



# MEMORANDUM

**TO:** Valley County Planning and Zoning  
**FROM:** Crestline Engineers, Inc.  
**CC:** Craig Groves – Owner  
Bonnie Layton – NV5  
**DATE:** January 31, 2024  
**RE:** MacGregor Townsite PUD – Additional Concerns

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During the Valley County Planning and Zoning Commission meeting on January 11, 2024, to discuss the MacGregor Townsite PUD project some additional concerns were raised about the Traffic Impact Study, water impacts, wastewater impacts, and on-site soil conditions. Crestline Engineers, Inc. (Crestline) has prepared the following memo to help address these concerns.

## **Traffic Impact Study**

During the Planning and Zoning (P&Z) meeting concerns were raised about the Traffic Impact Study (TIS) not being completed during the peak travel season. NV5 coordinated the timing of the TIS with the Idaho Transportation Department (ITD) to determine the best time to complete the traffic counts for the study which fell outside the peak travel season.

To determine the impact during the peak travel season NV5 proposed to adjust the traffic counts in the study for the peak travel season. NV5 has reached out to ITD about the seasonal adjustment factor used in the area to adjust the traffic count during peak travel season. Applying a seasonal factor to traffic counts is a common method to adjust traffic counts for peak travel periods.

A copy of the revised TIS including adjusted traffic volumes for seasonal and day-of-week factors is attached to this Memorandum.

## **North Lake Recreational Sewer & Water District Coordination**

On January 12, 2024, Crestline and the Owner presented the PUD to the North Lake Recreational Sewer & Water District (NLRSWD/District) Staff and Board of Directors. The presentation proceeded with a discussion about density, future District improvements and planning efforts as well as an explanation of some of the more recent Fir Grove water system changes and construction related issues experienced by the neighbors. The introduction to the project seemed to be well received and it was agreed to be placed on the Districts agenda for an Annexation Public Hearing on March 8, 2024. Additionally, the District agreed to provide DRAFT copies of their recently submitted Water Master Planning and Wastewater Facility Planning Studies to the Idaho Department of Environmental Quality (IDEQ) which include potential expansion and improvements to the areas surrounding the project. Copies of pertinent pages from each of the planning studies are attached to this Memorandum.

### Water System Impacts

The proposed PUD is located within the Districts Fir Grove water system area. According to the draft Master Planning Study the Fir Grove system has sufficient water rights but lacks the ability to deliver the water in the future when all current commitments are met. To provide adequate flow to the Fir Grove area NLRSD would like to build a new well, storage tank, and booster station located within the proposed development as outlined within the Districts selected Alternative 2 and as shown in Figure 7-5, Fir Grove Alternative 2 Layout.

The MacGregor Townsite PUD will also fit within the proposed Fir Grove Buildout System as shown in the attached Figure 8-18 of the draft planning study. Review of Figure 8-18 proposes water mains to be located along Loomis Lane and extending to the east of State Highway 55 as well as a water main heading north towards the City of Donnelly.

### Wastewater System Impacts

Currently as proposed, the wastewater from the proposed PUD would be connected to the Districts Southern Conveyance area as identified in Figure 7-2 of the draft Wastewater Facility Planning Study. The draft study indicates that existing lift stations in the area are near capacity and upgrades are needed. The current recommendation stated in the draft masterplan is to upsize the existing trunklines from 10-inch pipe to 15-inch pipe. Upgrading the pipe will allow NLRSD to service committed and buildout flows without the need to build additional infrastructure at this time.

The MacGregor Townsite PUD will also fit within the anticipated expansion area of the NLRSD wastewater collection system. The draft wastewater facility planning study has looked at potential future expansion within and adjacent to the project area. As proposed, the PUD is located within the East Northlake Buildout Growth Area which anticipates an additional 1,052 EDUs including and adjacent to the PUD. At full buildout, the MacGregor Townsite PUD would need approximately 335 residential EDUs, which is about one-third of the EDUs accounted for in the draft planning study, not including additional EDUs that may be generated within the common area amenities.

### On-site Soil Conditions

Crestline examined the existing soils on site using the Web Soil Survey from the USDA. The soil report states the existing soil on-site consists of three types of soils, Donnel sandy loam, Duston sandy loam, and Roseberry coarse sandy loam.

Donnel sandy loam is considered by the USDA to be a well-drained soil. Donnel sandy loam covers most of the property and can be found in the southwest corner and middle of the property. Duston sandy loam is considered by the USDA to be a well-drained soil. Duston sandy loam can be found in the southeast corner of the property. Roseberry coarse sandy loam is considered by the USDA to be a poorly drained soil and can be found in the north and western sections of the property. Well-drained soils make up approximately 53% of the total property area while the poor drained soils make up approximately 47% of the total property area.

ALLWEST completed a preliminary geotechnical evaluation of the property on August 3, 2023, and is of the opinion the site is suitable for the planned development. In section 6.1 of the

evaluation ALLWEST stated there are some unsuitable materials that would have to be removed before placing a building, however, in section 6.2 of the report they state, “On-site soils may be used as general grading fills or as utility trench backfills.” In the attached follow up email correspondence from Kevin Dyekman with ALLWEST on November 15, 2023, it was further clarified that “on-site soils meet our criteria for “site grading fill” in our report and may be used to build up lots or in other fill areas. The only soils that are restricted to only be used in berms/landscape areas would be any soils generated from site stripping which will contain abundant roots and organic material.”

Based on the comments from ALLWEST and examining the soils found within the USDA Web Soil Survey the soils on-site appear to be suitable for use across the site. Crestline and the Owner will also continue to work with ALLWEST during all phases of the construction/design process to better understand the soils on the property and implement any appropriate mitigation measures for any discovered poorly drained soils.

