | 811 | 155 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 25 | - | - | - | 200 | - | 25 | 200 | - | 525 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 4 | 4 | 4 | 0 | 5 | 5 | 0 | 1 | 1 |
| Mvmt Flow | 56 | 0 | 57 | 7 | 0 | 22 | 101 | 496 | 4 | 21 | 836 | 160 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1328 | 1580 | 418 | 1158 | 1736 | 248 | 996 | 0 | 0 | 500 | 0 | 0 |
| Stage 1 | 878 | 878 | - | 698 | 698 | - | - | - | - | - | - | - |
| Stage 2 | 450 | 702 | - | 460 | 1038 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.58 | 6.58 | 6.98 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.58 | 5.58 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.58 | 5.58 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.54 | 4.04 | 3.34 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 113 | 108 | 584 | 149 | 85 | 746 | 703 | - | - | 1075 | - | - |
| Stage 1 | 309 | 364 | - | 392 | 436 | - | - | - | - | - | - | - |
| Stage 2 | 558 | 439 | - | 545 | 302 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 96 | 91 | 584 | 118 | 71 | 746 | 703 | - | - | 1075 | - | - |
| Mov Cap-2 Maneuver | 191 | 204 | - | 217 | 145 | - | - | - | - | - | - | - |
| Stage 1 | 265 | 357 | - | 336 | 373 | - | - | - | - | - | - | - |
| Stage 2 | 464 | 376 | - | 482 | 296 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 21.5 | 13.3 | 1.8 | 0.2 |
| HCM LOS | C | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 703 | - | - | 191 | 584 | 464 | 1075 | - | - |
| HCM Lane V/C Ratio | 0.144 | - | - | 0.291 | 0.097 | 0.062 | 0.019 | - | - |
| HCM Control Delay (s) | 11 | - | - | 31.4 | 11.8 | 13.3 | 8.4 | - | - |
| HCM Lane LOS | B | - | - | D | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.5 | - | - | 1.2 | 0.3 | 0.2 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.4 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 89 | 282 | 229 | 55 | 404 | 414 |
| Future Vol, veh/h | 89 | 282 | 229 | 55 | 404 | 414 |
| 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 | 25 | - | 25 | 350 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 1 | 1 | 5 | 5 | 2 | 2 |
| Mvmt Flow | 92 | 291 | 236 | 57 | 416 | 427 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1282 | 118 | 0 | 0 | 293 | 0 |
| Stage 1 | 236 | - | - | - | - | - |
| Stage 2 | 1046 | - | - | - | - | - |
| Critical Hdwy | 6.82 | 6.92 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.82 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.82 | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 3.31 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 158 | 915 | - | - | 1265 | - |
| Stage 1 | 784 | - | - | - | - | - |
| Stage 2 | 302 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 106 | 915 | - | - | 1265 | - |
| Mov Cap-2 Maneuver | 174 | - | - | - | - | - |
| Stage 1 | 784 | - | - | - | - | - |
| Stage 2 | 203 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 19.4 | 0 | 4.6 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 174 | 915 | 1265 | - |
| HCM Lane V/C Ratio | - | - | 0.527 | 0.318 | 0.329 | - |
| HCM Control Delay (s) | - | - | 46.7 | 10.8 | 9.2 | - |
| HCM Lane LOS | - | - | E | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 2.7 | 1.4 | 1.5 | - |

# YEAR 2026

# LEVEL OF SERVICE CALCULATIONS

# AM & PM WITH BACKGROUND GROWTH RATE

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | | | ↑↑ | |
| Traffic Vol, veh/h | 63 | 2 | 54 | 2 | 2 | 15 | 83 | 1133 | 3 | 5 | 545 | 21 |
| Future Vol, veh/h | 63 | 2 | 54 | 2 | 2 | 15 | 83 | 1133 | 3 | 5 | 545 | 21 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 11 | 11 |
| Mvmt Flow | 70 | 2 | 60 | 2 | 2 | 17 | 92 | 1259 | 3 | 6 | 606 | 23 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1434 | 2064 | 303 | 1759 | 2084 | 631 | 629 | 0 | 0 | 1262 | 0 | 0 |
| Stage 1 | 618 | 618 | - | 1443 | 1443 | - | - | - | - | - | - | - |
| Stage 2 | 816 | 1446 | - | 316 | 641 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 96 | 55 | 699 | 55 | 54 | 429 | 963 | - | - | 558 | - | - |
| Stage 1 | 448 | 484 | - | 141 | 199 | - | - | - | - | - | - | - |
| Stage 2 | 341 | 199 | - | 675 | 473 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 84 | 49 | 699 | 46 | 48 | 429 | 963 | - | - | 558 | - | - |
| Mov Cap-2 Maneuver | 190 | 133 | - | 105 | 130 | - | - | - | - | - | - | - |
| Stage 1 | 405 | 479 | - | 127 | 180 | - | - | - | - | - | - | - |
| Stage 2 | 293 | 180 | - | 608 | 468 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 28.7 | 19.2 | 0.6 | 0.1 |
| HCM LOS | D | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 963 | - | - | 281 | 274 | 558 | - | - |
| HCM Lane V/C Ratio | 0.096 | - | - | 0.471 | 0.077 | 0.01 | - | - |
| HCM Control Delay (s) | 9.1 | - | - | 28.7 | 19.2 | 11.5 | - | - |
| HCM Lane LOS | A | - | - | D | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 2.4 | 0.2 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 119 | 2 | 2 | 15 | 83 | 1197 | 5 | 5 | 545 | 21 |
| Future Vol, veh/h | 0 | 0 | 119 | 2 | 2 | 15 | 83 | 1197 | 5 | 5 | 545 | 21 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 11 | 11 |
| Mvmt Flow | 0 | 0 | 132 | 2 | 2 | 17 | 92 | 1330 | 6 | 6 | 606 | 23 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 303 | 1829 | 2155 | 665 | 629 | 0 | 0 | 1336 | 0 | 0 |
| Stage 1 | - | - | - | 1514 | 1514 | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 315 | 641 | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | - | - | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 699 | 49 | 48 | 407 | 963 | - | - | 523 | - | - |
| Stage 1 | 0 | 0 | - | 128 | 184 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 676 | 473 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 699 | 37 | 43 | 407 | 963 | - | - | 523 | - | - |
| Mov Cap-2 Maneuver | - | - | - | 94 | 121 | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | 116 | 166 | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 542 | 468 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.3 | 20.5 | 0.6 | 0.1 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 963 | - | - | 699 | 254 | 523 | - | - |
| HCM Lane V/C Ratio | 0.096 | - | - | 0.189 | 0.083 | 0.011 | - | - |
| HCM Control Delay (s) | 9.1 | - | - | 11.3 | 20.5 | 12 | - | - |
| HCM Lane LOS | A | - | - | B | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 0.7 | 0.3 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | ↰ | ↑↑ | ↱ | ↰ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 173 | 0 | 0 | 43 | 41 | 1595 | 139 | 16 | 558 | 26 |
| Future Vol, veh/h | 0 | 0 | 173 | 0 | 0 | 43 | 41 | 1595 | 139 | 16 | 558 | 26 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | Stop | - | - | None | - | - | Yield |
| Storage Length | - | - | 0 | - | - | 0 | 217 | - | 25 | 217 | - | 600 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| Heavy Vehicles, % | 3 | 3 | 3 | 5 | 5 | 5 | 8 | 1 | 1 | 13 | 12 | 12 |
| Mvmt Flow | 0 | 0 | 204 | 0 | 0 | 51 | 48 | 1876 | 164 | 19 | 656 | 31 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 328 | - | - | 938 | 656 | 0 | 0 | 2040 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | - | - | 7 | 4.26 | - | - | 4.36 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | - | - | 3.35 | 2.28 | - | - | 2.33 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 665 | 0 | 0 | 260 | 888 | - | - | 235 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 665 | - | - | 260 | 888 | - | - | 235 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 12.8 | 22.2 | 0.2 | 0.6 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 888 | - | - | 665 | 260 | 235 | - | - |
| HCM Lane V/C Ratio | 0.054 | - | - | 0.306 | 0.195 | 0.08 | - | - |
| HCM Control Delay (s) | 9.3 | - | - | 12.8 | 22.2 | 21.6 | - | - |
| HCM Lane LOS | A | - | - | B | C | C | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 1.3 | 0.7 | 0.3 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 14 | 0 | 0 | 615 | 2 |
| Future Vol, veh/h | 0 | 14 | 0 | 0 | 615 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | - | 25 |
| Veh in Median Storage, # | 0 | - | - | 16974 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 9 | 9 | 0 | 0 | 10 | 10 |
| Mvmt Flow | 0 | 16 | 0 | 0 | 683 | 2 |

| Major/Minor | Minor2 | | | Major2 | | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 342 | | | - | 0 |
| Stage 1 | - | - | | | - | - |
| Stage 2 | - | - | | | - | - |
| Critical Hdwy | - | 7.08 | | | - | - |
| Critical Hdwy Stg 1 | - | - | | | - | - |
| Critical Hdwy Stg 2 | - | - | | | - | - |
| Follow-up Hdwy | - | 3.39 | | | - | - |
| Pot Cap-1 Maneuver | 0 | 634 | | | - | - |
| Stage 1 | 0 | - | | | - | - |
| Stage 2 | 0 | - | | | - | - |
| Platoon blocked, % | | | | | - | - |
| Mov Cap-1 Maneuver | - | 634 | | | - | - |
| Mov Cap-2 Maneuver | - | - | | | - | - |
| Stage 1 | - | - | | | - | - |
| Stage 2 | - | - | | | - | - |

| Approach | EB | SB |
|---|---|---|
| HCM Control Delay, s | 10.8 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|---|---|---|---|
| Capacity (veh/h) | 634 | - | - |
| HCM Lane V/C Ratio | 0.025 | - | - |
| HCM Control Delay (s) | 10.8 | - | - |
| HCM Lane LOS | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 756 | 0 | 0 | 0 | 0 | 0 | 113 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 756 | 0 | 0 | 0 | 0 | 0 | 113 | 0 | 0 | 0 | 0 | 0 |
| 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 | 0 | - | - | - | - | - | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Heavy Vehicles, % | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 969 | 0 | 0 | 0 | 0 | 0 | 145 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 0 | 1 | 1 | - | - | - | 1 |
| Stage 1 | - | - | - | 0 | 0 | - | - | - | - |
| Stage 2 | - | - | - | 1 | 1 | - | - | - | - |
| Critical Hdwy | - | - | - | 7.1 | 6.5 | - | - | - | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.1 | 5.5 | - | - | - | - |
| Follow-up Hdwy | - | - | - | 3.5 | 4 | - | - | - | 3.3 |
| Pot Cap-1 Maneuver | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | 1090 |
| Stage 1 | 0 | - | 0 | - | - | 0 | 0 | 0 | - |
| Stage 2 | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | - |
| Platoon blocked, % | | - | | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 1027 | 899 | - | - | - | 1090 |
| Mov Cap-2 Maneuver | - | - | - | 1027 | 899 | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 1027 | 899 | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 9.1 | 0 |
| HCM LOS | | A | A |

| Minor Lane/Major Mvmt | NBLn1 | WBT | SBLn1 |
|---|---|---|---|
| Capacity (veh/h) | 1027 | - | - |
| HCM Lane V/C Ratio | 0.141 | - | - |
| HCM Control Delay (s) | 9.1 | - | 0 |
| HCM Lane LOS | A | - | A |
| HCM 95th %tile Q(veh) | 0.5 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 663 | 51 | 2 | 127 | 0 | 0 | 0 | 0 | 18 | 1 | 0 |
| Future Vol, veh/h | 0 | 663 | 51 | 2 | 127 | 0 | 0 | 0 | 0 | 18 | 1 | 0 |
| 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 | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 22 | 22 | 22 |
| Mvmt Flow | 0 | 861 | 66 | 3 | 165 | 0 | 0 | 0 | 0 | 23 | 1 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | 0 | 927 | 0 | 0 | 1065 | 1098 | - |
| Stage 1 | - | - | - | - | - | - | 171 | 171 | - |
| Stage 2 | - | - | - | - | - | - | 894 | 927 | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | 6.62 | 6.72 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 5.62 | 5.72 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 5.62 | 5.72 | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | 3.698 | 4.198 | - |
| Pot Cap-1 Maneuver | 0 | - | - | 737 | - | 0 | 226 | 196 | 0 |
| Stage 1 | 0 | - | - | - | - | 0 | 813 | 721 | 0 |
| Stage 2 | 0 | - | - | - | - | 0 | 369 | 322 | 0 |
| Platoon blocked, % | | - | - | | - | | | | |
| Mov Cap-1 Maneuver | - | - | - | 737 | - | - | 225 | 0 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 225 | 0 | - |
| Stage 1 | - | - | - | - | - | - | 813 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 368 | 0 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.2 | 23 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 737 | - | 225 |
| HCM Lane V/C Ratio | - | - | 0.004 | - | 0.11 |
| HCM Control Delay (s) | - | - | 9.9 | 0 | 23 |
| HCM Lane LOS | - | - | A | A | C |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.4 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 127 | 0 | 0 | 714 | 0 | 203 |
| Future Vol, veh/h | 127 | 0 | 0 | 714 | 0 | 203 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Free | - | None |
| Storage Length | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | 0 | - | 16974 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 3 | 3 | 0 | 0 | 8 | 8 |
| Mvmt Flow | 146 | 0 | 0 | 821 | 0 | 233 |

| Major/Minor | Minor1 | | Major2 | |
|---|---|---|---|---|
| Conflicting Flow All | 233 | - | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 233 | - | - | - |
| Critical Hdwy | 6.43 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.43 | - | - | - |
| Follow-up Hdwy | 3.527 | - | - | - |
| Pot Cap-1 Maneuver | 753 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 803 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 753 | - | - | - |
| Mov Cap-2 Maneuver | 753 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 803 | - | - | - |

| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 10.9 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | WBLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 753 | - |
| HCM Lane V/C Ratio | 0.194 | - |
| HCM Control Delay (s) | 10.9 | - |
| HCM Lane LOS | B | - |
| HCM 95th %tile Q(veh) | 0.7 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 196 | 1 | 100 | 0 | 2 | 17 | 29 | 858 | 3 | 12 | 433 | 70 |
| Future Vol, veh/h | 196 | 1 | 100 | 0 | 2 | 17 | 29 | 858 | 3 | 12 | 433 | 70 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 25 | - | - | - | 200 | - | 25 | 200 | - | 525 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 3 | 3 | 3 | 17 | 17 | 17 | 4 | 2 | 2 | 9 | 9 | 6 |
| Mvmt Flow | 204 | 1 | 104 | 0 | 2 | 18 | 30 | 894 | 3 | 13 | 451 | 73 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 985 | 1434 | 226 | 1206 | 1504 | 447 | 524 | 0 | 0 | 897 | 0 | 0 |
| Stage 1 | 477 | 477 | - | 954 | 954 | - | - | - | - | - | - | - |
| Stage 2 | 508 | 957 | - | 252 | 550 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.84 | 6.84 | 7.24 | 4.18 | - | - | 4.28 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.84 | 5.84 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.84 | 5.84 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.67 | 4.17 | 3.47 | 2.24 | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver | ~ 201 | 132 | 774 | 123 | 105 | 520 | 1025 | - | - | 710 | - | - |
| Stage 1 | 535 | 552 | - | 250 | 303 | - | - | - | - | - | - | - |
| Stage 2 | 513 | 332 | - | 689 | 478 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 186 | 126 | 774 | 102 | 100 | 520 | 1025 | - | - | 710 | - | - |
| Mov Cap-2 Maneuver | 308 | 231 | - | 191 | 204 | - | - | - | - | - | - | - |
| Stage 1 | 519 | 542 | - | 243 | 294 | - | - | - | - | - | - | - |
| Stage 2 | 478 | 322 | - | 584 | 469 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 28.4 | 13.4 | 0.3 | 0.2 |
| HCM LOS | D | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1025 | - | - | 307 | 774 | 447 | 710 | - | - |
| HCM Lane V/C Ratio | 0.029 | - | - | 0.668 | 0.135 | 0.044 | 0.018 | - | - |
| HCM Control Delay (s) | 8.6 | - | - | 37.5 | 10.4 | 13.4 | 10.2 | - | - |
| HCM Lane LOS | A | - | - | E | B | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 4.5 | 0.5 | 0.1 | 0.1 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 62 | 397 | 417 | 91 | 204 | 241 |
| Future Vol, veh/h | 62 | 397 | 417 | 91 | 204 | 241 |
| 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 | 25 | - | 25 | 350 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 1 | 1 | 2 | 2 | 9 | 9 |
| Mvmt Flow | 72 | 462 | 485 | 106 | 237 | 280 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1099 | 243 | 0 | 0 | 591 | 0 |
| Stage 1 | 485 | - | - | - | - | - |
| Stage 2 | 614 | - | - | - | - | - |
| Critical Hdwy | 6.82 | 6.92 | - | - | 4.28 | - |
| Critical Hdwy Stg 1 | 5.82 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.82 | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 3.31 | - | - | 2.29 | - |
| Pot Cap-1 Maneuver | 208 | 761 | - | - | 934 | - |
| Stage 1 | 588 | - | - | - | - | - |
| Stage 2 | 505 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 155 | 761 | - | - | 934 | - |
| Mov Cap-2 Maneuver | 275 | - | - | - | - | - |
| Stage 1 | 588 | - | - | - | - | - |
| Stage 2 | 377 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 17.5 | 0 | 4.7 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 275 | 761 | 934 | - |
| HCM Lane V/C Ratio | - | - | 0.262 | 0.607 | 0.254 | - |
| HCM Control Delay (s) | - | - | 22.7 | 16.7 | 10.2 | - |
| HCM Lane LOS | - | - | C | C | B | - |
| HCM 95th %tile Q(veh) | - | - | 1 | 4.2 | 1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | | | ↑↑ | |
| Traffic Vol, veh/h | 24 | 2 | 148 | 4 | 2 | 16 | 90 | 626 | 11 | 24 | 1410 | 71 |
| Future Vol, veh/h | 24 | 2 | 148 | 4 | 2 | 16 | 90 | 626 | 11 | 24 | 1410 | 71 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 0 | 0 | 0 | 5 | 5 | 5 | 0 | 7 | 7 | 5 | 1 | 1 |
| Mvmt Flow | 25 | 2 | 156 | 4 | 2 | 17 | 95 | 659 | 12 | 25 | 1484 | 75 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2055 | 2395 | 742 | 1642 | 2458 | 330 | 1559 | 0 | 0 | 671 | 0 | 0 |
| Stage 1 | 1534 | 1534 | - | 849 | 849 | - | - | - | - | - | - | - |
| Stage 2 | 521 | 861 | - | 793 | 1609 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.6 | 6.6 | 7 | 4.1 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.55 | 4.05 | 3.35 | 2.2 | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver | 33 | 34 | 363 | 64 | 29 | 657 | 430 | - | - | 895 | - | - |
| Stage 1 | 124 | 180 | - | 316 | 368 | - | - | - | - | - | - | - |
| Stage 2 | 512 | 375 | - | 342 | 157 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 25 | 26 | 363 | 29 | 22 | 657 | 430 | - | - | 895 | - | - |
| Mov Cap-2 Maneuver | 77 | 108 | - | 71 | 49 | - | - | - | - | - | - | - |
| Stage 1 | 97 | 175 | - | 246 | 287 | - | - | - | - | - | - | - |
| Stage 2 | 386 | 292 | - | 187 | 153 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 58.6 | 27.8 | 1.9 | 0.1 |
| HCM LOS | F | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 430 | - | - | 236 | 181 | 895 | - | - |
| HCM Lane V/C Ratio | 0.22 | - | - | 0.776 | 0.128 | 0.028 | - | - |
| HCM Control Delay (s) | 15.7 | - | - | 58.6 | 27.8 | 9.1 | - | - |
| HCM Lane LOS | C | - | - | F | D | A | - | - |
| HCM 95th %tile Q(veh) | 0.8 | - | - | 5.6 | 0.4 | 0.1 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 174 | 4 | 2 | 16 | 90 | 650 | 13 | 24 | 1410 | 71 |
| Future Vol, veh/h | 0 | 0 | 174 | 4 | 2 | 16 | 90 | 650 | 13 | 24 | 1410 | 71 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 0 | 0 | 0 | 5 | 5 | 5 | 0 | 7 | 7 | 5 | 1 | 1 |
| Mvmt Flow | 0 | 0 | 183 | 4 | 2 | 17 | 95 | 684 | 14 | 25 | 1484 | 75 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 742 | 1666 | 2483 | 342 | 1559 | 0 | 0 | 698 | 0 | 0 |
| Stage 1 | - | - | - | 874 | 874 | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 792 | 1609 | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.9 | 7.6 | 6.6 | 7 | 4.1 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | - | - | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.3 | 3.55 | 4.05 | 3.35 | 2.2 | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 363 | 61 | 28 | 645 | 430 | - | - | 874 | - | - |
| Stage 1 | 0 | 0 | - | 305 | 359 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 342 | 157 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 363 | 25 | 21 | 645 | 430 | - | - | 874 | - | - |
| Mov Cap-2 Maneuver | - | - | - | 57 | 48 | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | 238 | 280 | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 165 | 152 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 24.6 | 31.1 | 1.9 | 0.1 |
| HCM LOS | C | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 430 | - | - | 363 | 161 | 874 | - | - |
| HCM Lane V/C Ratio | 0.22 | - | - | 0.505 | 0.144 | 0.029 | - | - |
| HCM Control Delay (s) | 15.7 | - | - | 24.6 | 31.1 | 9.2 | - | - |
| HCM Lane LOS | C | - | - | C | D | A | - | - |
| HCM 95th %tile Q(veh) | 0.8 | - | - | 2.7 | 0.5 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | ↰ | ↑↑ | ↱ | ↰ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 101 | 0 | 0 | 73 | 64 | 670 | 80 | 32 | 1439 | 79 |
| Future Vol, veh/h | 0 | 0 | 101 | 0 | 0 | 73 | 64 | 670 | 80 | 32 | 1439 | 79 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | Stop | - | - | None | - | - | Yield |
| Storage Length | - | - | 0 | - | - | 0 | 217 | - | 25 | 217 | - | 600 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 4 | 4 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 0 | 109 | 0 | 0 | 78 | 69 | 720 | 86 | 34 | 1547 | 85 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 774 | - | - | 360 | 1547 | 0 | 0 | 806 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.9 | - | - | 6.92 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.3 | - | - | 3.31 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 346 | 0 | 0 | 639 | 434 | - | - | 828 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 346 | - | - | 639 | 434 | - | - | 828 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 20.1 | 11.4 | 1.2 | 0.2 |
| HCM LOS | C | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 434 | - | - | 346 | 639 | 828 | - | - |
| HCM Lane V/C Ratio | 0.159 | - | - | 0.314 | 0.123 | 0.042 | - | - |
| HCM Control Delay (s) | 14.9 | - | - | 20.1 | 11.4 | 9.5 | - | - |
| HCM Lane LOS | B | - | - | C | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.6 | - | - | 1.3 | 0.4 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 4 | 0 | 0 | 1470 | 17 |
| Future Vol, veh/h | 0 | 4 | 0 | 0 | 1470 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | - | 25 |
| Veh in Median Storage, # | 0 | - | - | 16974 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 4 | 0 | 0 | 1564 | 18 |

| Major/Minor | Minor2 | | | Major2 | |
|---|---|---|---|---|---|
| Conflicting Flow All | - | 782 | | - | 0 |
| Stage 1 | - | - | | - | - |
| Stage 2 | - | - | | - | - |
| Critical Hdwy | - | 6.9 | | - | - |
| Critical Hdwy Stg 1 | - | - | | - | - |
| Critical Hdwy Stg 2 | - | - | | - | - |
| Follow-up Hdwy | - | 3.3 | | - | - |
| Pot Cap-1 Maneuver | 0 | 341 | | - | - |
| Stage 1 | 0 | - | | - | - |
| Stage 2 | 0 | - | | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | - | 341 | | - | - |
| Mov Cap-2 Maneuver | - | - | | - | - |
| Stage 1 | - | - | | - | - |
| Stage 2 | - | - | | - | - |

| Approach | EB | SB |
|---|---|---|
| HCM Control Delay, s | 15.7 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|---|---|---|---|
| Capacity (veh/h) | 341 | - | - |
| HCM Lane V/C Ratio | 0.012 | - | - |
| HCM Control Delay (s) | 15.7 | - | - |
| HCM Lane LOS | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 378 | 0 | 0 | 0 | 0 | 0 | 131 | 1 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 378 | 0 | 0 | 0 | 0 | 0 | 131 | 1 | 0 | 0 | 0 | 0 |
| 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 | 0 | - | - | - | - | - | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 402 | 0 | 0 | 0 | 0 | 0 | 139 | 1 | 0 | 0 | 0 | 0 |

| Major/Minor | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 0 | 1 | 1 | - | - | - | 1 |
| Stage 1 | - | - | - | 0 | 0 | - | - | - | - |
| Stage 2 | - | - | - | 1 | 1 | - | - | - | - |
| Critical Hdwy | - | - | - | 7.1 | 6.5 | - | - | - | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.1 | 5.5 | - | - | - | - |
| Follow-up Hdwy | - | - | - | 3.5 | 4 | - | - | - | 3.3 |
| Pot Cap-1 Maneuver | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | 1090 |
| Stage 1 | 0 | - | 0 | - | - | 0 | 0 | 0 | - |
| Stage 2 | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | - |
| Platoon blocked, % | | - | | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 1027 | 899 | - | - | - | 1090 |
| Mov Cap-2 Maneuver | - | - | - | 1027 | 899 | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 1027 | 899 | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 9.1 | 0 |
| HCM LOS | | A | A |

| Minor Lane/Major Mvmt | NBLn1 | WBT | SBLn1 |
|---|---|---|---|
| Capacity (veh/h) | 1026 | - | - |
| HCM Lane V/C Ratio | 0.137 | - | - |
| HCM Control Delay (s) | 9.1 | - | 0 |
| HCM Lane LOS | A | - | A |
| HCM 95th %tile Q(veh) | 0.5 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 345 | 142 | 9 | 119 | 0 | 0 | 0 | 0 | 11 | 1 | 0 |
| Future Vol, veh/h | 0 | 345 | 142 | 9 | 119 | 0 | 0 | 0 | 0 | 11 | 1 | 0 |
| 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 | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 431 | 178 | 11 | 149 | 0 | 0 | 0 | 0 | 14 | 1 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | 0 | 609 | 0 | 0 | 691 | 780 | - |
| Stage 1 | - | - | - | - | - | - | 171 | 171 | - |
| Stage 2 | - | - | - | - | - | - | 520 | 609 | - |
| Critical Hdwy | - | - | - | 4.13 | - | - | 6.4 | 6.5 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 5.4 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 5.4 | 5.5 | - |
| Follow-up Hdwy | - | - | - | 2.227 | - | - | 3.5 | 4 | - |
| Pot Cap-1 Maneuver | 0 | - | - | 965 | - | 0 | 413 | 329 | 0 |
| Stage 1 | 0 | - | - | - | - | 0 | 864 | 761 | 0 |
| Stage 2 | 0 | - | - | - | - | 0 | 601 | 488 | 0 |
| Platoon blocked, % | | - | - | | - | | | | |
| Mov Cap-1 Maneuver | - | - | - | 965 | - | - | 408 | 0 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 408 | 0 | - |
| Stage 1 | - | - | - | - | - | - | 864 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 594 | 0 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.6 | 14.2 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 965 | - | 408 |
| HCM Lane V/C Ratio | - | - | 0.012 | - | 0.037 |
| HCM Control Delay (s) | - | - | 8.8 | 0 | 14.2 |
| HCM Lane LOS | - | - | A | A | B |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 119 | 0 | 0 | 487 | 0 | 576 |
| Future Vol, veh/h | 119 | 0 | 0 | 487 | 0 | 576 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Free | - | None |
| Storage Length | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | 0 | - | 16974 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 1 | 1 | 0 | 0 | 1 | 1 |
| Mvmt Flow | 132 | 0 | 0 | 541 | 0 | 640 |

| Major/Minor | Minor1 | | Major2 | |
|---|---|---|---|---|
| Conflicting Flow All | 640 | - | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 640 | - | - | - |
| Critical Hdwy | 6.41 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | - | - | - |
| Follow-up Hdwy | 3.509 | - | - | - |
| Pot Cap-1 Maneuver | 441 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 527 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 441 | - | - | - |
| Mov Cap-2 Maneuver | 441 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 527 | - | - | - |

| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 16.6 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | WBLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 441 | - |
| HCM Lane V/C Ratio | 0.3 | - |
| HCM Control Delay (s) | 16.6 | - |
| HCM Lane LOS | C | - |
| HCM 95th %tile Q(veh) | 1.2 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 56 | 0 | 57 | 8 | 0 | 22 | 103 | 506 | 4 | 21 | 852 | 162 |
| Future Vol, veh/h | 56 | 0 | 57 | 8 | 0 | 22 | 103 | 506 | 4 | 21 | 852 | 162 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 25 | - | - | - | 200 | - | 25 | 200 | - | 525 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 4 | 4 | 4 | 0 | 5 | 5 | 0 | 1 | 1 |
| Mvmt Flow | 58 | 0 | 59 | 8 | 0 | 23 | 106 | 522 | 4 | 22 | 878 | 167 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1395 | 1660 | 439 | 1217 | 1823 | 261 | 1045 | 0 | 0 | 526 | 0 | 0 |
| Stage 1 | 922 | 922 | - | 734 | 734 | - | - | - | - | - | - | - |
| Stage 2 | 473 | 738 | - | 483 | 1089 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.58 | 6.58 | 6.98 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.58 | 5.58 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.58 | 5.58 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.54 | 4.04 | 3.34 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 101 | 96 | 566 | 134 | 75 | 732 | 673 | - | - | 1051 | - | - |
| Stage 1 | 291 | 347 | - | 373 | 419 | - | - | - | - | - | - | - |
| Stage 2 | 541 | 422 | - | 528 | 285 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 85 | 79 | 566 | 104 | 62 | 732 | 673 | - | - | 1051 | - | - |
| Mov Cap-2 Maneuver | 176 | 190 | - | 200 | 130 | - | - | - | - | - | - | - |
| Stage 1 | 245 | 340 | - | 314 | 353 | - | - | - | - | - | - | - |
| Stage 2 | 442 | 355 | - | 463 | 279 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 23.5 | 14.1 | 1.9 | 0.2 |
| HCM LOS | C | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 673 | - | - | 176 | 566 | 428 | 1051 | - | - |
| HCM Lane V/C Ratio | 0.158 | - | - | 0.328 | 0.104 | 0.072 | 0.021 | - | - |
| HCM Control Delay (s) | 11.3 | - | - | 35.1 | 12.1 | 14.1 | 8.5 | - | - |
| HCM Lane LOS | B | - | - | E | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.6 | - | - | 1.3 | 0.3 | 0.2 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 93 | 296 | 241 | 57 | 425 | 435 |
| Future Vol, veh/h | 93 | 296 | 241 | 57 | 425 | 435 |
| 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 | 25 | - | 25 | 350 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 1 | 1 | 5 | 5 | 2 | 2 |
| Mvmt Flow | 96 | 305 | 248 | 59 | 438 | 448 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1348 | 124 | 0 | 0 | 307 | 0 |
| Stage 1 | 248 | - | - | - | - | - |
| Stage 2 | 1100 | - | - | - | - | - |
| Critical Hdwy | 6.82 | 6.92 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.82 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.82 | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 3.31 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 143 | 907 | - | - | 1250 | - |
| Stage 1 | 773 | - | - | - | - | - |
| Stage 2 | 282 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 93 | 907 | - | - | 1250 | - |
| Mov Cap-2 Maneuver | 157 | - | - | - | - | - |
| Stage 1 | 773 | - | - | - | - | - |
| Stage 2 | 183 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 22.4 | 0 | 4.7 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 157 | 907 | 1250 | - |
| HCM Lane V/C Ratio | - | - | 0.611 | 0.336 | 0.351 | - |
| HCM Control Delay (s) | - | - | 58.5 | 11 | 9.4 | - |
| HCM Lane LOS | - | - | F | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 3.3 | 1.5 | 1.6 | - |

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

# YEAR 2026

# LEVEL OF SERVICE CALCULATIONS

# AM & PM WITHOUT PROJECT, WITH BACKGROUND

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↑↑ | | | ↑↑ | |
| Traffic Vol, veh/h | 63 | 2 | 55 | 2 | 2 | 15 | 86 | 1243 | 3 | 5 | 582 | 21 |
| Future Vol, veh/h | 63 | 2 | 55 | 2 | 2 | 15 | 86 | 1243 | 3 | 5 | 582 | 21 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 11 | 11 |
| Mvmt Flow | 70 | 2 | 61 | 2 | 2 | 17 | 96 | 1381 | 3 | 6 | 647 | 23 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1544 | 2235 | 324 | 1910 | 2255 | 692 | 670 | 0 | 0 | 1384 | 0 | 0 |
| Stage 1 | 659 | 659 | - | 1573 | 1573 | - | - | - | - | - | - | - |
| Stage 2 | 885 | 1576 | - | 337 | 682 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 80 | 43 | 678 | 42 | 42 | 391 | 930 | - | - | 501 | - | - |
| Stage 1 | 424 | 464 | - | 117 | 172 | - | - | - | - | - | - | - |
| Stage 2 | 310 | 172 | - | 656 | 453 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 69 | 38 | 678 | 34 | 37 | 391 | 930 | - | - | 501 | - | - |
| Mov Cap-2 Maneuver | 170 | 114 | - | 87 | 112 | - | - | - | - | - | - | - |
| Stage 1 | 380 | 458 | - | 105 | 154 | - | - | - | - | - | - | - |
| Stage 2 | 262 | 154 | - | 587 | 448 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 33.4 | 21.4 | 0.6 | 0.1 |
| HCM LOS | D | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 930 | - | - | 256 | 240 | 501 | - | - |
| HCM Lane V/C Ratio | 0.103 | - | - | 0.521 | 0.088 | 0.011 | - | - |
| HCM Control Delay (s) | 9.3 | - | - | 33.4 | 21.4 | 12.3 | - | - |
| HCM Lane LOS | A | - | - | D | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 2.8 | 0.3 | 0 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 120 | 2 | 2 | 15 | 86 | 1307 | 5 | 5 | 582 | 21 |
| Future Vol, veh/h | 0 | 0 | 120 | 2 | 2 | 15 | 86 | 1307 | 5 | 5 | 582 | 21 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 11 | 11 |
| Mvmt Flow | 0 | 0 | 133 | 2 | 2 | 17 | 96 | 1452 | 6 | 6 | 647 | 23 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 324 | 1980 | 2326 | 726 | 670 | 0 | 0 | 1458 | 0 | 0 |
| Stage 1 | - | - | - | 1644 | 1644 | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 336 | 682 | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | - | - | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 678 | 37 | 38 | 372 | 930 | - | - | 470 | - | - |
| Stage 1 | 0 | 0 | - | 106 | 159 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 657 | 453 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 678 | 27 | 34 | 372 | 930 | - | - | 470 | - | - |
| Mov Cap-2 Maneuver | - | - | - | 78 | 105 | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | 95 | 143 | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 521 | 447 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.6 | 22.8 | 0.6 | 0.1 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 930 | - | - | 678 | 223 | 470 | - | - |
| HCM Lane V/C Ratio | 0.103 | - | - | 0.197 | 0.095 | 0.012 | - | - |
| HCM Control Delay (s) | 9.3 | - | - | 11.6 | 22.8 | 12.8 | - | - |
| HCM Lane LOS | A | - | - | B | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 0.7 | 0.3 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 175 | 0 | 0 | 45 | 41 | 1712 | 147 | 16 | 598 | 30 |
| Future Vol, veh/h | 0 | 0 | 175 | 0 | 0 | 45 | 41 | 1712 | 147 | 16 | 598 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | Stop | - | - | None | - | - | Yield |
| Storage Length | - | - | 0 | - | - | 0 | 217 | - | 25 | 217 | - | 600 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| Heavy Vehicles, % | 3 | 3 | 3 | 5 | 5 | 5 | 8 | 1 | 1 | 13 | 12 | 12 |
| Mvmt Flow | 0 | 0 | 206 | 0 | 0 | 53 | 48 | 2014 | 173 | 19 | 704 | 35 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 352 | - | - | 1007 | 704 | 0 | 0 | 2187 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | - | - | 7 | 4.26 | - | - | 4.36 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | - | - | 3.35 | 2.28 | - | - | 2.33 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 641 | 0 | 0 | 234 | 851 | - | - | 204 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 641 | - | - | 234 | 851 | - | - | 204 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 13.3 | 24.8 | 0.2 | 0.6 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 851 | - | - | 641 | 234 | 204 | - | - |
| HCM Lane V/C Ratio | 0.057 | - | - | 0.321 | 0.226 | 0.092 | - | - |
| HCM Control Delay (s) | 9.5 | - | - | 13.3 | 24.8 | 24.4 | - | - |
| HCM Lane LOS | A | - | - | B | C | C | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 1.4 | 0.8 | 0.3 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 14 | 0 | 0 | 657 | 2 |
| Future Vol, veh/h | 0 | 14 | 0 | 0 | 657 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | - | 25 |
| Veh in Median Storage, # | 0 | - | - | 16974 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 9 | 9 | 0 | 0 | 10 | 10 |
| Mvmt Flow | 0 | 16 | 0 | 0 | 730 | 2 |

| Major/Minor | Minor2 | | | Major2 | | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 365 | | | - | 0 |
| Stage 1 | - | - | | | - | - |
| Stage 2 | - | - | | | - | - |
| Critical Hdwy | - | 7.08 | | | - | - |
| Critical Hdwy Stg 1 | - | - | | | - | - |
| Critical Hdwy Stg 2 | - | - | | | - | - |
| Follow-up Hdwy | - | 3.39 | | | - | - |
| Pot Cap-1 Maneuver | 0 | 612 | | | - | - |
| Stage 1 | 0 | - | | | - | - |
| Stage 2 | 0 | - | | | - | - |
| Platoon blocked, % | | | | | - | - |
| Mov Cap-1 Maneuver | - | 612 | | | - | - |
| Mov Cap-2 Maneuver | - | - | | | - | - |
| Stage 1 | - | - | | | - | - |
| Stage 2 | - | - | | | - | - |

| Approach | EB | SB |
|---|---|---|
| HCM Control Delay, s | 11 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|---|---|---|---|
| Capacity (veh/h) | 612 | - | - |
| HCM Lane V/C Ratio | 0.025 | - | - |
| HCM Control Delay (s) | 11 | - | - |
| HCM Lane LOS | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 781 | 0 | 0 | 0 | 0 | 0 | 115 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 781 | 0 | 0 | 0 | 0 | 0 | 115 | 0 | 0 | 0 | 0 | 0 |
| 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 | 0 | - | - | - | - | - | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Heavy Vehicles, % | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 1001 | 0 | 0 | 0 | 0 | 0 | 147 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 0 | 1 | 1 | - | - | - | 1 |
| Stage 1 | - | - | - | 0 | 0 | - | - | - | - |
| Stage 2 | - | - | - | 1 | 1 | - | - | - | - |
| Critical Hdwy | - | - | - | 7.1 | 6.5 | - | - | - | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.1 | 5.5 | - | - | - | - |
| Follow-up Hdwy | - | - | - | 3.5 | 4 | - | - | - | 3.3 |
| Pot Cap-1 Maneuver | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | 1090 |
| Stage 1 | 0 | - | 0 | - | - | 0 | 0 | 0 | - |
| Stage 2 | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | - |
| Platoon blocked, % | | - | | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 1027 | 899 | - | - | - | 1090 |
| Mov Cap-2 Maneuver | - | - | - | 1027 | 899 | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 1027 | 899 | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 9.1 | 0 |
| HCM LOS | | A | A |

| Minor Lane/Major Mvmt | NBLn1 | WBT | SBLn1 |
|---|---|---|---|
| Capacity (veh/h) | 1027 | - | - |
| HCM Lane V/C Ratio | 0.144 | - | - |
| HCM Control Delay (s) | 9.1 | - | 0 |
| HCM Lane LOS | A | - | A |
| HCM 95th %tile Q(veh) | 0.5 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 688 | 52 | 2 | 129 | 0 | 0 | 0 | 0 | 18 | 1 | 0 |
| Future Vol, veh/h | 0 | 688 | 52 | 2 | 129 | 0 | 0 | 0 | 0 | 18 | 1 | 0 |
| 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 | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 22 | 22 | 22 |
| Mvmt Flow | 0 | 894 | 68 | 3 | 168 | 0 | 0 | 0 | 0 | 23 | 1 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | 0 | 962 | 0 | 0 | 1102 | 1136 | - |
| Stage 1 | - | - | - | - | - | - | 174 | 174 | - |
| Stage 2 | - | - | - | - | - | - | 928 | 962 | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | 6.62 | 6.72 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 5.62 | 5.72 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 5.62 | 5.72 | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | 3.698 | 4.198 | - |
| Pot Cap-1 Maneuver | 0 | - | - | 715 | - | 0 | 214 | 186 | 0 |
| Stage 1 | 0 | - | - | - | - | 0 | 810 | 719 | 0 |
| Stage 2 | 0 | - | - | - | - | 0 | 355 | 309 | 0 |
| Platoon blocked, % | | - | - | | - | | | | |
| Mov Cap-1 Maneuver | - | - | - | 715 | - | - | 213 | 0 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 213 | 0 | - |
| Stage 1 | - | - | - | - | - | - | 810 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 353 | 0 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.2 | 24.1 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 715 | - | 213 |
| HCM Lane V/C Ratio | - | - | 0.004 | - | 0.116 |
| HCM Control Delay (s) | - | - | 10.1 | 0 | 24.1 |
| HCM Lane LOS | - | - | B | A | C |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.4 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 129 | 0 | 0 | 740 | 0 | 212 |
| Future Vol, veh/h | 129 | 0 | 0 | 740 | 0 | 212 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Free | - | None |
| Storage Length | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | 0 | - | 16974 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 3 | 3 | 0 | 0 | 8 | 8 |
| Mvmt Flow | 148 | 0 | 0 | 851 | 0 | 244 |

| Major/Minor | Minor1 | | Major2 | |
|---|---|---|---|---|
| Conflicting Flow All | 244 | - | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 244 | - | - | - |
| Critical Hdwy | 6.43 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.43 | - | - | - |
| Follow-up Hdwy | 3.527 | - | - | - |
| Pot Cap-1 Maneuver | 742 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 794 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 742 | - | - | - |
| Mov Cap-2 Maneuver | 742 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 794 | - | - | - |

| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 11.1 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | WBLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 742 | - |
| HCM Lane V/C Ratio | 0.2 | - |
| HCM Control Delay (s) | 11.1 | - |
| HCM Lane LOS | B | - |
| HCM 95th %tile Q(veh) | 0.7 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 237 | 1 | 124 | 0 | 2 | 17 | 37 | 919 | 3 | 12 | 453 | 84 |
| Future Vol, veh/h | 237 | 1 | 124 | 0 | 2 | 17 | 37 | 919 | 3 | 12 | 453 | 84 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 25 | - | - | - | 200 | - | 25 | 200 | - | 525 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 3 | 3 | 3 | 17 | 17 | 17 | 4 | 2 | 2 | 9 | 9 | 6 |
| Mvmt Flow | 247 | 1 | 129 | 0 | 2 | 18 | 39 | 957 | 3 | 13 | 472 | 88 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1056 | 1536 | 236 | 1298 | 1621 | 479 | 560 | 0 | 0 | 960 | 0 | 0 |
| Stage 1 | 498 | 498 | - | 1035 | 1035 | - | - | - | - | - | - | - |
| Stage 2 | 558 | 1038 | - | 263 | 586 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.84 | 6.84 | 7.24 | 4.18 | - | - | 4.28 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.84 | 5.84 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.84 | 5.84 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.67 | 4.17 | 3.47 | 2.24 | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver | ~ 178 | 114 | 763 | 105 | 88 | 494 | 993 | - | - | 671 | - | - |
| Stage 1 | 520 | 540 | - | 222 | 276 | - | - | - | - | - | - | - |
| Stage 2 | 479 | 304 | - | 678 | 460 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 163 | 108 | 763 | 83 | 83 | 494 | 993 | - | - | 671 | - | - |
| Mov Cap-2 Maneuver | 284 | 210 | - | 167 | 183 | - | - | - | - | - | - | - |
| Stage 1 | 500 | 530 | - | 213 | 265 | - | - | - | - | - | - | - |
| Stage 2 | 440 | 292 | - | 551 | 451 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 46.5 | 14 | 0.3 | 0.2 |
| HCM LOS | E | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 993 | - | - | 284 | 763 | 419 | 671 | - | - |
| HCM Lane V/C Ratio | 0.039 | - | - | 0.873 | 0.169 | 0.047 | 0.019 | - | - |
| HCM Control Delay (s) | 8.8 | - | - | 65.2 | 10.7 | 14 | 10.5 | - | - |
| HCM Lane LOS | A | - | - | F | B | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 7.6 | 0.6 | 0.1 | 0.1 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | ↰ | ↑↑ | ↱ | ↰ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 362 | 0 | 0 | 19 | 37 | 1156 | 4 | 12 | 453 | 87 |
| Future Vol, veh/h | 0 | 0 | 362 | 0 | 0 | 19 | 37 | 1156 | 4 | 12 | 453 | 87 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | 0 | 200 | - | 25 | 200 | - | 525 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 3 | 3 | 3 | 17 | 17 | 17 | 4 | 2 | 2 | 9 | 9 | 6 |
| Mvmt Flow | 0 | 0 | 377 | 0 | 0 | 20 | 39 | 1204 | 4 | 13 | 472 | 91 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 236 | - | - | 602 | 563 | 0 | 0 | 1208 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | - | - | 7.24 | 4.18 | - | - | 4.28 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | - | - | 3.47 | 2.24 | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 763 | 0 | 0 | 407 | 991 | - | - | 536 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 763 | - | - | 407 | 991 | - | - | 536 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 14.2 | 14.3 | 0.3 | 0.3 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 991 | - | - | 763 | 407 | 536 | - | - |
| HCM Lane V/C Ratio | 0.039 | - | - | 0.494 | 0.049 | 0.023 | - | - |
| HCM Control Delay (s) | 8.8 | - | - | 14.2 | 14.3 | 11.9 | - | - |
| HCM Lane LOS | A | - | - | B | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 2.8 | 0.2 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 66 | 402 | 436 | 102 | 216 | 273 |
| Future Vol, veh/h | 66 | 402 | 436 | 102 | 216 | 273 |
| 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 | 25 | - | 25 | 350 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 1 | 1 | 2 | 2 | 9 | 9 |
| Mvmt Flow | 77 | 467 | 507 | 119 | 251 | 317 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1168 | 254 | 0 | 0 | 626 | 0 |
| Stage 1 | 507 | - | - | - | - | - |
| Stage 2 | 661 | - | - | - | - | - |
| Critical Hdwy | 6.82 | 6.92 | - | - | 4.28 | - |
| Critical Hdwy Stg 1 | 5.82 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.82 | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 3.31 | - | - | 2.29 | - |
| Pot Cap-1 Maneuver | 188 | 748 | - | - | 905 | - |
| Stage 1 | 573 | - | - | - | - | - |
| Stage 2 | 478 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 136 | 748 | - | - | 905 | - |
| Mov Cap-2 Maneuver | 254 | - | - | - | - | - |
| Stage 1 | 573 | - | - | - | - | - |
| Stage 2 | 346 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 18.6 | 0 | 4.6 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 254 | 748 | 905 | - |
| HCM Lane V/C Ratio | - | - | 0.302 | 0.625 | 0.278 | - |
| HCM Control Delay (s) | - | - | 25.2 | 17.5 | 10.5 | - |
| HCM Lane LOS | - | - | D | C | B | - |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 4.4 | 1.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 66 | 402 | 436 | 102 | 216 | 273 |
| Future Vol, veh/h | 66 | 402 | 436 | 102 | 216 | 273 |
| 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 | 50 | - | 25 | 350 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 1 | 1 | 2 | 2 | 9 | 9 |
| Mvmt Flow | 77 | 467 | 507 | 119 | 251 | 317 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1168 | 254 | 0 | 0 | 626 | 0 |
| Stage 1 | 507 | - | - | - | - | - |
| Stage 2 | 661 | - | - | - | - | - |
| Critical Hdwy | 6.82 | 6.92 | - | - | 4.28 | - |
| Critical Hdwy Stg 1 | 5.82 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.82 | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 3.31 | - | - | 2.29 | - |
| Pot Cap-1 Maneuver | 188 | 748 | - | - | 905 | - |
| Stage 1 | 573 | - | - | - | - | - |
| Stage 2 | 478 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 136 | 748 | - | - | 905 | - |
| Mov Cap-2 Maneuver | 254 | - | - | - | - | - |
| Stage 1 | 573 | - | - | - | - | - |
| Stage 2 | 346 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 18.6 | 0 | 4.6 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 254 | 748 | 905 | - |
| HCM Lane V/C Ratio | - | - | 0.302 | 0.625 | 0.278 | - |
| HCM Control Delay (s) | - | - | 25.2 | 17.5 | 10.5 | - |
| HCM Lane LOS | - | - | D | C | B | - |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 4.4 | 1.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | ↰ | ↑↑ | ↱ | ↰ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 24 | 2 | 151 | 4 | 2 | 16 | 92 | 700 | 11 | 24 | 1533 | 71 |
| Future Vol, veh/h | 24 | 2 | 151 | 4 | 2 | 16 | 92 | 700 | 11 | 24 | 1533 | 71 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 0 | 0 | 0 | 5 | 5 | 5 | 0 | 7 | 7 | 5 | 1 | 1 |
| Mvmt Flow | 25 | 2 | 159 | 4 | 2 | 17 | 97 | 737 | 12 | 25 | 1614 | 75 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2228 | 2607 | 807 | 1789 | 2670 | 369 | 1689 | 0 | 0 | 749 | 0 | 0 |
| Stage 1 | 1664 | 1664 | - | 931 | 931 | - | - | - | - | - | - | - |
| Stage 2 | 564 | 943 | - | 858 | 1739 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.6 | 6.6 | 7 | 4.1 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.55 | 4.05 | 3.35 | 2.2 | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver | ~ 24 | 25 | 329 | 49 | 21 | 620 | 383 | - | - | 836 | - | - |
| Stage 1 | 103 | 155 | - | 281 | 337 | - | - | - | - | - | - | - |
| Stage 2 | 483 | 344 | - | 312 | 135 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 17 | 18 | 329 | 20 | 15 | 620 | 383 | - | - | 836 | - | - |
| Mov Cap-2 Maneuver | 61 | 91 | - | 47 | 30 | - | - | - | - | - | - | - |
| Stage 1 | 77 | 150 | - | 210 | 252 | - | - | - | - | - | - | - |
| Stage 2 | 348 | 257 | - | 154 | 131 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 93.1 | 40.6 | 2 | 0.1 |
| HCM LOS | F | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 383 | - | - | 202 | 124 | 836 | - | - |
| HCM Lane V/C Ratio | 0.253 | - | - | 0.922 | 0.187 | 0.03 | - | - |
| HCM Control Delay (s) | 17.6 | - | - | 93.1 | 40.6 | 9.4 | - | - |
| HCM Lane LOS | C | - | - | F | E | A | - | - |
| HCM 95th %tile Q(veh) | 1 | - | - | 7.4 | 0.7 | 0.1 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 177 | 4 | 2 | 16 | 92 | 724 | 13 | 24 | 1533 | 71 |
| Future Vol, veh/h | 0 | 0 | 177 | 4 | 2 | 16 | 92 | 724 | 13 | 24 | 1533 | 71 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 0 | 0 | 0 | 5 | 5 | 5 | 0 | 7 | 7 | 5 | 1 | 1 |
| Mvmt Flow | 0 | 0 | 186 | 4 | 2 | 17 | 97 | 762 | 14 | 25 | 1614 | 75 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 807 | 1813 | 2695 | 381 | 1689 | 0 | 0 | 776 | 0 | 0 |
| Stage 1 | - | - | - | 956 | 956 | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 857 | 1739 | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.9 | 7.6 | 6.6 | 7 | 4.1 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | - | - | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.3 | 3.55 | 4.05 | 3.35 | 2.2 | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 329 | 47 | 20 | 608 | 383 | - | - | 817 | - | - |
| Stage 1 | 0 | 0 | - | 271 | 328 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 312 | 135 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 329 | 16 | 14 | 608 | 383 | - | - | 817 | - | - |
| Mov Cap-2 Maneuver | - | - | - | 30 | 30 | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | 202 | 245 | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 131 | 131 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 29.3 | 53.4 | 1.9 | 0.1 |
| HCM LOS | D | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 383 | - | - | 329 | 97 | 817 | - | - |
| HCM Lane V/C Ratio | 0.253 | - | - | 0.566 | 0.239 | 0.031 | - | - |
| HCM Control Delay (s) | 17.6 | - | - | 29.3 | 53.4 | 9.5 | - | - |
| HCM Lane LOS | C | - | - | D | F | A | - | - |
| HCM 95th %tile Q(veh) | 1 | - | - | 3.3 | 0.9 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 106 | 0 | 0 | 81 | 64 | 748 | 85 | 32 | 1574 | 81 |
| Future Vol, veh/h | 0 | 0 | 106 | 0 | 0 | 81 | 64 | 748 | 85 | 32 | 1574 | 81 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | Stop | - | - | None | - | - | Yield |
| Storage Length | - | - | 0 | - | - | 0 | 217 | - | 25 | 217 | - | 600 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 4 | 4 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 0 | 114 | 0 | 0 | 87 | 69 | 804 | 91 | 34 | 1692 | 87 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 846 | - | - | 402 | 1692 | 0 | 0 | 895 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.9 | - | - | 6.92 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.3 | - | - | 3.31 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 310 | 0 | 0 | 601 | 382 | - | - | 767 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 310 | - | - | 601 | 382 | - | - | 767 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 23.2 | 12 | 1.2 | 0.2 |
| HCM LOS | C | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 382 | - | - | 310 | 601 | 767 | - | - |
| HCM Lane V/C Ratio | 0.18 | - | - | 0.368 | 0.145 | 0.045 | - | - |
| HCM Control Delay (s) | 16.5 | - | - | 23.2 | 12 | 9.9 | - | - |
| HCM Lane LOS | C | - | - | C | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.6 | - | - | 1.6 | 0.5 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 4 | 0 | 0 | 1610 | 17 |
| Future Vol, veh/h | 0 | 4 | 0 | 0 | 1610 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | - | 25 |
| Veh in Median Storage, # | 0 | - | - | 16974 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 4 | 0 | 0 | 1713 | 18 |

| Major/Minor | Minor2 | | | Major2 | |
|---|---|---|---|---|---|
| Conflicting Flow All | - | 857 | | - | 0 |
| Stage 1 | - | - | | - | - |
| Stage 2 | - | - | | - | - |
| Critical Hdwy | - | 6.9 | | - | - |
| Critical Hdwy Stg 1 | - | - | | - | - |
| Critical Hdwy Stg 2 | - | - | | - | - |
| Follow-up Hdwy | - | 3.3 | | - | - |
| Pot Cap-1 Maneuver | 0 | 305 | | - | - |
| Stage 1 | 0 | - | | - | - |
| Stage 2 | 0 | - | | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | - | 305 | | - | - |
| Mov Cap-2 Maneuver | - | - | | - | - |
| Stage 1 | - | - | | - | - |
| Stage 2 | - | - | | - | - |

| Approach | EB | SB |
|---|---|---|
| HCM Control Delay, s | 17 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|---|---|---|---|
| Capacity (veh/h) | 305 | - | - |
| HCM Lane V/C Ratio | 0.014 | - | - |
| HCM Control Delay (s) | 17 | - | - |
| HCM Lane LOS | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 396 | 0 | 0 | 0 | 0 | 0 | 132 | 1 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 396 | 0 | 0 | 0 | 0 | 0 | 132 | 1 | 0 | 0 | 0 | 0 |
| 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 | 0 | - | - | - | - | - | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 421 | 0 | 0 | 0 | 0 | 0 | 140 | 1 | 0 | 0 | 0 | 0 |

| Major/Minor | Major2 | | Minor1 | | | Minor2 | | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 0 | 1 | 1 | - | - | - | 1 |
| Stage 1 | - | - | - | 0 | 0 | - | - | - | - |
| Stage 2 | - | - | - | 1 | 1 | - | - | - | - |
| Critical Hdwy | - | - | - | 7.1 | 6.5 | - | - | - | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.1 | 5.5 | - | - | - | - |
| Follow-up Hdwy | - | - | - | 3.5 | 4 | - | - | - | 3.3 |
| Pot Cap-1 Maneuver | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | 1090 |
| Stage 1 | 0 | - | 0 | - | - | 0 | 0 | 0 | - |
| Stage 2 | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | - |
| Platoon blocked, % | | - | | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 1027 | 899 | - | - | - | 1090 |
| Mov Cap-2 Maneuver | - | - | - | 1027 | 899 | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 1027 | 899 | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 9.1 | 0 |
| HCM LOS | | A | A |

| Minor Lane/Major Mvmt | NBLn1 | WBT | SBLn1 |
|---|---|---|---|
| Capacity (veh/h) | 1026 | - | - |
| HCM Lane V/C Ratio | 0.138 | - | - |
| HCM Control Delay (s) | 9.1 | - | 0 |
| HCM Lane LOS | A | - | A |
| HCM 95th %tile Q(veh) | 0.5 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 363 | 144 | 9 | 120 | 0 | 0 | 0 | 0 | 11 | 1 | 0 |
| Future Vol, veh/h | 0 | 363 | 144 | 9 | 120 | 0 | 0 | 0 | 0 | 11 | 1 | 0 |
| 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 | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 454 | 180 | 11 | 150 | 0 | 0 | 0 | 0 | 14 | 1 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | 0 | 634 | 0 | 0 | 716 | 806 | - |
| Stage 1 | - | - | - | - | - | - | 172 | 172 | - |
| Stage 2 | - | - | - | - | - | - | 544 | 634 | - |
| Critical Hdwy | - | - | - | 4.13 | - | - | 6.4 | 6.5 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 5.4 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 5.4 | 5.5 | - |
| Follow-up Hdwy | - | - | - | 2.227 | - | - | 3.5 | 4 | - |
| Pot Cap-1 Maneuver | 0 | - | - | 944 | - | 0 | 400 | 318 | 0 |
| Stage 1 | 0 | - | - | - | - | 0 | 863 | 760 | 0 |
| Stage 2 | 0 | - | - | - | - | 0 | 586 | 476 | 0 |
| Platoon blocked, % | | - | - | | - | | | | |
| Mov Cap-1 Maneuver | - | - | - | 944 | - | - | 395 | 0 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 395 | 0 | - |
| Stage 1 | - | - | - | - | - | - | 863 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 578 | 0 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.6 | 14.5 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 944 | - | 395 |
| HCM Lane V/C Ratio | - | - | 0.012 | - | 0.038 |
| HCM Control Delay (s) | - | - | 8.9 | 0 | 14.5 |
| HCM Lane LOS | - | - | A | A | B |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 120 | 0 | 0 | 507 | 0 | 604 |
| Future Vol, veh/h | 120 | 0 | 0 | 507 | 0 | 604 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Free | - | None |
| Storage Length | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | 0 | - | 16974 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 1 | 1 | 0 | 0 | 1 | 1 |
| Mvmt Flow | 133 | 0 | 0 | 563 | 0 | 671 |

| Major/Minor | Minor1 | | Major2 | |
|---|---|---|---|---|
| Conflicting Flow All | 671 | - | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 671 | - | - | - |
| Critical Hdwy | 6.41 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | - | - | - |
| Follow-up Hdwy | 3.509 | - | - | - |
| Pot Cap-1 Maneuver | 423 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 510 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 423 | - | - | - |
| Mov Cap-2 Maneuver | 423 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 510 | - | - | - |

| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 17.4 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | WBLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 423 | - |
| HCM Lane V/C Ratio | 0.315 | - |
| HCM Control Delay (s) | 17.4 | - |
| HCM Lane LOS | C | - |
| HCM 95th %tile Q(veh) | 1.3 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 81 | 0 | 74 | 8 | 0 | 22 | 129 | 547 | 4 | 21 | 920 | 208 |
| Future Vol, veh/h | 81 | 0 | 74 | 8 | 0 | 22 | 129 | 547 | 4 | 21 | 920 | 208 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 25 | - | - | - | 200 | - | 25 | 200 | - | 525 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 4 | 4 | 4 | 0 | 5 | 5 | 0 | 1 | 1 |
| Mvmt Flow | 84 | 0 | 76 | 8 | 0 | 23 | 133 | 564 | 4 | 22 | 948 | 214 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1540 | 1826 | 474 | 1348 | 2036 | 282 | 1162 | 0 | 0 | 568 | 0 | 0 |
| Stage 1 | 992 | 992 | - | 830 | 830 | - | - | - | - | - | - | - |
| Stage 2 | 548 | 834 | - | 518 | 1206 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.58 | 6.58 | 6.98 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.58 | 5.58 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.58 | 5.58 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.54 | 4.04 | 3.34 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 79 | 76 | 537 | 107 | 55 | 709 | 608 | - | - | 1014 | - | - |
| Stage 1 | 264 | 322 | - | 326 | 378 | - | - | - | - | - | - | - |
| Stage 2 | 488 | 381 | - | 504 | 251 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 63 | 58 | 537 | 75 | 42 | 709 | 608 | - | - | 1014 | - | - |
| Mov Cap-2 Maneuver | 144 | 161 | - | 158 | 88 | - | - | - | - | - | - | - |
| Stage 1 | 206 | 315 | - | 255 | 295 | - | - | - | - | - | - | - |
| Stage 2 | 369 | 298 | - | 423 | 245 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 37.4 | 15.7 | 2.4 | 0.2 |
| HCM LOS | E | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 608 | - | - | 144 | 537 | 367 | 1014 | - | - |
| HCM Lane V/C Ratio | 0.219 | - | - | 0.58 | 0.142 | 0.084 | 0.021 | - | - |
| HCM Control Delay (s) | 12.6 | - | - | 59.8 | 12.8 | 15.7 | 8.6 | - | - |
| HCM Lane LOS | B | - | - | F | B | C | A | - | - |
| HCM 95th %tile Q(veh) | 0.8 | - | - | 3 | 0.5 | 0.3 | 0.1 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | ↰ | ↑↑ | ↱ | ↰ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 156 | 0 | 0 | 29 | 129 | 628 | 4 | 21 | 928 | 208 |
| Future Vol, veh/h | 0 | 0 | 156 | 0 | 0 | 29 | 129 | 628 | 4 | 21 | 928 | 208 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | 0 | 200 | - | 25 | 200 | - | 525 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 4 | 4 | 4 | 0 | 5 | 5 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 0 | 161 | 0 | 0 | 30 | 133 | 647 | 4 | 22 | 957 | 214 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 479 | - | - | 324 | 1171 | 0 | 0 | 651 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.94 | - | - | 6.98 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.32 | - | - | 3.34 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 533 | 0 | 0 | 666 | 604 | - | - | 945 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 533 | - | - | 666 | 604 | - | - | 945 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 14.6 | 10.7 | 2.1 | 0.2 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 604 | - | - | 533 | 666 | 945 | - | - |
| HCM Lane V/C Ratio | 0.22 | - | - | 0.302 | 0.045 | 0.023 | - | - |
| HCM Control Delay (s) | 12.6 | - | - | 14.6 | 10.7 | 8.9 | - | - |
| HCM Lane LOS | B | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.8 | - | - | 1.3 | 0.1 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 10 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 106 | 309 | 295 | 64 | 434 | 511 |
| Future Vol, veh/h | 106 | 309 | 295 | 64 | 434 | 511 |
| 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 | 25 | - | 25 | 350 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 1 | 1 | 5 | 5 | 2 | 2 |
| Mvmt Flow | 109 | 319 | 304 | 66 | 447 | 527 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1462 | 152 | 0 | 0 | 370 | 0 |
| Stage 1 | 304 | - | - | - | - | - |
| Stage 2 | 1158 | - | - | - | - | - |
| Critical Hdwy | 6.82 | 6.92 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.82 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.82 | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 3.31 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 121 | 870 | - | - | 1185 | - |
| Stage 1 | 725 | - | - | - | - | - |
| Stage 2 | 263 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 75 | 870 | - | - | 1185 | - |
| Mov Cap-2 Maneuver | 140 | - | - | - | - | - |
| Stage 1 | 725 | - | - | - | - | - |
| Stage 2 | 164 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 31.1 | 0 | 4.5 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 140 | 870 | 1185 | - |
| HCM Lane V/C Ratio | - | - | 0.781 | 0.366 | 0.378 | - |
| HCM Control Delay (s) | - | - | 88.4 | 11.5 | 9.9 | - |
| HCM Lane LOS | - | - | F | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 4.8 | 1.7 | 1.8 | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 10 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 106 | 309 | 295 | 64 | 434 | 511 |
| Future Vol, veh/h | 106 | 309 | 295 | 64 | 434 | 511 |
| 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 | 50 | - | 25 | 350 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 1 | 1 | 5 | 5 | 2 | 2 |
| Mvmt Flow | 109 | 319 | 304 | 66 | 447 | 527 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1462 | 152 | 0 | 0 | 370 | 0 |
| Stage 1 | 304 | - | - | - | - | - |
| Stage 2 | 1158 | - | - | - | - | - |
| Critical Hdwy | 6.82 | 6.92 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.82 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.82 | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 3.31 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 121 | 870 | - | - | 1185 | - |
| Stage 1 | 725 | - | - | - | - | - |
| Stage 2 | 263 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 75 | 870 | - | - | 1185 | - |
| Mov Cap-2 Maneuver | 140 | - | - | - | - | - |
| Stage 1 | 725 | - | - | - | - | - |
| Stage 2 | 164 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 31.1 | 0 | 4.5 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 140 | 870 | 1185 | - |
| HCM Lane V/C Ratio | - | - | 0.781 | 0.366 | 0.378 | - |
| HCM Control Delay (s) | - | - | 88.4 | 11.5 | 9.9 | - |
| HCM Lane LOS | - | - | F | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 4.8 | 1.7 | 1.8 | - |

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

# YEAR 2026

# LEVEL OF SERVICE CALCULATIONS

# AM & PM WITH PROJECT, WITH BACKGROUND

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | ↰ | ↑↑ | ↱ | ↰ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 63 | 2 | 56 | 2 | 2 | 15 | 89 | 1253 | 3 | 5 | 586 | 21 |
| Future Vol, veh/h | 63 | 2 | 56 | 2 | 2 | 15 | 89 | 1253 | 3 | 5 | 586 | 21 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 11 | 11 |
| Mvmt Flow | 70 | 2 | 62 | 2 | 2 | 17 | 99 | 1392 | 3 | 6 | 651 | 23 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1559 | 2256 | 326 | 1929 | 2276 | 697 | 674 | 0 | 0 | 1395 | 0 | 0 |
| Stage 1 | 663 | 663 | - | 1590 | 1590 | - | - | - | - | - | - | - |
| Stage 2 | 896 | 1593 | - | 339 | 686 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 78 | 42 | 676 | 41 | 41 | 388 | 927 | - | - | 497 | - | - |
| Stage 1 | 422 | 462 | - | 114 | 169 | - | - | - | - | - | - | - |
| Stage 2 | 306 | 168 | - | 655 | 451 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 67 | 37 | 676 | 33 | 36 | 388 | 927 | - | - | 497 | - | - |
| Mov Cap-2 Maneuver | 167 | 112 | - | 85 | 109 | - | - | - | - | - | - | - |
| Stage 1 | 377 | 456 | - | 102 | 151 | - | - | - | - | - | - | - |
| Stage 2 | 257 | 150 | - | 585 | 446 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 34.3 | 21.7 | 0.6 | 0.1 |
| HCM LOS | D | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 927 | - | - | 253 | 236 | 497 | - | - |
| HCM Lane V/C Ratio | 0.107 | - | - | 0.531 | 0.089 | 0.011 | - | - |
| HCM Control Delay (s) | 9.3 | - | - | 34.3 | 21.7 | 12.3 | - | - |
| HCM Lane LOS | A | - | - | D | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | - | 2.9 | 0.3 | 0 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 121 | 2 | 2 | 15 | 89 | 1317 | 5 | 5 | 586 | 21 |
| Future Vol, veh/h | 0 | 0 | 121 | 2 | 2 | 15 | 89 | 1317 | 5 | 5 | 586 | 21 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 11 | 11 |
| Mvmt Flow | 0 | 0 | 134 | 2 | 2 | 17 | 99 | 1463 | 6 | 6 | 651 | 23 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 326 | 1999 | 2347 | 732 | 674 | 0 | 0 | 1469 | 0 | 0 |
| Stage 1 | - | - | - | 1661 | 1661 | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 338 | 686 | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | - | - | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.5 | 5.5 | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.3 | 3.5 | 4 | 3.3 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 676 | 36 | 37 | 368 | 927 | - | - | 465 | - | - |
| Stage 1 | 0 | 0 | - | 103 | 156 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 656 | 451 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 676 | 26 | 33 | 368 | 927 | - | - | 465 | - | - |
| Mov Cap-2 Maneuver | - | - | - | 75 | 102 | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | 92 | 139 | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 519 | 445 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.6 | 23.3 | 0.6 | 0.1 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 927 | - | - | 676 | 218 | 465 | - | - |
| HCM Lane V/C Ratio | 0.107 | - | - | 0.199 | 0.097 | 0.012 | - | - |
| HCM Control Delay (s) | 9.3 | - | - | 11.6 | 23.3 | 12.8 | - | - |
| HCM Lane LOS | A | - | - | B | C | B | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | - | 0.7 | 0.3 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | ↰ | ↑↑ | ↱ | ↰ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 175 | 0 | 0 | 47 | 41 | 1725 | 152 | 16 | 605 | 30 |
| Future Vol, veh/h | 0 | 0 | 175 | 0 | 0 | 47 | 41 | 1725 | 152 | 16 | 605 | 30 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | Stop | - | - | None | - | - | Yield |
| Storage Length | - | - | 0 | - | - | 0 | 217 | - | 25 | 217 | - | 600 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| Heavy Vehicles, % | 3 | 3 | 3 | 5 | 5 | 5 | 8 | 1 | 1 | 13 | 12 | 12 |
| Mvmt Flow | 0 | 0 | 206 | 0 | 0 | 55 | 48 | 2029 | 179 | 19 | 712 | 35 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 356 | - | - | 1015 | 712 | 0 | 0 | 2208 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | - | - | 7 | 4.26 | - | - | 4.36 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | - | - | 3.35 | 2.28 | - | - | 2.33 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 638 | 0 | 0 | 231 | 845 | - | - | 200 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 638 | - | - | 231 | 845 | - | - | 200 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 13.3 | 25.4 | 0.2 | 0.6 |
| HCM LOS | B | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 845 | - | - | 638 | 231 | 200 | - | - |
| HCM Lane V/C Ratio | 0.057 | - | - | 0.323 | 0.239 | 0.094 | - | - |
| HCM Control Delay (s) | 9.5 | - | - | 13.3 | 25.4 | 24.9 | - | - |
| HCM Lane LOS | A | - | - | B | D | C | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 1.4 | 0.9 | 0.3 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 40 | 0 | 0 | 657 | 12 |
| Future Vol, veh/h | 0 | 40 | 0 | 0 | 657 | 12 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | - | 25 |
| Veh in Median Storage, # | 0 | - | - | 16974 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 9 | 9 | 0 | 0 | 10 | 10 |
| Mvmt Flow | 0 | 44 | 0 | 0 | 730 | 13 |

| Major/Minor | Minor2 | | | Major2 | |
|---|---|---|---|---|---|
| Conflicting Flow All | - | 365 | | - | 0 |
| Stage 1 | - | - | | - | - |
| Stage 2 | - | - | | - | - |
| Critical Hdwy | - | 7.08 | | - | - |
| Critical Hdwy Stg 1 | - | - | | - | - |
| Critical Hdwy Stg 2 | - | - | | - | - |
| Follow-up Hdwy | - | 3.39 | | - | - |
| Pot Cap-1 Maneuver | 0 | 612 | | - | - |
| Stage 1 | 0 | - | | - | - |
| Stage 2 | 0 | - | | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | - | 612 | | - | - |
| Mov Cap-2 Maneuver | - | - | | - | - |
| Stage 1 | - | - | | - | - |
| Stage 2 | - | - | | - | - |

| Approach | EB | SB |
|---|---|---|
| HCM Control Delay, s | 11.3 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|---|---|---|---|
| Capacity (veh/h) | 612 | - | - |
| HCM Lane V/C Ratio | 0.073 | - | - |
| HCM Control Delay (s) | 11.3 | - | - |
| HCM Lane LOS | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 800 | 0 | 0 | 0 | 0 | 0 | 115 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 800 | 0 | 0 | 0 | 0 | 0 | 115 | 0 | 0 | 0 | 0 | 0 |
| 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 | 0 | - | - | - | - | - | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Heavy Vehicles, % | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 1026 | 0 | 0 | 0 | 0 | 0 | 147 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 0 | 1 | 1 | - | - | - | 1 |
| Stage 1 | - | - | - | 0 | 0 | - | - | - | - |
| Stage 2 | - | - | - | 1 | 1 | - | - | - | - |
| Critical Hdwy | - | - | - | 7.1 | 6.5 | - | - | - | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.1 | 5.5 | - | - | - | - |
| Follow-up Hdwy | - | - | - | 3.5 | 4 | - | - | - | 3.3 |
| Pot Cap-1 Maneuver | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | 1090 |
| Stage 1 | 0 | - | 0 | - | - | 0 | 0 | 0 | - |
| Stage 2 | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | - |
| Platoon blocked, % | | - | | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 1027 | 899 | - | - | - | 1090 |
| Mov Cap-2 Maneuver | - | - | - | 1027 | 899 | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 1027 | 899 | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 9.1 | 0 |
| HCM LOS | | A | A |

| Minor Lane/Major Mvmt | NBLn1 | WBT | SBLn1 |
|---|---|---|---|
| Capacity (veh/h) | 1027 | - | - |
| HCM Lane V/C Ratio | 0.144 | - | - |
| HCM Control Delay (s) | 9.1 | - | 0 |
| HCM Lane LOS | A | - | A |
| HCM 95th %tile Q(veh) | 0.5 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 689 | 52 | 2 | 129 | 0 | 0 | 0 | 0 | 36 | 1 | 0 |
| Future Vol, veh/h | 0 | 689 | 52 | 2 | 129 | 0 | 0 | 0 | 0 | 36 | 1 | 0 |
| 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 | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 22 | 22 | 22 |
| Mvmt Flow | 0 | 895 | 68 | 3 | 168 | 0 | 0 | 0 | 0 | 47 | 1 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | 0 | 963 | 0 | 0 | 1103 | 1137 | - |
| Stage 1 | - | - | - | - | - | - | 174 | 174 | - |
| Stage 2 | - | - | - | - | - | - | 929 | 963 | - |
| Critical Hdwy | - | - | - | 4.12 | - | - | 6.62 | 6.72 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 5.62 | 5.72 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 5.62 | 5.72 | - |
| Follow-up Hdwy | - | - | - | 2.218 | - | - | 3.698 | 4.198 | - |
| Pot Cap-1 Maneuver | 0 | - | - | 715 | - | 0 | 214 | 185 | 0 |
| Stage 1 | 0 | - | - | - | - | 0 | 810 | 719 | 0 |
| Stage 2 | 0 | - | - | - | - | 0 | 354 | 309 | 0 |
| Platoon blocked, % | | - | - | | - | | | | |
| Mov Cap-1 Maneuver | - | - | - | 715 | - | - | 213 | 0 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 213 | 0 | - |
| Stage 1 | - | - | - | - | - | - | 810 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 352 | 0 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.2 | 26.8 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 715 | - | 213 |
| HCM Lane V/C Ratio | - | - | 0.004 | - | 0.226 |
| HCM Control Delay (s) | - | - | 10.1 | 0 | 26.8 |
| HCM Lane LOS | - | - | B | A | D |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.8 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 129 | 0 | 0 | 741 | 0 | 216 |
| Future Vol, veh/h | 129 | 0 | 0 | 741 | 0 | 216 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Free | - | None |
| Storage Length | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | 0 | - | 16974 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 3 | 3 | 0 | 0 | 8 | 8 |
| Mvmt Flow | 148 | 0 | 0 | 852 | 0 | 248 |

| Major/Minor | Minor1 | | | Major2 | |
|---|---|---|---|---|---|
| Conflicting Flow All | 248 | - | | - | - |
| Stage 1 | 0 | - | | - | - |
| Stage 2 | 248 | - | | - | - |
| Critical Hdwy | 6.43 | - | | - | - |
| Critical Hdwy Stg 1 | - | - | | - | - |
| Critical Hdwy Stg 2 | 5.43 | - | | - | - |
| Follow-up Hdwy | 3.527 | - | | - | - |
| Pot Cap-1 Maneuver | 738 | 0 | | 0 | - |
| Stage 1 | - | 0 | | 0 | - |
| Stage 2 | 791 | 0 | | 0 | - |
| Platoon blocked, % | | | | | - |
| Mov Cap-1 Maneuver | 738 | - | | - | - |
| Mov Cap-2 Maneuver | 738 | - | | - | - |
| Stage 1 | - | - | | - | - |
| Stage 2 | 791 | - | | - | - |

| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 11.1 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | WBLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 738 | - |
| HCM Lane V/C Ratio | 0.201 | - |
| HCM Control Delay (s) | 11.1 | - |
| HCM Lane LOS | B | - |
| HCM 95th %tile Q(veh) | 0.7 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 237 | 1 | 124 | 0 | 2 | 17 | 37 | 921 | 3 | 12 | 457 | 84 |
| Future Vol, veh/h | 237 | 1 | 124 | 0 | 2 | 17 | 37 | 921 | 3 | 12 | 457 | 84 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 25 | - | - | - | 200 | - | 25 | 200 | - | 525 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 3 | 3 | 3 | 17 | 17 | 17 | 4 | 2 | 2 | 9 | 9 | 6 |
| Mvmt Flow | 247 | 1 | 129 | 0 | 2 | 18 | 39 | 959 | 3 | 13 | 476 | 88 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1061 | 1542 | 238 | 1302 | 1627 | 480 | 564 | 0 | 0 | 962 | 0 | 0 |
| Stage 1 | 502 | 502 | - | 1037 | 1037 | - | - | - | - | - | - | - |
| Stage 2 | 559 | 1040 | - | 265 | 590 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.84 | 6.84 | 7.24 | 4.18 | - | - | 4.28 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.84 | 5.84 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.84 | 5.84 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.67 | 4.17 | 3.47 | 2.24 | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver | ~ 177 | 113 | 760 | 104 | 87 | 494 | 990 | - | - | 670 | - | - |
| Stage 1 | 517 | 538 | - | 222 | 276 | - | - | - | - | - | - | - |
| Stage 2 | 478 | 303 | - | 677 | 458 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 162 | 107 | 760 | 82 | 82 | 494 | 990 | - | - | 670 | - | - |
| Mov Cap-2 Maneuver | 283 | 209 | - | 166 | 182 | - | - | - | - | - | - | - |
| Stage 1 | 497 | 528 | - | 213 | 265 | - | - | - | - | - | - | - |
| Stage 2 | 439 | 291 | - | 550 | 449 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 47 | 14 | 0.3 | 0.2 |
| HCM LOS | E | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 990 | - | - | 283 | 760 | 418 | 670 | - | - |
| HCM Lane V/C Ratio | 0.039 | - | - | 0.876 | 0.17 | 0.047 | 0.019 | - | - |
| HCM Control Delay (s) | 8.8 | - | - | 65.9 | 10.7 | 14 | 10.5 | - | - |
| HCM Lane LOS | A | - | - | F | B | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 7.7 | 0.6 | 0.1 | 0.1 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | ↰ | ↑↑ | ↱ | ↰ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 362 | 0 | 0 | 19 | 37 | 1158 | 4 | 12 | 457 | 87 |
| Future Vol, veh/h | 0 | 0 | 362 | 0 | 0 | 19 | 37 | 1158 | 4 | 12 | 457 | 87 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | 0 | 200 | - | 25 | 200 | - | 525 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 3 | 3 | 3 | 17 | 17 | 17 | 4 | 2 | 2 | 9 | 9 | 6 |
| Mvmt Flow | 0 | 0 | 377 | 0 | 0 | 20 | 39 | 1206 | 4 | 13 | 476 | 91 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 238 | - | - | 603 | 567 | 0 | 0 | 1210 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | - | - | 7.24 | 4.18 | - | - | 4.28 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | - | - | 3.47 | 2.24 | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 760 | 0 | 0 | 407 | 987 | - | - | 535 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 760 | - | - | 407 | 987 | - | - | 535 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 14.3 | 14.3 | 0.3 | 0.3 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 987 | - | - | 760 | 407 | 535 | - | - |
| HCM Lane V/C Ratio | 0.039 | - | - | 0.496 | 0.049 | 0.023 | - | - |
| HCM Control Delay (s) | 8.8 | - | - | 14.3 | 14.3 | 11.9 | - | - |
| HCM Lane LOS | A | - | - | B | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 2.8 | 0.2 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 66 | 402 | 438 | 102 | 216 | 277 |
| Future Vol, veh/h | 66 | 402 | 438 | 102 | 216 | 277 |
| 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 | 25 | - | 25 | 350 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 1 | 1 | 2 | 2 | 9 | 9 |
| Mvmt Flow | 77 | 467 | 509 | 119 | 251 | 322 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1172 | 255 | 0 | 0 | 628 | 0 |
| Stage 1 | 509 | - | - | - | - | - |
| Stage 2 | 663 | - | - | - | - | - |
| Critical Hdwy | 6.82 | 6.92 | - | - | 4.28 | - |
| Critical Hdwy Stg 1 | 5.82 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.82 | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 3.31 | - | - | 2.29 | - |
| Pot Cap-1 Maneuver | 187 | 747 | - | - | 904 | - |
| Stage 1 | 571 | - | - | - | - | - |
| Stage 2 | 477 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 135 | 747 | - | - | 904 | - |
| Mov Cap-2 Maneuver | 252 | - | - | - | - | - |
| Stage 1 | 571 | - | - | - | - | - |
| Stage 2 | 344 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 18.6 | 0 | 4.6 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 252 | 747 | 904 | - |
| HCM Lane V/C Ratio | - | - | 0.305 | 0.626 | 0.278 | - |
| HCM Control Delay (s) | - | - | 25.4 | 17.5 | 10.5 | - |
| HCM Lane LOS | - | - | D | C | B | - |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 4.5 | 1.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 66 | 402 | 438 | 102 | 216 | 277 |
| Future Vol, veh/h | 66 | 402 | 438 | 102 | 216 | 277 |
| 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 | 50 | - | 25 | 350 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 1 | 1 | 2 | 2 | 9 | 9 |
| Mvmt Flow | 77 | 467 | 509 | 119 | 251 | 322 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1172 | 255 | 0 | 0 | 628 | 0 |
| Stage 1 | 509 | - | - | - | - | - |
| Stage 2 | 663 | - | - | - | - | - |
| Critical Hdwy | 6.82 | 6.92 | - | - | 4.28 | - |
| Critical Hdwy Stg 1 | 5.82 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.82 | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 3.31 | - | - | 2.29 | - |
| Pot Cap-1 Maneuver | 187 | 747 | - | - | 904 | - |
| Stage 1 | 571 | - | - | - | - | - |
| Stage 2 | 477 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 135 | 747 | - | - | 904 | - |
| Mov Cap-2 Maneuver | 252 | - | - | - | - | - |
| Stage 1 | 571 | - | - | - | - | - |
| Stage 2 | 344 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 18.6 | 0 | 4.6 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 252 | 747 | 904 | - |
| HCM Lane V/C Ratio | - | - | 0.305 | 0.626 | 0.278 | - |
| HCM Control Delay (s) | - | - | 25.4 | 17.5 | 10.5 | - |
| HCM Lane LOS | - | - | D | C | B | - |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 4.5 | 1.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↔ | | | ↔ | | | ↑↑ | ↱ | | ↑↑ | ↱ |
| Traffic Vol, veh/h | 24 | 2 | 155 | 4 | 2 | 16 | 94 | 710 | 11 | 24 | 1550 | 71 |
| Future Vol, veh/h | 24 | 2 | 155 | 4 | 2 | 16 | 94 | 710 | 11 | 24 | 1550 | 71 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 0 | 0 | 0 | 5 | 5 | 5 | 0 | 7 | 7 | 5 | 1 | 1 |
| Mvmt Flow | 25 | 2 | 163 | 4 | 2 | 17 | 99 | 747 | 12 | 25 | 1632 | 75 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2255 | 2639 | 816 | 1812 | 2702 | 374 | 1707 | 0 | 0 | 759 | 0 | 0 |
| Stage 1 | 1682 | 1682 | - | 945 | 945 | - | - | - | - | - | - | - |
| Stage 2 | 573 | 957 | - | 867 | 1757 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.5 | 6.5 | 6.9 | 7.6 | 6.6 | 7 | 4.1 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.5 | 5.5 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.5 | 5.5 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.5 | 4 | 3.3 | 3.55 | 4.05 | 3.35 | 2.2 | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver | ~ 23 | 24 | 324 | 47 | 20 | 615 | 377 | - | - | 829 | - | - |
| Stage 1 | 100 | 152 | - | 276 | 332 | - | - | - | - | - | - | - |
| Stage 2 | 477 | 339 | - | 308 | 133 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 16 | 17 | 324 | 18 | 14 | 615 | 377 | - | - | 829 | - | - |
| Mov Cap-2 Maneuver | 59 | 89 | - | 39 | 26 | - | - | - | - | - | - | - |
| Stage 1 | 74 | 147 | - | 203 | 245 | - | - | - | - | - | - | - |
| Stage 2 | 339 | 250 | - | 146 | 129 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 102.3 | 47.7 | 2.1 | 0.1 |
| HCM LOS | F | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 377 | - | - | 199 | 107 | 829 | - | - |
| HCM Lane V/C Ratio | 0.262 | - | - | 0.957 | 0.216 | 0.03 | - | - |
| HCM Control Delay (s) | 17.9 | - | - | 102.3 | 47.7 | 9.5 | - | - |
| HCM Lane LOS | C | - | - | F | E | A | - | - |
| HCM 95th %tile Q(veh) | 1 | - | - | 7.9 | 0.8 | 0.1 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 181 | 4 | 2 | 16 | 94 | 734 | 13 | 24 | 1550 | 71 |
| Future Vol, veh/h | 0 | 0 | 181 | 4 | 2 | 16 | 94 | 734 | 13 | 24 | 1550 | 71 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | - | 300 | - | 25 | 300 | - | 25 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 0 | 0 | 0 | 5 | 5 | 5 | 0 | 7 | 7 | 5 | 1 | 1 |
| Mvmt Flow | 0 | 0 | 191 | 4 | 2 | 17 | 99 | 773 | 14 | 25 | 1632 | 75 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 816 | 1837 | 2728 | 387 | 1707 | 0 | 0 | 787 | 0 | 0 |
| Stage 1 | - | - | - | 971 | 971 | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 866 | 1757 | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.9 | 7.6 | 6.6 | 7 | 4.1 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | - | - | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.3 | 3.55 | 4.05 | 3.35 | 2.2 | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 324 | 45 | 19 | 603 | 377 | - | - | 809 | - | - |
| Stage 1 | 0 | 0 | - | 266 | 323 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 308 | 133 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 324 | 14 | 14 | 603 | 377 | - | - | 809 | - | - |
| Mov Cap-2 Maneuver | - | - | - | 21 | 26 | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | 196 | 238 | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 123 | 129 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 30.8 | 73.1 | 2 | 0.1 |
| HCM LOS | D | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 377 | - | - | 324 | 75 | 809 | - | - |
| HCM Lane V/C Ratio | 0.262 | - | - | 0.588 | 0.309 | 0.031 | - | - |
| HCM Control Delay (s) | 17.9 | - | - | 30.8 | 73.1 | 9.6 | - | - |
| HCM Lane LOS | C | - | - | D | F | A | - | - |
| HCM 95th %tile Q(veh) | 1 | - | - | 3.5 | 1.1 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | ↰ | ↑↑ | ↱ | ↰ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 106 | 0 | 0 | 90 | 64 | 760 | 90 | 32 | 1604 | 81 |
| Future Vol, veh/h | 0 | 0 | 106 | 0 | 0 | 90 | 64 | 760 | 90 | 32 | 1604 | 81 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | Stop | - | - | None | - | - | Yield |
| Storage Length | - | - | 0 | - | - | 0 | 217 | - | 25 | 217 | - | 600 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| Heavy Vehicles, % | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 4 | 4 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 0 | 114 | 0 | 0 | 97 | 69 | 817 | 97 | 34 | 1725 | 87 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 863 | - | - | 409 | 1725 | 0 | 0 | 914 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.9 | - | - | 6.92 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.3 | - | - | 3.31 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 302 | 0 | 0 | 594 | 371 | - | - | 754 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 302 | - | - | 594 | 371 | - | - | 754 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 24 | 12.2 | 1.2 | 0.2 |
| HCM LOS | C | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 371 | - | - | 302 | 594 | 754 | - | - |
| HCM Lane V/C Ratio | 0.185 | - | - | 0.377 | 0.163 | 0.046 | - | - |
| HCM Control Delay (s) | 16.9 | - | - | 24 | 12.2 | 10 | - | - |
| HCM Lane LOS | C | - | - | C | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | - | 1.7 | 0.6 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 28 | 0 | 0 | 1610 | 59 |
| Future Vol, veh/h | 0 | 28 | 0 | 0 | 1610 | 59 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | - | 25 |
| Veh in Median Storage, # | 0 | - | - | 16974 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 30 | 0 | 0 | 1713 | 63 |

| Major/Minor | Minor2 | | | Major2 | |
|---|---|---|---|---|---|
| Conflicting Flow All | - | 857 | | - | 0 |
| Stage 1 | - | - | | - | - |
| Stage 2 | - | - | | - | - |
| Critical Hdwy | - | 6.9 | | - | - |
| Critical Hdwy Stg 1 | - | - | | - | - |
| Critical Hdwy Stg 2 | - | - | | - | - |
| Follow-up Hdwy | - | 3.3 | | - | - |
| Pot Cap-1 Maneuver | 0 | 305 | | - | - |
| Stage 1 | 0 | - | | - | - |
| Stage 2 | 0 | - | | - | - |
| Platoon blocked, % | | | | - | - |
| Mov Cap-1 Maneuver | - | 305 | | - | - |
| Mov Cap-2 Maneuver | - | - | | - | - |
| Stage 1 | - | - | | - | - |
| Stage 2 | - | - | | - | - |

| Approach | EB | SB |
|---|---|---|
| HCM Control Delay, s | 18.1 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|---|---|---|---|
| Capacity (veh/h) | 305 | - | - |
| HCM Lane V/C Ratio | 0.098 | - | - |
| HCM Control Delay (s) | 18.1 | - | - |
| HCM Lane LOS | C | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 419 | 0 | 0 | 0 | 0 | 0 | 132 | 1 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 419 | 0 | 0 | 0 | 0 | 0 | 132 | 1 | 0 | 0 | 0 | 0 |
| 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 | 0 | - | - | - | - | - | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 446 | 0 | 0 | 0 | 0 | 0 | 140 | 1 | 0 | 0 | 0 | 0 |