Attachments:

- Traffic Impact Study, Revision 1 (166 Pages)
- Pages from NLRSD Water Master Plan (Draft, 8 Pages)
- Pages from NLRSD Wastewater Master Plan (Draft, 6 Pages)
- Custom Soil Resource Report for Valley Area, Idaho, Parts of Adams and Valley Counties (20 pages)
- Pages from ALLWEST Preliminary Geotechnical Evaluation (2 Pages)
- Email from Kevin Dyekman from ALLWEST discussing on-site soil reuse (2 Pages)

TRAFFIC IMPACT STUDY FOR

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# McGREGOR SUBDIVISION DEVELOPMENT DONNELLY, ID (Revision 1)

**DATE:**  
February 1, 2024

**LOCATION:**  
Donnelly, ID

**PREPARED FOR:**  
Park Pointe Development  
6223 N. Discovery Way, Suite 120  
Boise, ID 83713

**PREPARED BY:**  
NV5  
690 S. Industry Way, Suite 10  
Meridian, ID 83642



2/1/2024

Traffic Impact Study for  
Sunset Ridge Residential Development  
NV5-3123097.00

**NV5**

## EXECUTIVE SUMMARY

This traffic impact study was prepared in accordance with the Idaho Transportation Department guidelines provided by ITD District 3 . It evaluates the traffic impacts associated with the McGregor Subdivision located south of Donnelly, ID. The study's findings and recommendations are summarized below.

### Proposed Development

McGregor is a proposed development consisting of 335 single-family dwelling units on a 158.71-acre parcel located south of Loomis Lane and West of Old State Road in Valley County. The development is planned to be constructed over the next fifteen years and will be completed by 2038. The proposed development is expected to generate 3,404 daily trips, 236 AM peak hour trips, and 403 PM peak hour trips. Access to the site will be provided at one location via Loomis Lane and two locations along Old State Road. The primary roadway network serving this proposed subdivision includes the following roadway intersections:

1. Loomis Lane & Old State Road
2. Loomis Lane & State Highway 55
3. Old State Road & State Highway 55
4. Future Site Driveway 1 & Loomis Lane
5. Future Site Driveway 2 & Old State Road
6. Future Site Driveway 3 & Old State Road

### Proposed Mitigation for Existing Traffic (2023)

Traffic conditions were analyzed with the current roadway lane configurations and intersection control. All intersections perform above acceptable LOS D but turning volumes at the intersection of State Highway 55 and Old State Road warrant a southbound right-turn lane and is recommended.

### Proposed Mitigation for Background Traffic (No-Build 2028, 2033, 2038)

All intersections perform above acceptable LOS D during each No-Build condition but ambient growth of the existing network warrant turn lanes without the contribution of traffic by the development, so a southbound right-turn lane is recommended at the intersection of Old State Road and Loomis Lane . Additionally due to ambient growth, a northbound left-turn lane is warranted and recommended at the intersection of State Highway 55 and Loomis Lane.

### Proposed Mitigation for Site Plus Background Traffic (Build 2028, 2033, 2038)

All intersections perform above acceptable LOS D with the exception of the State Highway 55 and Loomis Lane intersection as well as the State Highway 55 and Old State Road intersection. These intersections have approaches which experience LOS E by the build year 2038.

With the implementation of mitigations recommended during the Existing conditions, during the No-Build conditions, as well as newly warranted right-turn lane for the Build conditions at the intersection of State Highway 55 and Loomis Lane, all approaches perform at or above acceptable LOS D.

A southbound right-turn lane is recommended at the intersection of State Highway 55 and Loomis Lane.

## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	i
Proposed Development .....	1
Existing Conditions.....	5
A.1.    Transportation Facilities .....	5
A.1.1.    Roadways .....	5
A.1.2.    Transit Service.....	5
A.1.3.    Bicycle and Pedestrian Facilities .....	5
A.1.4.    Geometrics .....	5
A.2.    Traffic Volume .....	5
A.3.    Existing Levels of Service .....	9
A.4.    Turn Lane Analysis – Existing Conditions (2023) .....	10
Background Conditions .....	11
B.1.    Planned Roadway and Approved Development Projects .....	11
B.2.    Background Data (No-Build 2038) .....	11
B.3.    Background Levels of Service .....	13
B.4.    Turn Lane Analysis – Background Growth (No Build) .....	14
Projected Traffic .....	15
C.1.    Project Trip Generation (Build 2028, 2033, 2038) .....	15
C.2.    Site Access & Circulation.....	16
C.3.    Internal Capture Adjustment .....	16
C.4.    Trip Distribution and Assignment.....	18
C.5.    Build Condition Capacity Analysis (2028, 2033, 2038).....	22
C.6.    Turn Lane Analysis – Build Condition (2026, 2027, 2028).....	24
Conclusions and Recommendations .....	25
D.1.    Capacity Analysis Conclusions .....	25
D.2.    Proposed Mitigation for Existing Traffic (2023) .....	25
D.3.    Proposed Mitigation for Background Traffic (No-Build 2038).....	25
D.4.    Proposed Mitigation for Site Plus Background Traffic (Build 2028, 2033, 2038) .....	26
APPENDIX A: Site Plan .....	A
APPENDIX B: Traffic Counts.....	B
APPENDIX C: HCM Reports.....	C
APPENDIX D: Turn Lane Warrant .....	D
APPENDIX E: Growth Rate Calculations.....	E

## LIST OF TABLES

Table 1: Roadway Classification .....	5
Table 2: Level of Service Criteria .....	9
Table 3: Intersection Level of Service Results – Existing Conditions (2023) .....	9
Table 4: Intersection Level of Service Results – Background Growth AM Peak Hour (No-Build) .....	13
Table 5: Intersection Level of Service Results – Background Growth PM Peak Hour (No-Build) .....	13
Table 6: Trip Generation (Build 2038) .....	15
Table 7: Trip Generation Adjusted for Internal Capture (Build 2038) .....	15
Table 8: Intersection Level of Service Results – AM Build Conditions .....	22
Table 9: Intersection Level of Service Results – PM Build Conditions .....	22
Table 10: Build (2038) with Mitigations .....	22

## LIST OF FIGURES

Figure 1. Vicinity Map .....	2
Figure 2. Site Aerial and Study Intersections .....	3
Figure 3. Development Site Plan with Phasing .....	4
Figure 4. Roadway Geometrics .....	7
Figure 5. Existing Traffic Volumes Adjusted w/Seasonal and Day-of-Week Factors (2023) .....	8
Figure 6. No-Build Traffic Volume (2038) .....	12
Figure 7. Conceptual Site Plan .....	17
Figure 8. Trip Distribution (Build 2038) .....	19
Figure 9. Total Project Trips (Build 2038) .....	20
Figure 10. Build 2038 Traffic Volumes .....	21

## Proposed Development

A new residential subdivision is proposed for development along Loomis Lane and Old State Road about 2.25 miles south of Donnelly, Idaho. The proposed development will consist of 335 single-family homes. The development will include a Community/Open Space/Public Park containing a Skating Rink, a Community Center, as well as a possible Beer/Wine/Coffee Pub. The Community/Open Space/Public Park area will also dedicate an area for an outdoor concert/food truck court. One access driveway is proposed on Loomis Lane. A second and third access will be provided via Old State Road.