| Major/Minor | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 0 | 1 | 1 | - | - | - | 1 |
| Stage 1 | - | - | - | 0 | 0 | - | - | - | - |
| Stage 2 | - | - | - | 1 | 1 | - | - | - | - |
| Critical Hdwy | - | - | - | 7.1 | 6.5 | - | - | - | 6.2 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.1 | 5.5 | - | - | - | - |
| Follow-up Hdwy | - | - | - | 3.5 | 4 | - | - | - | 3.3 |
| Pot Cap-1 Maneuver | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | 1090 |
| Stage 1 | 0 | - | 0 | - | - | 0 | 0 | 0 | - |
| Stage 2 | 0 | - | 0 | 1027 | 899 | 0 | 0 | 0 | - |
| Platoon blocked, % | | - | | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 1027 | 899 | - | - | - | 1090 |
| Mov Cap-2 Maneuver | - | - | - | 1027 | 899 | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 1027 | 899 | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 9.1 | 0 |
| HCM LOS | | A | A |

| Minor Lane/Major Mvmt | NBLn1 | WBT | SBLn1 |
|---|---|---|---|
| Capacity (veh/h) | 1026 | - | - |
| HCM Lane V/C Ratio | 0.138 | - | - |
| HCM Control Delay (s) | 9.1 | - | 0 |
| HCM Lane LOS | A | - | A |
| HCM 95th %tile Q(veh) | 0.5 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 369 | 144 | 9 | 120 | 0 | 0 | 0 | 0 | 28 | 1 | 0 |
| Future Vol, veh/h | 0 | 369 | 144 | 9 | 120 | 0 | 0 | 0 | 0 | 28 | 1 | 0 |
| 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 | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 16974 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 461 | 180 | 11 | 150 | 0 | 0 | 0 | 0 | 35 | 1 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | 0 | 641 | 0 | 0 | 723 | 813 | - |
| Stage 1 | - | - | - | - | - | - | 172 | 172 | - |
| Stage 2 | - | - | - | - | - | - | 551 | 641 | - |
| Critical Hdwy | - | - | - | 4.13 | - | - | 6.4 | 6.5 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 5.4 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 5.4 | 5.5 | - |
| Follow-up Hdwy | - | - | - | 2.227 | - | - | 3.5 | 4 | - |
| Pot Cap-1 Maneuver | 0 | - | - | 939 | - | 0 | 396 | 315 | 0 |
| Stage 1 | 0 | - | - | - | - | 0 | 863 | 760 | 0 |
| Stage 2 | 0 | - | - | - | - | 0 | 581 | 473 | 0 |
| Platoon blocked, % | | - | - | | - | | | | |
| Mov Cap-1 Maneuver | - | - | - | 939 | - | - | 391 | 0 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 391 | 0 | - |
| Stage 1 | - | - | - | - | - | - | 863 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 573 | 0 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.6 | 15.1 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBT | EBR | WBL | WBT | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 939 | - | 391 |
| HCM Lane V/C Ratio | - | - | 0.012 | - | 0.093 |
| HCM Control Delay (s) | - | - | 8.9 | 0 | 15.1 |
| HCM Lane LOS | - | - | A | A | C |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 120 | 0 | 0 | 513 | 0 | 607 |
| Future Vol, veh/h | 120 | 0 | 0 | 513 | 0 | 607 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Free | - | None |
| Storage Length | 0 | - | - | 0 | - | - |
| Veh in Median Storage, # | 0 | - | 16974 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 1 | 1 | 0 | 0 | 1 | 1 |
| Mvmt Flow | 133 | 0 | 0 | 570 | 0 | 674 |

| Major/Minor | Minor1 | | Major2 | |
|---|---|---|---|---|
| Conflicting Flow All | 674 | - | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 674 | - | - | - |
| Critical Hdwy | 6.41 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.41 | - | - | - |
| Follow-up Hdwy | 3.509 | - | - | - |
| Pot Cap-1 Maneuver | 422 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 508 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 422 | - | - | - |
| Mov Cap-2 Maneuver | 422 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 508 | - | - | - |

| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 17.4 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | WBLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 422 | - |
| HCM Lane V/C Ratio | 0.316 | - |
| HCM Control Delay (s) | 17.4 | - |
| HCM Lane LOS | C | - |
| HCM 95th %tile Q(veh) | 1.3 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 81 | 0 | 74 | 8 | 0 | 22 | 129 | 553 | 4 | 21 | 924 | 208 |
| Future Vol, veh/h | 81 | 0 | 74 | 8 | 0 | 22 | 129 | 553 | 4 | 21 | 924 | 208 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 25 | - | - | - | 200 | - | 25 | 200 | - | 525 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 4 | 4 | 4 | 0 | 5 | 5 | 0 | 1 | 1 |
| Mvmt Flow | 84 | 0 | 76 | 8 | 0 | 23 | 133 | 570 | 4 | 22 | 953 | 214 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1548 | 1837 | 477 | 1357 | 2047 | 285 | 1167 | 0 | 0 | 574 | 0 | 0 |
| Stage 1 | 997 | 997 | - | 836 | 836 | - | - | - | - | - | - | - |
| Stage 2 | 551 | 840 | - | 521 | 1211 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.58 | 6.58 | 6.98 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.58 | 5.58 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.58 | 5.58 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.54 | 4.04 | 3.34 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | ~ 78 | 75 | 534 | 106 | 54 | 706 | 606 | - | - | 1009 | - | - |
| Stage 1 | 262 | 320 | - | 324 | 376 | - | - | - | - | - | - | - |
| Stage 2 | 486 | 379 | - | 501 | 249 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 62 | 57 | 534 | 74 | 41 | 706 | 606 | - | - | 1009 | - | - |
| Mov Cap-2 Maneuver | 143 | 159 | - | 156 | 87 | - | - | - | - | - | - | - |
| Stage 1 | 205 | 313 | - | 253 | 294 | - | - | - | - | - | - | - |
| Stage 2 | 367 | 296 | - | 420 | 244 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 37.8 | 15.8 | 2.4 | 0.2 |
| HCM LOS | E | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 606 | - | - | 143 | 534 | 364 | 1009 | - | - |
| HCM Lane V/C Ratio | 0.219 | - | - | 0.584 | 0.143 | 0.085 | 0.021 | - | - |
| HCM Control Delay (s) | 12.6 | - | - | 60.6 | 12.9 | 15.8 | 8.6 | - | - |
| HCM Lane LOS | B | - | - | F | B | C | A | - | - |
| HCM 95th %tile Q(veh) | 0.8 | - | - | 3 | 0.5 | 0.3 | 0.1 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | ↱ | | | ↱ | ↰ | ↑↑ | ↱ | ↰ | ↑↑ | ↱ |
| Traffic Vol, veh/h | 0 | 0 | 156 | 0 | 0 | 29 | 129 | 634 | 4 | 21 | 932 | 208 |
| Future Vol, veh/h | 0 | 0 | 156 | 0 | 0 | 29 | 129 | 634 | 4 | 21 | 932 | 208 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | 0 | 200 | - | 25 | 200 | - | 525 |
| Veh in Median Storage, # | - | 1 | - | - | 1 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 4 | 4 | 4 | 0 | 5 | 5 | 0 | 1 | 1 |
| Mvmt Flow | 0 | 0 | 161 | 0 | 0 | 30 | 133 | 654 | 4 | 22 | 961 | 214 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 481 | - | - | 327 | 1175 | 0 | 0 | 658 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.94 | - | - | 6.98 | 4.1 | - | - | 4.1 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.32 | - | - | 3.34 | 2.2 | - | - | 2.2 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 531 | 0 | 0 | 663 | 602 | - | - | 939 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 531 | - | - | 663 | 602 | - | - | 939 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 14.7 | 10.7 | 2.1 | 0.2 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 602 | - | - | 531 | 663 | 939 | - | - |
| HCM Lane V/C Ratio | 0.221 | - | - | 0.303 | 0.045 | 0.023 | - | - |
| HCM Control Delay (s) | 12.7 | - | - | 14.7 | 10.7 | 8.9 | - | - |
| HCM Lane LOS | B | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.8 | - | - | 1.3 | 0.1 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 10.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 106 | 312 | 298 | 64 | 436 | 513 |
| Future Vol, veh/h | 106 | 312 | 298 | 64 | 436 | 513 |
| 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 | 25 | - | 25 | 350 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 1 | 1 | 5 | 5 | 2 | 2 |
| Mvmt Flow | 109 | 322 | 307 | 66 | 449 | 529 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1470 | 154 | 0 | 0 | 373 | 0 |
| Stage 1 | 307 | - | - | - | - | - |
| Stage 2 | 1163 | - | - | - | - | - |
| Critical Hdwy | 6.82 | 6.92 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.82 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.82 | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 3.31 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 119 | 868 | - | - | 1182 | - |
| Stage 1 | 722 | - | - | - | - | - |
| Stage 2 | 262 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 74 | 868 | - | - | 1182 | - |
| Mov Cap-2 Maneuver | 138 | - | - | - | - | - |
| Stage 1 | 722 | - | - | - | - | - |
| Stage 2 | 162 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 31.8 | 0 | 4.5 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 138 | 868 | 1182 | - |
| HCM Lane V/C Ratio | - | - | 0.792 | 0.371 | 0.38 | - |
| HCM Control Delay (s) | - | - | 91.4 | 11.6 | 9.9 | - |
| HCM Lane LOS | - | - | F | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 4.9 | 1.7 | 1.8 | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 10.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 106 | 312 | 298 | 64 | 436 | 513 |
| Future Vol, veh/h | 106 | 312 | 298 | 64 | 436 | 513 |
| 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 | 50 | - | 25 | 350 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 1 | 1 | 5 | 5 | 2 | 2 |
| Mvmt Flow | 109 | 322 | 307 | 66 | 449 | 529 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1470 | 154 | 0 | 0 | 373 | 0 |
| Stage 1 | 307 | - | - | - | - | - |
| Stage 2 | 1163 | - | - | - | - | - |
| Critical Hdwy | 6.82 | 6.92 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.82 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.82 | - | - | - | - | - |
| Follow-up Hdwy | 3.51 | 3.31 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 119 | 868 | - | - | 1182 | - |
| Stage 1 | 722 | - | - | - | - | - |
| Stage 2 | 262 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 74 | 868 | - | - | 1182 | - |
| Mov Cap-2 Maneuver | 138 | - | - | - | - | - |
| Stage 1 | 722 | - | - | - | - | - |
| Stage 2 | 162 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 31.8 | 0 | 4.5 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 138 | 868 | 1182 | - |
| HCM Lane V/C Ratio | - | - | 0.792 | 0.371 | 0.38 | - |
| HCM Control Delay (s) | - | - | 91.4 | 11.6 | 9.9 | - |
| HCM Lane LOS | - | - | F | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 4.9 | 1.7 | 1.8 | - |

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

# I-90 SEGMENT LOS & QUEUE ANALYSIS

# HCS7 Freeway Merge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2021 existing |
| Jurisdiction | WSDOT | Time Period Analyzed | AM |
| Project Description | 20-2564 Latah Glen Residential - NB US 195 to EB I-90 | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 1 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 45.0 |
| Segment Length (L) / Acceleration Length (LA),ft | 970 | 465 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | Freeway | Ramp |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | Freeway | Ramp |
|---|---|---|
| Demand Volume (Vi) | 3627 | 1200 |
| Peak Hour Factor (PHF) | 0.88 | 0.89 |
| Total Trucks, % | 8.93 | 1.70 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.918 | 0.983 |
| Flow Rate (vi),pc/h | 4490 | 1372 |
| Capacity (c), pc/h | 6900 | 2100 |
| Volume-to-Capacity Ratio (v/c) | 0.85 | 0.65 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 1412.3 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 1250 | Speed Index (MS) | 0.632 |
| Downstream Equilibrium Distance (LEQ), ft | 8799.9 | Flow Outer Lanes (vOA), pc/mi/ln | 1356 |
| Distance to Downstream Ramp (LDOWN), ft | 2470 | On-Ramp Influenece Area Speed (SR), mi/h | 50.1 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFM) | 0.698 | Outer Lanes Freeway Speed (SO), mi/h | 60.9 |
| Flow in Lanes 1 and 2 (v12), pc/h | 3134 | Ramp Junction Speed (S), mi/h | 52.2 |
| Flow Entering Ramp-Infl. Area (vR12), pc/h | 4506 | Average Density (D), pc/mi/ln | 37.4 |
| Level of Service (LOS) | E | Density in Ramp Influence Area (DR), pc/mi/ln | 37.1 |

# HCS7 Freeway Merge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 01/29/2021 |
| Agency | WSDOT | Analysis Year | 2021 Existing |
| Jurisdiction | WSDOT | Time Period Analyzed | PM |
| Project Description | 20-2564 Latah Glen - NB US 195 to EB I-90 | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 1 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 45.0 |
| Segment Length (L) / Acceleration Length (LA),ft | 970 | 465 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | | |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | | |
|---|---|---|
| Demand Volume (Vi) | 4409 | 643 |
| Peak Hour Factor (PHF) | 0.92 | 0.96 |
| Total Trucks, % | 8.61 | 8.70 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.921 | 0.920 |
| Flow Rate (vi),pc/h | 5203 | 728 |
| Capacity (c), pc/h | 6900 | 2100 |
| Volume-to-Capacity Ratio (v/c) | 0.86 | 0.35 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 1427.1 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 1250 | Speed Index (MS) | 0.584 |
| Downstream Equilibrium Distance (LEQ), ft | 8799.9 | Flow Outer Lanes (vOA), pc/mi/ln | 1571 |
| Distance to Downstream Ramp (LDOWN), ft | 2470 | On-Ramp Influenece Area Speed (SR), mi/h | 51.2 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFM) | 0.698 | Outer Lanes Freeway Speed (SO), mi/h | 60.1 |
| Flow in Lanes 1 and 2 (v12), pc/h | 3632 | Ramp Junction Speed (S), mi/h | 53.3 |
| Flow Entering Ramp-Infl. Area (vR12), pc/h | 4360 | Average Density (D), pc/mi/ln | 37.1 |
| Level of Service (LOS) | E | Density in Ramp Influence Area (DR), pc/mi/ln | 36.3 |

# HCS7 Basic Freeway Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2021 Existing |
| Jurisdiction | WSDOT | Time Period Analyzed | AM |
| Project Description | 20-2564 Latah Glen Residential - Basic EB I-90 Bet. NB US 195 & Walnut | | |

## Geometric Data

| | | | |
|---|---|---|---|
| Number of Lanes, ln | 3 | Terrain Type | Level |
| Segment Length (L), ft | - | Percent Grade, % | - |
| Measured or Base Free-Flow Speed | Base | Grade Length, mi | - |
| Base Free-Flow Speed (BFFS), mi/h | 64.0 | Total Ramp Density (TRD), ramps/mi | 2.17 |
| Lane Width, ft | 12 | Free-Flow Speed (FFS), mi/h | 57.8 |
| Right-Side Lateral Clearance, ft | 10 | | |

## Adjustment Factors

| | | | |
|---|---|---|---|
| Driver Population | All Familiar | Final Speed Adjustment Factor (SAF) | 1.000 |
| Weather Type | Non-Severe Weather | Final Capacity Adjustment Factor (CAF) | 1.000 |
| Incident Type | No Incident | Demand Adjustment Factor (DAF) | 1.000 |

## Demand and Capacity

| | | | |
|---|---|---|---|
| Demand Volume veh/h | 4827 | Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.935 |
| Peak Hour Factor | 0.88 | Flow Rate ($V_p$), pc/h/ln | 1956 |
| Total Trucks, % | 6.90 | Capacity (c), pc/h/ln | 2278 |
| Single-Unit Trucks (SUT), % | - | Adjusted Capacity ($c_{adj}$), pc/h/ln | 2278 |
| Tractor-Trailers (TT), % | - | Volume-to-Capacity Ratio (v/c) | 0.86 |
| Passenger Car Equivalent ($E_T$) | 2.000 | | |

## Speed and Density

| | | | |
|---|---|---|---|
| Lane Width Adjustment ($f_{LW}$) | 0.0 | Average Speed (S), mi/h | 56.3 |
| Right-Side Lateral Clearance Adj. ($f_{RLC}$) | 0.0 | Density (D), pc/mi/ln | 34.7 |
| Total Ramp Density Adjustment | 6.2 | Level of Service (LOS) | D |
| Adjusted Free-Flow Speed ($FFS_{adj}$), mi/h | 57.8 | | |

# HCS7 Basic Freeway Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2021 Existing |
| Jurisdiction | WSDOT | Time Period Analyzed | PM |
| Project Description | 20-2564 Latah Glen Residential - Basic EB I-90 Bet. NB US 195 & Walnut | | |

## Geometric Data

| | | | |
|---|---|---|---|
| Number of Lanes, ln | 3 | Terrain Type | Level |
| Segment Length (L), ft | - | Percent Grade, % | - |
| Measured or Base Free-Flow Speed | Base | Grade Length, mi | - |
| Base Free-Flow Speed (BFFS), mi/h | 64.0 | Total Ramp Density (TRD), ramps/mi | 2.17 |
| Lane Width, ft | 12 | Free-Flow Speed (FFS), mi/h | 57.8 |
| Right-Side Lateral Clearance, ft | 10 | | |

## Adjustment Factors

| | | | |
|---|---|---|---|
| Driver Population | All Familiar | Final Speed Adjustment Factor (SAF) | 1.000 |
| Weather Type | Non-Severe Weather | Final Capacity Adjustment Factor (CAF) | 1.000 |
| Incident Type | No Incident | Demand Adjustment Factor (DAF) | 1.000 |

## Demand and Capacity

| | | | |
|---|---|---|---|
| Demand Volume veh/h | 5052 | Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.921 |
| Peak Hour Factor | 0.94 | Flow Rate ($V_p$), pc/h/ln | 1945 |
| Total Trucks, % | 8.60 | Capacity (c), pc/h/ln | 2278 |
| Single-Unit Trucks (SUT), % | - | Adjusted Capacity ($c_{adj}$), pc/h/ln | 2278 |
| Tractor-Trailers (TT), % | - | Volume-to-Capacity Ratio (v/c) | 0.85 |
| Passenger Car Equivalent ($E_T$) | 2.000 | | |

## Speed and Density

| | | | |
|---|---|---|---|
| Lane Width Adjustment ($f_{LW}$) | 0.0 | Average Speed (S), mi/h | 56.4 |
| Right-Side Lateral Clearance Adj. ($f_{RLC}$) | 0.0 | Density (D), pc/mi/ln | 34.5 |
| Total Ramp Density Adjustment | 6.2 | Level of Service (LOS) | D |
| Adjusted Free-Flow Speed ($FFS_{adj}$), mi/h | 57.8 | | |

# HCS7 Freeway Diverge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2021 Existing |
| Jurisdiction | WSDOT | Time Period Analyzed | AM |
| Project Description | 20-2564 Latah Glen Residential - EB I-90 to Walnut | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 2 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 35.0 |
| Segment Length (L) / Deceleration Length (LA),ft | 970 | 790 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | | |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | | |
|---|---|---|
| Demand Volume (Vi) | 3572 | 1255 |
| Peak Hour Factor (PHF) | 0.91 | 0.78 |
| Total Trucks, % | 8.30 | 2.40 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.923 | 0.977 |
| Flow Rate (vi),pc/h | 4253 | 1647 |
| Capacity (c), pc/h | 6900 | 4000 |
| Volume-to-Capacity Ratio (v/c) | 0.62 | 0.41 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 18237.3 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 2470 | Speed Index (DS) | 0.576 |
| Downstream Equilibrium Distance (LEQ), ft | - | Flow Outer Lanes (VOA), pc/mi/ln | 1433 |
| Distance to Downstream Ramp (LDOWN), ft | 2700 | Off-Ramp Influenece Area Speed (SR), mi/h | 51.3 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFD) | 0.450 | Outer Lanes Freeway Speed (SO), mi/h | 68.5 |
| Flow in Lanes 1 and 2 (v12), pc/h | 2820 | Ramp Junction Speed (S), mi/h | 56.0 |
| Flow Entering Ramp-Infl. Area (VR12), pc/h | - | Average Density (D), pc/mi/ln | 25.3 |
| Level of Service (LOS) | C | Density in Ramp Influence Area (DR), pc/mi/ln | 21.4 |

# HCS7 Freeway Diverge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2021 Existing |
| Jurisdiction | WSDOT | Time Period Analyzed | PM |
| Project Description | 20-2564 Latah Glen Residential - EB I-90 to Walnut | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 2 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 35.0 |
| Segment Length (L) / Deceleration Length (LA),ft | 970 | 790 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | Freeway | Ramp |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | Freeway | Ramp |
|---|---|---|
| Demand Volume (Vi) | 3587 | 1465 |
| Peak Hour Factor (PHF) | 0.94 | 0.93 |
| Total Trucks, % | 7.20 | 2.50 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.933 | 0.976 |
| Flow Rate (vi),pc/h | 4090 | 1614 |
| Capacity (c), pc/h | 6900 | 4000 |
| Volume-to-Capacity Ratio (v/c) | 0.59 | 0.40 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 18771.0 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 2470 | Speed Index (DS) | 0.573 |
| Downstream Equilibrium Distance (LEQ), ft | - | Flow Outer Lanes (VOA), pc/mi/ln | 1362 |
| Distance to Downstream Ramp (LDOWN), ft | 2700 | Off-Ramp Influenece Area Speed (SR), mi/h | 51.4 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFD) | 0.450 | Outer Lanes Freeway Speed (SO), mi/h | 68.8 |
| Flow in Lanes 1 and 2 (v12), pc/h | 2728 | Ramp Junction Speed (S), mi/h | 56.1 |
| Flow Entering Ramp-Infl. Area (vR12), pc/h | - | Average Density (D), pc/mi/ln | 24.3 |
| Level of Service (LOS) | C | Density in Ramp Influence Area (DR), pc/mi/ln | 20.6 |

# HCS7 Freeway Merge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W/ Background W/O Project |
| Jurisdiction | WSDOT | Time Period Analyzed | AM |
| Project Description | 20-2564 Latah Glen Residential - NB US 195 to EB I-90 | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 1 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 45.0 |
| Segment Length (L) / Acceleration Length (LA),ft | 970 | 465 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | | |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | | |
|---|---|---|
| Demand Volume (Vi) | 3821 | 1200 |
| Peak Hour Factor (PHF) | 0.88 | 0.89 |
| Total Trucks, % | 8.93 | 1.70 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.918 | 0.983 |
| Flow Rate (vi),pc/h | 4730 | 1372 |
| Capacity (c), pc/h | 6900 | 2100 |
| Volume-to-Capacity Ratio (v/c) | 0.88 | 0.65 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 1463.7 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 1250 | Speed Index (MS) | 0.697 |
| Downstream Equilibrium Distance (LEQ), ft | 8799.9 | Flow Outer Lanes (vOA), pc/mi/ln | 1428 |
| Distance to Downstream Ramp (LDOWN), ft | 2470 | On-Ramp Influenece Area Speed (SR), mi/h | 48.7 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFM) | 0.698 | Outer Lanes Freeway Speed (SO), mi/h | 60.7 |
| Flow in Lanes 1 and 2 (v12), pc/h | 3302 | Ramp Junction Speed (S), mi/h | 51.1 |
| Flow Entering Ramp-Infl. Area (vR12), pc/h | 4674 | Average Density (D), pc/mi/ln | 39.8 |
| Level of Service (LOS) | E | Density in Ramp Influence Area (DR), pc/mi/ln | 38.5 |

# HCS7 Freeway Merge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 01/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background W/O Project |
| Jurisdiction | WSDOT | Time Period Analyzed | PM |
| Project Description | 20-2564 Latah Glen - NB US 195 to EB I-90 | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 1 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 45.0 |
| Segment Length (L) / Acceleration Length (LA),ft | 970 | 465 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | | |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | | |
|---|---|---|
| Demand Volume (Vi) | 5353 | 701 |
| Peak Hour Factor (PHF) | 0.92 | 0.96 |
| Total Trucks, % | 8.61 | 8.70 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.921 | 0.920 |
| Flow Rate (vi),pc/h | 6318 | 794 |
| Capacity (c), pc/h | 6900 | 2100 |
| Volume-to-Capacity Ratio (v/c) | 1.03 | 0.38 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 1679.8 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 1250 | Speed Index (MS) | - |
| Downstream Equilibrium Distance (LEQ), ft | 8799.9 | Flow Outer Lanes (vOA), pc/mi/ln | 1908 |
| Distance to Downstream Ramp (LDOWN), ft | 2470 | On-Ramp Influenece Area Speed (SR), mi/h | 42.2 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFM) | 0.698 | Outer Lanes Freeway Speed (SO), mi/h | 58.9 |
| Flow in Lanes 1 and 2 (v12), pc/h | 4410 | Ramp Junction Speed (S), mi/h | - |
| Flow Entering Ramp-Infl. Area (vR12), pc/h | 5204 | Average Density (D), pc/mi/ln | - |
| Level of Service (LOS) | F | Density in Ramp Influence Area (DR), pc/mi/ln | 42.9 |

# HCS7 Freeway Merge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 01/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background W/O Project |
| Jurisdiction | WSDOT | Time Period Analyzed | PM |
| Project Description | 20-2564 Latah Glen - NB US 195 to EB I-90 (With 500 vph metering) | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 1 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 45.0 |
| Segment Length (L) / Acceleration Length (LA),ft | 970 | 465 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | Freeway | Ramp |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | Freeway | Ramp |
|---|---|---|
| Demand Volume (Vi) | 5353 | 500 |
| Peak Hour Factor (PHF) | 0.92 | 0.96 |
| Total Trucks, % | 8.61 | 8.70 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.921 | 0.920 |
| Flow Rate (vi),pc/h | 6318 | 566 |
| Capacity (c), pc/h | 6900 | 2100 |
| Volume-to-Capacity Ratio (v/c) | 1.00 | 0.27 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 1631.0 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 1250 | Speed Index (MS) | 0.844 |
| Downstream Equilibrium Distance (LEQ), ft | 8799.9 | Flow Outer Lanes (VOA), pc/mi/ln | 1908 |
| Distance to Downstream Ramp (LDOWN), ft | 2470 | On-Ramp Influenece Area Speed (SR), mi/h | 45.4 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFM) | 0.698 | Outer Lanes Freeway Speed (SO), mi/h | 58.9 |
| Flow in Lanes 1 and 2 (V12), pc/h | 4410 | Ramp Junction Speed (S), mi/h | 48.5 |
| Flow Entering Ramp-Infl. Area (VR12), pc/h | 4976 | Average Density (D), pc/mi/ln | 47.3 |
| Level of Service (LOS) | E | Density in Ramp Influence Area (DR), pc/mi/ln | 41.2 |

# HCS7 Basic Freeway Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background W/O Project |
| Jurisdiction | WSDOT | Time Period Analyzed | AM |
| Project Description | 20-2564 Latah Glen Residential - Basic EB I-90 Bet. NB US 195 & Walnut | | |

## Geometric Data

| | | | |
|---|---|---|---|
| Number of Lanes, ln | 3 | Terrain Type | Level |
| Segment Length (L), ft | - | Percent Grade, % | - |
| Measured or Base Free-Flow Speed | Base | Grade Length, mi | - |
| Base Free-Flow Speed (BFFS), mi/h | 64.0 | Total Ramp Density (TRD), ramps/mi | 2.17 |
| Lane Width, ft | 12 | Free-Flow Speed (FFS), mi/h | 57.8 |
| Right-Side Lateral Clearance, ft | 10 | | |

## Adjustment Factors

| | | | |
|---|---|---|---|
| Driver Population | All Familiar | Final Speed Adjustment Factor (SAF) | 1.000 |
| Weather Type | Non-Severe Weather | Final Capacity Adjustment Factor (CAF) | 1.000 |
| Incident Type | No Incident | Demand Adjustment Factor (DAF) | 1.000 |

## Demand and Capacity

| | | | |
|---|---|---|---|
| Demand Volume veh/h | 5021 | Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.935 |
| Peak Hour Factor | 0.88 | Flow Rate ($V_p$), pc/h/ln | 2034 |
| Total Trucks, % | 6.90 | Capacity (c), pc/h/ln | 2278 |
| Single-Unit Trucks (SUT), % | - | Adjusted Capacity ($c_{adj}$), pc/h/ln | 2278 |
| Tractor-Trailers (TT), % | - | Volume-to-Capacity Ratio (v/c) | 0.89 |
| Passenger Car Equivalent ($E_T$) | 2.000 | | |

## Speed and Density

| | | | |
|---|---|---|---|
| Lane Width Adjustment ($f_{LW}$) | 0.0 | Average Speed (S), mi/h | 55.3 |
| Right-Side Lateral Clearance Adj. ($f_{RLC}$) | 0.0 | Density (D), pc/mi/ln | 36.8 |
| Total Ramp Density Adjustment | 6.2 | Level of Service (LOS) | E |
| Adjusted Free-Flow Speed ($FFS_{adj}$), mi/h | 57.8 | | |

# HCS7 Basic Freeway Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background WO Project |
| Jurisdiction | WSDOT | Time Period Analyzed | PM |
| Project Description | 20-2564 Latah Glen Residential - Basic EB I-90 Bet. NB US 195 & Walnut | | |

## Geometric Data

| | | | |
|---|---|---|---|
| Number of Lanes, ln | 3 | Terrain Type | Level |
| Segment Length (L), ft | - | Percent Grade, % | - |
| Measured or Base Free-Flow Speed | Base | Grade Length, mi | - |
| Base Free-Flow Speed (BFFS), mi/h | 64.0 | Total Ramp Density (TRD), ramps/mi | 2.17 |
| Lane Width, ft | 12 | Free-Flow Speed (FFS), mi/h | 57.8 |
| Right-Side Lateral Clearance, ft | 10 | | |

## Adjustment Factors

| | | | |
|---|---|---|---|
| Driver Population | All Familiar | Final Speed Adjustment Factor (SAF) | 1.000 |
| Weather Type | Non-Severe Weather | Final Capacity Adjustment Factor (CAF) | 1.000 |
| Incident Type | No Incident | Demand Adjustment Factor (DAF) | 1.000 |

## Demand and Capacity

| | | | |
|---|---|---|---|
| Demand Volume veh/h | 6054 | Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.921 |
| Peak Hour Factor | 0.94 | Flow Rate ($V_p$), pc/h/ln | 2331 |
| Total Trucks, % | 8.60 | Capacity (c), pc/h/ln | 2278 |
| Single-Unit Trucks (SUT), % | - | Adjusted Capacity ($c_{adj}$), pc/h/ln | 2278 |
| Tractor-Trailers (TT), % | - | Volume-to-Capacity Ratio (v/c) | 1.02 |
| Passenger Car Equivalent ($E_T$) | 2.000 | | |

## Speed and Density

| | | | |
|---|---|---|---|
| Lane Width Adjustment ($f_{LW}$) | 0.0 | Average Speed (S), mi/h | - |
| Right-Side Lateral Clearance Adj. ($f_{RLC}$) | 0.0 | Density (D), pc/mi/ln | - |
| Total Ramp Density Adjustment | 6.2 | Level of Service (LOS) | F |
| Adjusted Free-Flow Speed ($FFS_{adj}$), mi/h | 57.8 | | |

# HCS7 Basic Freeway Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background WO Project |
| Jurisdiction | WSDOT | Time Period Analyzed | PM |
| Project Description | 20-2564 Latah Glen Residential - Basic EB I-90 Bet. NB US 195 & Walnut (With 500 vph metering) | | |

## Geometric Data

| | | | |
|---|---|---|---|
| Number of Lanes, ln | 3 | Terrain Type | Level |
| Segment Length (L), ft | - | Percent Grade, % | - |
| Measured or Base Free-Flow Speed | Base | Grade Length, mi | - |
| Base Free-Flow Speed (BFFS), mi/h | 64.0 | Total Ramp Density (TRD), ramps/mi | 2.17 |
| Lane Width, ft | 12 | Free-Flow Speed (FFS), mi/h | 57.8 |
| Right-Side Lateral Clearance, ft | 10 | | |

## Adjustment Factors

| | | | |
|---|---|---|---|
| Driver Population | All Familiar | Final Speed Adjustment Factor (SAF) | 1.000 |
| Weather Type | Non-Severe Weather | Final Capacity Adjustment Factor (CAF) | 1.000 |
| Incident Type | No Incident | Demand Adjustment Factor (DAF) | 1.000 |

## Demand and Capacity

| | | | |
|---|---|---|---|
| Demand Volume veh/h | 5853 | Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.921 |
| Peak Hour Factor | 0.94 | Flow Rate ($V_p$), pc/h/ln | 2254 |
| Total Trucks, % | 8.60 | Capacity (c), pc/h/ln | 2278 |
| Single-Unit Trucks (SUT), % | - | Adjusted Capacity ($c_{adj}$), pc/h/ln | 2278 |
| Tractor-Trailers (TT), % | - | Volume-to-Capacity Ratio (v/c) | 0.99 |
| Passenger Car Equivalent ($E_T$) | 2.000 | | |

## Speed and Density

| | | | |
|---|---|---|---|
| Lane Width Adjustment ($f_{LW}$) | 0.0 | Average Speed (S), mi/h | 51.2 |
| Right-Side Lateral Clearance Adj. ($f_{RLC}$) | 0.0 | Density (D), pc/mi/ln | 44.0 |
| Total Ramp Density Adjustment | 6.2 | Level of Service (LOS) | E |
| Adjusted Free-Flow Speed ($FFS_{adj}$), mi/h | 57.8 | | |

# HCS7 Freeway Diverge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background WO Project |
| Jurisdiction | WSDOT | Time Period Analyzed | AM |
| Project Description | 20-2564 Latah Glen Residential - EB I-90 to Walnut | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 2 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 35.0 |
| Segment Length (L) / Deceleration Length (LA),ft | 970 | 790 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | | |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | | |
|---|---|---|
| Demand Volume (Vi) | 3716 | 1305 |
| Peak Hour Factor (PHF) | 0.91 | 0.78 |
| Total Trucks, % | 8.30 | 2.40 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.923 | 0.977 |
| Flow Rate (vi),pc/h | 4424 | 1712 |
| Capacity (c), pc/h | 6900 | 4000 |
| Volume-to-Capacity Ratio (v/c) | 0.64 | 0.43 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 18667.9 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 2470 | Speed Index (DS) | 0.582 |
| Downstream Equilibrium Distance (LEQ), ft | - | Flow Outer Lanes (vOA), pc/mi/ln | 1492 |
| Distance to Downstream Ramp (LDOWN), ft | 2700 | Off-Ramp Influenece Area Speed (SR), mi/h | 51.2 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFD) | 0.450 | Outer Lanes Freeway Speed (SO), mi/h | 68.3 |
| Flow in Lanes 1 and 2 (v12), pc/h | 2932 | Ramp Junction Speed (S), mi/h | 55.9 |
| Flow Entering Ramp-Infl. Area (vR12), pc/h | - | Average Density (D), pc/mi/ln | 26.4 |
| Level of Service (LOS) | C | Density in Ramp Influence Area (DR), pc/mi/ln | 22.4 |

# HCS7 Freeway Diverge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background WO Project |
| Jurisdiction | WSDOT | Time Period Analyzed | PM |
| Project Description | 20-2564 Latah Glen Residential - EB I-90 to Walnut | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 2 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 35.0 |
| Segment Length (L) / Deceleration Length (LA),ft | 970 | 790 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | | |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | | |
|---|---|---|
| Demand Volume (Vi) | 4298 | 1756 |
| Peak Hour Factor (PHF) | 0.94 | 0.93 |
| Total Trucks, % | 7.20 | 2.50 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.933 | 0.976 |
| Flow Rate (vi),pc/h | 4901 | 1935 |
| Capacity (c), pc/h | 6900 | 4000 |
| Volume-to-Capacity Ratio (v/c) | 0.71 | 0.48 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 21711.3 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 2470 | Speed Index (DS) | 0.602 |
| Downstream Equilibrium Distance (LEQ), ft | - | Flow Outer Lanes (vOA), pc/mi/ln | 1631 |
| Distance to Downstream Ramp (LDOWN), ft | 2700 | Off-Ramp Influenece Area Speed (SR), mi/h | 50.8 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFD) | 0.450 | Outer Lanes Freeway Speed (SO), mi/h | 67.7 |
| Flow in Lanes 1 and 2 (v12), pc/h | 3270 | Ramp Junction Speed (S), mi/h | 55.4 |
| Flow Entering Ramp-Infl. Area (vR12), pc/h | - | Average Density (D), pc/mi/ln | 29.5 |
| Level of Service (LOS) | C | Density in Ramp Influence Area (DR), pc/mi/ln | 25.3 |

# HCS7 Freeway Merge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background & Project |
| Jurisdiction | WSDOT | Time Period Analyzed | AM |
| Project Description | 20-2564 Latah Glen Residential - NB US 195 to EB I-90 | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 1 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 45.0 |
| Segment Length (L) / Acceleration Length (LA),ft | 970 | 465 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | | |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | | |
|---|---|---|
| Demand Volume (Vi) | 3821 | 1200 |
| Peak Hour Factor (PHF) | 0.88 | 0.89 |
| Total Trucks, % | 8.93 | 1.70 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.918 | 0.983 |
| Flow Rate (vi),pc/h | 4730 | 1372 |
| Capacity (c), pc/h | 6900 | 2100 |
| Volume-to-Capacity Ratio (v/c) | 0.88 | 0.65 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 1463.7 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 1250 | Speed Index (MS) | 0.697 |
| Downstream Equilibrium Distance (LEQ), ft | 8799.9 | Flow Outer Lanes (vOA), pc/mi/ln | 1428 |
| Distance to Downstream Ramp (LDOWN), ft | 2470 | On-Ramp Influenece Area Speed (SR), mi/h | 48.7 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFM) | 0.698 | Outer Lanes Freeway Speed (SO), mi/h | 60.7 |
| Flow in Lanes 1 and 2 (v12), pc/h | 3302 | Ramp Junction Speed (S), mi/h | 51.1 |
| Flow Entering Ramp-Infl. Area (vR12), pc/h | 4674 | Average Density (D), pc/mi/ln | 39.8 |
| Level of Service (LOS) | E | Density in Ramp Influence Area (DR), pc/mi/ln | 38.5 |

# HCS7 Freeway Merge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 01/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background & Project |
| Jurisdiction | WSDOT | Time Period Analyzed | PM |
| Project Description | 20-2564 Latah Glen - NB US 195 to EB I-90 | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 1 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 45.0 |
| Segment Length (L) / Acceleration Length (LA),ft | 970 | 465 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | | |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | | |
|---|---|---|
| Demand Volume (Vi) | 5353 | 707 |
| Peak Hour Factor (PHF) | 0.92 | 0.96 |
| Total Trucks, % | 8.61 | 8.70 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.921 | 0.920 |
| Flow Rate (vi),pc/h | 6318 | 800 |
| Capacity (c), pc/h | 6900 | 2100 |
| Volume-to-Capacity Ratio (v/c) | 1.03 | 0.38 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 1681.1 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 1250 | Speed Index (MS) | - |
| Downstream Equilibrium Distance (LEQ), ft | 8799.9 | Flow Outer Lanes (vOA), pc/mi/ln | 1908 |
| Distance to Downstream Ramp (LDOWN), ft | 2470 | On-Ramp Influenece Area Speed (SR), mi/h | 42.2 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFM) | 0.698 | Outer Lanes Freeway Speed (SO), mi/h | 58.9 |
| Flow in Lanes 1 and 2 (v12), pc/h | 4410 | Ramp Junction Speed (S), mi/h | - |
| Flow Entering Ramp-Infl. Area (vR12), pc/h | 5210 | Average Density (D), pc/mi/ln | - |
| Level of Service (LOS) | F | Density in Ramp Influence Area (DR), pc/mi/ln | 42.9 |

# HCS7 Freeway Merge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 01/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background & Project |
| Jurisdiction | WSDOT | Time Period Analyzed | PM |
| Project Description | 20-2564 Latah Glen - NB US 195 to EB I-90 (500 vph metering) | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 1 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 45.0 |
| Segment Length (L) / Acceleration Length (LA),ft | 970 | 465 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | | |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | | |
|---|---|---|
| Demand Volume (Vi) | 5353 | 500 |
| Peak Hour Factor (PHF) | 0.92 | 0.96 |
| Total Trucks, % | 8.61 | 8.70 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.921 | 0.920 |
| Flow Rate (vi),pc/h | 6318 | 566 |
| Capacity (c), pc/h | 6900 | 2100 |
| Volume-to-Capacity Ratio (v/c) | 1.00 | 0.27 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 1631.0 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 1250 | Speed Index (MS) | 0.844 |
| Downstream Equilibrium Distance (LEQ), ft | 8799.9 | Flow Outer Lanes (vOA), pc/mi/ln | 1908 |
| Distance to Downstream Ramp (LDOWN), ft | 2470 | On-Ramp Influenece Area Speed (SR), mi/h | 45.4 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFM) | 0.698 | Outer Lanes Freeway Speed (SO), mi/h | 58.9 |
| Flow in Lanes 1 and 2 (v12), pc/h | 4410 | Ramp Junction Speed (S), mi/h | 48.5 |
| Flow Entering Ramp-Infl. Area (vR12), pc/h | 4976 | Average Density (D), pc/mi/ln | 47.3 |
| Level of Service (LOS) | E | Density in Ramp Influence Area (DR), pc/mi/ln | 41.2 |

# HCS7 Basic Freeway Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background & Project |
| Jurisdiction | WSDOT | Time Period Analyzed | AM |
| Project Description | 20-2564 Latah Glen Residential - Basic EB I-90 Bet. NB US 195 & Walnut | | |

## Geometric Data

| | | | |
|---|---|---|---|
| Number of Lanes, ln | 3 | Terrain Type | Level |
| Segment Length (L), ft | - | Percent Grade, % | - |
| Measured or Base Free-Flow Speed | Base | Grade Length, mi | - |
| Base Free-Flow Speed (BFFS), mi/h | 64.0 | Total Ramp Density (TRD), ramps/mi | 2.17 |
| Lane Width, ft | 12 | Free-Flow Speed (FFS), mi/h | 57.8 |
| Right-Side Lateral Clearance, ft | 10 | | |

## Adjustment Factors

| | | | |
|---|---|---|---|
| Driver Population | All Familiar | Final Speed Adjustment Factor (SAF) | 1.000 |
| Weather Type | Non-Severe Weather | Final Capacity Adjustment Factor (CAF) | 1.000 |
| Incident Type | No Incident | Demand Adjustment Factor (DAF) | 1.000 |

## Demand and Capacity

| | | | |
|---|---|---|---|
| Demand Volume veh/h | 5021 | Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.935 |
| Peak Hour Factor | 0.88 | Flow Rate ($V_p$), pc/h/ln | 2034 |
| Total Trucks, % | 6.90 | Capacity (c), pc/h/ln | 2278 |
| Single-Unit Trucks (SUT), % | - | Adjusted Capacity ($c_{adj}$), pc/h/ln | 2278 |
| Tractor-Trailers (TT), % | - | Volume-to-Capacity Ratio (v/c) | 0.89 |
| Passenger Car Equivalent ($E_T$) | 2.000 | | |

## Speed and Density

| | | | |
|---|---|---|---|
| Lane Width Adjustment ($f_{LW}$) | 0.0 | Average Speed (S), mi/h | 55.3 |
| Right-Side Lateral Clearance Adj. ($f_{RLC}$) | 0.0 | Density (D), pc/mi/ln | 36.8 |
| Total Ramp Density Adjustment | 6.2 | Level of Service (LOS) | E |
| Adjusted Free-Flow Speed ($FFS_{adj}$), mi/h | 57.8 | | |

# HCS7 Basic Freeway Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background & Project |
| Jurisdiction | WSDOT | Time Period Analyzed | PM |
| Project Description | 20-2564 Latah Glen Residential - Basic EB I-90 Bet. NB US 195 & Walnut | | |

## Geometric Data

| | | | |
|---|---|---|---|
| Number of Lanes, ln | 3 | Terrain Type | Level |
| Segment Length (L), ft | - | Percent Grade, % | - |
| Measured or Base Free-Flow Speed | Base | Grade Length, mi | - |
| Base Free-Flow Speed (BFFS), mi/h | 64.0 | Total Ramp Density (TRD), ramps/mi | 2.17 |
| Lane Width, ft | 12 | Free-Flow Speed (FFS), mi/h | 57.8 |
| Right-Side Lateral Clearance, ft | 10 | | |

## Adjustment Factors

| | | | |
|---|---|---|---|
| Driver Population | All Familiar | Final Speed Adjustment Factor (SAF) | 1.000 |
| Weather Type | Non-Severe Weather | Final Capacity Adjustment Factor (CAF) | 1.000 |
| Incident Type | No Incident | Demand Adjustment Factor (DAF) | 1.000 |

## Demand and Capacity

| | | | |
|---|---|---|---|
| Demand Volume veh/h | 6060 | Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.921 |
| Peak Hour Factor | 0.94 | Flow Rate ($V_p$), pc/h/ln | 2333 |
| Total Trucks, % | 8.60 | Capacity (c), pc/h/ln | 2278 |
| Single-Unit Trucks (SUT), % | - | Adjusted Capacity ($c_{adj}$), pc/h/ln | 2278 |
| Tractor-Trailers (TT), % | - | Volume-to-Capacity Ratio (v/c) | 1.02 |
| Passenger Car Equivalent ($E_T$) | 2.000 | | |

## Speed and Density

| | | | |
|---|---|---|---|
| Lane Width Adjustment ($f_{LW}$) | 0.0 | Average Speed (S), mi/h | - |
| Right-Side Lateral Clearance Adj. ($f_{RLC}$) | 0.0 | Density (D), pc/mi/ln | - |
| Total Ramp Density Adjustment | 6.2 | Level of Service (LOS) | F |
| Adjusted Free-Flow Speed ($FFS_{adj}$), mi/h | 57.8 | | |

# HCS7 Basic Freeway Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background & Project |
| Jurisdiction | WSDOT | Time Period Analyzed | PM |
| Project Description | 20-2564 Latah Glen Residential - Basic EB I-90 Bet. NB US 195 & Walnut (With 500 vph) | | |

## Geometric Data

| | | | |
|---|---|---|---|
| Number of Lanes, ln | 3 | Terrain Type | Level |
| Segment Length (L), ft | - | Percent Grade, % | - |
| Measured or Base Free-Flow Speed | Base | Grade Length, mi | - |
| Base Free-Flow Speed (BFFS), mi/h | 64.0 | Total Ramp Density (TRD), ramps/mi | 2.17 |
| Lane Width, ft | 12 | Free-Flow Speed (FFS), mi/h | 57.8 |
| Right-Side Lateral Clearance, ft | 10 | | |

## Adjustment Factors

| | | | |
|---|---|---|---|
| Driver Population | All Familiar | Final Speed Adjustment Factor (SAF) | 1.000 |
| Weather Type | Non-Severe Weather | Final Capacity Adjustment Factor (CAF) | 1.000 |
| Incident Type | No Incident | Demand Adjustment Factor (DAF) | 1.000 |

## Demand and Capacity

| | | | |
|---|---|---|---|
| Demand Volume veh/h | 5853 | Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.921 |
| Peak Hour Factor | 0.94 | Flow Rate ($V_p$), pc/h/ln | 2254 |
| Total Trucks, % | 8.60 | Capacity (c), pc/h/ln | 2278 |
| Single-Unit Trucks (SUT), % | - | Adjusted Capacity ($c_{adj}$), pc/h/ln | 2278 |
| Tractor-Trailers (TT), % | - | Volume-to-Capacity Ratio (v/c) | 0.99 |
| Passenger Car Equivalent ($E_T$) | 2.000 | | |

## Speed and Density

| | | | |
|---|---|---|---|
| Lane Width Adjustment ($f_{LW}$) | 0.0 | Average Speed (S), mi/h | 51.2 |
| Right-Side Lateral Clearance Adj. ($f_{RLC}$) | 0.0 | Density (D), pc/mi/ln | 44.0 |
| Total Ramp Density Adjustment | 6.2 | Level of Service (LOS) | E |
| Adjusted Free-Flow Speed ($FFS_{adj}$), mi/h | 57.8 | | |

# HCS7 Freeway Diverge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background & Project |
| Jurisdiction | WSDOT | Time Period Analyzed | AM |
| Project Description | 20-2564 Latah Glen Residential - EB I-90 to Walnut | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 2 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 35.0 |
| Segment Length (L) / Deceleration Length (LA),ft | 970 | 790 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | Freeway | Ramp |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | Freeway | Ramp |
|---|---|---|
| Demand Volume (Vi) | 3716 | 1305 |
| Peak Hour Factor (PHF) | 0.91 | 0.78 |
| Total Trucks, % | 8.30 | 2.40 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.923 | 0.977 |
| Flow Rate (vi),pc/h | 4424 | 1712 |
| Capacity (c), pc/h | 6900 | 4000 |
| Volume-to-Capacity Ratio (v/c) | 0.64 | 0.43 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 18667.9 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 2470 | Speed Index (DS) | 0.582 |
| Downstream Equilibrium Distance (LEQ), ft | - | Flow Outer Lanes (vOA), pc/mi/ln | 1492 |
| Distance to Downstream Ramp (LDOWN), ft | 2700 | Off-Ramp Influenece Area Speed (SR), mi/h | 51.2 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFD) | 0.450 | Outer Lanes Freeway Speed (SO), mi/h | 68.3 |
| Flow in Lanes 1 and 2 (v12), pc/h | 2932 | Ramp Junction Speed (S), mi/h | 55.9 |
| Flow Entering Ramp-Infl. Area (vR12), pc/h | - | Average Density (D), pc/mi/ln | 26.4 |
| Level of Service (LOS) | C | Density in Ramp Influence Area (DR), pc/mi/ln | 22.4 |

# HCS7 Freeway Diverge Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | Whipple Consulting Engineers | Date | 1/29/2021 |
| Agency | WSDOT | Analysis Year | 2026 W Background & Project |
| Jurisdiction | WSDOT | Time Period Analyzed | PM |
| Project Description | 20-2564 Latah Glen Residential - EB I-90 to Walnut | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N), ln | 3 | 2 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 35.0 |
| Segment Length (L) / Deceleration Length (LA),ft | 970 | 790 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | | |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | | |
|---|---|---|
| Demand Volume (Vi) | 4302 | 1758 |
| Peak Hour Factor (PHF) | 0.94 | 0.93 |
| Total Trucks, % | 7.20 | 2.50 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor (fHV) | 0.933 | 0.976 |
| Flow Rate (vi),pc/h | 4905 | 1937 |
| Capacity (c), pc/h | 6900 | 4000 |
| Volume-to-Capacity Ratio (v/c) | 0.71 | 0.48 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance (LEQ), ft | 21746.9 | Number of Outer Lanes on Freeway (NO) | 1 |
| Distance to Upstream Ramp (LUP), ft | 2470 | Speed Index (DS) | 0.602 |
| Downstream Equilibrium Distance (LEQ), ft | - | Flow Outer Lanes (vOA), pc/mi/ln | 1632 |
| Distance to Downstream Ramp (LDOWN), ft | 2700 | Off-Ramp Influenece Area Speed (SR), mi/h | 50.8 |
| Prop. Freeway Vehicles in Lane 1 and 2 (PFD) | 0.450 | Outer Lanes Freeway Speed (SO), mi/h | 67.7 |
| Flow in Lanes 1 and 2 (v12), pc/h | 3273 | Ramp Junction Speed (S), mi/h | 55.4 |
| Flow Entering Ramp-Infl. Area (vR12), pc/h | - | Average Density (D), pc/mi/ln | 29.5 |
| Level of Service (LOS) | C | Density in Ramp Influence Area (DR), pc/mi/ln | 25.3 |

DRAFT

**Ramp Merge Area LOS - NB 195 to EB 90**
**Ramp Meter in Operation Starting Tuesday, April 9, 2019**
**HCS7 Version 7.4**

| Date | AM Peak Hour | Mainline Volume | Ramp Volume | Density | LOS |
|---|---|---|---|---|---|
| Wednesday, August 23, 2017 | 7:15 AM | 2644 | 1078 | 28.9 | D |
| Thursday, August 16, 2018 | 7:15 AM | 2676 | 1040 | 29.0 | D |
| Friday, August 17, 2018 | 7:15 AM | 2509 | 924 | 26.8 | C |
| Tuesday, September 25, 2018 | 7:15 AM | 2897 | 1270 | 32.4 | D |
| Wednesday, September 26, 2018 | 7:15 AM | 3056 | 1227 | 33.2 | D |
| 9/26/2018 +500/50 | 7:15 AM | 3556 | 1277 | 37.9 | E |
| Wednesday, December 5, 2018 | 7:15 AM | 2718 | 1130 | 29.6 | D |
| Tuesday, April 16, 2019 | 7:15 AM | 2964 | 1059 | 30.5 | D |
| 4/16/2019 +500/0 | AM | 3464 | 1059 | 34.7 | D |
| 4/16/2019 +500/50 | AM | 3964 | 1109 | 35.2 | E |
| 4/16/2019 +1000/0 | AM | 3964 | 1059 | 39.1 | E |
| 4/16/2019 +1000/50 | AM | 3964 | 1109 | 39.6 | E |
| 4/16/2019 +1500/0 | AM | 4464 | 1059 | 43.7 | E |
| 4/16/2019 +1500/50 | AM | 4464 | 1109 | 44.2 | E |

| Date | PM Peak Hour | Mainline Volume | Ramp Volume | Density | LOS |
|---|---|---|---|---|---|
| Tuesday, August 22, 2017 | 3:15 PM | 3659 | 642 | 29.8 | D |
| Thursday, August 16, 2018 | 3:30 PM | 3862 | 617 | 30.9 | D |
| Friday, August 17, 2018 | 3:15 PM | 3930 | 655 | 31.2 | D |
| Tuesday, September 25, 2018 | 3:15 PM | 3914 | 593 | 30.9 | D |
| Wednesday, September 26, 2018 | 3:15 PM | 3822 | 580 | 31.1 | D |
| 9/26/2018 +500/50 | 3:15 PM | 4322 | 630 | 35.6 | E |
| Wednesday, December 5, 2018 | 2:45 PM | 3372 | 582 | 27.9 | C |
| Tuesday, April 16, 2019 | 3:45 PM | 3664 | 570 | 30.7 | D |
| 4/16/2019 +500/0 | PM | 4164 | 570 | 34.7 | D |
| 4/16/2019 +500/50 | PM | 4164 | 620 | 35.2 | E |
| 4/16/2019 +1000/0 | PM | 4664 | 570 | 38.9 | E |
| 4/16/2019 +1000/50 | PM | 4664 | 620 | 39.5 | E |
| 4/16/2019 +1500/0 | PM | 5164 | 570 | 43.3 | E |
| 4/16/2019 +1500/50 | PM | 5164 | 620 | 43.9 | E |

Notes
1. 500/50 indicates that for this scenario 500 vehicles were added to mainline and 50 vehicles were added to ramp volumes *(mailine add/ramp add)*.

2. HCS7 Diverge analysis of the adjacent Walnut EB off-ramp showed a better LOS than this ramp (LOS B for AM and PM using 2017 counts). See G:\TSM&O\12_I-90\090- 280 Walnut\090 EB Walnut On-ramp Ramp Meter_2018\5_Analysis for details. Therefore, further analysis was not done for this ramp.

| LOS | Density (pc/mi/ln) |
|---|---|
| A | ≤10 |
| B | >10–20 |
| C | >20–28 |
| D | >28–35 |
| E | >35 |
| F | Demand exceeds capacity |

**Exhibit 14-3**
LOS Criteria for Freeway Merge and Diverge Segments

# HCS7 Freeway Merge Report

DRAFT

## Project Information

| | | | |
|---|---|---|---|
| Analyst | ER Traffic | Date | TBD |
| Agency | WSDOT | Analysis Year | TBD |
| Jurisdiction | WSDOT | Time Period Analyzed | 9/26/2018 AM Peak Hour +500/50 |
| Project Description | NB US 195 to EB I-90 On-ramp, 9/26/2018 AM Peak Hour with 500/50 Additional Mainline/Ramp Vehicles | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N) | 3 | 1 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 45.0 |
| Segment Length (L) / Acceleration Length ($L_A$), ft | 970 | 465 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | | |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | | |
|---|---|---|
| Demand Volume ($V_i$), veh/h | 3556 | 1277 |
| Peak Hour Factor (PHF) | 0.88 | 0.89 |
| Total Trucks, % | 8.93 | 1.70 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.918 | 0.983 |
| Flow Rate ($v_i$), pc/h | 4402 | 1460 |
| Capacity (c), pc/h | 6900 | 2100 |
| Volume-to-Capacity Ratio (v/c) | 0.85 | 0.70 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance ($L_{EQ}$), ft | 1412.3 | Density in Ramp Influence Area ($D_R$), pc/mi/ln | 37.9 |
| Distance to Upstream Ramp ($L_{UP}$), ft | 1250 | Speed Index ($M_S$) | 0.672 |
| Downstream Equilibrium Distance ($L_{EQ}$), ft | 9877.8 | Flow Outer Lanes ($v_{OA}$), pc/h/ln | 1250 |
| Distance to Downstream Ramp ($L_{DOWN}$), ft | 2470 | On-Ramp Influence Area Speed ($S_R$), mi/h | 49.2 |
| Prop. Freeway Vehicles in Lane 1 and 2 ($P_{FM}$) | 0.716 | Outer Lanes Freeway Speed ($S_O$), mi/h | 61.3 |
| Flow in Lanes 1 and 2 ($v_{12}$), pc/h | 3152 | Ramp Junction Speed (S), mi/h | 51.4 |
| Flow Entering Ramp-Infl. Area ($v_{R12}$), pc/h | 4612 | Average Density (D), pc/mi/ln | 38.0 |
| Level of Service (LOS) | E | | |

# HCS7 Freeway Merge Report

DRAFT

## Project Information

| | | | |
|---|---|---|---|
| Analyst | ER Traffic | Date | TBD |
| Agency | WSDOT | Analysis Year | TBD |
| Jurisdiction | WSDOT | Time Period Analyzed | 9/26/2018 PM Peak Hour +500/50 |
| Project Description | NB US 195 to EB I-90 On-ramp, 9/26/2018 PM Peak Hour with 500/50 Additional Mainline/Ramp Vehicles | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N) | 3 | 1 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 45.0 |
| Segment Length (L) / Acceleration Length ($L_A$), ft | 970 | 465 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | | |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | | |
|---|---|---|
| Demand Volume ($V_i$), veh/h | 4322 | 630 |
| Peak Hour Factor (PHF) | 0.92 | 0.96 |
| Total Trucks, % | 8.61 | 8.70 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.921 | 0.920 |
| Flow Rate ($v_i$), pc/h | 5101 | 713 |
| Capacity (c), pc/h | 6900 | 2100 |
| Volume-to-Capacity Ratio (v/c) | 0.84 | 0.34 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance ($L_{EQ}$), ft | 1402.1 | Density in Ramp Influence Area ($D_R$), pc/mi/ln | 35.6 |
| Distance to Upstream Ramp ($L_{UP}$), ft | 1250 | Speed Index ($M_S$) | 0.558 |
| Downstream Equilibrium Distance ($L_{EQ}$), ft | 8718.9 | Flow Outer Lanes ($v_{OA}$), pc/h/ln | 1546 |
| Distance to Downstream Ramp ($L_{DOWN}$), ft | 2470 | On-Ramp Influence Area Speed ($S_R$), mi/h | 51.7 |
| Prop. Freeway Vehicles in Lane 1 and 2 ($P_{FM}$) | 0.697 | Outer Lanes Freeway Speed ($S_O$), mi/h | 60.2 |
| Flow in Lanes 1 and 2 ($v_{12}$), pc/h | 3555 | Ramp Junction Speed (S), mi/h | 53.7 |
| Flow Entering Ramp-Infl. Area ($v_{R12}$), pc/h | 4268 | Average Density (D), pc/mi/ln | 36.1 |
| Level of Service (LOS) | E | | |

# HCS7 Basic Freeway Report

DRAFT

## Project Information

| | | | |
|---|---|---|---|
| Analyst | ER Traffic | Date | TBD |
| Agency | WSDOT | Analysis Year | TBD |
| Jurisdiction | WSDOT | Time Period Analyzed | 9/26/2018 AM Peak Hour +550 |
| Project Description | EB Section Between 195 and Walnut, 9/26/2018 AM Peak Hour with 550 Additional Mainline Vehicles | | |

## Geometric Data

| | | | |
|---|---|---|---|
| Number of Lanes (N), ln | 3 | Terrain Type | Level |
| Segment Length (L), ft | - | Percent Grade, % | - |
| Measured or Base Free-Flow Speed | Base | Grade Length, mi | - |
| Base Free-Flow Speed (BFFS), mi/h | 64.0 | Total Ramp Density (TRD), ramps/mi | 2.17 |
| Lane Width, ft | 12 | Free-Flow Speed (FFS), mi/h | 57.8 |
| Right-Side Lateral Clearance, ft | 10 | | |

## Adjustment Factors

| | | | |
|---|---|---|---|
| Driver Population | All Familiar | Final Speed Adjustment Factor (SAF) | 1.000 |
| Weather Type | Non-Severe Weather | Final Capacity Adjustment Factor (CAF) | 1.000 |
| Incident Type | No Incident | Demand Adjustment Factor (DAF) | 1.000 |

## Demand and Capacity

| | | | |
|---|---|---|---|
| Demand Volume (V), veh/h | 4833 | Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.935 |
| Peak Hour Factor (PHF) | 0.88 | Flow Rate ($v_p$), pc/h/ln | 1958 |
| Total Trucks, % | 6.90 | Capacity (c), pc/h/ln | 2278 |
| Single-Unit Trucks (SUT), % | - | Adjusted Capacity ($c_{adj}$), pc/h/ln | 2278 |
| Tractor-Trailers (TT), % | - | Volume-to-Capacity Ratio (v/c) | 0.86 |
| Passenger Car Equivalent ($E_T$) | 2.000 | | |

## Speed and Density

| | | | |
|---|---|---|---|
| Lane Width Adjustment ($f_{LW}$) | 0.0 | Average Speed (S), mi/h | 56.3 |
| Right-Side Lateral Clearance Adj. ($f_{RLC}$) | 0.0 | Density (D), pc/mi/ln | 34.8 |
| Total Ramp Density Adjustment | 6.2 | Level of Service (LOS) | D |
| Adjusted Free-Flow Speed ($FFS_{adj}$), mi/h | 57.8 | | |

# HCS7 Basic Freeway Report

DRAFT

## Project Information

| | | | |
|---|---|---|---|
| Analyst | ER Traffic | Date | TBD |
| Agency | WSDOT | Analysis Year | TBD |
| Jurisdiction | WSDOT | Time Period Analyzed | 9/26/2018 PM Peak Hour +550 |
| Project Description | Basice EB Section Between 195 and Walnut | | |

## Geometric Data

| | | | |
|---|---|---|---|
| Number of Lanes (N), ln | 3 | Terrain Type | Level |
| Segment Length (L), ft | - | Percent Grade, % | - |
| Measured or Base Free-Flow Speed | Base | Grade Length, mi | - |
| Base Free-Flow Speed (BFFS), mi/h | 64.0 | Total Ramp Density (TRD), ramps/mi | 2.17 |
| Lane Width, ft | 12 | Free-Flow Speed (FFS), mi/h | 57.8 |
| Right-Side Lateral Clearance, ft | 10 | | |

## Adjustment Factors

| | | | |
|---|---|---|---|
| Driver Population | All Familiar | Final Speed Adjustment Factor (SAF) | 1.000 |
| Weather Type | Non-Severe Weather | Final Capacity Adjustment Factor (CAF) | 1.000 |
| Incident Type | No Incident | Demand Adjustment Factor (DAF) | 1.000 |

## Demand and Capacity

| | | | |
|---|---|---|---|
| Demand Volume (V), veh/h | 4952 | Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.921 |
| Peak Hour Factor (PHF) | 0.94 | Flow Rate ($v_p$), pc/h/ln | 1907 |
| Total Trucks, % | 8.60 | Capacity (c), pc/h/ln | 2278 |
| Single-Unit Trucks (SUT), % | - | Adjusted Capacity ($c_{adj}$), pc/h/ln | 2278 |
| Tractor-Trailers (TT), % | - | Volume-to-Capacity Ratio (v/c) | 0.84 |
| Passenger Car Equivalent ($E_T$) | 2.000 | | |

## Speed and Density

| | | | |
|---|---|---|---|
| Lane Width Adjustment ($f_{LW}$) | 0.0 | Average Speed (S), mi/h | 56.8 |
| Right-Side Lateral Clearance Adj. ($f_{RLC}$) | 0.0 | Density (D), pc/mi/ln | 33.6 |
| Total Ramp Density Adjustment | 6.2 | Level of Service (LOS) | D |
| Adjusted Free-Flow Speed ($FFS_{adj}$), mi/h | 57.8 | | |

# HCS7 Freeway Diverge Report

DRAFT

## Project Information

| | | | |
|---|---|---|---|
| Analyst | ER Traffic | Date | 7/18/2017 |
| Agency | WSDOT | Analysis Year | 2017 |
| Jurisdiction | WSDOT | Time Period Analyzed | AM Peak Hour 0715-0815 |
| Project Description | EB Walnut Off-ramp | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N) | 3 | 2 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 35.0 |
| Segment Length (L) / Deceleration Length ($L_D$), ft | 970 | 790 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | | |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | | |
|---|---|---|
| Demand Volume ($V_i$), veh/h | 2739 74% | 983 26% |
| Peak Hour Factor (PHF) | 0.91 | 0.78 |
| Total Trucks, % | 8.30 | 2.40 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.923 | 0.977 |
| Flow Rate ($v_i$), pc/h | 3261 | 1290 |
| Capacity (c), pc/h | 6900 | 4000 |
| Volume-to-Capacity Ratio (v/c) | 0.47 | 0.32 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance ($L_{EQ}$), ft | 25921.9 | Density in Ramp Influence Area ($D_R$), pc/mi/ln | 15.9 |
| Distance to Upstream Ramp ($L_{UP}$), ft | 2470 | Speed Index ($D_S$) | 0.544 |
| Downstream Equilibrium Distance ($L_{EQ}$), ft | - | Flow Outer Lanes ($v_{OA}$), pc/h/ln | 1084 |
| Distance to Downstream Ramp ($L_{DOWN}$), ft | 2700 | Off-Ramp Influence Area Speed ($S_R$), mi/h | 52.0 |
| Prop. Freeway Vehicles in Lane 1 and 2 ($P_{FD}$) | 0.450 | Outer Lanes Freeway Speed ($S_O$), mi/h | 69.9 |
| Flow in Lanes 1 and 2 ($v_{12}$), pc/h | 2177 | Ramp Junction Speed (S), mi/h | 56.8 |
| Flow Entering Ramp-Infl. Area ($v_{R12}$), pc/h | - | Average Density (D), pc/mi/ln | 19.1 |
| Level of Service (LOS) | B | | |

# HCS7 Freeway Diverge Report

DRAFT

## Project Information

| | | | |
|---|---|---|---|
| Analyst | ER Traffic | Date | 7/18/2017 |
| Agency | WSDOT | Analysis Year | 2017 |
| Jurisdiction | WSDOT | Time Period Analyzed | PM Peak Hour 1615-1715 |
| Project Description | EB Walnut Off-ramp | | |

## Geometric Data

| | Freeway | Ramp |
|---|---|---|
| Number of Lanes (N) | 3 | 2 |
| Free-Flow Speed (FFS), mi/h | 64.0 | 35.0 |
| Segment Length (L) / Deceleration Length ($L_D$), ft | 970 | 790 |
| Terrain Type | Level | Level |
| Percent Grade, % | - | - |
| Segment Type / Ramp Side | Freeway | Right |

## Adjustment Factors

| | Freeway | Ramp |
|---|---|---|
| Driver Population | All Familiar | All Familiar |
| Weather Type | Non-Severe Weather | Non-Severe Weather |
| Incident Type | No Incident | - |
| Final Speed Adjustment Factor (SAF) | 1.000 | 1.000 |
| Final Capacity Adjustment Factor (CAF) | 1.000 | 1.000 |
| Demand Adjustment Factor (DAF) | 1.000 | 1.000 |

## Demand and Capacity

| | Freeway | Ramp |
|---|---|---|
| Demand Volume ($V_i$), veh/h | 2921 71% | 1182 29% |
| Peak Hour Factor (PHF) | 0.94 | 0.93 |
| Total Trucks, % | 7.20 | 2.50 |
| Single-Unit Trucks (SUT), % | - | - |
| Tractor-Trailers (TT), % | - | - |
| Heavy Vehicle Adjustment Factor ($f_{HV}$) | 0.933 | 0.976 |
| Flow Rate ($v_i$), pc/h | 3331 | 1302 |
| Capacity (c), pc/h | 6900 | 4000 |
| Volume-to-Capacity Ratio (v/c) | 0.48 | 0.33 |

## Speed and Density

| | | | |
|---|---|---|---|
| Upstream Equilibrium Distance ($L_{EQ}$), ft | 13119.3 | Density in Ramp Influence Area ($D_R$), pc/mi/ln | 16.2 |
| Distance to Upstream Ramp ($L_{UP}$), ft | 2470 | Speed Index ($D_S$) | 0.545 |
| Downstream Equilibrium Distance ($L_{EQ}$), ft | - | Flow Outer Lanes ($v_{OA}$), pc/h/ln | 1116 |
| Distance to Downstream Ramp ($L_{DOWN}$), ft | 2700 | Off-Ramp Influence Area Speed ($S_R$), mi/h | 52.0 |
| Prop. Freeway Vehicles in Lane 1 and 2 ($P_{FD}$) | 0.450 | Outer Lanes Freeway Speed ($S_O$), mi/h | 69.8 |
| Flow in Lanes 1 and 2 ($v_{12}$), pc/h | 2215 | Ramp Junction Speed (S), mi/h | 56.9 |
| Flow Entering Ramp-Infl. Area ($v_{R12}$), pc/h | - | Average Density (D), pc/mi/ln | 19.5 |
| Level of Service (LOS) | B | | |

## EB 195

2021 AM Existing

AM Adjustment factor 1.062

AM k30 factor (R103) 1.15

2-lane retrofit (use shoulder) alternate release Max rate = 1400

| Storage Length | 1000 | No. of Storage Lanes | Ramp Meter Rate | 1200 | Exceed Storage |
|---|---|---|---|---|---|
| 2038 AM Volume | | Adjusted Volume | Vehicles released | Vehicles in queue | Queue length |
| 6:00 AM | 4 | 4 | 4 | 0 | 0 |
| 6:01 AM | 5 | 5 | 5 | 0 | 0 |
| 6:02 AM | 1 | 1 | 1 | 0 | 0 |
| 6:03 AM | 2 | 2 | 2 | 0 | 0 |
| 6:04 AM | 5 | 5 | 5 | 0 | 0 |
| 6:05 AM | 4 | 4 | 4 | 0 | 0 |
| 6:06 AM | 7 | 7 | 7 | 0 | 0 |
| 6:07 AM | 5 | 5 | 5 | 0 | 0 |
| 6:08 AM | 4 | 4 | 4 | 0 | 0 |
| 6:09 AM | 5 | 5 | 5 | 0 | 0 |
| 6:10 AM | 7 | 7 | 7 | 0 | 0 |
| 6:11 AM | 6 | 6 | 6 | 0 | 0 |
| 6:12 AM | 9 | 10 | 10 | 0 | 0 |
| 6:13 AM | 6 | 6 | 6 | 0 | 0 |
| 6:14 AM | 5 | 5 | 5 | 0 | 0 |
| 6:15 AM | 6 | 6 | 6 | 0 | 0 |
| 6:16 AM | 5 | 5 | 5 | 0 | 0 |
| 6:17 AM | 6 | 6 | 6 | 0 | 0 |
| 6:18 AM | 4 | 4 | 4 | 0 | 0 |
| 6:19 AM | 10 | 11 | 11 | 0 | 0 |
| 6:20 AM | 12 | 13 | 13 | 0 | 0 |
| 6:21 AM | 13 | 14 | 14 | 0 | 0 |
| 6:22 AM | 8 | 8 | 8 | 0 | 0 |
| 6:23 AM | 12 | 13 | 13 | 0 | 0 |
| 6:24 AM | 15 | 16 | 16 | 0 | 0 |
| 6:25 AM | 17 | 18 | 18 | 0 | 0 |
| 6:26 AM | 6 | 6 | 6 | 0 | 0 |
| 6:27 AM | 11 | 12 | 12 | 0 | 0 |
| 6:28 AM | 7 | 7 | 7 | 0 | 0 |
| 6:29 AM | 12 | 13 | 13 | 0 | 0 |
| 6:30 AM | 9 | 10 | 10 | 0 | 0 |
| 6:31 AM | 15 | 16 | 16 | 0 | 0 |
| 6:32 AM | 6 | 6 | 6 | 0 | 0 |
| 6:33 AM | 11 | 12 | 12 | 0 | 0 |
| 6:34 AM | 11 | 12 | 12 | 0 | 0 |
| 6:35 AM | 10 | 11 | 11 | 0 | 0 |
| 6:36 AM | 12 | 13 | 13 | 0 | 0 |
| 6:37 AM | 14 | 15 | 15 | 0 | 0 |
| 6:38 AM | 8 | 8 | 8 | 0 | 0 |
| 6:39 AM | 21 | 22 | 20 | 2 | 58 |
| 6:40 AM | 16 | 17 | 19 | 0 | 0 |
| 6:41 AM | 21 | 22 | 20 | 2 | 58 |
| 6:42 AM | 26 | 28 | 20 | 10 | 348 |
| 6:43 AM | 21 | 22 | 20 | 12 | 395 |
| 6:44 AM | 23 | 24 | 20 | 17 | 416 |
| 6:45 AM | 19 | 20 | 20 | 17 | 421 |
| 6:46 AM | 21 | 22 | 20 | 18 | 452 |
| 6:47 AM | 23 | 24 | 20 | 22 | 562 |
| 6:48 AM | 16 | 17 | 20 | 19 | 487 |
| 6:49 AM | 22 | 23 | 20 | 21 | 571 |
| 6:50 AM | 21 | 22 | 20 | 23 | 659 |
| 6:51 AM | 17 | 18 | 20 | 21 | 582 |
| 6:52 AM | 14 | 14 | 20 | 17 | 425 |
| 6:53 AM | 16 | 17 | 20 | 14 | 350 |
| 6:54 AM | 18 | 18 | 20 | 13 | 328 |
| 6:55 AM | 12 | 13 | 20 | 6 | 148 |
| 6:56 AM | 19 | 19 | 20 | 0 | 0 |
| 6:57 AM | 12 | 13 | 20 | 0 | 0 |
| 6:58 AM | 16 | 17 | 20 | 0 | 0 |
| 6:59 AM | 15 | 16 | 20 | 0 | 0 |
| 7:00 AM | 16 | 17 | 20 | 0 | 0 |
| 7:01 AM | 7 | 7 | 7 | 0 | 0 |
| 7:02 AM | 22 | 23 | 20 | 3 | 84 |
| 7:03 AM | 11 | 12 | 20 | 0 | 0 |
| 7:04 AM | 16 | 17 | 20 | 0 | 0 |
| 7:05 AM | 6 | 6 | 6 | 0 | 0 |
| 7:06 AM | 18 | 19 | 20 | 0 | 0 |
| 7:07 AM | 20 | 21 | 20 | 1 | 31 |
| 7:08 AM | 14 | 15 | 16 | 0 | 0 |
| 7:09 AM | 11 | 12 | 16 | 0 | 0 |
| 7:10 AM | 16 | 17 | 17 | 0 | 0 |
| 7:11 AM | 22 | 24 | 17 | 4 | 111 |
| 7:12 AM | 22 | 23 | 20 | 7 | 195 |
| 7:13 AM | 20 | 21 | 20 | 8 | 224 |
| 7:14 AM | 19 | 20 | 20 | 8 | 224 |
| 7:15 AM | 14 | 15 | 20 | 3 | 75 |
| 7:16 AM | 22 | 23 | 20 | 6 | 159 |
| 7:17 AM | 16 | 17 | 20 | 3 | 84 |
| 7:18 AM | 22 | 23 | 20 | 7 | 168 |
| 7:19 AM | 22 | 24 | 20 | 10 | 252 |
| 7:20 AM | 23 | 25 | 20 | 16 | 390 |
| 7:21 AM | 22 | 23 | 20 | 19 | 474 |
| 7:22 AM | 22 | 23 | 20 | 20 | 485 |
| 7:23 AM | 17 | 18 | 20 | 17 | 430 |
| 7:24 AM | 17 | 18 | 20 | 13 | 326 |
| 7:25 AM | 15 | 16 | 20 | 9 | 226 |
| 7:26 AM | 15 | 16 | 20 | 15 | 363 |
| 7:27 AM | 24 | 25 | 20 | 12 | 288 |
| 7:28 AM | 14 | 15 | 20 | 6 | 160 |
| 7:29 AM | 20 | 21 | 20 | 16 | 409 |
| 7:30 AM | 23 | 25 | 20 | 19 | 487 |
| 7:31 AM | 20 | 22 | 20 | 22 | 545 |
| 7:32 AM | 25 | 27 | 20 | 25 | 629 |
| 7:33 AM | 30 | 32 | 20 | 32 | 793 |
| 7:34 AM | 28 | 30 | 20 | 41 | 1036 |
| 7:35 AM | 26 | 28 | 20 | 49 | 1226 |
| 7:36 AM | 21 | 23 | 20 | 51 | 1284 |
| 7:37 AM | 24 | 25 | 20 | 51 | 1277 |
| 7:38 AM | 25 | 26 | 20 | 57 | 1426 |
| 7:39 AM | 20 | 20 | 20 | 57 | 1434 |
| 7:40 AM | 15 | 16 | 20 | 53 | 1324 |
| 7:41 AM | 23 | 24 | 20 | 57 | 1434 |
| 7:42 AM | 24 | 24 | 20 | 62 | 1545 |
| 7:43 AM | 30 | 32 | 20 | 74 | 1842 |
| 7:44 AM | 19 | 19 | 20 | 73 | 1820 |
| 7:45 AM | 20 | 20 | 20 | 73 | 1814 |
| 7:46 AM | 26 | 28 | 20 | 81 | 2014 |
| 7:47 AM | 26 | 27 | 20 | 86 | 2151 |
| 7:48 AM | 28 | 30 | 20 | 94 | 2342 |
| 7:49 AM | 24 | 25 | 20 | 102 | 2559 |
| 7:50 AM | 26 | 28 | 20 | 112 | 2802 |
| 7:51 AM | 25 | 26 | 20 | 118 | 2939 |
| 7:52 AM | 26 | 28 | 20 | 125 | 3130 |
| 7:53 AM | 27 | 29 | 20 | 134 | 3346 |
| 7:54 AM | 21 | 21 | 20 | 135 | 3377 |
| 7:55 AM | 16 | 17 | 20 | 132 | 3302 |
| 7:56 AM | 21 | 22 | 20 | 134 | 3360 |
| 7:57 AM | 17 | 17 | 20 | 131 | 3285 |
| 7:58 AM | 19 | 20 | 20 | 132 | 3289 |
| 7:59 AM | 9 | 10 | 20 | 121 | 3028 |
| 8:00 AM | 24 | 25 | 20 | 127 | 3165 |
| 8:01 AM | 15 | 16 | 20 | 123 | 3065 |
| 8:02 AM | 13 | 14 | 20 | 118 | 2962 |
| 8:03 AM | 15 | 16 | 20 | 108 | 2705 |
| 8:04 AM | 25 | 27 | 20 | 115 | 2869 |
| 8:05 AM | 15 | 16 | 20 | 111 | 2767 |
| 8:06 AM | 19 | 19 | 20 | 110 | 2745 |
| 8:07 AM | 20 | 21 | 20 | 111 | 2776 |
| 8:08 AM | 22 | 23 | 20 | 114 | 2846 |
| 8:09 AM | 14 | 14 | 20 | 114 | 2838 |
| 8:10 AM | 17 | 18 | 20 | 112 | 2789 |
| 8:11 AM | 25 | 27 | 20 | 118 | 2953 |
| 8:12 AM | 9 | 10 | 20 | 108 | 2692 |
| 8:13 AM | 21 | 22 | 20 | 110 | 2750 |
| 8:14 AM | 12 | 13 | 20 | 103 | 2568 |
| 8:15 AM | 17 | 17 | 20 | 100 | 2493 |
| 8:16 AM | 19 | 20 | 20 | 100 | 2487 |
| 8:17 AM | 20 | 20 | 20 | 100 | 2502 |
| 8:18 AM | 12 | 13 | 20 | 92 | 2298 |
| 8:19 AM | 19 | 19 | 20 | 84 | 2090 |
| 8:20 AM | 18 | 19 | 20 | 80 | 1989 |
| 8:21 AM | 11 | 12 | 20 | 74 | 1850 |
| 8:22 AM | 14 | 14 | 20 | 65 | 1616 |
| 8:23 AM | 10 | 11 | 20 | 54 | 1338 |
| 8:24 AM | 8 | 8 | 20 | 51 | 1263 |
| 8:25 AM | 16 | 17 | 20 | 51 | 1267 |
| 8:26 AM | 19 | 20 | 20 | 47 | 1166 |
| 8:27 AM | 16 | 16 | 20 | 41 | 1037 |
| 8:28 AM | 14 | 15 | 20 | 37 | 936 |
| 8:29 AM | 14 | 14 | 20 | 31 | 785 |
| 8:30 AM | 15 | 16 | 20 | 21 | 524 |
| 8:31 AM | 14 | 15 | 20 | 17 | 422 |
| 8:32 AM | 9 | 10 | 20 | 14 | 368 |
| 8:33 AM | 15 | 16 | 20 | 8 | 192 |
| 8:34 AM | 15 | 16 | 20 | 3 | 64 |
| 8:35 AM | 14 | 15 | 20 | 1 | 15 |
| 8:36 AM | 16 | 17 | 20 | 0 | 0 |
| 8:37 AM | 14 | 14 | 20 | 0 | 0 |
| 8:38 AM | 17 | 18 | 20 | 0 | 0 |
| 8:39 AM | 14 | 15 | 20 | 0 | 0 |
| 8:40 AM | 15 | 15 | 20 | 0 | 0 |
| 8:41 AM | 15 | 16 | 20 | 0 | 0 |
| 8:42 AM | 12 | 13 | 20 | 0 | 0 |
| 8:43 AM | 15 | 16 | 20 | 0 | 0 |
| 8:44 AM | 17 | 18 | 20 | 0 | 0 |
| 8:45 AM | 5 | 5 | 5 | 0 | 0 |
| 8:46 AM | 13 | 14 | 14 | 0 | 0 |
| 8:47 AM | 17 | 18 | 18 | 0 | 0 |
| 8:48 AM | 13 | 14 | 14 | 0 | 0 |
| 8:49 AM | 15 | 16 | 16 | 0 | 0 |
| 8:50 AM | 12 | 13 | 13 | 0 | 0 |
| 8:51 AM | 12 | 13 | 13 | 0 | 0 |
| 8:52 AM | 10 | 11 | 11 | 0 | 0 |
| 8:53 AM | 11 | 12 | 12 | 0 | 0 |
| 8:54 AM | 17 | 18 | 18 | 0 | 0 |
| 8:55 AM | 13 | 14 | 14 | 0 | 0 |
| 8:56 AM | 11 | 12 | 12 | 0 | 0 |
| 8:57 AM | 9 | 10 | 10 | 0 | 0 |
| 8:58 AM | 18 | 19 | 19 | 0 | 0 |
| 8:59 AM | 13 | 14 | 14 | 0 | 0 |
| 7:10-8:10 | | 1303 | | | |

PEAK HOUR I-90 EB FLOW

THE TIME PERIOD WITH QUEUE BEYOND THE STORAGE AFTER I-90 EB PEAK HOUR

| Time | Cumulative | Cumulative Excessive Queue |
|---|---|---|
| 6:00 AM | 4 | 0 |
| 6:01 AM | 10 | 0 |
| 6:02 AM | 11 | 0 |
| 6:03 AM | 13 | 0 |
| 6:04 AM | 18 | 0 |
| 6:05 AM | 22 | 0 |
| 6:06 AM | 29 | 0 |
| 6:07 AM | 35 | 0 |
| 6:08 AM | 39 | 0 |
| 6:09 AM | 45 | 0 |
| 6:10 AM | 52 | 0 |
| 6:11 AM | 58 | 0 |
| 6:12 AM | 68 | 0 |
| 6:13 AM | 74 | 0 |
| 6:14 AM | 80 | 0 |
| 6:15 AM | 86 | 0 |
| 6:16 AM | 91 | 0 |
| 6:17 AM | 98 | 0 |
| 6:18 AM | 102 | 0 |
| 6:19 AM | 113 | 0 |
| 6:20 AM | 125 | 0 |
| 6:21 AM | 139 | 0 |
| 6:22 AM | 148 | 0 |
| 6:23 AM | 160 | 0 |
| 6:24 AM | 176 | 0 |
| 6:25 AM | 194 | 0 |
| 6:26 AM | 201 | 0 |
| 6:27 AM | 212 | 0 |
| 6:28 AM | 220 | 0 |
| 6:29 AM | 233 | 0 |
| 6:30 AM | 243 | 0 |
| 6:31 AM | 258 | 0 |
| 6:32 AM | 274 | 0 |
| 6:33 AM | 280 | 0 |
| 6:34 AM | 292 | 0 |
| 6:35 AM | 304 | 0 |
| 6:36 AM | 314 | 0 |
| 6:37 AM | 327 | 0 |
| 6:38 AM | 340 | 0 |
| 6:39 AM | 355 | 0 |
| 6:40 AM | 363 | 0 |
| 6:41 AM | 386 | 0 |
| 6:42 AM | 402 | 0 |
| 6:43 AM | 425 | 0 |
| 6:44 AM | 442 | 0 |
| 6:45 AM | 466 | 0 |
| 6:46 AM | 482 | 0 |
| 6:47 AM | 519 | 0 |
| 6:48 AM | 541 | 0 |
| 6:49 AM | 565 | 0 |
| 6:50 AM | 582 | 0 |
| 6:51 AM | 605 | 0 |
| 6:52 AM | 628 | 0 |
| 6:53 AM | 646 | 0 |
| 6:54 AM | 660 | 0 |
| 6:55 AM | 676 | 0 |
| 6:56 AM | 696 | 0 |
| 6:57 AM | 708 | 0 |
| 6:58 AM | 721 | 0 |
| 6:59 AM | 738 | 0 |
| 7:00 AM | 754 | 0 |
| 7:01 AM | 770 | 0 |
| 7:02 AM | 777 | 0 |
| 7:03 AM | 801 | 0 |
| 7:04 AM | 812 | 0 |
| 7:05 AM | 829 | 0 |
| 7:06 AM | 836 | 0 |
| 7:07 AM | 855 | 0 |
| 7:08 AM | 876 | 0 |
| 7:09 AM | 891 | 0 |
| 7:10 AM | 903 | 0 |
| 7:11 AM | 920 | 0 |
| 7:12 AM | 944 | 0 |
| 7:13 AM | 967 | 0 |
| 7:14 AM | 987 | 0 |
| 7:15 AM | 1008 | 0 |
| 7:16 AM | 1023 | 0 |
| 7:17 AM | 1046 | 0 |
| 7:18 AM | 1063 | 0 |
| 7:19 AM | 1086 | 0 |
| 7:20 AM | 1110 | 0 |
| 7:21 AM | 1135 | 0 |
| 7:22 AM | 1159 | 0 |
| 7:23 AM | 1177 | 0 |
| 7:24 AM | 1197 | 0 |
| 7:25 AM | 1213 | 0 |
| 7:26 AM | 1229 | 0 |
| 7:27 AM | 1254 | 0 |
| 7:28 AM | 1271 | 0 |
| 7:29 AM | 1286 | 0 |
| 7:30 AM | 1315 | 0 |
| 7:31 AM | 1339 | 0 |
| 7:32 AM | 1361 | 0 |
| 7:33 AM | 1385 | 0 |
| 7:34 AM | 1411 | 0 |
| 7:35 AM | 1441 | 0 |
| 7:36 AM | 1469 | 0 |
| 7:37 AM | 1491 | 0 |
| 7:38 AM | 1517 | 0 |
| 7:39 AM | 1537 | 0 |
| 7:40 AM | 1553 | 0 |
| 7:41 AM | 1577 | 0 |
| 7:42 AM | 1601 | 0 |
| 7:43 AM | 1633 | 0 |
| 7:44 AM | 1652 | 0 |
| 7:45 AM | 1673 | 0 |
| 7:46 AM | 1699 | 0 |
| 7:47 AM | 1726 | 0 |
| 7:48 AM | 1753 | 0 |
| 7:49 AM | 1782 | 0 |
| 7:50 AM | 1812 | 0 |
| 7:51 AM | 1837 | 0 |
| 7:52 AM | 1865 | 0 |
| 7:53 AM | 1894 | 0 |
| 7:54 AM | 1915 | 0 |
| 7:55 AM | 1932 | 0 |
| 7:56 AM | 1954 | 0 |
| 7:57 AM | 1971 | 0 |
| 7:58 AM | 1991 | 0 |
| 7:59 AM | 2001 | 0 |
| 8:00 AM | 2026 | 0 |
| 8:01 AM | 2050 | 0 |
| 8:02 AM | 2058 | 0 |
| 8:03 AM | 2072 | 0 |
| 8:04 AM | 2088 | 0 |
| 8:05 AM | 2114 | 0 |
| 8:06 AM | 2130 | 0 |
| 8:07 AM | 2149 | 0 |
| 8:08 AM | 2171 | 0 |
| 8:09 AM | 2185 | 0 |
| 8:10 AM | 2213 | 0 |
| 8:11 AM | 2231 | 0 |
| 8:12 AM | 2258 | 0 |
| 8:13 AM | 2287 | 0 |
| 8:14 AM | 2290 | 0 |
| 8:15 AM | 2302 | 0 |
| 8:16 AM | 2319 | 0 |
| 8:17 AM | 2340 | 0 |
| 8:18 AM | 2360 | 0 |
| 8:19 AM | 2373 | 0 |
| 8:20 AM | 2392 | 0 |
| 8:21 AM | 2403 | 0 |
| 8:22 AM | 2419 | 0 |
| 8:23 AM | 2431 | 0 |
| 8:24 AM | 2445 | 0 |
| 8:25 AM | 2453 | 0 |
| 8:26 AM | 2470 | 0 |
| 8:27 AM | 2490 | 0 |
| 8:28 AM | 2506 | 0 |
| 8:29 AM | 2521 | 0 |
| 8:30 AM | 2537 | 0 |
| 8:31 AM | 2555 | 0 |
| 8:32 AM | 2571 | 0 |
| 8:33 AM | 2581 | 0 |
| 8:34 AM | 2597 | 0 |
| 8:35 AM | 2610 | 0 |
| 8:36 AM | 2627 | 0 |
| 8:37 AM | 2642 | 0 |
| 8:38 AM | 2650 | 0 |
| 8:39 AM | 2675 | 0 |
| 8:40 AM | 2693 | 0 |
| 8:41 AM | 2709 | 0 |
| 8:42 AM | 2722 | 0 |
| 8:43 AM | 2738 | 0 |
| 8:44 AM | 2756 | 0 |
| 8:45 AM | 2761 | 0 |
| 8:46 AM | 2775 | 0 |
| 8:47 AM | 2793 | 0 |
| 8:48 AM | 2807 | 0 |
| 8:49 AM | 2823 | 0 |
| 8:50 AM | 2836 | 0 |
| 8:51 AM | 2848 | 0 |
| 8:52 AM | 2859 | 0 |
| 8:53 AM | 2871 | 0 |
| 8:54 AM | 2888 | 0 |
| 8:55 AM | 2902 | 0 |
| 8:56 AM | 2914 | 0 |
| 8:57 AM | 2924 | 0 |
| 8:58 AM | 2943 | 0 |
| 8:59 AM | 2957 | 0 |