The existing site is a Planned Unit Development located within Valley County just outside Donnelly City limits and is currently zoned 101 Irrigated Crop Land. Buildout of the subdivision is expected to occur in three stages, Phase 1&2 to be completed by year 2028, Phases 3&4 to be completed by 2033, and Phases 5&6 to be completed by 2038.

The following intersections were examined as part of this study:

1. Loomis Lane & Old State Road
2. Loomis Lane & State Highway 55
3. Old State Road & State Highway 55
4. Future Site Driveway 1 & Loomis Lane
5. Future Site Driveway 2 & Old State Road
6. Future Site Driveway 3 & Old State Road

The site's location is shown in **Figure 1**. The intersections studied for this development are shown in **Figure 2**. The proposed site plan with phasing is shown in **Figure 3**.

Figure 1. Vicinity Map

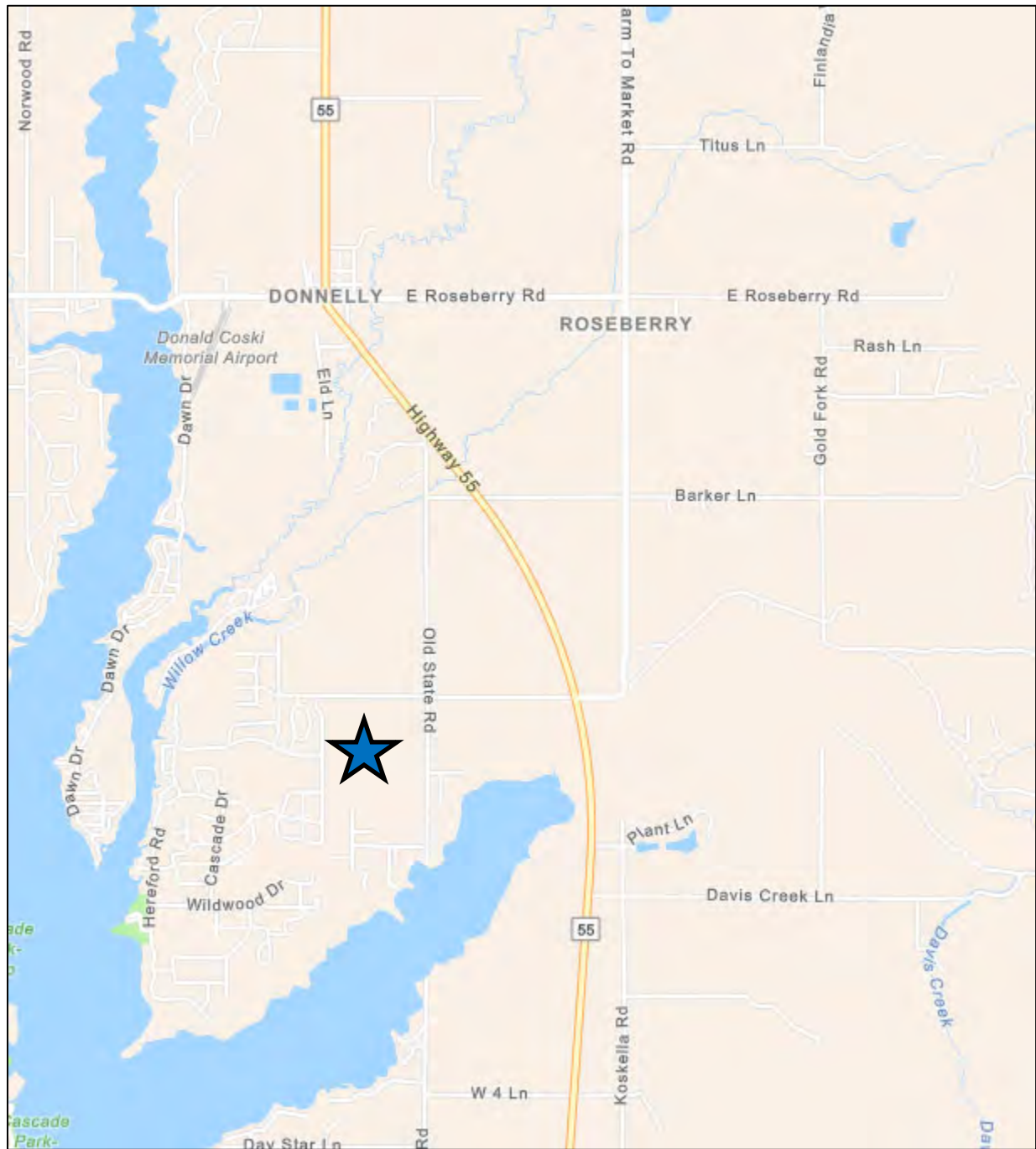


Figure 2. Site Aerial and Study Intersections

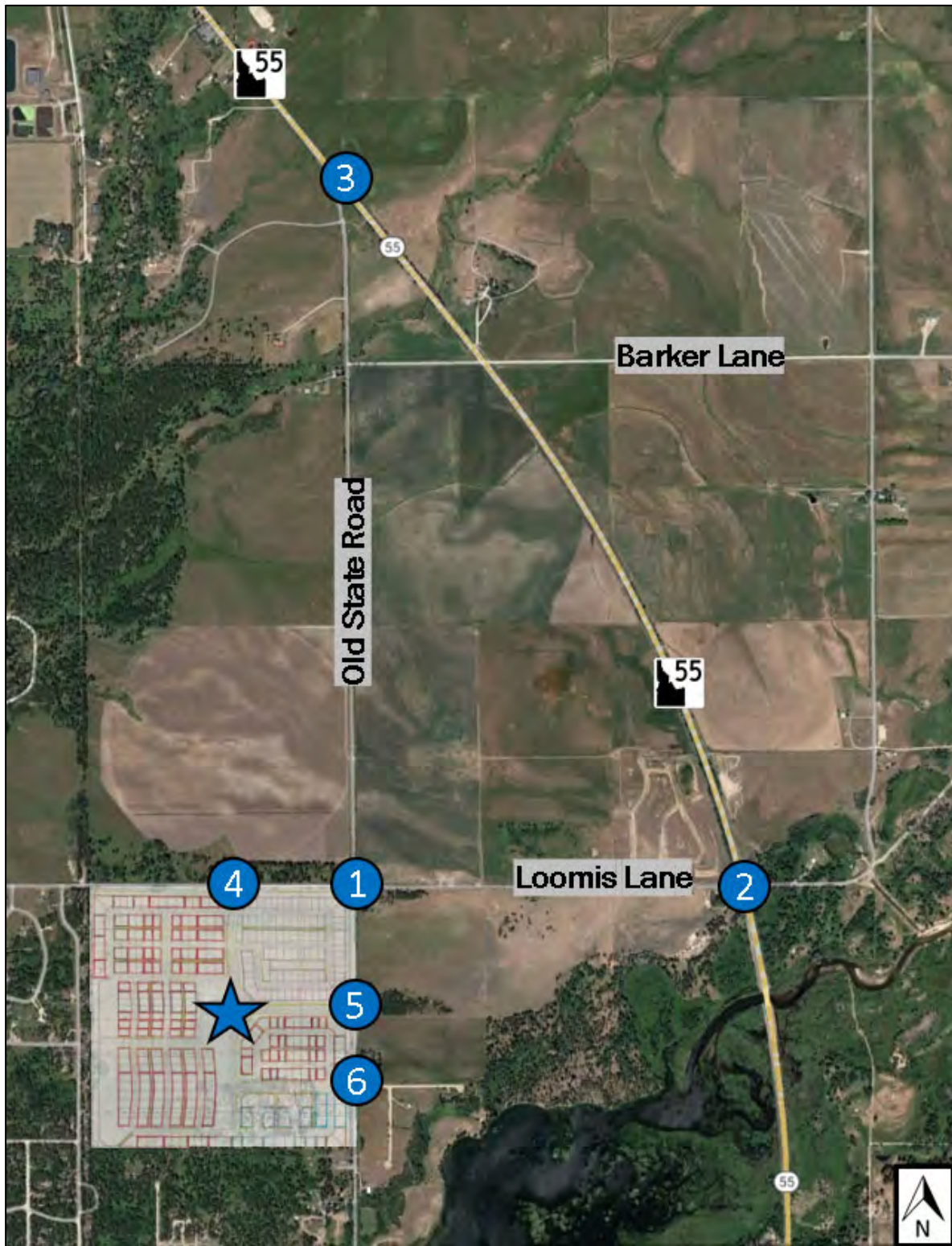
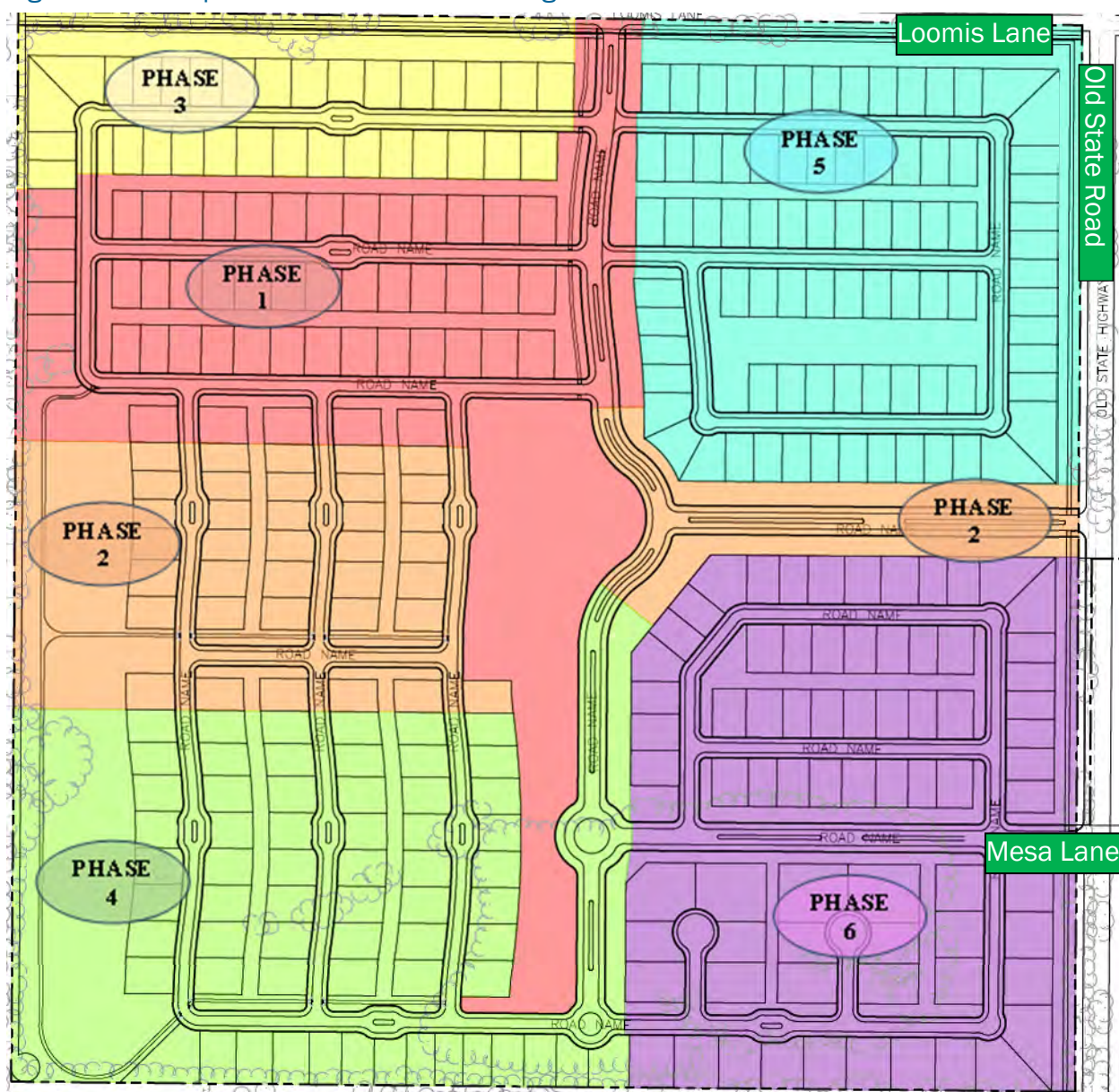