**PEAK HOUR I-90 EB**

## EB 195

2021 PM Existing

PM Adjustment factor: 1.109

PM k30 factor (R103): 1.14

Storage Length: 1000

No. of Storage Lanes: 1

Ramp Meter Rate: 800

2-lane retrofit (use shoulder) alternate release Max rate = 1400

| Time | 2018 PM Volume | Adjusted Volume | Vehicles released | Vehicles in queue | Queue length | Exceed Storage |
|---|---|---|---|---|---|---|
| 3:00 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 3:01 PM | 6 | 7 | 7 | 0 | 0 | 0 |
| 3:02 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 3:03 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 3:04 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 3:05 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 3:06 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 3:07 PM | 5 | 6 | 6 | 0 | 0 | 0 |
| 3:08 PM | 5 | 6 | 6 | 0 | 0 | 0 |
| 3:09 PM | 16 | 18 | 13 | 4 | 110 | 0 |
| 3:10 PM | 5 | 6 | 10 | 0 | 0 | 0 |
| 3:11 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 3:12 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 3:13 PM | 4 | 4 | 4 | 0 | 0 | 0 |
| 3:14 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 3:15 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 3:16 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 3:17 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 3:18 PM | 13 | 14 | 13 | 1 | 27 | 0 |
| 3:19 PM | 14 | 16 | 13 | 3 | 82 | 0 |
| 3:20 PM | 10 | 11 | 13 | 1 | 28 | 0 |
| 3:21 PM | 5 | 6 | 7 | 0 | 0 | 0 |
| 3:22 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 3:23 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 3:24 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 3:25 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 3:26 PM | 4 | 4 | 4 | 0 | 0 | 0 |
| 3:27 PM | 4 | 4 | 4 | 0 | 0 | 0 |
| 3:28 PM | 14 | 16 | 13 | 2 | 55 | 0 |
| 3:29 PM | 13 | 14 | 13 | 3 | 82 | 0 |
| 3:30 PM | 9 | 10 | 13 | 0 | 0 | 0 |
| 3:31 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 3:32 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 3:33 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 3:34 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 3:35 PM | 16 | 18 | 13 | 4 | 110 | 0 |
| 3:36 PM | 15 | 17 | 13 | 8 | 193 | 0 |
| 3:37 PM | 14 | 16 | 13 | 10 | 248 | 0 |
| 3:38 PM | 6 | 7 | 13 | 3 | 81 | 0 |
| 3:39 PM | 11 | 12 | 13 | 2 | 52 | 0 |
| 3:40 PM | 9 | 10 | 12 | 0 | 0 | 0 |
| 3:41 PM | 6 | 7 | 7 | 0 | 0 | 0 |
| 3:42 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 3:43 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 3:44 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 3:45 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 3:46 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 3:47 PM | 14 | 16 | 13 | 2 | 55 | 0 |
| 3:48 PM | 21 | 23 | 13 | 12 | 304 | 0 |
| 3:49 PM | 8 | 9 | 13 | 8 | 192 | 0 |
| 3:50 PM | 12 | 13 | 13 | 8 | 192 | 0 |
| 3:51 PM | 9 | 10 | 13 | 4 | 108 | 0 |
| 3:52 PM | 10 | 11 | 13 | 2 | 52 | 0 |
| 3:53 PM | 6 | 7 | 9 | 0 | 0 | 0 |
| 3:54 PM | 2 | 2 | 2 | 0 | 0 | 0 |
| 3:55 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 3:56 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 3:57 PM | 6 | 7 | 7 | 0 | 0 | 0 |
| 3:58 PM | 16 | 18 | 13 | 4 | 110 | 0 |
| 3:59 PM | 9 | 10 | 13 | 1 | 26 | 0 |
| 4:00 PM | 8 | 9 | 10 | 0 | 0 | 0 |
| 4:01 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:02 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 4:03 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:04 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:05 PM | 13 | 14 | 13 | 1 | 27 | 0 |
| 4:06 PM | 9 | 10 | 11 | 0 | 0 | 0 |
| 4:07 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 4:08 PM | 5 | 6 | 6 | 0 | 0 | 0 |
| 4:09 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 4:10 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 4:11 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:12 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 4:13 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:14 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:15 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:16 PM | 13 | 14 | 13 | 1 | 27 | 0 |
| 4:17 PM | 7 | 8 | 9 | 0 | 0 | 0 |
| 4:18 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:19 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 4:20 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 4:21 PM | 4 | 4 | 4 | 0 | 0 | 0 |
| 4:22 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:23 PM | 6 | 7 | 7 | 0 | 0 | 0 |
| 4:24 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:25 PM | 5 | 6 | 6 | 0 | 0 | 0 |
| 4:26 PM | 3 | 3 | 3 | 0 | 0 | 0 |
| 4:27 PM | 13 | 14 | 13 | 1 | 27 | 0 |
| 4:28 PM | 3 | 3 | 4 | 0 | 0 | 0 |
| 4:29 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:30 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 4:31 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 4:32 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 4:33 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 4:34 PM | 6 | 7 | 7 | 0 | 0 | 0 |
| 4:35 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 4:36 PM | 5 | 6 | 6 | 0 | 0 | 0 |
| 4:37 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:38 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:39 PM | 16 | 18 | 13 | 4 | 110 | 0 |
| 4:40 PM | 7 | 8 | 12 | 0 | 0 | 0 |
| 4:41 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:42 PM | 13 | 14 | 13 | 1 | 27 | 0 |
| 4:43 PM | 3 | 3 | 4 | 0 | 0 | 0 |
| 4:44 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:45 PM | 5 | 6 | 6 | 0 | 0 | 0 |
| 4:46 PM | 5 | 6 | 6 | 0 | 0 | 0 |
| 4:47 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:48 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 4:49 PM | 13 | 14 | 13 | 1 | 27 | 0 |
| 4:50 PM | 24 | 27 | 13 | 14 | 359 | 0 |
| 4:51 PM | 10 | 11 | 13 | 12 | 303 | 0 |
| 4:52 PM | 10 | 11 | 13 | 10 | 247 | 0 |
| 4:53 PM | 7 | 8 | 13 | 4 | 108 | 0 |
| 4:54 PM | 6 | 7 | 11 | 0 | 0 | 0 |
| 4:55 PM | 1 | 1 | 1 | 0 | 0 | 0 |
| 4:56 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 4:57 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:58 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 4:59 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:00 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 5:01 PM | 19 | 21 | 13 | 8 | 193 | 0 |
| 5:02 PM | 12 | 13 | 13 | 8 | 193 | 0 |
| 5:03 PM | 7 | 8 | 13 | 2 | 54 | 0 |
| 5:04 PM | 6 | 7 | 9 | 0 | 0 | 0 |
| 5:05 PM | 6 | 7 | 7 | 0 | 0 | 0 |
| 5:06 PM | 5 | 6 | 6 | 0 | 0 | 0 |
| 5:07 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 5:08 PM | 6 | 7 | 7 | 0 | 0 | 0 |
| 5:09 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 5:10 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 5:11 PM | 18 | 20 | 13 | 7 | 166 | 0 |
| 5:12 PM | 10 | 11 | 13 | 4 | 110 | 0 |
| 5:13 PM | 11 | 12 | 13 | 3 | 81 | 0 |
| 5:14 PM | 10 | 11 | 13 | 1 | 25 | 0 |
| 5:15 PM | 7 | 8 | 9 | 0 | 0 | 0 |
| 5:16 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:17 PM | 6 | 7 | 7 | 0 | 0 | 0 |
| 5:18 PM | 14 | 16 | 13 | 2 | 55 | 0 |
| 5:19 PM | 10 | 11 | 13 | 0 | 0 | 0 |
| 5:20 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 5:21 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:22 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:23 PM | 5 | 6 | 6 | 0 | 0 | 0 |
| 5:24 PM | 6 | 7 | 7 | 0 | 0 | 0 |
| 5:25 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 5:26 PM | 6 | 7 | 7 | 0 | 0 | 0 |
| 5:27 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 5:28 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:29 PM | 5 | 6 | 6 | 0 | 0 | 0 |
| 5:30 PM | 17 | 19 | 13 | 6 | 138 | 0 |
| 5:31 PM | 6 | 7 | 12 | 0 | 0 | 0 |
| 5:32 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 5:33 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 5:34 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:35 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:36 PM | 13 | 14 | 13 | 1 | 27 | 0 |
| 5:37 PM | 7 | 8 | 9 | 0 | 0 | 0 |
| 5:38 PM | 7 | 8 | 8 | 0 | 0 | 0 |
| 5:39 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 5:40 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 5:41 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:42 PM | 4 | 4 | 4 | 0 | 0 | 0 |
| 5:43 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 5:44 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 5:45 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:46 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:47 PM | 14 | 16 | 13 | 2 | 55 | 0 |
| 5:48 PM | 12 | 13 | 13 | 2 | 54 | 0 |
| 5:49 PM | 11 | 12 | 13 | 1 | 26 | 0 |
| 5:50 PM | 11 | 12 | 13 | 0 | 0 | 0 |
| 5:51 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:52 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:53 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:54 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:55 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:56 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:57 PM | 13 | 14 | 13 | 1 | 27 | 0 |
| 5:58 PM | 13 | 14 | 13 | 2 | 54 | 0 |
| 5:59 PM | 9 | 10 | 12 | 0 | 0 | 0 |
| 3:16-4:16 | | 643 | | 12 | | |

**EB 195**

| Time | Cumulative | Cumulative | Excessive Queue Length |
|---|---|---|---|
| 3:00 PM | 13 | 13 | 0 |
| 3:01 PM | 20 | 20 | 0 |
| 3:02 PM | 33 | 33 | 0 |
| 3:03 PM | 42 | 42 | 0 |
| 3:04 PM | 53 | 53 | 0 |
| 3:05 PM | 62 | 62 | 0 |
| 3:06 PM | 74 | 74 | 0 |
| 3:07 PM | 80 | 80 | 0 |
| 3:08 PM | 85 | 85 | 0 |
| 3:09 PM | 103 | 99 | 0 |
| 3:10 PM | 109 | 109 | 0 |
| 3:11 PM | 119 | 119 | 0 |
| 3:12 PM | 126 | 126 | 0 |
| 3:13 PM | 131 | 131 | 0 |
| 3:14 PM | 142 | 142 | 0 |
| 3:15 PM | 154 | 154 | 0 |
| 3:16 PM | 162 | 162 | 0 |
| 3:17 PM | 173 | 173 | 0 |
| 3:18 PM | 187 | 186 | 0 |
| 3:19 PM | 203 | 200 | 0 |
| 3:20 PM | 214 | 213 | 0 |
| 3:21 PM | 220 | 220 | 0 |
| 3:22 PM | 230 | 230 | 0 |
| 3:23 PM | 237 | 237 | 0 |
| 3:24 PM | 245 | 245 | 0 |
| 3:25 PM | 258 | 258 | 0 |
| 3:26 PM | 263 | 263 | 0 |
| 3:27 PM | 267 | 267 | 0 |
| 3:28 PM | 283 | 281 | 0 |
| 3:29 PM | 297 | 294 | 0 |
| 3:30 PM | 307 | 307 | 0 |
| 3:31 PM | 317 | 317 | 0 |
| 3:32 PM | 326 | 326 | 0 |
| 3:33 PM | 337 | 337 | 0 |
| 3:34 PM | 346 | 346 | 0 |
| 3:35 PM | 364 | 359 | 0 |
| 3:36 PM | 380 | 373 | 0 |
| 3:37 PM | 396 | 386 | 0 |
| 3:38 PM | 403 | 399 | 0 |
| 3:39 PM | 415 | 413 | 0 |
| 3:40 PM | 425 | 425 | 0 |
| 3:41 PM | 431 | 431 | 0 |
| 3:42 PM | 440 | 440 | 0 |
| 3:43 PM | 448 | 448 | 0 |
| 3:44 PM | 461 | 461 | 0 |
| 3:45 PM | 471 | 471 | 0 |
| 3:46 PM | 480 | 480 | 0 |
| 3:47 PM | 496 | 494 | 0 |
| 3:48 PM | 519 | 507 | 0 |
| 3:49 PM | 528 | 520 | 0 |
| 3:50 PM | 541 | 534 | 0 |
| 3:51 PM | 551 | 547 | 0 |
| 3:52 PM | 562 | 560 | 0 |
| 3:53 PM | 569 | 569 | 0 |
| 3:54 PM | 571 | 571 | 0 |
| 3:55 PM | 581 | 581 | 0 |
| 3:56 PM | 594 | 594 | 0 |
| 3:57 PM | 601 | 601 | 0 |
| 3:58 PM | 619 | 614 | 0 |
| 3:59 PM | 629 | 628 | 0 |
| 4:00 PM | 638 | 638 | 0 |
| 4:01 PM | 649 | 649 | 0 |
| 4:02 PM | 662 | 662 | 0 |
| 4:03 PM | 673 | 673 | 0 |
| 4:04 PM | 685 | 685 | 0 |
| 4:05 PM | 700 | 699 | 0 |
| 4:06 PM | 710 | 710 | 0 |
| 4:07 PM | 723 | 723 | 0 |
| 4:08 PM | 729 | 729 | 0 |
| 4:09 PM | 737 | 737 | 0 |
| 4:10 PM | 745 | 745 | 0 |
| 4:11 PM | 756 | 756 | 0 |
| 4:12 PM | 765 | 765 | 0 |
| 4:13 PM | 775 | 775 | 0 |
| 4:14 PM | 785 | 785 | 0 |
| 4:15 PM | 797 | 797 | 0 |
| 4:16 PM | 812 | 811 | 0 |
| 4:17 PM | 820 | 820 | 0 |
| 4:18 PM | 831 | 831 | 0 |
| 4:19 PM | 838 | 838 | 0 |
| 4:20 PM | 852 | 852 | 0 |
| 4:21 PM | 856 | 856 | 0 |
| 4:22 PM | 867 | 867 | 0 |
| 4:23 PM | 874 | 874 | 0 |
| 4:24 PM | 884 | 884 | 0 |
| 4:25 PM | 889 | 889 | 0 |
| 4:26 PM | 893 | 893 | 0 |
| 4:27 PM | 907 | 906 | 0 |
| 4:28 PM | 910 | 910 | 0 |
| 4:29 PM | 923 | 923 | 0 |
| 4:30 PM | 932 | 932 | 0 |
| 4:31 PM | 940 | 940 | 0 |
| 4:32 PM | 948 | 948 | 0 |
| 4:33 PM | 956 | 956 | 0 |
| 4:34 PM | 963 | 963 | 0 |
| 4:35 PM | 971 | 971 | 0 |
| 4:36 PM | 977 | 977 | 0 |
| 4:37 PM | 989 | 989 | 0 |
| 4:38 PM | 1000 | 1000 | 0 |
| 4:39 PM | 1018 | 1014 | 0 |
| 4:40 PM | 1026 | 1026 | 0 |
| 4:41 PM | 1037 | 1037 | 0 |
| 4:42 PM | 1051 | 1050 | 0 |
| 4:43 PM | 1055 | 1055 | 0 |
| 4:44 PM | 1066 | 1066 | 0 |
| 4:45 PM | 1071 | 1071 | 0 |
| 4:46 PM | 1077 | 1077 | 0 |
| 4:47 PM | 1087 | 1087 | 0 |
| 4:48 PM | 1100 | 1100 | 0 |
| 4:49 PM | 1115 | 1113 | 0 |
| 4:50 PM | 1141 | 1127 | 0 |
| 4:51 PM | 1152 | 1140 | 0 |
| 4:52 PM | 1163 | 1153 | 0 |
| 4:53 PM | 1171 | 1167 | 0 |
| 4:54 PM | 1178 | 1178 | 0 |
| 4:55 PM | 1179 | 1179 | 0 |
| 4:56 PM | 1187 | 1187 | 0 |
| 4:57 PM | 1197 | 1197 | 0 |
| 4:58 PM | 1204 | 1204 | 0 |
| 4:59 PM | 1214 | 1214 | 0 |
| 5:00 PM | 1227 | 1227 | 0 |
| 5:01 PM | 1248 | 1240 | 0 |
| 5:02 PM | 1261 | 1253 | 0 |
| 5:03 PM | 1269 | 1267 | 0 |
| 5:04 PM | 1275 | 1275 | 0 |
| 5:05 PM | 1282 | 1282 | 0 |
| 5:06 PM | 1288 | 1288 | 0 |
| 5:07 PM | 1296 | 1296 | 0 |
| 5:08 PM | 1303 | 1303 | 0 |
| 5:09 PM | 1311 | 1311 | 0 |
| 5:10 PM | 1324 | 1324 | 0 |
| 5:11 PM | 1344 | 1337 | 0 |
| 5:12 PM | 1355 | 1351 | 0 |
| 5:13 PM | 1367 | 1364 | 0 |
| 5:14 PM | 1378 | 1377 | 0 |
| 5:15 PM | 1386 | 1386 | 0 |
| 5:16 PM | 1397 | 1397 | 0 |
| 5:17 PM | 1404 | 1404 | 0 |
| 5:18 PM | 1420 | 1417 | 0 |
| 5:19 PM | 1431 | 1431 | 0 |
| 5:20 PM | 1438 | 1438 | 0 |
| 5:21 PM | 1448 | 1448 | 0 |
| 5:22 PM | 1458 | 1458 | 0 |
| 5:23 PM | 1464 | 1464 | 0 |
| 5:24 PM | 1471 | 1471 | 0 |
| 5:25 PM | 1478 | 1478 | 0 |
| 5:26 PM | 1485 | 1485 | 0 |
| 5:27 PM | 1494 | 1494 | 0 |
| 5:28 PM | 1504 | 1504 | 0 |
| 5:29 PM | 1509 | 1509 | 0 |
| 5:30 PM | 1528 | 1523 | 0 |
| 5:31 PM | 1535 | 1535 | 0 |
| 5:32 PM | 1543 | 1543 | 0 |
| 5:33 PM | 1555 | 1555 | 0 |
| 5:34 PM | 1566 | 1566 | 0 |
| 5:35 PM | 1576 | 1576 | 0 |
| 5:36 PM | 1590 | 1589 | 0 |
| 5:37 PM | 1598 | 1598 | 0 |
| 5:38 PM | 1606 | 1606 | 0 |
| 5:39 PM | 1615 | 1615 | 0 |
| 5:40 PM | 1627 | 1627 | 0 |
| 5:41 PM | 1637 | 1637 | 0 |
| 5:42 PM | 1641 | 1641 | 0 |
| 5:43 PM | 1650 | 1650 | 0 |
| 5:44 PM | 1659 | 1659 | 0 |
| 5:45 PM | 1669 | 1669 | 0 |
| 5:46 PM | 1679 | 1679 | 0 |
| 5:47 PM | 1695 | 1692 | 0 |
| 5:48 PM | 1708 | 1706 | 0 |
| 5:49 PM | 1720 | 1719 | 0 |
| 5:50 PM | 1732 | 1732 | 0 |
| 5:51 PM | 1742 | 1742 | 0 |
| 5:52 PM | 1752 | 1752 | 0 |
| 5:53 PM | 1763 | 1763 | 0 |
| 5:54 PM | 1774 | 1774 | 0 |
| 5:55 PM | 1784 | 1784 | 0 |
| 5:56 PM | 1795 | 1795 | 0 |
| 5:57 PM | 1810 | 1809 | 0 |
| 5:58 PM | 1824 | 1822 | 0 |
| 5:59 PM | 1834 | 1834 | 0 |

**EB 195**

| | | | | | | |
|---|---|---|---|---|---|---|
| | 2026 AM without Project | AM Adjustment factor | 1.081 | AM k30 factor (R103) | 1.15 | |
| Storage Length | 1000 | No. of Storage Lanes | 1 | Ramp Meter Rate | 1200 | 2-lane retrofit (use shoulder) alternate release Max rate = 1400 |

| Time | 2021 AM Volume | Adjusted Volume | Vehicles released | Vehicles in queue | Queue length | Exceed Storage |
|---|---|---|---|---|---|---|
| 6:00 AM | 4 | 5 | 5 | 0 | 0 | 0 |
| 6:01 AM | 5 | 6 | 6 | 0 | 0 | 0 |
| 6:02 AM | 1 | 1 | 1 | 0 | 0 | 0 |
| 6:03 AM | 2 | 2 | 2 | 0 | 0 | 0 |
| 6:04 AM | 5 | 6 | 6 | 0 | 0 | 0 |
| 6:05 AM | 4 | 5 | 5 | 0 | 0 | 0 |
| 6:06 AM | 7 | 8 | 8 | 0 | 0 | 0 |
| 6:07 AM | 5 | 6 | 6 | 0 | 0 | 0 |
| 6:08 AM | 4 | 5 | 5 | 0 | 0 | 0 |
| 6:09 AM | 5 | 6 | 6 | 0 | 0 | 0 |
| 6:10 AM | 7 | 8 | 8 | 0 | 0 | 0 |
| 6:11 AM | 6 | 7 | 7 | 0 | 0 | 0 |
| 6:12 AM | 10 | 10 | 10 | 0 | 0 | 0 |
| 6:13 AM | 6 | 7 | 7 | 0 | 0 | 0 |
| 6:14 AM | 5 | 6 | 6 | 0 | 0 | 0 |
| 6:15 AM | 6 | 7 | 7 | 0 | 0 | 0 |
| 6:16 AM | 5 | 6 | 6 | 0 | 0 | 0 |
| 6:17 AM | 6 | 7 | 7 | 0 | 0 | 0 |
| 6:18 AM | 4 | 5 | 5 | 0 | 0 | 0 |
| 6:19 AM | 11 | 11 | 11 | 0 | 0 | 0 |
| 6:20 AM | 13 | 14 | 14 | 0 | 0 | 0 |
| 6:21 AM | 14 | 15 | 15 | 0 | 0 | 0 |
| 6:22 AM | 8 | 9 | 9 | 0 | 0 | 0 |
| 6:23 AM | 13 | 14 | 14 | 0 | 0 | 0 |
| 6:24 AM | 16 | 17 | 17 | 0 | 0 | 0 |
| 6:25 AM | 18 | 20 | 20 | 0 | 0 | 0 |
| 6:26 AM | 6 | 7 | 7 | 0 | 0 | 0 |
| 6:27 AM | 12 | 13 | 13 | 0 | 0 | 0 |
| 6:28 AM | 7 | 8 | 8 | 0 | 0 | 0 |
| 6:29 AM | 13 | 14 | 14 | 0 | 0 | 0 |
| 6:30 AM | 10 | 10 | 10 | 0 | 0 | 0 |
| 6:31 AM | 16 | 17 | 17 | 0 | 0 | 0 |
| 6:32 AM | 16 | 17 | 17 | 0 | 0 | 0 |
| 6:33 AM | 6 | 7 | 7 | 0 | 0 | 0 |
| 6:34 AM | 12 | 13 | 13 | 0 | 0 | 0 |
| 6:35 AM | 12 | 13 | 13 | 0 | 0 | 0 |
| 6:36 AM | 11 | 11 | 11 | 0 | 0 | 0 |
| 6:37 AM | 13 | 14 | 14 | 0 | 0 | 0 |
| 6:38 AM | 13 | 14 | 14 | 0 | 0 | 0 |
| 6:39 AM | 15 | 16 | 16 | 0 | 0 | 0 |
| 6:40 AM | 8 | 9 | 9 | 0 | 0 | 0 |
| 6:41 AM | 22 | 24 | 20 | 4 | 103 | 0 |
| 6:42 AM | 17 | 18 | 20 | 2 | 62 | 0 |
| 6:43 AM | 22 | 24 | 20 | 7 | 165 | 0 |
| 6:44 AM | 28 | 30 | 20 | 16 | 411 | 0 |
| 6:45 AM | 22 | 24 | 20 | 21 | 514 | 0 |
| 6:46 AM | 24 | 26 | 20 | 27 | 674 | 0 |
| 6:47 AM | 20 | 22 | 20 | 29 | 719 | 0 |
| 6:48 AM | 21 | 23 | 20 | 32 | 783 | 0 |
| 6:49 AM | 24 | 26 | 20 | 38 | 953 | 0 |
| 6:50 AM | 17 | 18 | 20 | 36 | 912 | 0 |
| 6:51 AM | 23 | 25 | 20 | 42 | 1044 | 44 |
| 6:52 AM | 22 | 24 | 20 | 46 | 1146 | 146 |
| 6:53 AM | 18 | 20 | 20 | 45 | 1134 | 134 |
| 6:54 AM | 14 | 15 | 20 | 40 | 1007 | 7 |
| 6:55 AM | 17 | 18 | 20 | 39 | 967 | 0 |
| 6:56 AM | 19 | 21 | 20 | 39 | 983 | 0 |
| 6:57 AM | 13 | 14 | 20 | 33 | 828 | 0 |
| 6:58 AM | 13 | 14 | 20 | 27 | 672 | 0 |
| 6:59 AM | 17 | 18 | 20 | 25 | 631 | 0 |
| 7:00 AM | 16 | 17 | 20 | 22 | 562 | 0 |
| 7:01 AM | 16 | 17 | 20 | 20 | 492 | 0 |
| 7:02 AM | 7 | 8 | 20 | 8 | 193 | 0 |
| 7:03 AM | 23 | 25 | 20 | 13 | 325 | 0 |
| 7:04 AM | 12 | 13 | 20 | 6 | 140 | 0 |
| 7:05 AM | 17 | 18 | 20 | 4 | 100 | 0 |
| 7:06 AM | 6 | 7 | 11 | 0 | 0 | 0 |
| 7:07 AM | 19 | 21 | 20 | 1 | 17 | 0 |
| 7:08 AM | 21 | 23 | 20 | 4 | 91 | 0 |
| 7:09 AM | 15 | 16 | 20 | 0 | 0 | 0 |
| 7:10 AM | 12 | 13 | 13 | 0 | 0 | 0 |
| 7:11 AM | 17 | 18 | 18 | 0 | 0 | 0 |
| 7:12 AM | 24 | 26 | 20 | 6 | 160 | 0 |
| 7:13 AM | 23 | 25 | 20 | 12 | 292 | 0 |
| 7:14 AM | 19 | 21 | 20 | 12 | 308 | 0 |
| 7:15 AM | 21 | 23 | 20 | 15 | 382 | 0 |
| 7:16 AM | 15 | 16 | 20 | 11 | 284 | 0 |
| 7:17 AM | 23 | 25 | 20 | 17 | 415 | 0 |
| 7:18 AM | 17 | 18 | 20 | 15 | 375 | 0 |
| 7:19 AM | 23 | 25 | 20 | 20 | 506 | 0 |
| 7:20 AM | 23 | 25 | 20 | 25 | 637 | 0 |
| 7:21 AM | 25 | 28 | 20 | 33 | 826 | 0 |
| 7:22 AM | 23 | 25 | 20 | 38 | 958 | 0 |
| 7:23 AM | 18 | 20 | 20 | 38 | 946 | 0 |
| 7:24 AM | 20 | 22 | 20 | 40 | 991 | 0 |
| 7:25 AM | 16 | 17 | 20 | 37 | 921 | 0 |
| 7:26 AM | 16 | 17 | 20 | 34 | 852 | 0 |
| 7:27 AM | 25 | 28 | 20 | 42 | 1041 | 41 |
| 7:28 AM | 17 | 18 | 20 | 40 | 1000 | 0 |
| 7:29 AM | 15 | 16 | 20 | 36 | 902 | 0 |
| 7:30 AM | 30 | 32 | 20 | 48 | 1205 | 205 |
| 7:31 AM | 23 | 25 | 20 | 53 | 1337 | 337 |
| 7:32 AM | 22 | 24 | 20 | 58 | 1439 | 439 |
| 7:33 AM | 23 | 25 | 20 | 63 | 1571 | 571 |
| 7:34 AM | 27 | 29 | 20 | 72 | 1788 | 788 |
| 7:35 AM | 30 | 32 | 20 | 84 | 2092 | 1092 |
| 7:36 AM | 28 | 30 | 20 | 94 | 2338 | 1338 |
| 7:37 AM | 22 | 24 | 20 | 98 | 2441 | 1441 |
| 7:38 AM | 25 | 28 | 20 | 105 | 2630 | 1630 |
| 7:39 AM | 20 | 22 | 20 | 107 | 2675 | 1675 |
| 7:40 AM | 16 | 17 | 20 | 104 | 2606 | 1606 |
| 7:41 AM | 24 | 26 | 20 | 111 | 2766 | 1766 |
| 7:42 AM | 24 | 26 | 20 | 117 | 2926 | 1926 |
| 7:43 AM | 32 | 34 | 20 | 131 | 3287 | 2287 |
| 7:44 AM | 19 | 21 | 20 | 132 | 3303 | 2303 |
| 7:45 AM | 20 | 22 | 20 | 134 | 3349 | 2349 |
| 7:46 AM | 28 | 30 | 20 | 144 | 3595 | 2595 |
| 7:47 AM | 25 | 28 | 20 | 151 | 3784 | 2784 |
| 7:48 AM | 28 | 30 | 20 | 161 | 4030 | 3030 |
| 7:49 AM | 29 | 31 | 20 | 172 | 4305 | 3305 |
| 7:50 AM | 30 | 32 | 20 | 184 | 4608 | 3608 |
| 7:51 AM | 25 | 28 | 20 | 192 | 4797 | 3797 |
| 7:52 AM | 28 | 30 | 20 | 202 | 5043 | 4043 |
| 7:53 AM | 29 | 31 | 20 | 213 | 5318 | 4318 |
| 7:54 AM | 21 | 23 | 20 | 216 | 5392 | 4392 |
| 7:55 AM | 17 | 18 | 20 | 214 | 5352 | 4352 |
| 7:56 AM | 22 | 24 | 20 | 218 | 5454 | 4454 |
| 7:57 AM | 17 | 18 | 20 | 217 | 5414 | 4414 |
| 7:58 AM | 20 | 22 | 20 | 218 | 5459 | 4459 |
| 7:59 AM | 10 | 10 | 20 | 209 | 5217 | 4217 |
| 8:00 AM | 25 | 28 | 20 | 216 | 5406 | 4406 |
| 8:01 AM | 16 | 17 | 20 | 213 | 5336 | 4336 |
| 8:02 AM | 16 | 17 | 20 | 211 | 5267 | 4267 |
| 8:03 AM | 14 | 15 | 20 | 206 | 5140 | 4140 |
| 8:04 AM | 16 | 17 | 20 | 203 | 5071 | 4071 |
| 8:05 AM | 27 | 29 | 20 | 212 | 5288 | 4288 |
| 8:06 AM | 16 | 17 | 20 | 209 | 5219 | 4219 |
| 8:07 AM | 19 | 21 | 20 | 209 | 5235 | 4235 |
| 8:08 AM | 21 | 23 | 20 | 212 | 5309 | 4309 |
| 8:09 AM | 23 | 25 | 20 | 218 | 5441 | 4441 |
| 8:10 AM | 19 | 21 | 20 | 218 | 5457 | 4457 |
| 8:11 AM | 18 | 20 | 20 | 218 | 5445 | 4445 |
| 8:12 AM | 27 | 29 | 20 | 227 | 5663 | 4663 |
| 8:13 AM | 10 | 10 | 20 | 217 | 5421 | 4421 |
| 8:14 AM | 22 | 24 | 20 | 221 | 5524 | 4524 |
| 8:15 AM | 13 | 14 | 20 | 215 | 5368 | 4368 |
| 8:16 AM | 17 | 18 | 20 | 213 | 5327 | 4327 |
| 8:17 AM | 20 | 22 | 20 | 215 | 5373 | 4373 |
| 8:18 AM | 20 | 22 | 20 | 217 | 5418 | 4418 |
| 8:19 AM | 13 | 14 | 20 | 210 | 5262 | 4262 |
| 8:20 AM | 19 | 21 | 20 | 211 | 5279 | 4279 |
| 8:21 AM | 12 | 13 | 20 | 204 | 5095 | 4095 |
| 8:22 AM | 16 | 17 | 20 | 201 | 5025 | 4025 |
| 8:23 AM | 15 | 16 | 20 | 197 | 4927 | 3927 |
| 8:24 AM | 11 | 11 | 20 | 189 | 4714 | 3714 |
| 8:25 AM | 8 | 9 | 20 | 178 | 4444 | 3444 |
| 8:26 AM | 17 | 18 | 20 | 176 | 4403 | 3403 |
| 8:27 AM | 20 | 22 | 20 | 178 | 4448 | 3448 |
| 8:28 AM | 16 | 17 | 20 | 175 | 4379 | 3379 |
| 8:29 AM | 15 | 16 | 20 | 171 | 4280 | 3280 |
| 8:30 AM | 16 | 17 | 20 | 168 | 4211 | 3211 |
| 8:31 AM | 19 | 21 | 20 | 169 | 4228 | 3228 |
| 8:32 AM | 15 | 16 | 20 | 165 | 4129 | 3129 |
| 8:33 AM | 10 | 10 | 20 | 156 | 3888 | 2888 |
| 8:34 AM | 16 | 17 | 20 | 153 | 3818 | 2818 |
| 8:35 AM | 14 | 15 | 20 | 148 | 3691 | 2691 |
| 8:36 AM | 17 | 18 | 20 | 146 | 3650 | 2650 |
| 8:37 AM | 15 | 16 | 20 | 142 | 3552 | 2552 |
| 8:38 AM | 18 | 20 | 20 | 142 | 3540 | 2540 |
| 8:39 AM | 15 | 16 | 20 | 138 | 3442 | 2442 |
| 8:40 AM | 18 | 20 | 20 | 137 | 3430 | 2430 |
| 8:41 AM | 16 | 17 | 20 | 134 | 3360 | 2360 |
| 8:42 AM | 13 | 14 | 20 | 128 | 3205 | 2205 |
| 8:43 AM | 16 | 17 | 20 | 125 | 3135 | 2135 |
| 8:44 AM | 18 | 20 | 20 | 125 | 3123 | 2123 |
| 8:45 AM | 5 | 6 | 20 | 111 | 2767 | 1767 |
| 8:46 AM | 14 | 15 | 20 | 106 | 2640 | 1640 |
| 8:47 AM | 18 | 20 | 20 | 105 | 2628 | 1628 |
| 8:48 AM | 14 | 15 | 20 | 100 | 2501 | 1501 |
| 8:49 AM | 16 | 17 | 20 | 97 | 2431 | 1431 |
| 8:50 AM | 13 | 14 | 20 | 91 | 2276 | 1276 |
| 8:51 AM | 13 | 14 | 20 | 85 | 2120 | 1120 |
| 8:52 AM | 11 | 11 | 20 | 76 | 1907 | 907 |
| 8:53 AM | 12 | 13 | 20 | 69 | 1728 | 728 |
| 8:54 AM | 18 | 20 | 20 | 68 | 1711 | 711 |
| 8:55 AM | 14 | 15 | 20 | 63 | 1584 | 584 |
| 8:56 AM | 12 | 13 | 20 | 56 | 1400 | 400 |
| 8:57 AM | 10 | 10 | 20 | 46 | 1158 | 158 |
| 8:58 AM | 19 | 21 | 20 | 47 | 1175 | 175 |
| 8:59 AM | 14 | 15 | 20 | 42 | 1048 | 48 |
| 7:10 - 8:10 | 1303 | 1409 | | | | |

**PEAK HOUR I-90 EB**

**THE TIME PERIOD WITH QUEUE BEYOND THE STORAGE AFTER I-90 EB PEAK HOUR**

**EB 195**

| Time | Cumulative | Cumulative | Excessive Queue Length |
|---|---|---|---|
| 6:00 AM | 5 | 5 | 0 |
| 6:01 AM | 10 | 10 | 0 |
| 6:02 AM | 11 | 11 | 0 |
| 6:03 AM | 14 | 14 | 0 |
| 6:04 AM | 20 | 20 | 0 |
| 6:05 AM | 24 | 24 | 0 |
| 6:06 AM | 32 | 32 | 0 |
| 6:07 AM | 38 | 38 | 0 |
| 6:08 AM | 42 | 42 | 0 |
| 6:09 AM | 48 | 48 | 0 |
| 6:10 AM | 56 | 56 | 0 |
| 6:11 AM | 63 | 63 | 0 |
| 6:12 AM | 73 | 73 | 0 |
| 6:13 AM | 80 | 80 | 0 |
| 6:14 AM | 86 | 86 | 0 |
| 6:15 AM | 93 | 93 | 0 |
| 6:16 AM | 99 | 99 | 0 |
| 6:17 AM | 106 | 106 | 0 |
| 6:18 AM | 110 | 110 | 0 |
| 6:19 AM | 122 | 122 | 0 |
| 6:20 AM | 135 | 135 | 0 |
| 6:21 AM | 150 | 150 | 0 |
| 6:22 AM | 160 | 160 | 0 |
| 6:23 AM | 173 | 173 | 0 |
| 6:24 AM | 191 | 191 | 0 |
| 6:25 AM | 210 | 210 | 0 |
| 6:26 AM | 217 | 217 | 0 |
| 6:27 AM | 230 | 230 | 0 |
| 6:28 AM | 238 | 238 | 0 |
| 6:29 AM | 251 | 251 | 0 |
| 6:30 AM | 262 | 262 | 0 |
| 6:31 AM | 279 | 279 | 0 |
| 6:32 AM | 296 | 296 | 0 |
| 6:33 AM | 303 | 303 | 0 |
| 6:34 AM | 316 | 316 | 0 |
| 6:35 AM | 328 | 328 | 0 |
| 6:36 AM | 340 | 340 | 0 |
| 6:37 AM | 354 | 354 | 0 |
| 6:38 AM | 367 | 367 | 0 |
| 6:39 AM | 383 | 383 | 0 |
| 6:40 AM | 393 | 393 | 0 |
| 6:41 AM | 417 | 413 | 0 |
| 6:42 AM | 435 | 433 | 0 |
| 6:43 AM | 459 | 453 | 0 |
| 6:44 AM | 489 | 473 | 0 |
| 6:45 AM | 513 | 493 | 0 |
| 6:46 AM | 540 | 513 | 0 |
| 6:47 AM | 561 | 533 | 0 |
| 6:48 AM | 584 | 553 | 0 |
| 6:49 AM | 611 | 573 | 0 |
| 6:50 AM | 629 | 593 | 0 |
| 6:51 AM | 654 | 613 | 44 |
| 6:52 AM | 678 | 633 | 146 |
| 6:53 AM | 698 | 653 | 134 |
| 6:54 AM | 713 | 673 | 7 |
| 6:55 AM | 731 | 693 | 0 |
| 6:56 AM | 752 | 713 | 0 |
| 6:57 AM | 766 | 733 | 0 |
| 6:58 AM | 780 | 753 | 0 |
| 6:59 AM | 798 | 773 | 0 |
| 7:00 AM | 815 | 793 | 0 |
| 7:01 AM | 832 | 813 | 0 |
| 7:02 AM | 840 | 833 | 0 |
| 7:03 AM | 866 | 853 | 0 |
| 7:04 AM | 878 | 873 | 0 |
| 7:05 AM | 897 | 893 | 0 |
| 7:06 AM | 903 | 903 | 0 |
| 7:07 AM | 924 | 923 | 0 |
| 7:08 AM | 947 | 943 | 0 |
| 7:09 AM | 963 | 963 | 0 |
| 7:10 AM | 976 | 976 | 0 |
| 7:11 AM | 994 | 994 | 0 |
| 7:12 AM | 1021 | 1014 | 0 |
| 7:13 AM | 1046 | 1034 | 0 |
| 7:14 AM | 1067 | 1054 | 0 |
| 7:15 AM | 1089 | 1074 | 0 |
| 7:16 AM | 1106 | 1094 | 0 |
| 7:17 AM | 1131 | 1114 | 0 |
| 7:18 AM | 1149 | 1134 | 0 |
| 7:19 AM | 1174 | 1154 | 0 |
| 7:20 AM | 1200 | 1174 | 0 |
| 7:21 AM | 1227 | 1194 | 0 |
| 7:22 AM | 1252 | 1214 | 0 |
| 7:23 AM | 1272 | 1234 | 0 |
| 7:24 AM | 1294 | 1254 | 0 |
| 7:25 AM | 1311 | 1274 | 0 |
| 7:26 AM | 1328 | 1294 | 0 |
| 7:27 AM | 1356 | 1314 | 41 |
| 7:28 AM | 1374 | 1334 | 0 |
| 7:29 AM | 1390 | 1354 | 0 |
| 7:30 AM | 1422 | 1374 | 205 |
| 7:31 AM | 1448 | 1394 | 337 |
| 7:32 AM | 1472 | 1414 | 439 |
| 7:33 AM | 1497 | 1434 | 571 |
| 7:34 AM | 1526 | 1454 | 788 |
| 7:35 AM | 1558 | 1474 | 1092 |
| 7:36 AM | 1588 | 1494 | 1338 |
| 7:37 AM | 1612 | 1514 | 1441 |
| 7:38 AM | 1639 | 1534 | 1630 |
| 7:39 AM | 1661 | 1554 | 1675 |
| 7:40 AM | 1678 | 1574 | 1606 |
| 7:41 AM | 1705 | 1594 | 1766 |
| 7:42 AM | 1731 | 1614 | 1926 |
| 7:43 AM | 1766 | 1634 | 2287 |
| 7:44 AM | 1786 | 1654 | 2303 |
| 7:45 AM | 1808 | 1674 | 2349 |
| 7:46 AM | 1838 | 1694 | 2595 |
| 7:47 AM | 1866 | 1714 | 2784 |
| 7:48 AM | 1895 | 1734 | 3030 |
| 7:49 AM | 1926 | 1754 | 3305 |
| 7:50 AM | 1959 | 1774 | 3608 |
| 7:51 AM | 1986 | 1794 | 3797 |
| 7:52 AM | 2016 | 1814 | 4043 |
| 7:53 AM | 2047 | 1834 | 4318 |
| 7:54 AM | 2070 | 1854 | 4392 |
| 7:55 AM | 2088 | 1874 | 4352 |
| 7:56 AM | 2112 | 1894 | 4454 |
| 7:57 AM | 2131 | 1914 | 4414 |
| 7:58 AM | 2153 | 1934 | 4459 |
| 7:59 AM | 2163 | 1954 | 4217 |
| 8:00 AM | 2190 | 1974 | 4406 |
| 8:01 AM | 2208 | 1994 | 4336 |
| 8:02 AM | 2225 | 2014 | 4267 |
| 8:03 AM | 2240 | 2034 | 4140 |
| 8:04 AM | 2257 | 2054 | 4071 |
| 8:05 AM | 2286 | 2074 | 4288 |
| 8:06 AM | 2303 | 2094 | 4219 |
| 8:07 AM | 2324 | 2114 | 4235 |
| 8:08 AM | 2347 | 2134 | 4309 |
| 8:09 AM | 2372 | 2154 | 4441 |
| 8:10 AM | 2392 | 2174 | 4457 |
| 8:11 AM | 2412 | 2194 | 4445 |
| 8:12 AM | 2441 | 2214 | 4663 |
| 8:13 AM | 2451 | 2234 | 4421 |
| 8:14 AM | 2475 | 2254 | 4524 |
| 8:15 AM | 2489 | 2274 | 4368 |
| 8:16 AM | 2507 | 2294 | 4327 |
| 8:17 AM | 2529 | 2314 | 4373 |
| 8:18 AM | 2551 | 2334 | 4418 |
| 8:19 AM | 2565 | 2354 | 4262 |
| 8:20 AM | 2585 | 2374 | 4279 |
| 8:21 AM | 2598 | 2394 | 4095 |
| 8:22 AM | 2615 | 2414 | 4025 |
| 8:23 AM | 2631 | 2434 | 3927 |
| 8:24 AM | 2643 | 2454 | 3714 |
| 8:25 AM | 2652 | 2474 | 3444 |
| 8:26 AM | 2670 | 2494 | 3403 |
| 8:27 AM | 2692 | 2514 | 3448 |
| 8:28 AM | 2709 | 2534 | 3379 |
| 8:29 AM | 2725 | 2554 | 3280 |
| 8:30 AM | 2743 | 2574 | 3211 |
| 8:31 AM | 2763 | 2594 | 3228 |
| 8:32 AM | 2779 | 2614 | 3129 |
| 8:33 AM | 2790 | 2634 | 2888 |
| 8:34 AM | 2807 | 2654 | 2818 |
| 8:35 AM | 2822 | 2674 | 2691 |
| 8:36 AM | 2840 | 2694 | 2650 |
| 8:37 AM | 2856 | 2714 | 2552 |
| 8:38 AM | 2876 | 2734 | 2540 |
| 8:39 AM | 2892 | 2754 | 2442 |
| 8:40 AM | 2911 | 2774 | 2430 |
| 8:41 AM | 2929 | 2794 | 2360 |
| 8:42 AM | 2942 | 2814 | 2205 |
| 8:43 AM | 2960 | 2834 | 2135 |
| 8:44 AM | 2979 | 2854 | 2123 |
| 8:45 AM | 2985 | 2874 | 1767 |
| 8:46 AM | 3000 | 2894 | 1640 |
| 8:47 AM | 3019 | 2914 | 1628 |
| 8:48 AM | 3034 | 2934 | 1501 |
| 8:49 AM | 3051 | 2954 | 1431 |
| 8:50 AM | 3065 | 2974 | 1276 |
| 8:51 AM | 3079 | 2994 | 1120 |
| 8:52 AM | 3090 | 3014 | 907 |
| 8:53 AM | 3103 | 3034 | 723 |
| 8:54 AM | 3123 | 3054 | 711 |
| 8:55 AM | 3138 | 3074 | 584 |
| 8:56 AM | 3150 | 3094 | 400 |
| 8:57 AM | 3161 | 3114 | 158 |
| 8:58 AM | 3181 | 3134 | 175 |
| 8:59 AM | 3196 | 3154 | 48 |
| | | | 0 |

**PEAK HOUR I-90 EB**

## EB 195

| | | | | | | |
|---|---|---|---|---|---|---|
| | 2026 PM without Project | PM Adjustment factor | 1.09 | PM k30 factor (R103) | 1.14 | |
| Storage Length | 1000 | No. of Storage Lanes | 1 | Ramp Meter Rate | 800 | 2-lane retrofit (use shoulder) alternate release Max rate = 1400 |

| Time | 2021 PM Volume | Adjusted Volume | Vehicles released | Vehicles in queue | Queue length | Exceed Storage |
|---|---|---|---|---|---|---|
| 3:00 PM | 13 | 15 | 13 | 1 | 29 | 0 |
| 3:01 PM | 7 | 7 | 8 | 0 | 0 | 0 |
| 3:02 PM | 13 | 15 | 13 | 1 | 29 | 0 |
| 3:03 PM | 9 | 10 | 11 | 0 | 0 | 0 |
| 3:04 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 3:05 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 3:06 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 3:07 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 3:08 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 3:09 PM | 18 | 19 | 13 | 6 | 150 | 0 |
| 3:10 PM | 6 | 6 | 12 | 0 | 0 | 0 |
| 3:11 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 3:12 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 3:13 PM | 4 | 5 | 5 | 0 | 0 | 0 |
| 3:14 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 3:15 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 3:16 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 3:17 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 3:18 PM | 14 | 16 | 13 | 2 | 60 | 0 |
| 3:19 PM | 16 | 17 | 13 | 6 | 149 | 0 |
| 3:20 PM | 11 | 12 | 13 | 5 | 118 | 0 |
| 3:21 PM | 6 | 6 | 11 | 0 | 0 | 0 |
| 3:22 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 3:23 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 3:24 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 3:25 PM | 13 | 15 | 13 | 1 | 29 | 0 |
| 3:26 PM | 4 | 5 | 6 | 0 | 0 | 0 |
| 3:27 PM | 4 | 5 | 5 | 0 | 0 | 0 |
| 3:28 PM | 16 | 17 | 13 | 4 | 90 | 0 |
| 3:29 PM | 14 | 16 | 13 | 6 | 149 | 0 |
| 3:30 PM | 10 | 11 | 13 | 4 | 88 | 0 |
| 3:31 PM | 10 | 11 | 13 | 1 | 27 | 0 |
| 3:32 PM | 9 | 10 | 11 | 0 | 0 | 0 |
| 3:33 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 3:34 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 3:35 PM | 18 | 19 | 13 | 6 | 150 | 0 |
| 3:36 PM | 17 | 18 | 13 | 11 | 270 | 0 |
| 3:37 PM | 16 | 17 | 13 | 14 | 360 | 0 |
| 3:38 PM | 7 | 7 | 13 | 8 | 208 | 0 |
| 3:39 PM | 12 | 13 | 13 | 8 | 207 | 0 |
| 3:40 PM | 10 | 11 | 13 | 6 | 146 | 0 |
| 3:41 PM | 7 | 7 | 13 | 0 | 0 | 0 |
| 3:42 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 3:43 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 3:44 PM | 13 | 15 | 13 | 1 | 29 | 0 |
| 3:45 PM | 10 | 11 | 12 | 0 | 0 | 0 |
| 3:46 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 3:47 PM | 16 | 17 | 13 | 4 | 90 | 0 |
| 3:48 PM | 23 | 25 | 13 | 16 | 391 | 0 |
| 3:49 PM | 9 | 10 | 13 | 12 | 299 | 0 |
| 3:50 PM | 13 | 15 | 13 | 13 | 329 | 0 |
| 3:51 PM | 10 | 11 | 13 | 11 | 267 | 0 |
| 3:52 PM | 11 | 12 | 13 | 9 | 236 | 0 |
| 3:53 PM | 7 | 7 | 13 | 3 | 84 | 0 |
| 3:54 PM | 2 | 2 | 6 | 0 | 0 | 0 |
| 3:55 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 3:56 PM | 13 | 15 | 13 | 1 | 29 | 0 |
| 3:57 PM | 7 | 7 | 8 | 0 | 0 | 0 |
| 3:58 PM | 18 | 19 | 13 | 6 | 150 | 0 |
| 3:59 PM | 10 | 11 | 13 | 4 | 89 | 0 |
| 4:00 PM | 9 | 10 | 13 | 0 | 0 | 0 |
| 4:01 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:02 PM | 13 | 15 | 13 | 1 | 29 | 0 |
| 4:03 PM | 11 | 12 | 13 | 0 | 0 | 0 |
| 4:04 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 4:05 PM | 14 | 16 | 13 | 2 | 60 | 0 |
| 4:06 PM | 10 | 11 | 13 | 0 | 0 | 0 |
| 4:07 PM | 13 | 15 | 13 | 1 | 29 | 0 |
| 4:08 PM | 6 | 6 | 7 | 0 | 0 | 0 |
| 4:09 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:10 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 4:11 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:12 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:13 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:14 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:15 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 4:16 PM | 14 | 16 | 13 | 2 | 60 | 0 |
| 4:17 PM | 8 | 8 | 11 | 0 | 0 | 0 |
| 4:18 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:19 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 4:20 PM | 13 | 15 | 13 | 1 | 29 | 0 |
| 4:21 PM | 4 | 5 | 6 | 0 | 0 | 0 |
| 4:22 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:23 PM | 7 | 7 | 7 | 0 | 0 | 0 |
| 4:24 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:25 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 4:26 PM | 3 | 4 | 4 | 0 | 0 | 0 |
| 4:27 PM | 14 | 16 | 13 | 2 | 60 | 0 |
| 4:28 PM | 3 | 4 | 6 | 0 | 0 | 0 |
| 4:29 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 4:30 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:31 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:32 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 4:33 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 4:34 PM | 7 | 7 | 7 | 0 | 0 | 0 |
| 4:35 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:36 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 4:37 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 4:38 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:39 PM | 18 | 19 | 13 | 6 | 150 | 0 |
| 4:40 PM | 8 | 8 | 13 | 1 | 28 | 0 |
| 4:41 PM | 11 | 12 | 13 | 0 | 0 | 0 |
| 4:42 PM | 14 | 16 | 13 | 2 | 60 | 0 |
| 4:43 PM | 3 | 4 | 6 | 0 | 0 | 0 |
| 4:44 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:45 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 4:46 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 4:47 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:48 PM | 13 | 15 | 13 | 1 | 29 | 0 |
| 4:49 PM | 14 | 16 | 13 | 4 | 89 | 0 |
| 4:50 PM | 27 | 29 | 13 | 19 | 481 | 0 |
| 4:51 PM | 11 | 12 | 13 | 18 | 450 | 0 |
| 4:52 PM | 11 | 12 | 13 | 17 | 419 | 0 |
| 4:53 PM | 8 | 8 | 13 | 12 | 297 | 0 |
| 4:54 PM | 7 | 7 | 13 | 6 | 145 | 0 |
| 4:55 PM | 1 | 1 | 7 | 0 | 0 | 0 |
| 4:56 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 4:57 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:58 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 4:59 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:00 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 5:01 PM | 21 | 23 | 13 | 10 | 241 | 0 |
| 5:02 PM | 13 | 15 | 13 | 11 | 270 | 0 |
| 5:03 PM | 8 | 8 | 13 | 6 | 148 | 0 |
| 5:04 PM | 7 | 7 | 13 | 0 | 0 | 0 |
| 5:05 PM | 7 | 7 | 7 | 0 | 0 | 0 |
| 5:06 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 5:07 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:08 PM | 7 | 7 | 7 | 0 | 0 | 0 |
| 5:09 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 5:10 PM | 13 | 15 | 13 | 1 | 29 | 0 |
| 5:11 PM | 20 | 22 | 13 | 10 | 240 | 0 |
| 5:12 PM | 11 | 12 | 13 | 8 | 209 | 0 |
| 5:13 PM | 12 | 13 | 13 | 8 | 208 | 0 |
| 5:14 PM | 11 | 12 | 13 | 7 | 177 | 0 |
| 5:15 PM | 8 | 8 | 13 | 2 | 55 | 0 |
| 5:16 PM | 11 | 12 | 13 | 1 | 24 | 0 |
| 5:17 PM | 7 | 7 | 8 | 0 | 0 | 0 |
| 5:18 PM | 16 | 17 | 13 | 4 | 90 | 0 |
| 5:19 PM | 11 | 12 | 13 | 2 | 59 | 0 |
| 5:20 PM | 8 | 8 | 11 | 0 | 0 | 0 |
| 5:21 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:22 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:23 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 5:24 PM | 7 | 7 | 7 | 0 | 0 | 0 |
| 5:25 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 5:26 PM | 7 | 7 | 7 | 0 | 0 | 0 |
| 5:27 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:28 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:29 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 5:30 PM | 19 | 21 | 13 | 7 | 180 | 0 |
| 5:31 PM | 7 | 7 | 13 | 1 | 28 | 0 |
| 5:32 PM | 8 | 8 | 10 | 0 | 0 | 0 |
| 5:33 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 5:34 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 5:35 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:36 PM | 14 | 16 | 13 | 2 | 60 | 0 |
| 5:37 PM | 8 | 8 | 11 | 0 | 0 | 0 |
| 5:38 PM | 8 | 8 | 8 | 0 | 0 | 0 |
| 5:39 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:40 PM | 12 | 13 | 13 | 0 | 0 | 0 |
| 5:41 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:42 PM | 4 | 5 | 5 | 0 | 0 | 0 |
| 5:43 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:44 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:45 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:46 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:47 PM | 16 | 17 | 13 | 4 | 90 | 0 |
| 5:48 PM | 13 | 15 | 13 | 5 | 119 | 0 |
| 5:49 PM | 12 | 13 | 13 | 5 | 118 | 0 |
| 5:50 PM | 12 | 13 | 13 | 5 | 117 | 0 |
| 5:51 PM | 10 | 11 | 13 | 2 | 56 | 0 |
| 5:52 PM | 10 | 11 | 13 | 0 | 0 | 0 |
| 5:53 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 5:54 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 5:55 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:56 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 5:57 PM | 14 | 16 | 13 | 2 | 60 | 0 |
| 5:58 PM | 14 | 16 | 13 | 5 | 119 | 0 |
| 5:59 PM | 10 | 11 | 13 | 2 | 58 | 0 |
| 3:16-4:16 | 643 | 701 | | 16 | | |

**EB 195**

| Time | Cumulative 2021 PM Volume | Cumulative Adjusted Volume | Excessive Queue Length |
|---|---|---|---|
| 3:00 PM | 15 | 13 | 0 |
| 3:01 PM | 22 | 22 | 0 |
| 3:02 PM | 36 | 35 | 0 |
| 3:03 PM | 46 | 46 | 0 |
| 3:04 PM | 58 | 58 | 0 |
| 3:05 PM | 68 | 68 | 0 |
| 3:06 PM | 81 | 81 | 0 |
| 3:07 PM | 87 | 87 | 0 |
| 3:08 PM | 93 | 93 | 0 |
| 3:09 PM | 112 | 106 | 0 |
| 3:10 PM | 118 | 118 | 0 |
| 3:11 PM | 129 | 129 | 0 |
| 3:12 PM | 138 | 138 | 0 |
| 3:13 PM | 143 | 143 | 0 |
| 3:14 PM | 155 | 155 | 0 |
| 3:15 PM | 168 | 168 | 0 |
| 3:16 PM | 176 | 176 | 0 |
| 3:17 PM | 189 | 189 | 0 |
| 3:18 PM | 204 | 202 | 0 |
| 3:19 PM | 221 | 215 | 0 |
| 3:20 PM | 233 | 229 | 0 |
| 3:21 PM | 239 | 239 | 0 |
| 3:22 PM | 250 | 250 | 0 |
| 3:23 PM | 259 | 259 | 0 |
| 3:24 PM | 267 | 267 | 0 |
| 3:25 PM | 282 | 280 | 0 |
| 3:26 PM | 286 | 286 | 0 |
| 3:27 PM | 291 | 291 | 0 |
| 3:28 PM | 308 | 305 | 0 |
| 3:29 PM | 324 | 318 | 0 |
| 3:30 PM | 335 | 331 | 0 |
| 3:31 PM | 346 | 345 | 0 |
| 3:32 PM | 355 | 355 | 0 |
| 3:33 PM | 367 | 367 | 0 |
| 3:34 PM | 377 | 377 | 0 |
| 3:35 PM | 396 | 390 | 0 |
| 3:36 PM | 415 | 404 | 0 |
| 3:37 PM | 432 | 417 | 0 |
| 3:38 PM | 439 | 430 | 0 |
| 3:39 PM | 452 | 444 | 0 |
| 3:40 PM | 463 | 457 | 0 |
| 3:41 PM | 470 | 470 | 0 |
| 3:42 PM | 480 | 480 | 0 |
| 3:43 PM | 488 | 488 | 0 |
| 3:44 PM | 503 | 502 | 0 |
| 3:45 PM | 514 | 514 | 0 |
| 3:46 PM | 523 | 523 | 0 |
| 3:47 PM | 540 | 537 | 0 |
| 3:48 PM | 566 | 550 | 0 |
| 3:49 PM | 575 | 563 | 0 |
| 3:50 PM | 590 | 577 | 0 |
| 3:51 PM | 601 | 590 | 0 |
| 3:52 PM | 613 | 603 | 0 |
| 3:53 PM | 620 | 617 | 0 |
| 3:54 PM | 623 | 623 | 0 |
| 3:55 PM | 633 | 633 | 0 |
| 3:56 PM | 648 | 647 | 0 |
| 3:57 PM | 655 | 655 | 0 |
| 3:58 PM | 675 | 669 | 0 |
| 3:59 PM | 685 | 682 | 0 |
| 4:00 PM | 695 | 695 | 0 |
| 4:01 PM | 707 | 707 | 0 |
| 4:02 PM | 722 | 720 | 0 |
| 4:03 PM | 734 | 734 | 0 |
| 4:04 PM | 747 | 747 | 0 |
| 4:05 PM | 763 | 760 | 0 |
| 4:06 PM | 774 | 774 | 0 |
| 4:07 PM | 788 | 787 | 0 |
| 4:08 PM | 794 | 794 | 0 |
| 4:09 PM | 804 | 804 | 0 |
| 4:10 PM | 812 | 812 | 0 |
| 4:11 PM | 824 | 824 | 0 |
| 4:12 PM | 834 | 834 | 0 |
| 4:13 PM | 845 | 845 | 0 |
| 4:14 PM | 856 | 856 | 0 |
| 4:15 PM | 869 | 869 | 0 |
| 4:16 PM | 885 | 882 | 0 |
| 4:17 PM | 893 | 893 | 0 |
| 4:18 PM | 905 | 905 | 0 |
| 4:19 PM | 914 | 914 | 0 |
| 4:20 PM | 928 | 927 | 0 |
| 4:21 PM | 933 | 933 | 0 |
| 4:22 PM | 945 | 945 | 0 |
| 4:23 PM | 953 | 953 | 0 |
| 4:24 PM | 963 | 963 | 0 |
| 4:25 PM | 969 | 969 | 0 |
| 4:26 PM | 973 | 973 | 0 |
| 4:27 PM | 989 | 986 | 0 |
| 4:28 PM | 992 | 992 | 0 |
| 4:29 PM | 1006 | 1006 | 0 |
| 4:30 PM | 1015 | 1015 | 0 |
| 4:31 PM | 1025 | 1025 | 0 |
| 4:32 PM | 1034 | 1034 | 0 |
| 4:33 PM | 1042 | 1042 | 0 |
| 4:34 PM | 1049 | 1049 | 0 |
| 4:35 PM | 1059 | 1059 | 0 |
| 4:36 PM | 1065 | 1065 | 0 |
| 4:37 PM | 1078 | 1078 | 0 |
| 4:38 PM | 1090 | 1090 | 0 |
| 4:39 PM | 1110 | 1104 | 0 |
| 4:40 PM | 1118 | 1117 | 0 |
| 4:41 PM | 1130 | 1130 | 0 |
| 4:42 PM | 1146 | 1144 | 0 |
| 4:43 PM | 1150 | 1150 | 0 |
| 4:44 PM | 1162 | 1162 | 0 |
| 4:45 PM | 1168 | 1168 | 0 |
| 4:46 PM | 1174 | 1174 | 0 |
| 4:47 PM | 1185 | 1185 | 0 |
| 4:48 PM | 1199 | 1198 | 0 |
| 4:49 PM | 1215 | 1211 | 0 |
| 4:50 PM | 1244 | 1225 | 0 |
| 4:51 PM | 1256 | 1238 | 0 |
| 4:52 PM | 1268 | 1251 | 0 |
| 4:53 PM | 1277 | 1265 | 0 |
| 4:54 PM | 1284 | 1278 | 0 |
| 4:55 PM | 1285 | 1285 | 0 |
| 4:56 PM | 1293 | 1293 | 0 |
| 4:57 PM | 1304 | 1304 | 0 |
| 4:58 PM | 1313 | 1313 | 0 |
| 4:59 PM | 1324 | 1324 | 0 |
| 5:00 PM | 1337 | 1337 | 0 |
| 5:01 PM | 1360 | 1350 | 0 |
| 5:02 PM | 1374 | 1364 | 0 |
| 5:03 PM | 1383 | 1377 | 0 |
| 5:04 PM | 1390 | 1390 | 0 |
| 5:05 PM | 1397 | 1397 | 0 |
| 5:06 PM | 1403 | 1403 | 0 |
| 5:07 PM | 1413 | 1413 | 0 |
| 5:08 PM | 1420 | 1420 | 0 |
| 5:09 PM | 1429 | 1429 | 0 |
| 5:10 PM | 1443 | 1442 | 0 |
| 5:11 PM | 1465 | 1455 | 0 |
| 5:12 PM | 1477 | 1469 | 0 |
| 5:13 PM | 1490 | 1482 | 0 |
| 5:14 PM | 1503 | 1495 | 0 |
| 5:15 PM | 1511 | 1509 | 0 |
| 5:16 PM | 1523 | 1522 | 0 |
| 5:17 PM | 1530 | 1530 | 0 |
| 5:18 PM | 1547 | 1544 | 0 |
| 5:19 PM | 1559 | 1557 | 0 |
| 5:20 PM | 1568 | 1568 | 0 |
| 5:21 PM | 1579 | 1579 | 0 |
| 5:22 PM | 1590 | 1590 | 0 |
| 5:23 PM | 1596 | 1596 | 0 |
| 5:24 PM | 1603 | 1603 | 0 |
| 5:25 PM | 1611 | 1611 | 0 |
| 5:26 PM | 1619 | 1619 | 0 |
| 5:27 PM | 1628 | 1628 | 0 |
| 5:28 PM | 1639 | 1639 | 0 |
| 5:29 PM | 1645 | 1645 | 0 |
| 5:30 PM | 1666 | 1659 | 0 |
| 5:31 PM | 1673 | 1672 | 0 |
| 5:32 PM | 1681 | 1681 | 0 |
| 5:33 PM | 1695 | 1695 | 0 |
| 5:34 PM | 1707 | 1707 | 0 |
| 5:35 PM | 1718 | 1718 | 0 |
| 5:36 PM | 1733 | 1731 | 0 |
| 5:37 PM | 1742 | 1742 | 0 |
| 5:38 PM | 1750 | 1750 | 0 |
| 5:39 PM | 1760 | 1760 | 0 |
| 5:40 PM | 1773 | 1773 | 0 |
| 5:41 PM | 1784 | 1784 | 0 |
| 5:42 PM | 1789 | 1789 | 0 |
| 5:43 PM | 1799 | 1799 | 0 |
| 5:44 PM | 1808 | 1808 | 0 |
| 5:45 PM | 1819 | 1819 | 0 |
| 5:46 PM | 1830 | 1830 | 0 |
| 5:47 PM | 1847 | 1843 | 0 |
| 5:48 PM | 1862 | 1857 | 0 |
| 5:49 PM | 1875 | 1870 | 0 |
| 5:50 PM | 1888 | 1883 | 0 |
| 5:51 PM | 1899 | 1897 | 0 |
| 5:52 PM | 1910 | 1910 | 0 |
| 5:53 PM | 1922 | 1922 | 0 |
| 5:54 PM | 1934 | 1934 | 0 |
| 5:55 PM | 1945 | 1945 | 0 |
| 5:56 PM | 1957 | 1957 | 0 |
| 5:57 PM | 1973 | 1970 | 0 |
| 5:58 PM | 1988 | 1984 | 0 |
| 5:59 PM | 1999 | 1997 | 0 |

**PEAK HOUR I-90 EB**

**THE TIME PERIOD WITH QUEUE BEYOND THE STORAGE AFTER I-90 EB PEAK HOUR**

## EB 195

| | | | | | | |
|---|---|---|---|---|---|---|
| | 2026 PM without Project (500vph) | PM Adjustment factor | 1.09 | PM k30 factor (R103) | 1.14 | |
| Storage Length | 1000 | No. of Storage Lanes | 1 | Ramp Meter Rate | 500 | 2-lane retrofit (use shoulder) alternate release Max rate = 1400 |

| Time | 2021 PM Volume | Adjusted Volume | Vehicles released | Vehicles in queue | Queue length | Exceed Storage |
|---|---|---|---|---|---|---|
| 3:00 PM | 13 | 15 | 8 | 6 | 154 | 0 |
| 3:01 PM | 7 | 7 | 8 | 5 | 127 | 0 |
| 3:02 PM | 13 | 15 | 8 | 11 | 282 | 0 |
| 3:03 PM | 9 | 10 | 8 | 13 | 315 | 0 |
| 3:04 PM | 11 | 12 | 8 | 16 | 409 | 0 |
| 3:05 PM | 9 | 10 | 8 | 18 | 442 | 0 |
| 3:06 PM | 12 | 13 | 8 | 23 | 566 | 0 |
| 3:07 PM | 6 | 6 | 8 | 20 | 509 | 0 |
| 3:08 PM | 6 | 6 | 8 | 18 | 452 | 0 |
| 3:09 PM | 18 | 19 | 8 | 29 | 727 | 0 |
| 3:10 PM | 6 | 6 | 8 | 27 | 670 | 0 |
| 3:11 PM | 10 | 11 | 8 | 29 | 734 | 0 |
| 3:12 PM | 8 | 8 | 8 | 29 | 737 | 0 |
| 3:13 PM | 4 | 5 | 8 | 26 | 649 | 0 |
| 3:14 PM | 11 | 12 | 8 | 30 | 743 | 0 |
| 3:15 PM | 12 | 13 | 8 | 35 | 867 | 0 |
| 3:16 PM | 8 | 8 | 8 | 35 | 870 | 0 |
| 3:17 PM | 11 | 12 | 8 | 39 | 964 | 0 |
| 3:18 PM | 14 | 16 | 8 | 46 | 1149 | 149 |
| 3:19 PM | 16 | 17 | 8 | 55 | 1364 | 364 |
| 3:20 PM | 11 | 12 | 8 | 58 | 1458 | 458 |
| 3:21 PM | 6 | 6 | 8 | 56 | 1400 | 400 |
| 3:22 PM | 10 | 11 | 8 | 59 | 1464 | 464 |
| 3:23 PM | 8 | 8 | 8 | 59 | 1467 | 467 |
| 3:24 PM | 8 | 8 | 8 | 59 | 1470 | 470 |
| 3:25 PM | 13 | 15 | 8 | 65 | 1625 | 625 |
| 3:26 PM | 4 | 5 | 8 | 61 | 1537 | 537 |
| 3:27 PM | 4 | 5 | 8 | 58 | 1450 | 450 |
| 3:28 PM | 16 | 17 | 8 | 67 | 1664 | 664 |
| 3:29 PM | 14 | 16 | 8 | 74 | 1849 | 849 |
| 3:30 PM | 10 | 11 | 8 | 77 | 1913 | 913 |
| 3:31 PM | 10 | 11 | 8 | 79 | 1976 | 976 |
| 3:32 PM | 9 | 10 | 8 | 80 | 2010 | 1010 |
| 3:33 PM | 11 | 12 | 8 | 84 | 2104 | 1104 |
| 3:34 PM | 9 | 10 | 8 | 85 | 2137 | 1137 |
| 3:35 PM | 18 | 19 | 8 | 96 | 2412 | 1412 |
| 3:36 PM | 17 | 18 | 8 | 106 | 2657 | 1657 |
| 3:37 PM | 16 | 17 | 8 | 115 | 2872 | 1872 |
| 3:38 PM | 7 | 7 | 8 | 114 | 2845 | 1845 |
| 3:39 PM | 12 | 13 | 8 | 119 | 2969 | 1969 |
| 3:40 PM | 10 | 11 | 8 | 121 | 3033 | 2033 |
| 3:41 PM | 7 | 7 | 8 | 120 | 3006 | 2006 |
| 3:42 PM | 9 | 10 | 8 | 122 | 3039 | 2039 |
| 3:43 PM | 8 | 8 | 8 | 122 | 3042 | 2042 |
| 3:44 PM | 13 | 15 | 8 | 128 | 3197 | 2197 |
| 3:45 PM | 10 | 11 | 8 | 130 | 3260 | 2260 |
| 3:46 PM | 9 | 10 | 8 | 132 | 3294 | 2294 |
| 3:47 PM | 16 | 17 | 8 | 140 | 3508 | 2508 |
| 3:48 PM | 23 | 25 | 8 | 157 | 3935 | 2935 |
| 3:49 PM | 9 | 10 | 8 | 159 | 3968 | 2968 |
| 3:50 PM | 13 | 15 | 8 | 165 | 4122 | 3122 |
| 3:51 PM | 10 | 11 | 8 | 167 | 4186 | 3186 |
| 3:52 PM | 11 | 12 | 8 | 171 | 4280 | 3280 |
| 3:53 PM | 7 | 7 | 8 | 170 | 4253 | 3253 |
| 3:54 PM | 2 | 2 | 8 | 164 | 4105 | 3105 |
| 3:55 PM | 10 | 11 | 8 | 167 | 4169 | 3169 |
| 3:56 PM | 13 | 15 | 8 | 173 | 4323 | 3323 |
| 3:57 PM | 7 | 7 | 8 | 172 | 4296 | 3296 |
| 3:58 PM | 18 | 19 | 8 | 183 | 4571 | 3571 |
| 3:59 PM | 10 | 11 | 8 | 185 | 4635 | 3635 |
| 4:00 PM | 9 | 10 | 8 | 187 | 4668 | 3668 |
| 4:01 PM | 11 | 12 | 8 | 190 | 4762 | 3762 |
| 4:02 PM | 13 | 15 | 8 | 197 | 4916 | 3916 |
| 4:03 PM | 11 | 12 | 8 | 200 | 5010 | 4010 |
| 4:04 PM | 12 | 13 | 8 | 205 | 5134 | 4134 |
| 4:05 PM | 14 | 16 | 8 | 213 | 5319 | 4319 |
| 4:06 PM | 10 | 11 | 8 | 215 | 5383 | 4383 |
| 4:07 PM | 13 | 15 | 8 | 221 | 5537 | 4537 |
| 4:08 PM | 6 | 6 | 8 | 219 | 5480 | 4480 |
| 4:09 PM | 9 | 10 | 8 | 221 | 5513 | 4513 |
| 4:10 PM | 8 | 8 | 8 | 221 | 5516 | 4516 |
| 4:11 PM | 11 | 12 | 8 | 224 | 5610 | 4610 |
| 4:12 PM | 9 | 10 | 8 | 226 | 5644 | 4644 |
| 4:13 PM | 10 | 11 | 8 | 228 | 5707 | 4707 |
| 4:14 PM | 10 | 11 | 8 | 231 | 5771 | 4771 |
| 4:15 PM | 12 | 13 | 8 | 236 | 5895 | 4895 |
| 4:16 PM | 14 | 16 | 8 | 243 | 6080 | 5080 |
| 4:17 PM | 8 | 8 | 8 | 243 | 6083 | 5083 |
| 4:18 PM | 11 | 12 | 8 | 247 | 6177 | 5177 |
| 4:19 PM | 8 | 8 | 8 | 247 | 6180 | 5180 |
| 4:20 PM | 13 | 15 | 8 | 253 | 6334 | 5334 |
| 4:21 PM | 4 | 5 | 8 | 250 | 6247 | 5247 |
| 4:22 PM | 11 | 12 | 8 | 254 | 6341 | 5341 |
| 4:23 PM | 7 | 7 | 8 | 253 | 6314 | 5314 |
| 4:24 PM | 10 | 11 | 8 | 255 | 6377 | 5377 |
| 4:25 PM | 6 | 6 | 8 | 253 | 6320 | 5320 |
| 4:26 PM | 3 | 4 | 8 | 248 | 6202 | 5202 |
| 4:27 PM | 14 | 16 | 8 | 255 | 6387 | 5387 |
| 4:28 PM | 3 | 4 | 8 | 251 | 6269 | 5269 |
| 4:29 PM | 12 | 13 | 8 | 256 | 6393 | 5393 |
| 4:30 PM | 9 | 10 | 8 | 257 | 6427 | 5427 |
| 4:31 PM | 9 | 10 | 8 | 258 | 6460 | 5460 |
| 4:32 PM | 8 | 8 | 8 | 259 | 6463 | 5463 |
| 4:33 PM | 8 | 8 | 8 | 259 | 6467 | 5467 |
| 4:34 PM | 7 | 7 | 8 | 258 | 6440 | 5440 |
| 4:35 PM | 9 | 10 | 8 | 259 | 6473 | 5473 |
| 4:36 PM | 6 | 6 | 8 | 257 | 6416 | 5416 |
| 4:37 PM | 12 | 13 | 8 | 262 | 6540 | 5540 |
| 4:38 PM | 11 | 12 | 8 | 265 | 6634 | 5634 |
| 4:39 PM | 18 | 19 | 8 | 276 | 6909 | 5909 |
| 4:40 PM | 8 | 8 | 8 | 276 | 6912 | 5912 |
| 4:41 PM | 11 | 12 | 8 | 280 | 7006 | 6006 |
| 4:42 PM | 14 | 16 | 8 | 288 | 7190 | 6190 |
| 4:43 PM | 3 | 4 | 8 | 283 | 7073 | 6073 |
| 4:44 PM | 11 | 12 | 8 | 287 | 7167 | 6167 |
| 4:45 PM | 6 | 6 | 8 | 284 | 7109 | 6109 |
| 4:46 PM | 6 | 6 | 8 | 282 | 7052 | 6052 |
| 4:47 PM | 10 | 11 | 8 | 285 | 7116 | 6116 |
| 4:48 PM | 13 | 15 | 8 | 291 | 7270 | 6270 |
| 4:49 PM | 14 | 16 | 8 | 298 | 7455 | 6455 |
| 4:50 PM | 27 | 29 | 8 | 319 | 7972 | 6972 |
| 4:51 PM | 11 | 12 | 8 | 323 | 8066 | 7066 |
| 4:52 PM | 11 | 12 | 8 | 326 | 8159 | 7159 |
| 4:53 PM | 8 | 8 | 8 | 327 | 8163 | 7163 |
| 4:54 PM | 7 | 7 | 8 | 325 | 8136 | 7136 |
| 4:55 PM | 1 | 1 | 8 | 318 | 7957 | 6957 |
| 4:56 PM | 8 | 8 | 8 | 318 | 7961 | 6961 |
| 4:57 PM | 10 | 11 | 8 | 321 | 8024 | 7024 |
| 4:58 PM | 8 | 8 | 8 | 321 | 8028 | 7028 |
| 4:59 PM | 10 | 11 | 8 | 324 | 8091 | 7091 |
| 5:00 PM | 12 | 13 | 8 | 329 | 8215 | 7215 |
| 5:01 PM | 21 | 23 | 8 | 343 | 8581 | 7581 |
| 5:02 PM | 13 | 15 | 8 | 349 | 8735 | 7735 |
| 5:03 PM | 8 | 8 | 8 | 350 | 8739 | 7739 |
| 5:04 PM | 7 | 7 | 8 | 348 | 8712 | 7712 |
| 5:05 PM | 7 | 7 | 8 | 347 | 8685 | 7685 |
| 5:06 PM | 6 | 6 | 8 | 345 | 8627 | 7627 |
| 5:07 PM | 9 | 10 | 8 | 346 | 8661 | 7661 |
| 5:08 PM | 7 | 7 | 8 | 345 | 8634 | 7634 |
| 5:09 PM | 8 | 8 | 8 | 345 | 8637 | 7637 |
| 5:10 PM | 13 | 15 | 8 | 352 | 8791 | 7791 |
| 5:11 PM | 20 | 22 | 8 | 365 | 9127 | 8127 |
| 5:12 PM | 11 | 12 | 8 | 369 | 9221 | 8221 |
| 5:13 PM | 12 | 13 | 8 | 374 | 9345 | 8345 |
| 5:14 PM | 11 | 12 | 8 | 378 | 9439 | 8439 |
| 5:15 PM | 8 | 8 | 8 | 378 | 9442 | 8442 |
| 5:16 PM | 11 | 12 | 8 | 381 | 9536 | 8536 |
| 5:17 PM | 7 | 7 | 8 | 380 | 9509 | 8509 |
| 5:18 PM | 16 | 17 | 8 | 389 | 9724 | 8724 |
| 5:19 PM | 11 | 12 | 8 | 393 | 9817 | 8817 |
| 5:20 PM | 8 | 8 | 8 | 393 | 9821 | 8821 |
| 5:21 PM | 10 | 11 | 8 | 395 | 9884 | 8884 |
| 5:22 PM | 10 | 11 | 8 | 398 | 9948 | 8948 |
| 5:23 PM | 6 | 6 | 8 | 396 | 9891 | 8891 |
| 5:24 PM | 7 | 7 | 8 | 395 | 9864 | 8864 |
| 5:25 PM | 8 | 8 | 8 | 395 | 9867 | 8867 |
| 5:26 PM | 7 | 7 | 8 | 394 | 9840 | 8840 |
| 5:27 PM | 9 | 10 | 8 | 395 | 9873 | 8873 |
| 5:28 PM | 10 | 11 | 8 | 397 | 9937 | 8937 |
| 5:29 PM | 6 | 6 | 8 | 395 | 9880 | 8880 |
| 5:30 PM | 19 | 21 | 8 | 407 | 10185 | 9185 |
| 5:31 PM | 7 | 7 | 8 | 406 | 10158 | 9158 |
| 5:32 PM | 8 | 8 | 8 | 406 | 10161 | 9161 |
| 5:33 PM | 12 | 13 | 8 | 411 | 10285 | 9285 |
| 5:34 PM | 11 | 12 | 8 | 415 | 10379 | 9379 |
| 5:35 PM | 10 | 11 | 8 | 418 | 10443 | 9443 |
| 5:36 PM | 14 | 16 | 8 | 425 | 10628 | 9628 |
| 5:37 PM | 8 | 8 | 8 | 425 | 10631 | 9631 |
| 5:38 PM | 8 | 8 | 8 | 425 | 10634 | 9634 |
| 5:39 PM | 9 | 10 | 8 | 427 | 10667 | 9667 |
| 5:40 PM | 12 | 13 | 8 | 432 | 10791 | 9791 |
| 5:41 PM | 10 | 11 | 8 | 434 | 10855 | 9855 |
| 5:42 PM | 4 | 5 | 8 | 431 | 10768 | 9768 |
| 5:43 PM | 9 | 10 | 8 | 432 | 10801 | 9801 |
| 5:44 PM | 9 | 10 | 8 | 433 | 10834 | 9834 |
| 5:45 PM | 10 | 11 | 8 | 436 | 10898 | 9898 |
| 5:46 PM | 10 | 11 | 8 | 438 | 10962 | 9962 |
| 5:47 PM | 16 | 17 | 8 | 447 | 11177 | 10177 |
| 5:48 PM | 13 | 15 | 8 | 453 | 11331 | 10331 |
| 5:49 PM | 12 | 13 | 8 | 458 | 11455 | 10455 |
| 5:50 PM | 12 | 13 | 8 | 463 | 11579 | 10579 |
| 5:51 PM | 10 | 11 | 8 | 466 | 11643 | 10643 |
| 5:52 PM | 10 | 11 | 8 | 468 | 11706 | 10706 |
| 5:53 PM | 11 | 12 | 8 | 472 | 11800 | 10800 |
| 5:54 PM | 11 | 12 | 8 | 476 | 11894 | 10894 |
| 5:55 PM | 10 | 11 | 8 | 478 | 11958 | 10958 |
| 5:56 PM | 11 | 12 | 8 | 482 | 12052 | 11052 |
| 5:57 PM | 14 | 16 | 8 | 489 | 12236 | 11236 |
| 5:58 PM | 14 | 16 | 8 | 497 | 12421 | 11421 |
| 5:59 PM | 10 | 11 | 8 | 499 | 12484 | 11484 |
| 3:16-4:16 | 643 | 701 | | 236 | | |

**EB 195**

| Time | Cumulative | Cumulative | Excessive Queue Length |
|---|---|---|---|
| 3:00 PM | 15 | 8 | 0 |
| 3:01 PM | 22 | 17 | 0 |
| 3:02 PM | 36 | 25 | 0 |
| 3:03 PM | 46 | 33 | 0 |
| 3:04 PM | 58 | 42 | 0 |
| 3:05 PM | 68 | 50 | 0 |
| 3:06 PM | 81 | 58 | 0 |
| 3:07 PM | 87 | 67 | 0 |
| 3:08 PM | 93 | 75 | 0 |
| 3:09 PM | 112 | 83 | 0 |
| 3:10 PM | 118 | 92 | 0 |
| 3:11 PM | 129 | 100 | 0 |
| 3:12 PM | 138 | 108 | 0 |
| 3:13 PM | 143 | 117 | 0 |
| 3:14 PM | 155 | 125 | 0 |
| 3:15 PM | 168 | 133 | 0 |
| 3:16 PM | 176 | 142 | 0 |
| 3:17 PM | 189 | 150 | 0 |
| 3:18 PM | 204 | 158 | 149 |
| 3:19 PM | 221 | 167 | 364 |
| 3:20 PM | 233 | 175 | 458 |
| 3:21 PM | 239 | 183 | 400 |
| 3:22 PM | 250 | 192 | 464 |
| 3:23 PM | 259 | 200 | 467 |
| 3:24 PM | 267 | 208 | 470 |
| 3:25 PM | 282 | 217 | 625 |
| 3:26 PM | 286 | 225 | 537 |
| 3:27 PM | 291 | 233 | 450 |
| 3:28 PM | 308 | 242 | 664 |
| 3:29 PM | 324 | 250 | 849 |
| 3:30 PM | 335 | 258 | 913 |
| 3:31 PM | 346 | 267 | 976 |
| 3:32 PM | 355 | 275 | 1010 |
| 3:33 PM | 367 | 283 | 1104 |
| 3:34 PM | 377 | 292 | 1137 |
| 3:35 PM | 396 | 300 | 1412 |
| 3:36 PM | 415 | 308 | 1657 |
| 3:37 PM | 432 | 317 | 1872 |
| 3:38 PM | 439 | 325 | 1845 |
| 3:39 PM | 452 | 333 | 1969 |
| 3:40 PM | 463 | 342 | 2033 |
| 3:41 PM | 470 | 350 | 2006 |
| 3:42 PM | 480 | 358 | 2039 |
| 3:43 PM | 488 | 367 | 2042 |
| 3:44 PM | 503 | 375 | 2197 |
| 3:45 PM | 514 | 383 | 2260 |
| 3:46 PM | 523 | 392 | 2294 |
| 3:47 PM | 540 | 400 | 2508 |
| 3:48 PM | 566 | 408 | 2935 |
| 3:49 PM | 575 | 417 | 2968 |
| 3:50 PM | 590 | 425 | 3122 |
| 3:51 PM | 601 | 433 | 3186 |
| 3:52 PM | 613 | 442 | 3280 |
| 3:53 PM | 620 | 450 | 3253 |
| 3:54 PM | 623 | 458 | 3105 |
| 3:55 PM | 633 | 467 | 3169 |
| 3:56 PM | 648 | 475 | 3323 |
| 3:57 PM | 655 | 483 | 3296 |
| 3:58 PM | 675 | 492 | 3571 |
| 3:59 PM | 685 | 500 | 3635 |
| 4:00 PM | 695 | 508 | 3668 |
| 4:01 PM | 707 | 517 | 3762 |
| 4:02 PM | 722 | 525 | 3916 |
| 4:03 PM | 734 | 533 | 4010 |
| 4:04 PM | 747 | 542 | 4134 |
| 4:05 PM | 763 | 550 | 4319 |
| 4:06 PM | 774 | 558 | 4383 |
| 4:07 PM | 788 | 567 | 4537 |
| 4:08 PM | 794 | 575 | 4480 |
| 4:09 PM | 804 | 583 | 4513 |
| 4:10 PM | 812 | 592 | 4516 |
| 4:11 PM | 824 | 600 | 4610 |
| 4:12 PM | 834 | 608 | 4644 |
| 4:13 PM | 845 | 617 | 4707 |
| 4:14 PM | 856 | 625 | 4771 |
| 4:15 PM | 869 | 633 | 4895 |
| 4:16 PM | 885 | 642 | 5080 |
| 4:17 PM | 893 | 650 | 5083 |
| 4:18 PM | 905 | 658 | 5177 |
| 4:19 PM | 914 | 667 | 5180 |
| 4:20 PM | 928 | 675 | 5334 |
| 4:21 PM | 933 | 683 | 5247 |
| 4:22 PM | 945 | 692 | 5341 |
| 4:23 PM | 953 | 700 | 5314 |
| 4:24 PM | 963 | 708 | 5377 |
| 4:25 PM | 969 | 717 | 5320 |
| 4:26 PM | 973 | 725 | 5202 |
| 4:27 PM | 989 | 733 | 5387 |
| 4:28 PM | 992 | 742 | 5269 |
| 4:29 PM | 1006 | 750 | 5393 |
| 4:30 PM | 1015 | 758 | 5427 |
| 4:31 PM | 1025 | 767 | 5460 |
| 4:32 PM | 1034 | 775 | 5463 |
| 4:33 PM | 1042 | 783 | 5467 |
| 4:34 PM | 1049 | 792 | 5440 |
| 4:35 PM | 1059 | 800 | 5473 |
| 4:36 PM | 1065 | 808 | 5416 |
| 4:37 PM | 1078 | 817 | 5540 |
| 4:38 PM | 1090 | 825 | 5634 |
| 4:39 PM | 1110 | 833 | 5909 |
| 4:40 PM | 1118 | 842 | 5912 |
| 4:41 PM | 1130 | 850 | 6006 |
| 4:42 PM | 1146 | 858 | 6190 |
| 4:43 PM | 1150 | 867 | 6073 |
| 4:44 PM | 1162 | 875 | 6167 |
| 4:45 PM | 1168 | 883 | 6109 |
| 4:46 PM | 1174 | 892 | 6052 |
| 4:47 PM | 1185 | 900 | 6116 |
| 4:48 PM | 1199 | 908 | 6270 |
| 4:49 PM | 1215 | 917 | 6455 |
| 4:50 PM | 1244 | 925 | 6972 |
| 4:51 PM | 1256 | 933 | 7066 |
| 4:52 PM | 1268 | 942 | 7159 |
| 4:53 PM | 1277 | 950 | 7163 |
| 4:54 PM | 1284 | 958 | 7136 |
| 4:55 PM | 1285 | 967 | 6957 |
| 4:56 PM | 1293 | 975 | 6961 |
| 4:57 PM | 1304 | 983 | 7024 |
| 4:58 PM | 1313 | 992 | 7028 |
| 4:59 PM | 1324 | 1000 | 7091 |
| 5:00 PM | 1337 | 1008 | 7215 |
| 5:01 PM | 1360 | 1017 | 7581 |
| 5:02 PM | 1374 | 1025 | 7735 |
| 5:03 PM | 1383 | 1033 | 7739 |
| 5:04 PM | 1390 | 1042 | 7712 |
| 5:05 PM | 1397 | 1050 | 7685 |
| 5:06 PM | 1403 | 1058 | 7627 |
| 5:07 PM | 1413 | 1067 | 7661 |
| 5:08 PM | 1420 | 1075 | 7634 |
| 5:09 PM | 1429 | 1083 | 7637 |
| 5:10 PM | 1443 | 1092 | 7791 |
| 5:11 PM | 1465 | 1100 | 8127 |
| 5:12 PM | 1477 | 1108 | 8221 |
| 5:13 PM | 1490 | 1117 | 8345 |
| 5:14 PM | 1503 | 1125 | 8439 |
| 5:15 PM | 1511 | 1133 | 8442 |
| 5:16 PM | 1523 | 1142 | 8536 |
| 5:17 PM | 1530 | 1150 | 8509 |
| 5:18 PM | 1547 | 1158 | 8724 |
| 5:19 PM | 1559 | 1167 | 8817 |
| 5:20 PM | 1568 | 1175 | 8821 |
| 5:21 PM | 1579 | 1183 | 8884 |
| 5:22 PM | 1590 | 1192 | 8948 |
| 5:23 PM | 1596 | 1200 | 8891 |
| 5:24 PM | 1603 | 1208 | 8864 |
| 5:25 PM | 1611 | 1217 | 8867 |
| 5:26 PM | 1619 | 1225 | 8840 |
| 5:27 PM | 1628 | 1233 | 8873 |
| 5:28 PM | 1639 | 1242 | 8937 |
| 5:29 PM | 1645 | 1250 | 8880 |
| 5:30 PM | 1666 | 1258 | 9185 |
| 5:31 PM | 1673 | 1267 | 9158 |
| 5:32 PM | 1681 | 1275 | 9161 |
| 5:33 PM | 1695 | 1283 | 9285 |
| 5:34 PM | 1707 | 1292 | 9379 |
| 5:35 PM | 1718 | 1300 | 9443 |
| 5:36 PM | 1733 | 1308 | 9628 |
| 5:37 PM | 1742 | 1317 | 9631 |
| 5:38 PM | 1750 | 1325 | 9634 |
| 5:39 PM | 1760 | 1333 | 9667 |
| 5:40 PM | 1773 | 1342 | 9791 |
| 5:41 PM | 1784 | 1350 | 9855 |
| 5:42 PM | 1789 | 1358 | 9768 |
| 5:43 PM | 1799 | 1367 | 9801 |
| 5:44 PM | 1808 | 1375 | 9834 |
| 5:45 PM | 1819 | 1383 | 9898 |
| 5:46 PM | 1830 | 1392 | 9962 |
| 5:47 PM | 1847 | 1400 | 10177 |
| 5:48 PM | 1862 | 1408 | 10331 |
| 5:49 PM | 1875 | 1417 | 10455 |
| 5:50 PM | 1888 | 1425 | 10579 |
| 5:51 PM | 1899 | 1433 | 10643 |
| 5:52 PM | 1910 | 1442 | 10706 |
| 5:53 PM | 1922 | 1450 | 10800 |
| 5:54 PM | 1934 | 1458 | 10894 |
| 5:55 PM | 1945 | 1467 | 10958 |
| 5:56 PM | 1957 | 1475 | 11052 |
| 5:57 PM | 1973 | 1483 | 11236 |
| 5:58 PM | 1988 | 1492 | 11421 |
| 5:59 PM | 1999 | 1500 | 11484 |