Figure 3. Development Site Plan with Phasing



- Phases 1&2 to be completed in 2028
- Phases 3&4 to be completed in 2033
- Phases 5&6 to be completed in 2038

## Existing Conditions

### A.1. Transportation Facilities

#### A.1.1. Roadways

**Loomis Lane** is an east-west county-maintained roadway with one lane in each direction. The roadway is classified as a Local Rural roadway with a posted speed limit of 35 miles per hour (mph).

**Old State Road** is a north-south county-maintained roadway with one lane in each direction. The roadway is classified as a Local Rural roadway with a posted speed limit of 35 mph.

**State Highway 55** is a north-south state-maintained roadway with one lane in each direction. The roadway is classified as a Principal Arterial with a posted speed limit of 65 mph in the study area.

Table 1: Roadway Classification

Roadway	Classification <sup>1</sup>	Cross Section	Posted Speed	AADT <sup>2</sup> (vpd)
Loomis Lane	Local Rural	2-lane Undivided	35 mph	1,168
Old State Road	Local Rural	2-lane Undivided	35 mph	167 (south of Loomis Ln)
State Highway 55	Principal Arterial	2-lane Undivided	65 mph	4,768

<sup>1</sup> Source: Idaho Transportation Department (ITD) Statewide Functional Classification Map

<sup>2</sup> Source: 2023 Field Collected Data

#### A.1.2. Transit Service

There are no transit routes available in the immediate vicinity.

#### A.1.3. Bicycle and Pedestrian Facilities

Bicycle lanes are not present along Loomis Lane, Old State Road, or State Highway 55. Sidewalks are not present within the study area.

#### A.1.4. Geometrics

All intersections are stop-controlled at the minor roadway. The specific roadway lanes and traffic control designation are shown in **Figure 4**.

### A.2. Traffic Volume

New peak hour intersection turning movement counts were collected on Wednesday, November 8, 2023. Intersection turning movement counts were recorded between 7:00 AM and 9:00 AM to isolate the AM peak hour condition, and again between 4:00 PM and 6:00 PM to isolate the PM peak hour conditions. In addition, 24-hour tube counts were collected along Loomis Lane and along Old State Road.

Because November is identified as the shoulder season (off peak) for the area, the Idaho

Transportation Department was consulted to identify seasonal factors to apply to the collected traffic counts so that they reflect more accurately the traffic volumes that would be expected during the peak season of the year. Working with an ITD Traffic Analyst the monthly seasonal factor of 1.5% was identified and the day-of-week factor of 1.15% was identified. Each factor was applied to the collected turning movement counts and used as the baseline counts for this study. Existing traffic Volumes adjusted with seasonal and day-of-week factors are shown in **Figure 5**.