## EB 195

2026 AM with Project

AM Adjustment factor: 1.086

AM K30 factor (R103): 1.15

| Storage Length | No. of Storage Lanes | Ramp Meter Rate | 2-lane retrofit (use shoulder) alternate release Max rate = 1400 |
|---|---|---|---|
| 1000 | 1 | 1200 | |

EB 195

| Time | 2021 AM Volume | Adjusted Volume | Vehicles released | Vehicles in queue | Queue length | Exceed Storage |
|---|---|---|---|---|---|---|
| 6:00 AM | 4 | 5 | 5 | 0 | 0 | 0 |
| 6:01 AM | 5 | 6 | 6 | 0 | 0 | 0 |
| 6:02 AM | 1 | 1 | 1 | 0 | 0 | 0 |
| 6:03 AM | 2 | 2 | 2 | 0 | 0 | 0 |
| 6:04 AM | 5 | 6 | 6 | 0 | 0 | 0 |
| 6:05 AM | 4 | 5 | 5 | 0 | 0 | 0 |
| 6:06 AM | 7 | 8 | 8 | 0 | 0 | 0 |
| 6:07 AM | 5 | 6 | 6 | 0 | 0 | 0 |
| 6:08 AM | 4 | 5 | 5 | 0 | 0 | 0 |
| 6:09 AM | 5 | 6 | 6 | 0 | 0 | 0 |
| 6:10 AM | 7 | 8 | 8 | 0 | 0 | 0 |
| 6:11 AM | 6 | 7 | 7 | 0 | 0 | 0 |
| 6:12 AM | 10 | 10 | 10 | 0 | 0 | 0 |
| 6:13 AM | 6 | 7 | 7 | 0 | 0 | 0 |
| 6:14 AM | 5 | 6 | 6 | 0 | 0 | 0 |
| 6:15 AM | 6 | 7 | 7 | 0 | 0 | 0 |
| 6:16 AM | 5 | 6 | 6 | 0 | 0 | 0 |
| 6:17 AM | 6 | 7 | 7 | 0 | 0 | 0 |
| 6:18 AM | 4 | 5 | 5 | 0 | 0 | 0 |
| 6:19 AM | 11 | 12 | 12 | 0 | 0 | 0 |
| 6:20 AM | 13 | 14 | 14 | 0 | 0 | 0 |
| 6:21 AM | 14 | 15 | 15 | 0 | 0 | 0 |
| 6:22 AM | 8 | 9 | 9 | 0 | 0 | 0 |
| 6:23 AM | 13 | 14 | 14 | 0 | 0 | 0 |
| 6:24 AM | 16 | 17 | 17 | 0 | 0 | 0 |
| 6:25 AM | 18 | 20 | 20 | 0 | 0 | 0 |
| 6:26 AM | 6 | 7 | 7 | 0 | 0 | 0 |
| 6:27 AM | 12 | 13 | 13 | 0 | 0 | 0 |
| 6:28 AM | 7 | 8 | 8 | 0 | 0 | 0 |
| 6:29 AM | 13 | 14 | 14 | 0 | 0 | 0 |
| 6:30 AM | 10 | 10 | 10 | 0 | 0 | 0 |
| 6:31 AM | 16 | 17 | 17 | 0 | 0 | 0 |
| 6:32 AM | 16 | 17 | 17 | 0 | 0 | 0 |
| 6:33 AM | 6 | 7 | 7 | 0 | 0 | 0 |
| 6:34 AM | 12 | 13 | 13 | 0 | 0 | 0 |
| 6:35 AM | 12 | 13 | 13 | 0 | 0 | 0 |
| 6:36 AM | 11 | 12 | 12 | 0 | 0 | 0 |
| 6:37 AM | 13 | 14 | 14 | 0 | 0 | 0 |
| 6:38 AM | 13 | 14 | 14 | 0 | 0 | 0 |
| 6:39 AM | 15 | 16 | 16 | 0 | 0 | 0 |
| 6:40 AM | 8 | 9 | 9 | 0 | 0 | 0 |
| 6:41 AM | 22 | 24 | 20 | 4 | 105 | 0 |
| 6:42 AM | 17 | 18 | 20 | 3 | 67 | 0 |
| 6:43 AM | 22 | 24 | 20 | 7 | 172 | 0 |
| 6:44 AM | 28 | 30 | 20 | 17 | 422 | 0 |
| 6:45 AM | 22 | 24 | 20 | 21 | 527 | 0 |
| 6:46 AM | 24 | 27 | 20 | 28 | 691 | 0 |
| 6:47 AM | 20 | 22 | 20 | 30 | 738 | 0 |
| 6:48 AM | 21 | 23 | 20 | 33 | 815 | 0 |
| 6:49 AM | 24 | 27 | 20 | 39 | 978 | 0 |
| 6:50 AM | 17 | 18 | 20 | 38 | 940 | 0 |
| 6:51 AM | 23 | 25 | 20 | 43 | 1074 | 74 |
| 6:52 AM | 22 | 24 | 20 | 47 | 1179 | 179 |
| 6:53 AM | 18 | 20 | 20 | 47 | 1170 | 170 |
| 6:54 AM | 14 | 15 | 20 | 42 | 1044 | 44 |
| 6:55 AM | 17 | 18 | 20 | 40 | 1006 | 6 |
| 6:56 AM | 19 | 21 | 20 | 41 | 1025 | 25 |
| 6:57 AM | 13 | 14 | 20 | 35 | 871 | 0 |
| 6:58 AM | 13 | 14 | 20 | 29 | 717 | 0 |
| 6:59 AM | 17 | 18 | 20 | 27 | 678 | 0 |
| 7:00 AM | 16 | 17 | 20 | 24 | 611 | 0 |
| 7:01 AM | 16 | 17 | 20 | 22 | 548 | 0 |
| 7:02 AM | 7 | 8 | 20 | 10 | 245 | 0 |
| 7:03 AM | 23 | 25 | 20 | 15 | 379 | 0 |
| 7:04 AM | 12 | 13 | 20 | 8 | 196 | 0 |
| 7:05 AM | 17 | 18 | 20 | 6 | 158 | 0 |
| 7:06 AM | 6 | 7 | 13 | 0 | 0 | 0 |
| 7:07 AM | 19 | 21 | 20 | 1 | 19 | 0 |
| 7:08 AM | 21 | 23 | 20 | 4 | 96 | 0 |
| 7:09 AM | 15 | 16 | 20 | 0 | 0 | 0 |
| 7:10 AM | 12 | 13 | 13 | 0 | 0 | 0 |
| 7:11 AM | 17 | 18 | 18 | 0 | 0 | 0 |
| 7:12 AM | 24 | 27 | 20 | 7 | 163 | 0 |
| 7:13 AM | 23 | 25 | 20 | 12 | 297 | 0 |
| 7:14 AM | 19 | 21 | 20 | 13 | 316 | 0 |
| 7:15 AM | 21 | 23 | 20 | 16 | 393 | 0 |
| 7:16 AM | 15 | 16 | 20 | 12 | 297 | 0 |
| 7:17 AM | 23 | 25 | 20 | 17 | 431 | 0 |
| 7:18 AM | 17 | 18 | 20 | 16 | 392 | 0 |
| 7:19 AM | 23 | 25 | 20 | 21 | 527 | 0 |
| 7:20 AM | 23 | 25 | 20 | 26 | 661 | 0 |
| 7:21 AM | 25 | 28 | 20 | 34 | 853 | 0 |
| 7:22 AM | 23 | 25 | 20 | 39 | 987 | 0 |
| 7:23 AM | 18 | 20 | 20 | 39 | 978 | 0 |
| 7:24 AM | 20 | 22 | 20 | 41 | 1025 | 25 |
| 7:25 AM | 16 | 17 | 20 | 38 | 958 | 0 |
| 7:26 AM | 16 | 17 | 20 | 36 | 890 | 0 |
| 7:27 AM | 25 | 28 | 20 | 43 | 1082 | 82 |
| 7:28 AM | 17 | 18 | 20 | 42 | 1044 | 44 |
| 7:29 AM | 15 | 16 | 20 | 38 | 947 | 0 |
| 7:30 AM | 30 | 32 | 20 | 50 | 1255 | 255 |
| 7:31 AM | 23 | 25 | 20 | 56 | 1389 | 389 |
| 7:32 AM | 22 | 24 | 20 | 60 | 1495 | 495 |
| 7:33 AM | 23 | 25 | 20 | 65 | 1629 | 629 |
| 7:34 AM | 27 | 29 | 20 | 74 | 1850 | 850 |
| 7:35 AM | 30 | 32 | 20 | 86 | 2157 | 1157 |
| 7:36 AM | 28 | 30 | 20 | 96 | 2407 | 1407 |
| 7:37 AM | 22 | 24 | 20 | 100 | 2512 | 1512 |
| 7:38 AM | 25 | 28 | 20 | 108 | 2704 | 1704 |
| 7:39 AM | 20 | 22 | 20 | 110 | 2752 | 1752 |
| 7:40 AM | 16 | 17 | 20 | 107 | 2685 | 1685 |
| 7:41 AM | 24 | 27 | 20 | 114 | 2848 | 1848 |
| 7:42 AM | 24 | 27 | 20 | 120 | 3011 | 2011 |
| 7:43 AM | 32 | 35 | 20 | 135 | 3376 | 2376 |
| 7:44 AM | 19 | 21 | 20 | 136 | 3395 | 2395 |
| 7:45 AM | 20 | 22 | 20 | 138 | 3443 | 2443 |
| 7:46 AM | 28 | 30 | 20 | 148 | 3692 | 2692 |
| 7:47 AM | 25 | 28 | 20 | 155 | 3884 | 2884 |
| 7:48 AM | 30 | 32 | 20 | 165 | 4134 | 3134 |
| 7:49 AM | 29 | 31 | 20 | 177 | 4413 | 3413 |
| 7:50 AM | 30 | 32 | 20 | 189 | 4720 | 3720 |
| 7:51 AM | 25 | 28 | 20 | 196 | 4912 | 3912 |
| 7:52 AM | 28 | 30 | 20 | 206 | 5162 | 4162 |
| 7:53 AM | 29 | 31 | 20 | 218 | 5440 | 4440 |
| 7:54 AM | 21 | 23 | 20 | 221 | 5517 | 4517 |
| 7:55 AM | 17 | 18 | 20 | 219 | 5478 | 4478 |
| 7:56 AM | 22 | 24 | 20 | 223 | 5584 | 4584 |
| 7:57 AM | 17 | 18 | 20 | 222 | 5545 | 4545 |
| 7:58 AM | 20 | 22 | 20 | 224 | 5593 | 4593 |
| 7:59 AM | 10 | 10 | 20 | 214 | 5392 | 4352 |
| 8:00 AM | 25 | 28 | 20 | 222 | 5544 | 4544 |
| 8:01 AM | 16 | 17 | 20 | 219 | 5477 | 4477 |
| 8:02 AM | 16 | 17 | 20 | 216 | 5409 | 4409 |
| 8:03 AM | 14 | 15 | 20 | 211 | 5284 | 4284 |
| 8:04 AM | 16 | 17 | 20 | 209 | 5217 | 4217 |
| 8:05 AM | 27 | 29 | 20 | 217 | 5437 | 4437 |
| 8:06 AM | 16 | 17 | 20 | 215 | 5370 | 4370 |
| 8:07 AM | 19 | 21 | 20 | 216 | 5389 | 4389 |
| 8:08 AM | 21 | 23 | 20 | 219 | 5466 | 4466 |
| 8:09 AM | 23 | 25 | 20 | 224 | 5600 | 4600 |
| 8:10 AM | 19 | 21 | 20 | 225 | 5619 | 4619 |
| 8:11 AM | 18 | 20 | 20 | 224 | 5609 | 4609 |
| 8:12 AM | 27 | 29 | 20 | 233 | 5830 | 4830 |
| 8:13 AM | 10 | 10 | 20 | 224 | 5589 | 4589 |
| 8:14 AM | 22 | 24 | 20 | 228 | 5695 | 4695 |
| 8:15 AM | 13 | 14 | 20 | 222 | 5541 | 4541 |
| 8:16 AM | 17 | 18 | 20 | 220 | 5502 | 4502 |
| 8:17 AM | 20 | 22 | 20 | 222 | 5550 | 4550 |
| 8:18 AM | 22 | 22 | 20 | 224 | 5598 | 4598 |
| 8:19 AM | 13 | 14 | 20 | 218 | 5444 | 4444 |
| 8:20 AM | 19 | 21 | 20 | 219 | 5463 | 4463 |
| 8:21 AM | 12 | 13 | 20 | 211 | 5280 | 4280 |
| 8:22 AM | 16 | 17 | 20 | 209 | 5213 | 4213 |
| 8:23 AM | 15 | 16 | 20 | 205 | 5116 | 4116 |
| 8:24 AM | 11 | 12 | 20 | 196 | 4905 | 3905 |
| 8:25 AM | 8 | 9 | 20 | 185 | 4635 | 3635 |
| 8:26 AM | 17 | 18 | 20 | 184 | 4597 | 3597 |
| 8:27 AM | 20 | 22 | 20 | 186 | 4644 | 3644 |
| 8:28 AM | 16 | 17 | 20 | 183 | 4577 | 3577 |
| 8:29 AM | 15 | 16 | 20 | 179 | 4481 | 3481 |
| 8:30 AM | 16 | 17 | 20 | 177 | 4413 | 3413 |
| 8:31 AM | 19 | 21 | 20 | 177 | 4432 | 3432 |
| 8:32 AM | 15 | 16 | 20 | 173 | 4336 | 3336 |
| 8:33 AM | 10 | 10 | 20 | 164 | 4095 | 3095 |
| 8:34 AM | 16 | 17 | 20 | 161 | 4028 | 3028 |
| 8:35 AM | 14 | 15 | 20 | 156 | 3903 | 2903 |
| 8:36 AM | 17 | 18 | 20 | 155 | 3884 | 2864 |
| 8:37 AM | 15 | 16 | 20 | 151 | 3768 | 2768 |
| 8:38 AM | 18 | 20 | 20 | 150 | 3758 | 2758 |
| 8:39 AM | 15 | 16 | 20 | 146 | 3661 | 2661 |
| 8:40 AM | 18 | 20 | 20 | 146 | 3652 | 2652 |
| 8:41 AM | 16 | 17 | 20 | 143 | 3584 | 2584 |
| 8:42 AM | 13 | 14 | 20 | 137 | 3430 | 2430 |
| 8:43 AM | 16 | 17 | 20 | 135 | 3363 | 2363 |
| 8:44 AM | 18 | 20 | 20 | 134 | 3353 | 2353 |
| 8:45 AM | 5 | 6 | 20 | 120 | 2997 | 1997 |
| 8:46 AM | 14 | 15 | 20 | 115 | 2872 | 1872 |
| 8:47 AM | 18 | 20 | 20 | 114 | 2862 | 1862 |
| 8:48 AM | 14 | 15 | 20 | 109 | 2737 | 1737 |
| 8:49 AM | 16 | 17 | 20 | 107 | 2669 | 1669 |
| 8:50 AM | 13 | 14 | 20 | 101 | 2515 | 1515 |
| 8:51 AM | 13 | 14 | 20 | 94 | 2361 | 1361 |
| 8:52 AM | 11 | 12 | 20 | 86 | 2150 | 1150 |
| 8:53 AM | 12 | 13 | 20 | 79 | 1967 | 967 |
| 8:54 AM | 18 | 20 | 20 | 78 | 1957 | 957 |
| 8:55 AM | 14 | 15 | 20 | 73 | 1832 | 832 |
| 8:56 AM | 12 | 13 | 20 | 66 | 1649 | 649 |
| 8:57 AM | 10 | 10 | 20 | 56 | 1408 | 408 |
| 8:58 AM | 19 | 21 | 20 | 57 | 1427 | 427 |
| 8:59 AM | 14 | 15 | 20 | 52 | 1302 | 302 |
| 7:10 - 8:10 | 1303 | 1415 | | | | |

| Time | Cumulative | Cumulative | Excessive Queue Length |
|---|---|---|---|
| 6:00 AM | 5 | 5 | 0 |
| 6:01 AM | 10 | 10 | 0 |
| 6:02 AM | 12 | 12 | 0 |
| 6:03 AM | 14 | 14 | 0 |
| 6:04 AM | 20 | 20 | 0 |
| 6:05 AM | 24 | 24 | 0 |
| 6:06 AM | 32 | 32 | 0 |
| 6:07 AM | 38 | 38 | 0 |
| 6:08 AM | 43 | 43 | 0 |
| 6:09 AM | 48 | 48 | 0 |
| 6:10 AM | 57 | 57 | 0 |
| 6:11 AM | 63 | 63 | 0 |
| 6:12 AM | 74 | 74 | 0 |
| 6:13 AM | 81 | 81 | 0 |
| 6:14 AM | 86 | 86 | 0 |
| 6:15 AM | 93 | 93 | 0 |
| 6:16 AM | 99 | 99 | 0 |
| 6:17 AM | 106 | 106 | 0 |
| 6:18 AM | 111 | 111 | 0 |
| 6:19 AM | 122 | 122 | 0 |
| 6:20 AM | 136 | 136 | 0 |
| 6:21 AM | 151 | 151 | 0 |
| 6:22 AM | 160 | 160 | 0 |
| 6:23 AM | 174 | 174 | 0 |
| 6:24 AM | 191 | 191 | 0 |
| 6:25 AM | 211 | 211 | 0 |
| 6:26 AM | 218 | 218 | 0 |
| 6:27 AM | 231 | 231 | 0 |
| 6:28 AM | 239 | 239 | 0 |
| 6:29 AM | 253 | 253 | 0 |
| 6:30 AM | 263 | 263 | 0 |
| 6:31 AM | 280 | 280 | 0 |
| 6:32 AM | 298 | 298 | 0 |
| 6:33 AM | 304 | 304 | 0 |
| 6:34 AM | 317 | 317 | 0 |
| 6:35 AM | 330 | 330 | 0 |
| 6:36 AM | 341 | 341 | 0 |
| 6:37 AM | 355 | 355 | 0 |
| 6:38 AM | 369 | 369 | 0 |
| 6:39 AM | 385 | 385 | 0 |
| 6:40 AM | 394 | 394 | 0 |
| 6:41 AM | 419 | 414 | 0 |
| 6:42 AM | 437 | 434 | 0 |
| 6:43 AM | 461 | 454 | 0 |
| 6:44 AM | 491 | 474 | 0 |
| 6:45 AM | 516 | 494 | 0 |
| 6:46 AM | 542 | 514 | 0 |
| 6:47 AM | 564 | 534 | 0 |
| 6:48 AM | 587 | 554 | 0 |
| 6:49 AM | 614 | 574 | 0 |
| 6:50 AM | 632 | 594 | 0 |
| 6:51 AM | 657 | 614 | 74 |
| 6:52 AM | 682 | 634 | 179 |
| 6:53 AM | 701 | 654 | 170 |
| 6:54 AM | 716 | 674 | 44 |
| 6:55 AM | 735 | 694 | 6 |
| 6:56 AM | 755 | 714 | 25 |
| 6:57 AM | 769 | 734 | 0 |
| 6:58 AM | 783 | 754 | 0 |
| 6:59 AM | 802 | 774 | 0 |
| 7:00 AM | 819 | 794 | 0 |
| 7:01 AM | 836 | 814 | 0 |
| 7:02 AM | 844 | 834 | 0 |
| 7:03 AM | 870 | 854 | 0 |
| 7:04 AM | 882 | 874 | 0 |
| 7:05 AM | 901 | 894 | 0 |
| 7:06 AM | 908 | 908 | 0 |
| 7:07 AM | 928 | 928 | 0 |
| 7:08 AM | 951 | 948 | 0 |
| 7:09 AM | 968 | 968 | 0 |
| 7:10 AM | 980 | 980 | 0 |
| 7:11 AM | 999 | 999 | 0 |
| 7:12 AM | 1025 | 1019 | 0 |
| 7:13 AM | 1051 | 1039 | 0 |
| 7:14 AM | 1071 | 1059 | 0 |
| 7:15 AM | 1095 | 1079 | 0 |
| 7:16 AM | 1111 | 1099 | 0 |
| 7:17 AM | 1136 | 1119 | 0 |
| 7:18 AM | 1154 | 1139 | 0 |
| 7:19 AM | 1180 | 1159 | 0 |
| 7:20 AM | 1205 | 1179 | 0 |
| 7:21 AM | 1233 | 1199 | 0 |
| 7:22 AM | 1258 | 1219 | 0 |
| 7:23 AM | 1278 | 1239 | 0 |
| 7:24 AM | 1300 | 1259 | 25 |
| 7:25 AM | 1317 | 1279 | 0 |
| 7:26 AM | 1334 | 1299 | 0 |
| 7:27 AM | 1362 | 1319 | 82 |
| 7:28 AM | 1381 | 1339 | 44 |
| 7:29 AM | 1397 | 1359 | 0 |
| 7:30 AM | 1429 | 1379 | 255 |
| 7:31 AM | 1454 | 1399 | 389 |
| 7:32 AM | 1479 | 1419 | 495 |
| 7:33 AM | 1504 | 1439 | 629 |
| 7:34 AM | 1533 | 1459 | 850 |
| 7:35 AM | 1565 | 1479 | 1157 |
| 7:36 AM | 1595 | 1499 | 1407 |
| 7:37 AM | 1619 | 1519 | 1512 |
| 7:38 AM | 1647 | 1539 | 1704 |
| 7:39 AM | 1669 | 1559 | 1752 |
| 7:40 AM | 1686 | 1579 | 1685 |
| 7:41 AM | 1713 | 1599 | 1848 |
| 7:42 AM | 1739 | 1619 | 2011 |
| 7:43 AM | 1774 | 1639 | 2376 |
| 7:44 AM | 1795 | 1659 | 2395 |
| 7:45 AM | 1816 | 1679 | 2443 |
| 7:46 AM | 1846 | 1699 | 2692 |
| 7:47 AM | 1874 | 1719 | 2884 |
| 7:48 AM | 1904 | 1739 | 3134 |
| 7:49 AM | 1935 | 1759 | 3413 |
| 7:50 AM | 1968 | 1779 | 3720 |
| 7:51 AM | 1995 | 1799 | 3912 |
| 7:52 AM | 2025 | 1819 | 4162 |
| 7:53 AM | 2056 | 1839 | 4440 |
| 7:54 AM | 2079 | 1859 | 4517 |
| 7:55 AM | 2098 | 1879 | 4478 |
| 7:56 AM | 2122 | 1899 | 4584 |
| 7:57 AM | 2141 | 1919 | 4545 |
| 7:58 AM | 2162 | 1939 | 4593 |
| 7:59 AM | 2173 | 1959 | 4352 |
| 8:00 AM | 2201 | 1979 | 4544 |
| 8:01 AM | 2218 | 1999 | 4477 |
| 8:02 AM | 2235 | 2019 | 4409 |
| 8:03 AM | 2250 | 2039 | 4284 |
| 8:04 AM | 2267 | 2059 | 4217 |
| 8:05 AM | 2296 | 2079 | 4437 |
| 8:06 AM | 2314 | 2099 | 4370 |
| 8:07 AM | 2334 | 2119 | 4389 |
| 8:08 AM | 2357 | 2139 | 4466 |
| 8:09 AM | 2383 | 2159 | 4600 |
| 8:10 AM | 2404 | 2179 | 4619 |
| 8:11 AM | 2423 | 2199 | 4609 |
| 8:12 AM | 2452 | 2219 | 4830 |
| 8:13 AM | 2462 | 2239 | 4589 |
| 8:14 AM | 2487 | 2259 | 4695 |
| 8:15 AM | 2500 | 2279 | 4541 |
| 8:16 AM | 2519 | 2299 | 4502 |
| 8:17 AM | 2541 | 2319 | 4550 |
| 8:18 AM | 2563 | 2339 | 4598 |
| 8:19 AM | 2577 | 2359 | 4444 |
| 8:20 AM | 2597 | 2379 | 4463 |
| 8:21 AM | 2610 | 2399 | 4280 |
| 8:22 AM | 2627 | 2419 | 4213 |
| 8:23 AM | 2643 | 2439 | 4116 |
| 8:24 AM | 2655 | 2459 | 3905 |
| 8:25 AM | 2664 | 2479 | 3635 |
| 8:26 AM | 2683 | 2499 | 3597 |
| 8:27 AM | 2705 | 2519 | 3644 |
| 8:28 AM | 2722 | 2539 | 3577 |
| 8:29 AM | 2738 | 2559 | 3481 |
| 8:30 AM | 2755 | 2579 | 3413 |
| 8:31 AM | 2776 | 2599 | 3432 |
| 8:32 AM | 2792 | 2619 | 3336 |
| 8:33 AM | 2803 | 2639 | 3095 |
| 8:34 AM | 2820 | 2659 | 3028 |
| 8:35 AM | 2835 | 2679 | 2903 |
| 8:36 AM | 2853 | 2699 | 2864 |
| 8:37 AM | 2869 | 2719 | 2768 |
| 8:38 AM | 2889 | 2739 | 2758 |
| 8:39 AM | 2905 | 2759 | 2661 |
| 8:40 AM | 2925 | 2779 | 2652 |
| 8:41 AM | 2942 | 2799 | 2584 |
| 8:42 AM | 2956 | 2819 | 2430 |
| 8:43 AM | 2973 | 2839 | 2363 |
| 8:44 AM | 2993 | 2859 | 2353 |
| 8:45 AM | 2999 | 2879 | 1997 |
| 8:46 AM | 3014 | 2899 | 1872 |
| 8:47 AM | 3033 | 2919 | 1862 |
| 8:48 AM | 3048 | 2939 | 1737 |
| 8:49 AM | 3066 | 2959 | 1669 |
| 8:50 AM | 3079 | 2979 | 1515 |
| 8:51 AM | 3093 | 2999 | 1361 |
| 8:52 AM | 3105 | 3019 | 1150 |
| 8:53 AM | 3117 | 3039 | 967 |
| 8:54 AM | 3137 | 3059 | 957 |
| 8:55 AM | 3152 | 3079 | 832 |
| 8:56 AM | 3165 | 3099 | 649 |
| 8:57 AM | 3175 | 3119 | 408 |
| 8:58 AM | 3196 | 3139 | 427 |
| 8:59 AM | 3211 | 3159 | 302 |

**PEAK HOUR I-90 EB**

**THE TIME PERIOD WITH QUEUE BEYOND THE STORAGE AFTER I-90 EB PEAK HOUR**

**PEAK HOUR I-90 EB**

## EB 195

2026 PM with Project

PM Adjustment factor: 1.099

PM k30 factor (R103): 1.14

Storage Length: 1000

No. of Storage Lanes: 1

Ramp Meter Rate: 800

2-lane retrofit (use shoulder) alternate release - Max rate = 1400

| Time | 2021 PM Volume | Adjusted Volume | Vehicles released | Vehicles in queue | Queue length | Exceed Storage |
|---|---|---|---|---|---|---|
| 3:00 PM | 13 | 15 | 13 | 1 | 32 | 0 |
| 3:01 PM | 7 | 7 | 9 | 0 | 0 | 0 |
| 3:02 PM | 13 | 15 | 13 | 1 | 32 | 0 |
| 3:03 PM | 9 | 10 | 11 | 0 | 0 | 0 |
| 3:04 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 3:05 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 3:06 PM | 12 | 13 | 13 | 0 | 2 | 0 |
| 3:07 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 3:08 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 3:09 PM | 18 | 20 | 13 | 6 | 154 | 0 |
| 3:10 PM | 6 | 6 | 12 | 0 | 0 | 0 |
| 3:11 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 3:12 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 3:13 PM | 4 | 5 | 5 | 0 | 0 | 0 |
| 3:14 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 3:15 PM | 12 | 13 | 13 | 0 | 2 | 0 |
| 3:16 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 3:17 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 3:18 PM | 14 | 16 | 13 | 3 | 63 | 0 |
| 3:19 PM | 16 | 17 | 13 | 6 | 156 | 0 |
| 3:20 PM | 11 | 12 | 13 | 5 | 127 | 0 |
| 3:21 PM | 6 | 6 | 11 | 0 | 0 | 0 |
| 3:22 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 3:23 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 3:24 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 3:25 PM | 13 | 15 | 13 | 1 | 32 | 0 |
| 3:26 PM | 4 | 5 | 6 | 0 | 0 | 0 |
| 3:27 PM | 4 | 5 | 5 | 0 | 0 | 0 |
| 3:28 PM | 16 | 17 | 13 | 4 | 93 | 0 |
| 3:29 PM | 14 | 16 | 13 | 6 | 156 | 0 |
| 3:30 PM | 10 | 11 | 13 | 4 | 97 | 0 |
| 3:31 PM | 10 | 11 | 13 | 2 | 38 | 0 |
| 3:32 PM | 9 | 10 | 11 | 0 | 0 | 0 |
| 3:33 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 3:34 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 3:35 PM | 18 | 20 | 13 | 6 | 154 | 0 |
| 3:36 PM | 17 | 18 | 13 | 11 | 278 | 0 |
| 3:37 PM | 16 | 17 | 13 | 15 | 371 | 0 |
| 3:38 PM | 7 | 7 | 13 | 9 | 221 | 0 |
| 3:39 PM | 12 | 13 | 13 | 9 | 222 | 0 |
| 3:40 PM | 10 | 11 | 13 | 7 | 163 | 0 |
| 3:41 PM | 7 | 7 | 13 | 1 | 13 | 0 |
| 3:42 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 3:43 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 3:44 PM | 13 | 15 | 13 | 1 | 32 | 0 |
| 3:45 PM | 10 | 11 | 12 | 0 | 0 | 0 |
| 3:46 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 3:47 PM | 16 | 17 | 13 | 4 | 93 | 0 |
| 3:48 PM | 23 | 26 | 13 | 16 | 400 | 0 |
| 3:49 PM | 9 | 10 | 13 | 12 | 310 | 0 |
| 3:50 PM | 13 | 15 | 13 | 14 | 343 | 0 |
| 3:51 PM | 10 | 11 | 13 | 11 | 283 | 0 |
| 3:52 PM | 11 | 12 | 13 | 10 | 255 | 0 |
| 3:53 PM | 7 | 7 | 13 | 4 | 104 | 0 |
| 3:54 PM | 2 | 2 | 7 | 0 | 0 | 0 |
| 3:55 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 3:56 PM | 13 | 15 | 13 | 1 | 32 | 0 |
| 3:57 PM | 7 | 7 | 9 | 0 | 0 | 0 |
| 3:58 PM | 18 | 20 | 13 | 6 | 154 | 0 |
| 3:59 PM | 10 | 11 | 13 | 4 | 95 | 0 |
| 4:00 PM | 9 | 10 | 13 | 0 | 6 | 0 |
| 4:01 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:02 PM | 13 | 15 | 13 | 1 | 32 | 0 |
| 4:03 PM | 11 | 12 | 13 | 0 | 4 | 0 |
| 4:04 PM | 12 | 13 | 13 | 0 | 6 | 0 |
| 4:05 PM | 14 | 16 | 13 | 3 | 68 | 0 |
| 4:06 PM | 10 | 11 | 13 | 0 | 9 | 0 |
| 4:07 PM | 13 | 15 | 13 | 2 | 41 | 0 |
| 4:08 PM | 6 | 6 | 8 | 0 | 0 | 0 |
| 4:09 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:10 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 4:11 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:12 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:13 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:14 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:15 PM | 12 | 13 | 13 | 0 | 2 | 0 |
| 4:16 PM | 14 | 16 | 13 | 3 | 65 | 0 |
| 4:17 PM | 8 | 9 | 11 | 0 | 0 | 0 |
| 4:18 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:19 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 4:20 PM | 13 | 15 | 13 | 1 | 32 | 0 |
| 4:21 PM | 4 | 5 | 6 | 0 | 0 | 0 |
| 4:22 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:23 PM | 7 | 7 | 7 | 0 | 0 | 0 |
| 4:24 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:25 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 4:26 PM | 3 | 4 | 4 | 0 | 0 | 0 |
| 4:27 PM | 14 | 16 | 13 | 3 | 63 | 0 |
| 4:28 PM | 3 | 4 | 6 | 0 | 0 | 0 |
| 4:29 PM | 12 | 13 | 13 | 0 | 2 | 0 |
| 4:30 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:31 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:32 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 4:33 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 4:34 PM | 7 | 7 | 7 | 0 | 0 | 0 |
| 4:35 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 4:36 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 4:37 PM | 12 | 13 | 13 | 0 | 2 | 0 |
| 4:38 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:39 PM | 18 | 20 | 13 | 6 | 154 | 0 |
| 4:40 PM | 8 | 9 | 13 | 1 | 34 | 0 |
| 4:41 PM | 11 | 12 | 13 | 0 | 6 | 0 |
| 4:42 PM | 14 | 16 | 13 | 3 | 68 | 0 |
| 4:43 PM | 3 | 4 | 6 | 0 | 0 | 0 |
| 4:44 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 4:45 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 4:46 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 4:47 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:48 PM | 13 | 15 | 13 | 1 | 32 | 0 |
| 4:49 PM | 14 | 16 | 13 | 4 | 95 | 0 |
| 4:50 PM | 27 | 29 | 13 | 20 | 493 | 0 |
| 4:51 PM | 11 | 12 | 13 | 19 | 464 | 0 |
| 4:52 PM | 11 | 12 | 13 | 17 | 436 | 0 |
| 4:53 PM | 8 | 9 | 13 | 13 | 316 | 0 |
| 4:54 PM | 7 | 7 | 13 | 7 | 165 | 0 |
| 4:55 PM | 1 | 1 | 8 | 0 | 0 | 0 |
| 4:56 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 4:57 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 4:58 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 4:59 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:00 PM | 12 | 13 | 13 | 0 | 2 | 0 |
| 5:01 PM | 21 | 23 | 13 | 10 | 247 | 0 |
| 5:02 PM | 13 | 15 | 13 | 11 | 280 | 0 |
| 5:03 PM | 8 | 9 | 13 | 6 | 160 | 0 |
| 5:04 PM | 7 | 7 | 13 | 0 | 9 | 0 |
| 5:05 PM | 7 | 7 | 8 | 0 | 0 | 0 |
| 5:06 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 5:07 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:08 PM | 7 | 7 | 7 | 0 | 0 | 0 |
| 5:09 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 5:10 PM | 13 | 15 | 13 | 1 | 32 | 0 |
| 5:11 PM | 20 | 22 | 13 | 10 | 247 | 0 |
| 5:12 PM | 11 | 12 | 13 | 9 | 219 | 0 |
| 5:13 PM | 12 | 13 | 13 | 9 | 221 | 0 |
| 5:14 PM | 11 | 12 | 13 | 8 | 192 | 0 |
| 5:15 PM | 8 | 9 | 13 | 3 | 72 | 0 |
| 5:16 PM | 11 | 12 | 13 | 2 | 43 | 0 |
| 5:17 PM | 7 | 7 | 9 | 0 | 0 | 0 |
| 5:18 PM | 16 | 17 | 13 | 4 | 93 | 0 |
| 5:19 PM | 11 | 12 | 13 | 3 | 65 | 0 |
| 5:20 PM | 8 | 9 | 11 | 0 | 0 | 0 |
| 5:21 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:22 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:23 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 5:24 PM | 7 | 7 | 7 | 0 | 0 | 0 |
| 5:25 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 5:26 PM | 7 | 7 | 7 | 0 | 0 | 0 |
| 5:27 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:28 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:29 PM | 6 | 6 | 6 | 0 | 0 | 0 |
| 5:30 PM | 19 | 21 | 13 | 7 | 185 | 0 |
| 5:31 PM | 7 | 7 | 13 | 1 | 34 | 0 |
| 5:32 PM | 8 | 9 | 10 | 0 | 0 | 0 |
| 5:33 PM | 12 | 13 | 13 | 0 | 2 | 0 |
| 5:34 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 5:35 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:36 PM | 14 | 16 | 13 | 3 | 63 | 0 |
| 5:37 PM | 8 | 9 | 11 | 0 | 0 | 0 |
| 5:38 PM | 8 | 9 | 9 | 0 | 0 | 0 |
| 5:39 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:40 PM | 12 | 13 | 13 | 0 | 2 | 0 |
| 5:41 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:42 PM | 4 | 5 | 5 | 0 | 0 | 0 |
| 5:43 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:44 PM | 9 | 10 | 10 | 0 | 0 | 0 |
| 5:45 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:46 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:47 PM | 16 | 17 | 13 | 4 | 93 | 0 |
| 5:48 PM | 13 | 15 | 13 | 5 | 126 | 0 |
| 5:49 PM | 12 | 13 | 13 | 5 | 127 | 0 |
| 5:50 PM | 12 | 13 | 13 | 5 | 129 | 0 |
| 5:51 PM | 10 | 11 | 13 | 3 | 70 | 0 |
| 5:52 PM | 10 | 11 | 13 | 0 | 11 | 0 |
| 5:53 PM | 11 | 12 | 13 | 0 | 0 | 0 |
| 5:54 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 5:55 PM | 10 | 11 | 11 | 0 | 0 | 0 |
| 5:56 PM | 11 | 12 | 12 | 0 | 0 | 0 |
| 5:57 PM | 14 | 16 | 13 | 3 | 63 | 0 |
| 5:58 PM | 14 | 16 | 13 | 5 | 126 | 0 |
| 5:59 PM | 10 | 11 | 13 | 3 | 66 | 0 |
| 3:16-4:16 | 643 | 707 | | | | |

## EB 195

| Time | Cumulative Volume | Cumulative Exceed Storage | Excessive Queue Length |
|---|---|---|---|
| 3:00 PM | 15 | 13 | 0 |
| 3:01 PM | 22 | 22 | 0 |
| 3:02 PM | 37 | 35 | 0 |
| 3:03 PM | 46 | 46 | 0 |
| 3:04 PM | 59 | 59 | 0 |
| 3:05 PM | 68 | 68 | 0 |
| 3:06 PM | 82 | 82 | 0 |
| 3:07 PM | 88 | 88 | 0 |
| 3:08 PM | 94 | 94 | 0 |
| 3:09 PM | 113 | 107 | 0 |
| 3:10 PM | 119 | 119 | 0 |
| 3:11 PM | 130 | 130 | 0 |
| 3:12 PM | 139 | 139 | 0 |
| 3:13 PM | 144 | 144 | 0 |
| 3:14 PM | 156 | 156 | 0 |
| 3:15 PM | 169 | 169 | 0 |
| 3:16 PM | 178 | 178 | 0 |
| 3:17 PM | 190 | 190 | 0 |
| 3:18 PM | 206 | 203 | 0 |
| 3:19 PM | 228 | 217 | 0 |
| 3:20 PM | 235 | 230 | 0 |
| 3:21 PM | 241 | 241 | 0 |
| 3:22 PM | 252 | 252 | 0 |
| 3:23 PM | 261 | 261 | 0 |
| 3:24 PM | 269 | 269 | 0 |
| 3:25 PM | 284 | 283 | 0 |
| 3:26 PM | 289 | 289 | 0 |
| 3:27 PM | 294 | 294 | 0 |
| 3:28 PM | 311 | 307 | 0 |
| 3:29 PM | 327 | 320 | 0 |
| 3:30 PM | 338 | 334 | 0 |
| 3:31 PM | 349 | 347 | 0 |
| 3:32 PM | 358 | 358 | 0 |
| 3:33 PM | 371 | 371 | 0 |
| 3:34 PM | 380 | 380 | 0 |
| 3:35 PM | 400 | 394 | 0 |
| 3:36 PM | 418 | 407 | 0 |
| 3:37 PM | 435 | 420 | 0 |
| 3:38 PM | 442 | 434 | 0 |
| 3:39 PM | 456 | 447 | 0 |
| 3:40 PM | 467 | 460 | 0 |
| 3:41 PM | 474 | 474 | 0 |
| 3:42 PM | 484 | 484 | 0 |
| 3:43 PM | 492 | 492 | 0 |
| 3:44 PM | 507 | 506 | 0 |
| 3:45 PM | 518 | 518 | 0 |
| 3:46 PM | 528 | 528 | 0 |
| 3:47 PM | 545 | 541 | 0 |
| 3:48 PM | 570 | 554 | 0 |
| 3:49 PM | 580 | 568 | 0 |
| 3:50 PM | 595 | 581 | 0 |
| 3:51 PM | 606 | 594 | 0 |
| 3:52 PM | 618 | 608 | 0 |
| 3:53 PM | 625 | 621 | 0 |
| 3:54 PM | 628 | 628 | 0 |
| 3:55 PM | 639 | 639 | 0 |
| 3:56 PM | 653 | 652 | 0 |
| 3:57 PM | 661 | 661 | 0 |
| 3:58 PM | 680 | 674 | 0 |
| 3:59 PM | 691 | 687 | 0 |
| 4:00 PM | 701 | 701 | 0 |
| 4:01 PM | 713 | 713 | 0 |
| 4:02 PM | 728 | 726 | 0 |
| 4:03 PM | 740 | 740 | 0 |
| 4:04 PM | 753 | 753 | 0 |
| 4:05 PM | 769 | 766 | 0 |
| 4:06 PM | 780 | 780 | 0 |
| 4:07 PM | 795 | 793 | 0 |
| 4:08 PM | 801 | 801 | 0 |
| 4:09 PM | 810 | 810 | 0 |
| 4:10 PM | 819 | 819 | 0 |
| 4:11 PM | 831 | 831 | 0 |
| 4:12 PM | 841 | 841 | 0 |
| 4:13 PM | 852 | 852 | 0 |
| 4:14 PM | 863 | 863 | 0 |
| 4:15 PM | 876 | 876 | 0 |
| 4:16 PM | 892 | 890 | 0 |
| 4:17 PM | 901 | 901 | 0 |
| 4:18 PM | 913 | 913 | 0 |
| 4:19 PM | 921 | 921 | 0 |
| 4:20 PM | 936 | 935 | 0 |
| 4:21 PM | 941 | 941 | 0 |
| 4:22 PM | 953 | 953 | 0 |
| 4:23 PM | 960 | 960 | 0 |
| 4:24 PM | 971 | 971 | 0 |
| 4:25 PM | 977 | 977 | 0 |
| 4:26 PM | 981 | 981 | 0 |
| 4:27 PM | 997 | 994 | 0 |
| 4:28 PM | 1001 | 1001 | 0 |
| 4:29 PM | 1014 | 1014 | 0 |
| 4:30 PM | 1024 | 1024 | 0 |
| 4:31 PM | 1034 | 1034 | 0 |
| 4:32 PM | 1042 | 1042 | 0 |
| 4:33 PM | 1051 | 1051 | 0 |
| 4:34 PM | 1058 | 1058 | 0 |
| 4:35 PM | 1068 | 1068 | 0 |
| 4:36 PM | 1074 | 1074 | 0 |
| 4:37 PM | 1087 | 1087 | 0 |
| 4:38 PM | 1099 | 1099 | 0 |
| 4:39 PM | 1119 | 1113 | 0 |
| 4:40 PM | 1127 | 1126 | 0 |
| 4:41 PM | 1140 | 1139 | 0 |
| 4:42 PM | 1155 | 1153 | 0 |
| 4:43 PM | 1159 | 1159 | 0 |
| 4:44 PM | 1171 | 1171 | 0 |
| 4:45 PM | 1177 | 1177 | 0 |
| 4:46 PM | 1183 | 1183 | 0 |
| 4:47 PM | 1194 | 1194 | 0 |
| 4:48 PM | 1209 | 1208 | 0 |
| 4:49 PM | 1225 | 1221 | 0 |
| 4:50 PM | 1254 | 1234 | 0 |
| 4:51 PM | 1266 | 1248 | 0 |
| 4:52 PM | 1279 | 1261 | 0 |
| 4:53 PM | 1287 | 1274 | 0 |
| 4:54 PM | 1294 | 1288 | 0 |
| 4:55 PM | 1296 | 1296 | 0 |
| 4:56 PM | 1304 | 1304 | 0 |
| 4:57 PM | 1315 | 1315 | 0 |
| 4:58 PM | 1324 | 1324 | 0 |
| 4:59 PM | 1335 | 1335 | 0 |
| 5:00 PM | 1348 | 1348 | 0 |
| 5:01 PM | 1371 | 1361 | 0 |
| 5:02 PM | 1386 | 1375 | 0 |
| 5:03 PM | 1394 | 1388 | 0 |
| 5:04 PM | 1402 | 1401 | 0 |
| 5:05 PM | 1409 | 1409 | 0 |
| 5:06 PM | 1415 | 1415 | 0 |
| 5:07 PM | 1425 | 1425 | 0 |
| 5:08 PM | 1432 | 1432 | 0 |
| 5:09 PM | 1441 | 1441 | 0 |
| 5:10 PM | 1455 | 1454 | 0 |
| 5:11 PM | 1477 | 1467 | 0 |
| 5:12 PM | 1489 | 1481 | 0 |
| 5:13 PM | 1503 | 1494 | 0 |
| 5:14 PM | 1515 | 1507 | 0 |
| 5:15 PM | 1523 | 1521 | 0 |
| 5:16 PM | 1536 | 1534 | 0 |
| 5:17 PM | 1543 | 1543 | 0 |
| 5:18 PM | 1560 | 1556 | 0 |
| 5:19 PM | 1572 | 1570 | 0 |
| 5:20 PM | 1581 | 1581 | 0 |
| 5:21 PM | 1592 | 1592 | 0 |
| 5:22 PM | 1603 | 1603 | 0 |
| 5:23 PM | 1609 | 1609 | 0 |
| 5:24 PM | 1616 | 1616 | 0 |
| 5:25 PM | 1625 | 1625 | 0 |
| 5:26 PM | 1632 | 1632 | 0 |
| 5:27 PM | 1642 | 1642 | 0 |
| 5:28 PM | 1653 | 1653 | 0 |
| 5:29 PM | 1659 | 1659 | 0 |
| 5:30 PM | 1679 | 1672 | 0 |
| 5:31 PM | 1687 | 1685 | 0 |
| 5:32 PM | 1695 | 1695 | 0 |
| 5:33 PM | 1709 | 1709 | 0 |
| 5:34 PM | 1721 | 1721 | 0 |
| 5:35 PM | 1732 | 1732 | 0 |
| 5:36 PM | 1748 | 1745 | 0 |
| 5:37 PM | 1756 | 1756 | 0 |
| 5:38 PM | 1765 | 1765 | 0 |
| 5:39 PM | 1775 | 1775 | 0 |
| 5:40 PM | 1788 | 1788 | 0 |
| 5:41 PM | 1799 | 1799 | 0 |
| 5:42 PM | 1804 | 1804 | 0 |
| 5:43 PM | 1814 | 1814 | 0 |
| 5:44 PM | 1823 | 1823 | 0 |
| 5:45 PM | 1834 | 1834 | 0 |
| 5:46 PM | 1845 | 1845 | 0 |
| 5:47 PM | 1862 | 1859 | 0 |
| 5:48 PM | 1877 | 1872 | 0 |
| 5:49 PM | 1890 | 1885 | 0 |
| 5:50 PM | 1904 | 1899 | 0 |
| 5:51 PM | 1915 | 1912 | 0 |
| 5:52 PM | 1926 | 1925 | 0 |
| 5:53 PM | 1938 | 1938 | 0 |
| 5:54 PM | 1950 | 1950 | 0 |
| 5:55 PM | 1961 | 1961 | 0 |
| 5:56 PM | 1973 | 1973 | 0 |
| 5:57 PM | 1989 | 1987 | 0 |
| 5:58 PM | 2005 | 2000 | 0 |
| 5:59 PM | 2016 | 2013 | 0 |

## EB 195

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 2026 PM with Project (500 vph) | PM Adjustment factor | 1.099 | PM k30 factor (R103) | 1.14 | |
| Storage Length | 1000 | No. of Storage Lanes | Ramp Meter Rate | 1 | 500 | 2-lane retrofit (use shoulder) alternate release Max rate = 1400 | |

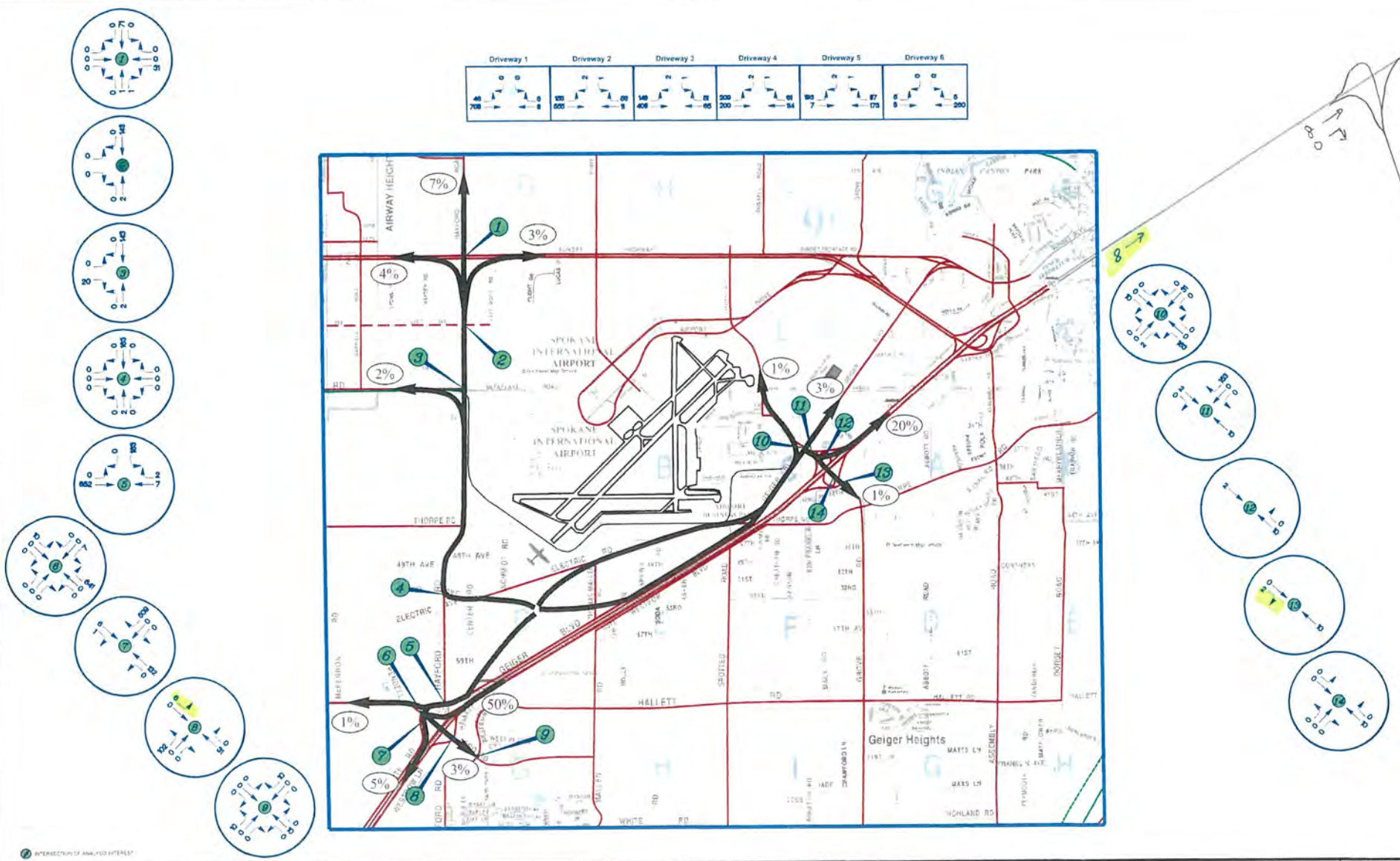
| Time | 2021 PM Volume | Adjusted Volume | Vehicles released | Vehicles in queue | Queue length | Exceed Storage |
|---|---|---|---|---|---|---|
| 3:00 PM | 13 | 15 | 8 | 6 | 157 | 0 |
| 3:01 PM | 7 | 7 | 8 | 5 | 132 | 0 |
| 3:02 PM | 13 | 15 | 8 | 12 | 289 | 0 |
| 3:03 PM | 9 | 10 | 8 | 13 | 325 | 0 |
| 3:04 PM | 11 | 12 | 8 | 17 | 421 | 0 |
| 3:05 PM | 9 | 10 | 8 | 18 | 456 | 0 |
| 3:06 PM | 12 | 13 | 8 | 23 | 583 | 0 |
| 3:07 PM | 6 | 6 | 8 | 21 | 527 | 0 |
| 3:08 PM | 6 | 6 | 8 | 19 | 471 | 0 |
| 3:09 PM | 18 | 20 | 8 | 30 | 750 | 0 |
| 3:10 PM | 6 | 6 | 8 | 28 | 694 | 0 |
| 3:11 PM | 10 | 11 | 8 | 30 | 760 | 0 |
| 3:12 PM | 8 | 9 | 8 | 31 | 765 | 0 |
| 3:13 PM | 4 | 5 | 8 | 27 | 678 | 0 |
| 3:14 PM | 11 | 12 | 8 | 31 | 775 | 0 |
| 3:15 PM | 12 | 13 | 8 | 36 | 902 | 0 |
| 3:16 PM | 8 | 9 | 8 | 36 | 907 | 0 |
| 3:17 PM | 11 | 12 | 8 | 40 | 1003 | 3 |
| 3:18 PM | 14 | 16 | 8 | 48 | 1191 | 191 |
| 3:19 PM | 16 | 17 | 8 | 56 | 1409 | 409 |
| 3:20 PM | 11 | 12 | 8 | 60 | 1506 | 506 |
| 3:21 PM | 6 | 6 | 8 | 58 | 1450 | 450 |
| 3:22 PM | 10 | 11 | 8 | 61 | 1516 | 516 |
| 3:23 PM | 8 | 9 | 8 | 61 | 1521 | 521 |
| 3:24 PM | 8 | 9 | 8 | 61 | 1525 | 525 |
| 3:25 PM | 13 | 15 | 8 | 67 | 1683 | 683 |
| 3:26 PM | 4 | 5 | 8 | 64 | 1596 | 596 |
| 3:27 PM | 4 | 5 | 8 | 60 | 1510 | 510 |
| 3:28 PM | 16 | 17 | 8 | 69 | 1728 | 728 |
| 3:29 PM | 14 | 16 | 8 | 77 | 1916 | 916 |
| 3:30 PM | 10 | 11 | 8 | 79 | 1982 | 982 |
| 3:31 PM | 10 | 11 | 8 | 82 | 2048 | 1048 |
| 3:32 PM | 9 | 10 | 8 | 83 | 2083 | 1083 |
| 3:33 PM | 11 | 12 | 8 | 87 | 2179 | 1179 |
| 3:34 PM | 9 | 10 | 8 | 89 | 2215 | 1215 |
| 3:35 PM | 18 | 20 | 8 | 100 | 2494 | 1494 |
| 3:36 PM | 17 | 18 | 8 | 110 | 2743 | 1743 |
| 3:37 PM | 16 | 17 | 8 | 118 | 2961 | 1961 |
| 3:38 PM | 7 | 7 | 8 | 117 | 2936 | 1936 |
| 3:39 PM | 12 | 13 | 8 | 122 | 3062 | 2062 |
| 3:40 PM | 10 | 11 | 8 | 125 | 3128 | 2128 |
| 3:41 PM | 7 | 7 | 8 | 124 | 3103 | 2103 |
| 3:42 PM | 9 | 10 | 8 | 126 | 3138 | 2138 |
| 3:43 PM | 8 | 9 | 8 | 126 | 3143 | 2143 |
| 3:44 PM | 13 | 15 | 8 | 132 | 3300 | 2300 |
| 3:45 PM | 10 | 11 | 8 | 135 | 3366 | 2366 |
| 3:46 PM | 9 | 10 | 8 | 136 | 3402 | 2402 |
| 3:47 PM | 16 | 17 | 8 | 145 | 3620 | 2620 |
| 3:48 PM | 23 | 26 | 8 | 162 | 4052 | 3052 |
| 3:49 PM | 9 | 10 | 8 | 163 | 4087 | 3087 |
| 3:50 PM | 13 | 15 | 8 | 170 | 4244 | 3244 |
| 3:51 PM | 10 | 11 | 8 | 172 | 4310 | 3310 |
| 3:52 PM | 11 | 12 | 8 | 176 | 4407 | 3407 |
| 3:53 PM | 7 | 7 | 8 | 175 | 4381 | 3381 |
| 3:54 PM | 2 | 2 | 8 | 169 | 4234 | 3234 |
| 3:55 PM | 10 | 11 | 8 | 172 | 4299 | 3299 |
| 3:56 PM | 13 | 15 | 8 | 178 | 4457 | 3457 |
| 3:57 PM | 7 | 7 | 8 | 177 | 4431 | 3431 |
| 3:58 PM | 18 | 20 | 8 | 188 | 4710 | 3710 |
| 3:59 PM | 10 | 11 | 8 | 191 | 4776 | 3776 |
| 4:00 PM | 9 | 10 | 8 | 192 | 4812 | 3812 |
| 4:01 PM | 11 | 12 | 8 | 196 | 4908 | 3908 |
| 4:02 PM | 13 | 15 | 8 | 203 | 5085 | 4085 |
| 4:03 PM | 11 | 12 | 8 | 206 | 5162 | 4162 |
| 4:04 PM | 12 | 13 | 8 | 212 | 5289 | 4289 |
| 4:05 PM | 14 | 16 | 8 | 219 | 5476 | 4476 |
| 4:06 PM | 10 | 11 | 8 | 222 | 5542 | 4542 |
| 4:07 PM | 13 | 15 | 8 | 228 | 5700 | 4700 |
| 4:08 PM | 6 | 6 | 8 | 226 | 5644 | 4644 |
| 4:09 PM | 9 | 10 | 8 | 227 | 5679 | 4679 |
| 4:10 PM | 8 | 9 | 8 | 227 | 5684 | 4684 |
| 4:11 PM | 11 | 12 | 8 | 231 | 5780 | 4780 |
| 4:12 PM | 9 | 10 | 8 | 233 | 5816 | 4816 |
| 4:13 PM | 10 | 11 | 8 | 235 | 5882 | 4882 |
| 4:14 PM | 10 | 11 | 8 | 238 | 5948 | 4948 |
| 4:15 PM | 12 | 13 | 8 | 243 | 6074 | 5074 |
| 4:16 PM | 14 | 16 | 8 | 250 | 6262 | 5262 |
| 4:17 PM | 8 | 9 | 8 | 251 | 6267 | 5267 |
| 4:18 PM | 11 | 12 | 8 | 255 | 6364 | 5364 |
| 4:19 PM | 8 | 9 | 8 | 255 | 6368 | 5368 |
| 4:20 PM | 13 | 15 | 8 | 261 | 6526 | 5526 |
| 4:21 PM | 4 | 5 | 8 | 258 | 6439 | 5439 |
| 4:22 PM | 11 | 12 | 8 | 261 | 6536 | 5536 |
| 4:23 PM | 7 | 7 | 8 | 260 | 6510 | 5510 |
| 4:24 PM | 10 | 11 | 8 | 263 | 6576 | 5576 |
| 4:25 PM | 6 | 6 | 8 | 261 | 6520 | 5520 |
| 4:26 PM | 3 | 4 | 8 | 256 | 6403 | 5403 |
| 4:27 PM | 14 | 16 | 8 | 264 | 6591 | 5591 |
| 4:28 PM | 3 | 4 | 8 | 259 | 6474 | 5474 |
| 4:29 PM | 12 | 13 | 8 | 264 | 6601 | 5601 |
| 4:30 PM | 9 | 10 | 8 | 265 | 6636 | 5636 |
| 4:31 PM | 9 | 10 | 8 | 267 | 6672 | 5672 |
| 4:32 PM | 8 | 9 | 8 | 267 | 6677 | 5677 |
| 4:33 PM | 8 | 9 | 8 | 267 | 6682 | 5682 |
| 4:34 PM | 7 | 7 | 8 | 266 | 6656 | 5656 |
| 4:35 PM | 9 | 10 | 8 | 268 | 6692 | 5692 |
| 4:36 PM | 6 | 6 | 8 | 265 | 6636 | 5636 |
| 4:37 PM | 12 | 13 | 8 | 270 | 6762 | 5762 |
| 4:38 PM | 11 | 12 | 8 | 274 | 6859 | 5859 |
| 4:39 PM | 18 | 20 | 8 | 286 | 7138 | 6138 |
| 4:40 PM | 8 | 9 | 8 | 286 | 7148 | 6148 |
| 4:41 PM | 11 | 12 | 8 | 290 | 7239 | 6239 |
| 4:42 PM | 14 | 16 | 8 | 297 | 7427 | 6427 |
| 4:43 PM | 3 | 4 | 8 | 292 | 7310 | 6310 |
| 4:44 PM | 11 | 12 | 8 | 296 | 7406 | 6406 |
| 4:45 PM | 6 | 6 | 8 | 294 | 7350 | 6350 |
| 4:46 PM | 6 | 6 | 8 | 292 | 7294 | 6294 |
| 4:47 PM | 10 | 11 | 8 | 294 | 7360 | 6360 |
| 4:48 PM | 13 | 15 | 8 | 301 | 7518 | 6518 |
| 4:49 PM | 14 | 16 | 8 | 308 | 7705 | 6705 |
| 4:50 PM | 27 | 29 | 8 | 329 | 8228 | 7228 |
| 4:51 PM | 11 | 12 | 8 | 333 | 8325 | 7325 |
| 4:52 PM | 11 | 12 | 8 | 337 | 8421 | 7421 |
| 4:53 PM | 8 | 9 | 8 | 337 | 8426 | 7426 |
| 4:54 PM | 7 | 7 | 8 | 336 | 8401 | 7401 |
| 4:55 PM | 1 | 1 | 8 | 329 | 8223 | 7223 |
| 4:56 PM | 8 | 9 | 8 | 329 | 8228 | 7228 |
| 4:57 PM | 10 | 11 | 8 | 332 | 8294 | 7294 |
| 4:58 PM | 8 | 9 | 8 | 332 | 8299 | 7299 |
| 4:59 PM | 10 | 11 | 8 | 335 | 8364 | 7364 |
| 5:00 PM | 12 | 13 | 8 | 340 | 8491 | 7491 |
| 5:01 PM | 21 | 23 | 8 | 354 | 8862 | 7862 |
| 5:02 PM | 13 | 15 | 8 | 361 | 9019 | 8019 |
| 5:03 PM | 8 | 9 | 8 | 361 | 9024 | 8024 |
| 5:04 PM | 7 | 7 | 8 | 360 | 8999 | 7999 |
| 5:05 PM | 7 | 7 | 8 | 359 | 8973 | 7973 |
| 5:06 PM | 6 | 6 | 8 | 357 | 8917 | 7917 |
| 5:07 PM | 9 | 10 | 8 | 358 | 8953 | 7953 |
| 5:08 PM | 7 | 7 | 8 | 357 | 8927 | 7927 |
| 5:09 PM | 8 | 9 | 8 | 357 | 8932 | 7932 |
| 5:10 PM | 13 | 15 | 8 | 364 | 9089 | 8089 |
| 5:11 PM | 20 | 22 | 8 | 377 | 9429 | 8429 |
| 5:12 PM | 11 | 12 | 8 | 381 | 9526 | 8526 |
| 5:13 PM | 12 | 13 | 8 | 386 | 9653 | 8653 |
| 5:14 PM | 11 | 12 | 8 | 390 | 9749 | 8749 |
| 5:15 PM | 8 | 9 | 8 | 390 | 9754 | 8754 |
| 5:16 PM | 11 | 12 | 8 | 394 | 9850 | 8850 |
| 5:17 PM | 7 | 7 | 8 | 393 | 9825 | 8825 |
| 5:18 PM | 16 | 17 | 8 | 402 | 10043 | 9043 |
| 5:19 PM | 11 | 12 | 8 | 406 | 10139 | 9139 |
| 5:20 PM | 8 | 9 | 8 | 406 | 10144 | 9144 |
| 5:21 PM | 10 | 11 | 8 | 408 | 10210 | 9210 |
| 5:22 PM | 10 | 11 | 8 | 411 | 10276 | 9276 |
| 5:23 PM | 6 | 6 | 8 | 409 | 10220 | 9220 |
| 5:24 PM | 7 | 7 | 8 | 408 | 10195 | 9195 |
| 5:25 PM | 8 | 9 | 8 | 408 | 10200 | 9200 |
| 5:26 PM | 7 | 7 | 8 | 407 | 10174 | 9174 |
| 5:27 PM | 9 | 10 | 8 | 408 | 10209 | 9209 |
| 5:28 PM | 10 | 11 | 8 | 411 | 10275 | 9275 |
| 5:29 PM | 6 | 6 | 8 | 409 | 10219 | 9219 |
| 5:30 PM | 19 | 21 | 8 | 421 | 10529 | 9529 |
| 5:31 PM | 7 | 7 | 8 | 420 | 10504 | 9504 |
| 5:32 PM | 8 | 9 | 8 | 420 | 10508 | 9508 |
| 5:33 PM | 12 | 13 | 8 | 425 | 10635 | 9635 |
| 5:34 PM | 11 | 12 | 8 | 429 | 10732 | 9732 |
| 5:35 PM | 10 | 11 | 8 | 432 | 10798 | 9798 |
| 5:36 PM | 14 | 16 | 8 | 439 | 10985 | 9985 |
| 5:37 PM | 8 | 9 | 8 | 440 | 10990 | 9990 |
| 5:38 PM | 8 | 9 | 8 | 440 | 10995 | 9995 |
| 5:39 PM | 9 | 10 | 8 | 441 | 11031 | 10031 |
| 5:40 PM | 12 | 13 | 8 | 446 | 11157 | 10157 |
| 5:41 PM | 10 | 11 | 8 | 449 | 11223 | 10223 |
| 5:42 PM | 4 | 5 | 8 | 445 | 11137 | 10137 |
| 5:43 PM | 9 | 10 | 8 | 447 | 11172 | 10172 |
| 5:44 PM | 9 | 10 | 8 | 448 | 11208 | 10208 |
| 5:45 PM | 10 | 11 | 8 | 451 | 11274 | 10274 |
| 5:46 PM | 10 | 11 | 8 | 454 | 11340 | 10340 |
| 5:47 PM | 16 | 17 | 8 | 462 | 11558 | 10558 |
| 5:48 PM | 13 | 15 | 8 | 469 | 11715 | 10715 |
| 5:49 PM | 12 | 13 | 8 | 474 | 11842 | 10842 |
| 5:50 PM | 12 | 13 | 8 | 479 | 11969 | 10969 |
| 5:51 PM | 10 | 11 | 8 | 481 | 12035 | 11035 |
| 5:52 PM | 10 | 11 | 8 | 484 | 12101 | 11101 |
| 5:53 PM | 11 | 12 | 8 | 488 | 12197 | 11197 |
| 5:54 PM | 11 | 12 | 8 | 492 | 12293 | 11293 |
| 5:55 PM | 10 | 11 | 8 | 494 | 12359 | 11359 |
| 5:56 PM | 11 | 12 | 8 | 498 | 12456 | 11456 |
| 5:57 PM | 14 | 16 | 8 | 506 | 12643 | 11643 |
| 5:58 PM | 14 | 16 | 8 | 513 | 12831 | 11831 |
| 5:59 PM | 10 | 11 | 8 | 516 | 12897 | 11897 |
| 3:16-4:16 | 643 | 707 | | | | |

**PEAK HOUR I-90 EB**

**THE TIME PERIOD WITH QUEUE BEYOND THE STORAGE AFTER I-90 EB PEAK HOUR**

## EB 195

| Time | Cumulative | Cumulative | Excessive Queue Length |
|---|---|---|---|
| 3:00 PM | 15 | 8 | 0 |
| 3:01 PM | 22 | 17 | 0 |
| 3:02 PM | 37 | 25 | 0 |
| 3:03 PM | 46 | 33 | 0 |
| 3:04 PM | 59 | 42 | 0 |
| 3:05 PM | 68 | 50 | 0 |
| 3:06 PM | 82 | 58 | 0 |
| 3:07 PM | 88 | 67 | 0 |
| 3:08 PM | 94 | 75 | 0 |
| 3:09 PM | 113 | 83 | 0 |
| 3:10 PM | 119 | 92 | 0 |
| 3:11 PM | 130 | 100 | 0 |
| 3:12 PM | 139 | 108 | 0 |
| 3:13 PM | 144 | 117 | 0 |
| 3:14 PM | 156 | 125 | 0 |
| 3:15 PM | 169 | 133 | 0 |
| 3:16 PM | 178 | 142 | 0 |
| 3:17 PM | 190 | 150 | 3 |
| 3:18 PM | 206 | 158 | 191 |
| 3:19 PM | 223 | 167 | 409 |
| 3:20 PM | 235 | 175 | 506 |
| 3:21 PM | 241 | 183 | 450 |
| 3:22 PM | 252 | 192 | 516 |
| 3:23 PM | 261 | 200 | 521 |
| 3:24 PM | 269 | 208 | 525 |
| 3:25 PM | 284 | 217 | 683 |
| 3:26 PM | 289 | 225 | 596 |
| 3:27 PM | 294 | 233 | 510 |
| 3:28 PM | 311 | 242 | 728 |
| 3:29 PM | 327 | 250 | 916 |
| 3:30 PM | 338 | 258 | 982 |
| 3:31 PM | 349 | 267 | 1048 |
| 3:32 PM | 358 | 275 | 1083 |
| 3:33 PM | 371 | 283 | 1179 |
| 3:34 PM | 380 | 292 | 1215 |
| 3:35 PM | 400 | 300 | 1494 |
| 3:36 PM | 418 | 308 | 1743 |
| 3:37 PM | 435 | 317 | 1961 |
| 3:38 PM | 442 | 325 | 1936 |
| 3:39 PM | 456 | 333 | 2062 |
| 3:40 PM | 467 | 342 | 2128 |
| 3:41 PM | 474 | 350 | 2103 |
| 3:42 PM | 484 | 358 | 2138 |
| 3:43 PM | 492 | 367 | 2143 |
| 3:44 PM | 507 | 375 | 2300 |
| 3:45 PM | 518 | 383 | 2366 |
| 3:46 PM | 528 | 392 | 2402 |
| 3:47 PM | 545 | 400 | 2620 |
| 3:48 PM | 570 | 408 | 3052 |
| 3:49 PM | 580 | 417 | 3087 |
| 3:50 PM | 595 | 425 | 3244 |
| 3:51 PM | 606 | 433 | 3310 |
| 3:52 PM | 618 | 442 | 3407 |
| 3:53 PM | 625 | 450 | 3381 |
| 3:54 PM | 628 | 458 | 3234 |
| 3:55 PM | 639 | 467 | 3299 |
| 3:56 PM | 653 | 475 | 3457 |
| 3:57 PM | 661 | 483 | 3431 |
| 3:58 PM | 680 | 492 | 3710 |
| 3:59 PM | 691 | 500 | 3776 |
| 4:00 PM | 701 | 508 | 3812 |
| 4:01 PM | 713 | 517 | 3908 |
| 4:02 PM | 728 | 525 | 4065 |
| 4:03 PM | 740 | 533 | 4162 |
| 4:04 PM | 753 | 542 | 4289 |
| 4:05 PM | 769 | 550 | 4476 |
| 4:06 PM | 780 | 558 | 4542 |
| 4:07 PM | 795 | 567 | 4700 |
| 4:08 PM | 801 | 575 | 4644 |
| 4:09 PM | 810 | 583 | 4679 |
| 4:10 PM | 819 | 592 | 4684 |
| 4:11 PM | 831 | 600 | 4780 |
| 4:12 PM | 841 | 608 | 4816 |
| 4:13 PM | 852 | 617 | 4882 |
| 4:14 PM | 863 | 625 | 4948 |
| 4:15 PM | 876 | 633 | 5074 |
| 4:16 PM | 892 | 642 | 5262 |
| 4:17 PM | 901 | 650 | 5267 |
| 4:18 PM | 913 | 658 | 5364 |
| 4:19 PM | 921 | 667 | 5368 |
| 4:20 PM | 936 | 675 | 5526 |
| 4:21 PM | 941 | 683 | 5439 |
| 4:22 PM | 953 | 692 | 5536 |
| 4:23 PM | 960 | 700 | 5510 |
| 4:24 PM | 971 | 708 | 5576 |
| 4:25 PM | 977 | 717 | 5520 |
| 4:26 PM | 981 | 725 | 5403 |
| 4:27 PM | 997 | 733 | 5591 |
| 4:28 PM | 1001 | 742 | 5474 |
| 4:29 PM | 1014 | 750 | 5601 |
| 4:30 PM | 1024 | 758 | 5636 |
| 4:31 PM | 1034 | 767 | 5672 |
| 4:32 PM | 1042 | 775 | 5677 |
| 4:33 PM | 1051 | 783 | 5682 |
| 4:34 PM | 1058 | 792 | 5656 |
| 4:35 PM | 1068 | 800 | 5692 |
| 4:36 PM | 1074 | 808 | 5636 |
| 4:37 PM | 1087 | 817 | 5762 |
| 4:38 PM | 1099 | 825 | 5859 |
| 4:39 PM | 1119 | 833 | 6138 |
| 4:40 PM | 1127 | 842 | 6143 |
| 4:41 PM | 1140 | 850 | 6239 |
| 4:42 PM | 1155 | 858 | 6427 |
| 4:43 PM | 1159 | 867 | 6310 |
| 4:44 PM | 1171 | 875 | 6406 |
| 4:45 PM | 1177 | 883 | 6350 |
| 4:46 PM | 1183 | 892 | 6294 |
| 4:47 PM | 1194 | 900 | 6360 |
| 4:48 PM | 1209 | 908 | 6518 |
| 4:49 PM | 1225 | 917 | 6705 |
| 4:50 PM | 1254 | 925 | 7228 |
| 4:51 PM | 1266 | 933 | 7325 |
| 4:52 PM | 1279 | 942 | 7421 |
| 4:53 PM | 1287 | 950 | 7426 |
| 4:54 PM | 1294 | 958 | 7401 |
| 4:55 PM | 1296 | 967 | 7223 |
| 4:56 PM | 1304 | 975 | 7228 |
| 4:57 PM | 1315 | 983 | 7294 |
| 4:58 PM | 1324 | 992 | 7299 |
| 4:59 PM | 1335 | 1000 | 7364 |
| 5:00 PM | 1348 | 1008 | 7491 |
| 5:01 PM | 1371 | 1017 | 7862 |
| 5:02 PM | 1386 | 1025 | 8019 |
| 5:03 PM | 1394 | 1033 | 8024 |
| 5:04 PM | 1402 | 1042 | 7999 |
| 5:05 PM | 1409 | 1050 | 7973 |
| 5:06 PM | 1415 | 1058 | 7917 |
| 5:07 PM | 1425 | 1067 | 7953 |
| 5:08 PM | 1432 | 1075 | 7927 |
| 5:09 PM | 1441 | 1083 | 7932 |
| 5:10 PM | 1455 | 1092 | 8089 |
| 5:11 PM | 1477 | 1100 | 8429 |
| 5:12 PM | 1489 | 1108 | 8526 |
| 5:13 PM | 1503 | 1117 | 8653 |
| 5:14 PM | 1515 | 1125 | 8749 |
| 5:15 PM | 1523 | 1133 | 8754 |
| 5:16 PM | 1536 | 1142 | 8850 |
| 5:17 PM | 1543 | 1150 | 8825 |
| 5:18 PM | 1560 | 1158 | 9043 |
| 5:19 PM | 1572 | 1167 | 9139 |
| 5:20 PM | 1581 | 1175 | 9144 |
| 5:21 PM | 1592 | 1183 | 9210 |
| 5:22 PM | 1603 | 1192 | 9276 |
| 5:23 PM | 1609 | 1200 | 9220 |
| 5:24 PM | 1616 | 1208 | 9195 |
| 5:25 PM | 1625 | 1217 | 9200 |
| 5:26 PM | 1632 | 1225 | 9174 |
| 5:27 PM | 1642 | 1233 | 9209 |
| 5:28 PM | 1653 | 1242 | 9275 |
| 5:29 PM | 1659 | 1250 | 9219 |
| 5:30 PM | 1679 | 1258 | 9529 |
| 5:31 PM | 1687 | 1267 | 9504 |
| 5:32 PM | 1695 | 1275 | 9508 |
| 5:33 PM | 1709 | 1283 | 9635 |
| 5:34 PM | 1721 | 1292 | 9732 |
| 5:35 PM | 1732 | 1300 | 9798 |
| 5:36 PM | 1748 | 1308 | 9985 |
| 5:37 PM | 1756 | 1317 | 9990 |
| 5:38 PM | 1765 | 1325 | 9995 |
| 5:39 PM | 1775 | 1333 | 10031 |
| 5:40 PM | 1788 | 1342 | 10157 |
| 5:41 PM | 1799 | 1350 | 10223 |
| 5:42 PM | 1804 | 1358 | 10137 |
| 5:43 PM | 1814 | 1367 | 10172 |
| 5:44 PM | 1823 | 1375 | 10208 |
| 5:45 PM | 1834 | 1383 | 10274 |
| 5:46 PM | 1845 | 1392 | 10340 |
| 5:47 PM | 1862 | 1400 | 10558 |
| 5:48 PM | 1877 | 1408 | 10715 |
| 5:49 PM | 1890 | 1417 | 10842 |
| 5:50 PM | 1904 | 1425 | 10969 |
| 5:51 PM | 1915 | 1433 | 11035 |
| 5:52 PM | 1926 | 1442 | 11101 |
| 5:53 PM | 1938 | 1450 | 11197 |
| 5:54 PM | 1950 | 1458 | 11293 |
| 5:55 PM | 1961 | 1467 | 11359 |
| 5:56 PM | 1973 | 1475 | 11456 |
| 5:57 PM | 1989 | 1483 | 11643 |
| 5:58 PM | 2005 | 1492 | 11831 |
| 5:59 PM | 2016 | 1500 | 11897 |

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QC. REVIEW BY: ###
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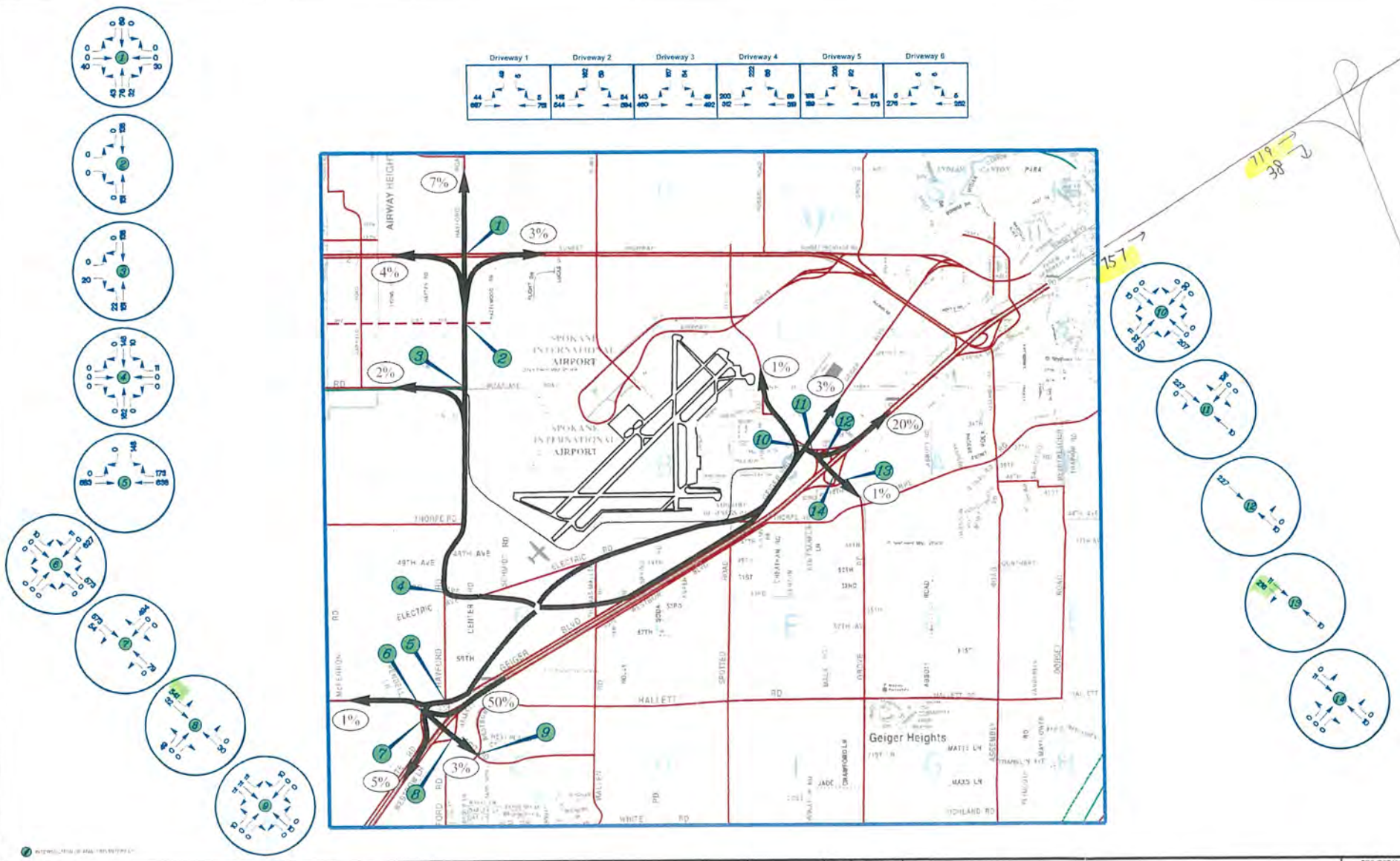
TRAMMEL - PROJECT ROSE DISTRIBUTION FACILITY
SPOKANE COUNTY WASHINGTON
PROJECT TRIP DISTRIBUTION AND ASSIGNMENT, TYPICAL EMPLOYMENT CONDITION
AM PEAK HOUR

PROJECT NUMBER 5148003.010
SHEET NUMBER #
DRAWING NUMBER F6

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SPOKANE COUNTY WASHINGTON
PROJECT TRIP DISTRIBUTION AND ASSIGNMENT, TYPICAL EMPLOYMENT CONDITION
PM PEAK HOUR

PROJECT NUMBER 5148003.010
SHEET NUMBER #
DRAWING NUMBER F7

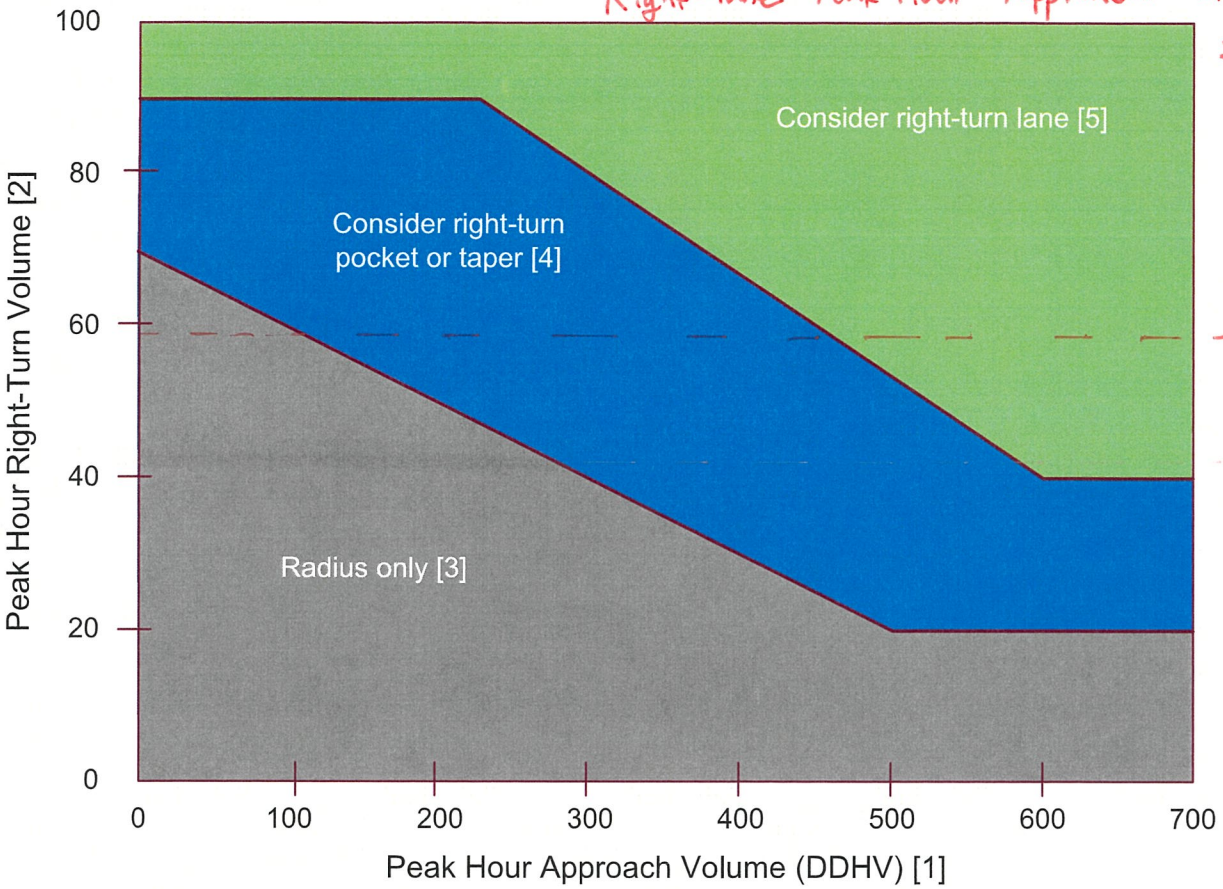
# RIGHT TURN LANE WARRANT ANALYSIS

Inland Empire Way & US 195



## Exhibit 1310-11 Right-Turn Lane Guidelines

SB Right-Turn Vol. ⇒ 59 vph
Right-lane Peak Hour Approach Vol. (DDHV) ⇒ 1,230 vph





Notes:

[1] For two-lane highways, use the peak hour DDHV (through + right-turn). For multilane, highways (posted speed 45 mph or above), use the right-lane peak hour approach volume (through + right-turn).

[2] When all three of the following conditions are met, reduce the right-turn DDHV by 20:

- The posted speed is 45 mph or below
- The right-turn volume is greater than 40 VPH
- The peak hour approach volume (DDHV) is less than 300 VPH

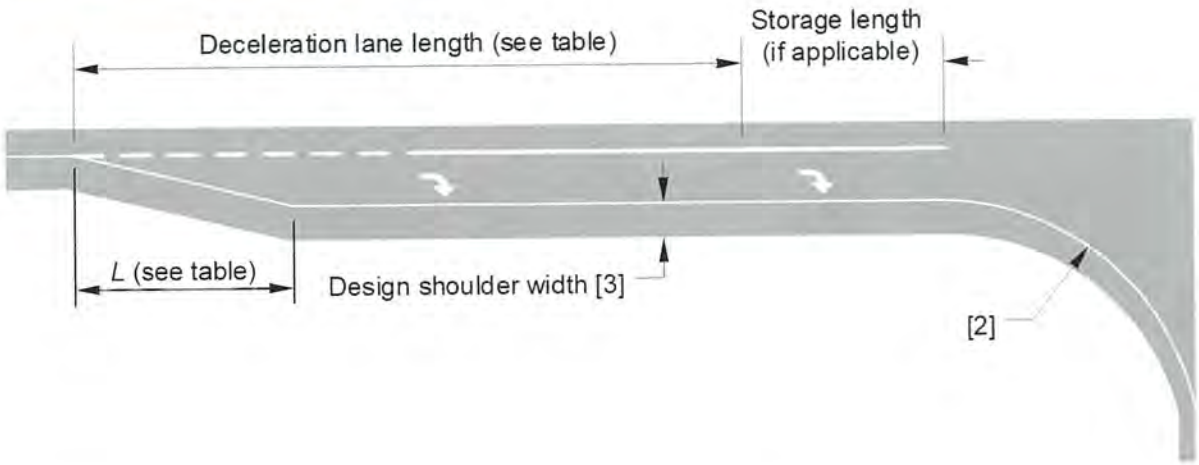
[3] For right-turn corner design, see Exhibit 1310-6.

[4] For right-turn pocket or taper design, see Exhibit 1310-12.

[5] For right-turn lane design, see Exhibit 1310-13.

An acceleration lane (see Exhibit 1310-14) is not as advantageous because entering drivers can wait for an opportunity to merge without disrupting through traffic. However, acceleration lanes for left-turning vehicles provide a benefit by allowing the turn to be made in two movements.

### Exhibit 1310-13 Right-Turn Lane




| Highway Design Speed (mph) | Deceleration Lane Length (ft) |
|---|---|
| 30 | 160 [1] |
| 35 | 220 |
| 40 | 275 |
| 45 | 350 |
| 50 | 425 |
| 55 | 515 |
| 60 | 605 |
| 65 | 715 |
| 70 | 820 |

**Minimum Deceleration Lane Length (ft)**

| Posted Speed Limit | *L* |
|---|---|
| Below 40 mph | 40 ft |
| 40 mph or above | 100 ft |

| Grade | Upgrade | Downgrade |
|---|---|---|
| 3% to less than 5% | 0.9 | 1.2 |
| 5% or more | 0.8 | 1.35 |

**Adjustment Multiplier for Grades 3% or Greater**

Notes:

[1] When adjusting for grade, do not reduce the deceleration lane to less than 150 ft.

[2] For right-turn corner design, see Exhibit 1310-6.

[3] See 1310.03(6) and Chapter 1230.

**General:**

For pavement marking details, see the *Standard Plans* and the MUTCD.