Figure 4. Roadway Geometrics

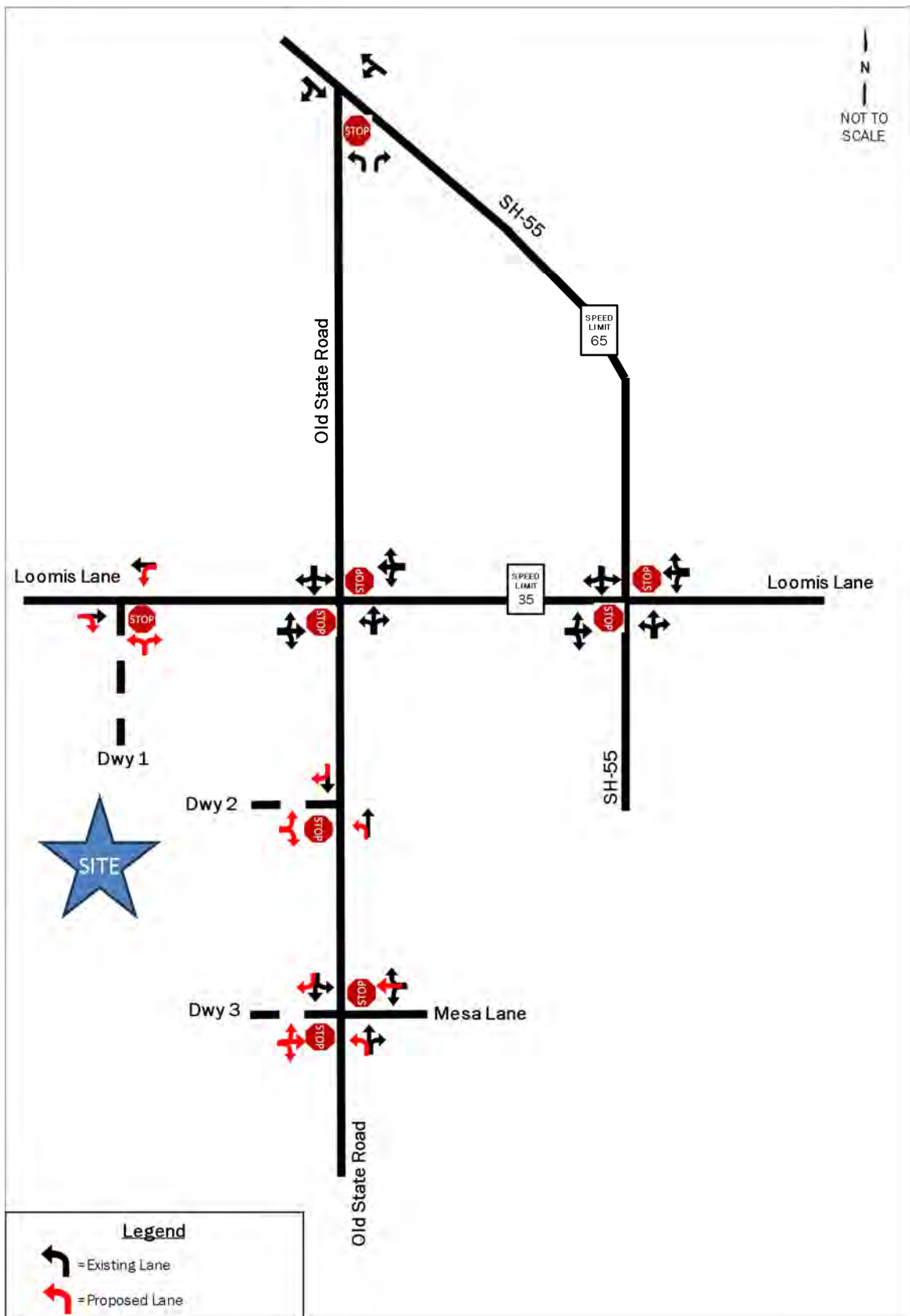
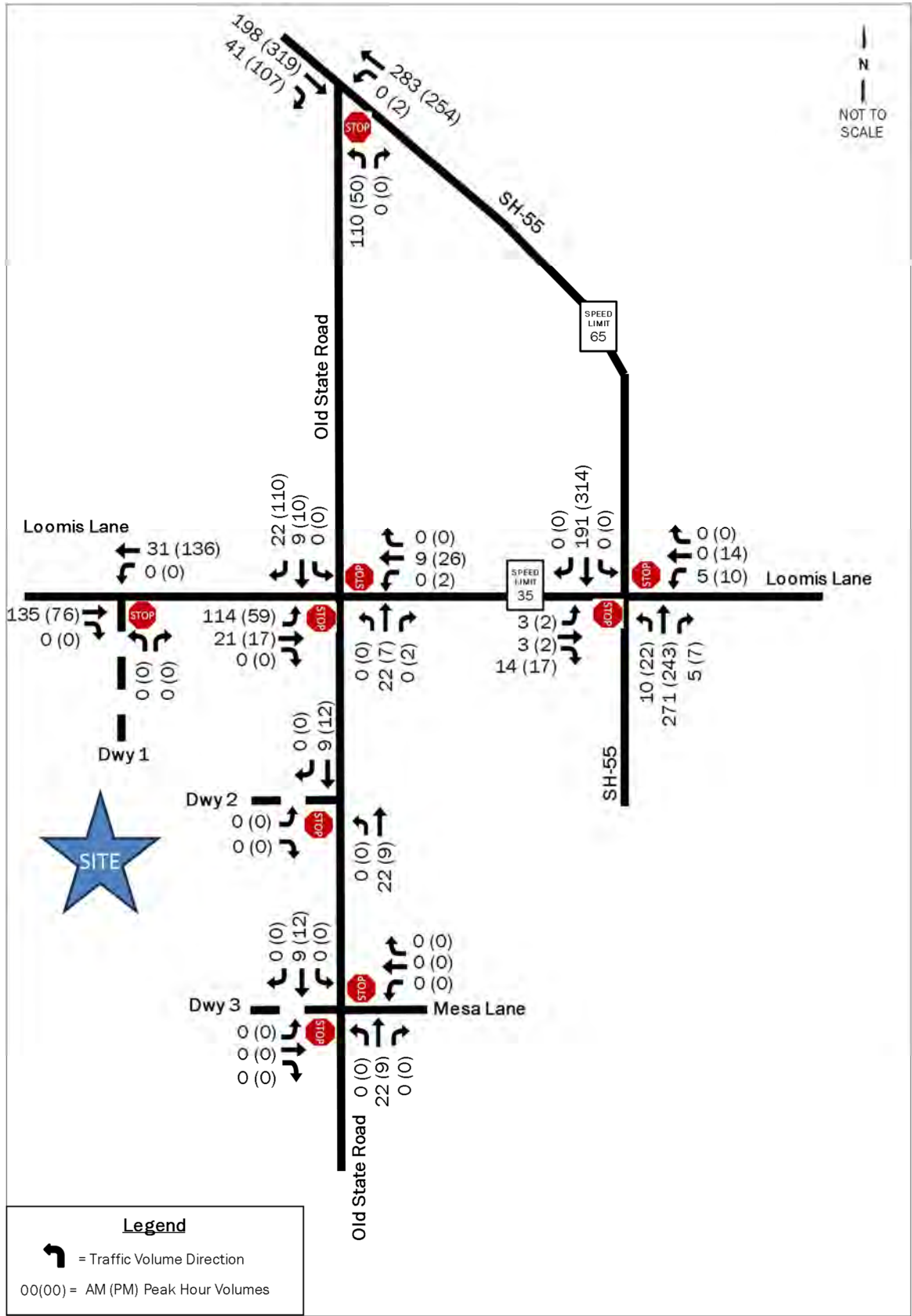


Figure 5. Existing Traffic Volumes Adjusted with Seasonal and Day-of-Week Factors (2023)



### A.3. Existing Levels of Service

Intersection LOS was evaluated using the Highway Capacity Manual (HCM) 7<sup>th</sup> Edition methodology and Synchro 12® software. Each of the intersections within the study area were evaluated under existing traffic control, lane configuration and peak hour volumes adjusted with seasonal and day-of-week factors.

Average vehicular delays are calculated and reported as Levels of Service (LOS) as defined by the Highway Capacity Manual, 7th Edition (HCM 7), ranging from A to F as seen in **Table 2**. Valley County and Idaho Transportation Department, following general accepted practice, recognizes LOS D with a volume to capacity (v/c) of 0.90 or better as an acceptable LOS for both signalized and unsignalized intersections.

**Table 2: Level of Service Criteria**

LOS	Signalized Intersections	Unsignalized
	Ave Control Delay	Ave Control Delay (s/veh)
A	0.0 to 10.0	0.0 to 10.0
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	80.1 and higher	50.1 and higher

The results of the existing conditions analysis are shown in **Table 3**. Movements that appear highlighted in red are LOS F and those in orange are LOS E.

**Table 3: Intersection Level of Service Results – Existing Conditions (2023)**

ID	Intersection	Control	Movement	AM		PM	
				LOS	Delay	LOS	Delay
1	Loomis Ln. & Old State Road	Side-Street Stop Control	EB	A	9.5	A	9.6
			WB	A	9.3	A	9.8
			NB	A	0.0	A	0.0
			SB	A	0.0	A	0.0
2	Loomis Ln. & SH55	Side-Street Stop Control	EB	B	10.4	B	11.0
			WB	B	12.6	B	14.6
			NB	A	0.3	A	0.6
			SB	A	0.0	A	0.0
3	Old State Road & SH55	Side-Street Stop Control	EB	A	0.0	A	0.0
			WB	A	0.0	A	0.1
			NB	B	13.6	B	14.1

As shown in **Table 3**, all intersections currently operate at acceptable levels of service.

#### A.4. Turn Lane Analysis – Existing Conditions (2023)

Right-turn lanes were analyzed for all intersections using the *Idaho Supplementary Guidance to the MUTCD Figure 3B-1 Right-Turn Lane Warrant*. Left-turn lanes were analyzed for all intersections using *AASHTO Green Book Table 9-23 Guide for Left-Turn Lanes on Two-Lane Highways*. Figures are provided in the **Appendix**.

- A right-turn lane is warranted for the southbound approach during the PM peak hour for the intersection of State Highway 55/Old State Road.

## Background Conditions

### B.1. Planned Roadway and Approved Development Projects

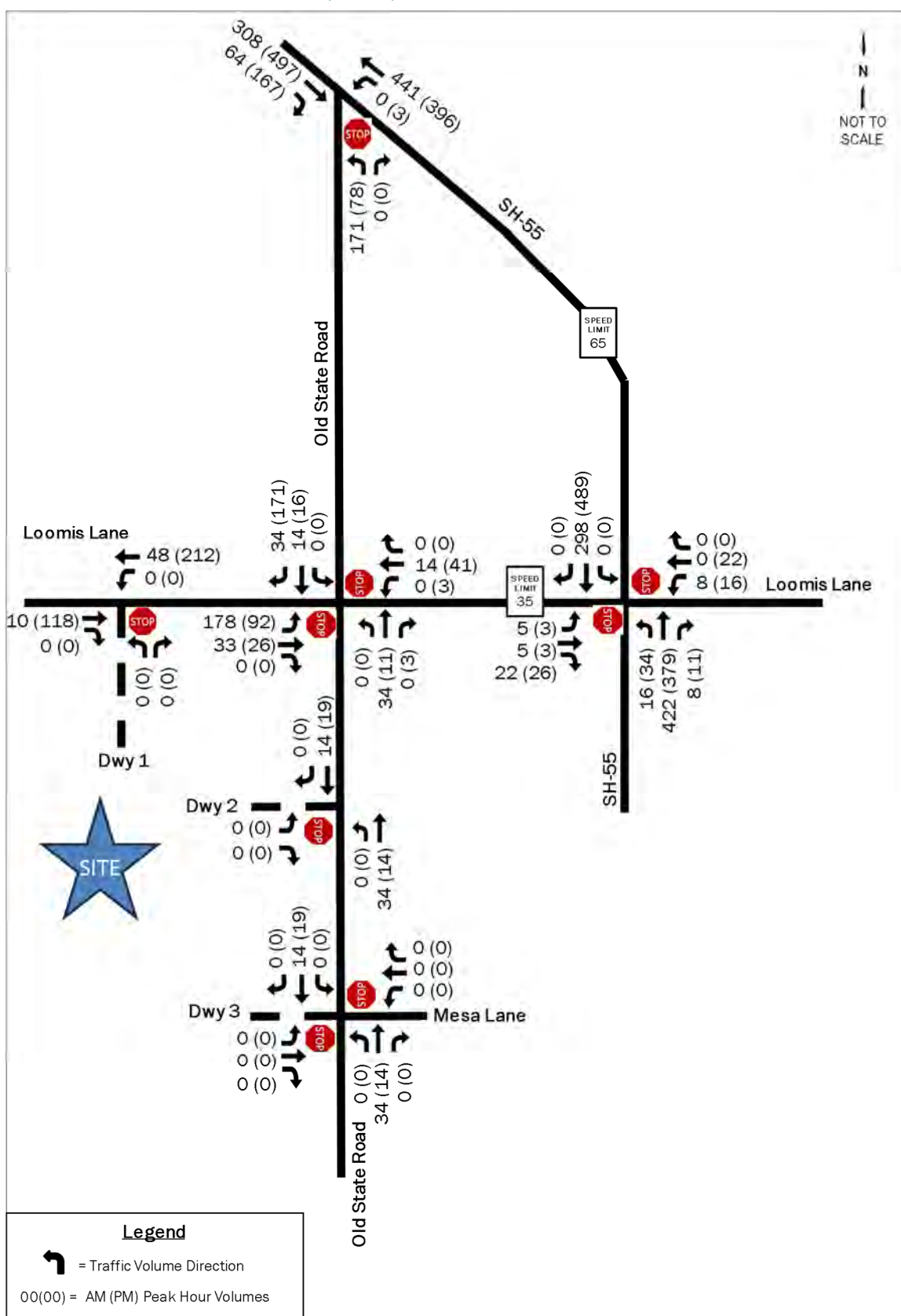
There are no known improvements planned around the study area.

### B.2. Background Data (No-Build 2038)

Without a metropolitan planning organization in the study area, existing volume trends along State Highway 55 from the Idaho Transportation Department Roadway Data Section have been used to indicate a historical growth rate of 3.0% for the roadway network. This was determined using data from ATR #243(north of Donnelly) and ATR #43 (south of Donnelly) for the years of 2013 through 2022. During the Covid-19 pandemic of 2020-2022 the traffic patterns recorded did not appear to be significantly affected, so no adjustments were made. See growth rate charts and calculations in **Appendix**.

For the purpose of this study the development is expected to be built in three stages of construction and will be completed in the year 2038. A conservative **3% growth rate** was applied to the existing volumes to reflect ambient growth in the study areas up to the year 2038. **Figure 6** shows the Existing + Background Growth traffic volume, i.e., No-Build Traffic (2038). Background data for the years 2028 and 2033 are provided in the **Appendix**.

Figure 6. No-Build Traffic Volume (2038)



### B.3. Background Levels of Service

The existing plus background growth levels of services for intersections of the background years representing each phase of construction for the years 2028, 2033, and 2038 are shown in **Table 4** and **Table 5** below.

**Table 4: Intersection Level of Service Results – Background Growth AM Peak Hour (No-Build)**

AM PEAK HOUR									
ID	Intersection	Control	Movement	No-Build 2028		No-Build 2033		No-Build 2038	
				LOS	Delay	LOS	Delay	LOS	Delay
1	Loomis Ln. & Old State Road	Side-Street Stop Control	EB	A	9.7	A	10.0	B	10.3
			WB	A	9.4	A	9.5	A	9.5
			NB	A	0.0	A	0.0	A	0.0
			SB	A	0.0	A	0.0	A	0.0
2	Loomis Ln. & SH55	Side-Street Stop Control	EB	B	10.7	B	11.3	B	12.2
			WB	B	13.7	C	15.1	C	17.2
			NB	A	0.3	A	0.3	A	0.3
			SB	A	0.0	A	0.0	A	0.0
3	Old State Road & SH55	Side-Street Stop Control	EB	A	0.0	A	0.0	A	0.0
			WB	A	0.0	A	0.0	A	0.0
			NB	C	15.4	C	18.3	C	23.7

As shown in Table 4, the AM Peak Hour traffic sees a slight increase in delays across each phase year from existing conditions, but all remain within accepted levels of service.

**Table 5: Intersection Level of Service Results – Background Growth PM Peak Hour (No-Build)**

PM PEAK HOUR									
ID	Intersection	Control	Movement	No-Build 2028		No-Build 2033		No-Build 2038	
				LOS	Delay	LOS	Delay	LOS	Delay
1	Loomis Ln. & Old State Road	Side-Street Stop Control	EB	A	9.8	B	10.1	B	10.4
			WB	A	10.0	B	10.2	B	10.4
			NB	A	0.0	A	0.0	A	0.0
			SB	A	0.0	A	0.0	A	0.0
2	Loomis Ln. & SH55	Side-Street Stop Control	EB	B	11.4	B	12.6	B	13.6
			WB	C	16.4	C	19.0	C	23.0
			NB	A	0.7	A	0.7	A	0.7
			SB	A	0.0	A	0.0	A	0.0
3	Old State Road & SH55	Side-Street Stop Control	EB	A	0.0	A	0.0	A	0.0
			WB	A	0.1	A	0.1	A	0.1
			NB	C	15.9	C	18.6	C	23.2

As shown in Table 5, the PM Peak Hour traffic sees a slight increase in delays across each phase year from existing conditions, but all remain within accepted levels of service.

#### B.4. Turn Lane Analysis – Background Growth (No Build)

Right-turn lanes were analyzed for all intersections using the *Idaho Supplementary Guidance to the MUTCD Figure 3B-1 Right-Turn Lane Warrant*. Left-turn lanes were analyzed for all intersections using *AASHTO Green Book Table 9-23 Guide for Left-Turn Lanes on Two-Lane Highways*. Figures are provided in the **Appendix**.

- A right-turn lane is warranted for the southbound approach for the intersection of Loomis Lane/Old State Road during the PM Peak Hour of the 2028 No-Build condition.
- A left-turn lane is warranted for the northbound approach for the intersection of State Highway 55/Loomis Lane during the PM Peak Hour of the 2033 No-Build condition as well as the AM Peak Hour of the 2038 No-Build condition.

## Projected Traffic

### C.1. Project Trip Generation (Build 2028, 2033, 2038)

Phases 1&2 of the development will be constructed by the year 2028 and include 86 housing units. This stage of development will include a Community/Open Space/Public Park containing a Skating Rink, a Community Center, as well as a possible Beer/Wine/Coffee Pub. The Community/Open Space/Public Park area will also dedicate an area for an outdoor concert/food truck court. While the skating rink is considered seasonal, it will be operational for a long enough period to affect daily traffic patterns during its use. The outdoor concert/food truck court will be for special use occasions and would not contribute to the daily occurrence of traffic and has been omitted from the study.

Phases 3&4 of the development will be constructed by the year 2033 and include 179 total housing units, while Phases 5&6 of the development will be constructed by the year 2038 and include 335 total housing units.

The total number of trips generated by the proposed development was estimated using the Land Use Codes listed in the table below as provided in the *ITE Trip Generation Manual, 11<sup>th</sup> Edition*. **Table 6** provides a summary of the daily expected trip generation, AM peak hour trip generation, and PM peak hour trip generation of the proposed development.

**Table 6: Trip Generation (Build 2038)**

LUC	Detail	Factor	Daily	AM Peak Hour			PM Peak Hour		
				IN	OUT	TOTAL	IN	OUT	TOTAL
210	Single-Family Detached Housing	335 DU	3,068	58	166	224	195	115	310
411	Public Park	8.24 Ac	94	0	0	0	13	10	23
465	Skating Rink	17,000 SF	n/a	1	2	3	13	10	23
495	Rec. Comm. Center	4,000 SF	118	5	3	8	13	14	27
971	Brewery Tap	2,000 SF	124	1	0	1	12	8	20
<b>Totals</b>			<b>3,404</b>	<b>65</b>	<b>171</b>	<b>236</b>	<b>246</b>	<b>157</b>	<b>403</b>

## C.2. Site Access & Circulation

During Phases 1&2 and 3&4, access to the site will be provided from one access point along Loomis Lane and one access point along Old State Road. During Phases 5&6 the third access along Old State Road will be constructed. Internal roadways will be constructed for connection between the access points. **Figure 7** shows the conceptual site plan.

## C.3. Internal Capture Adjustment

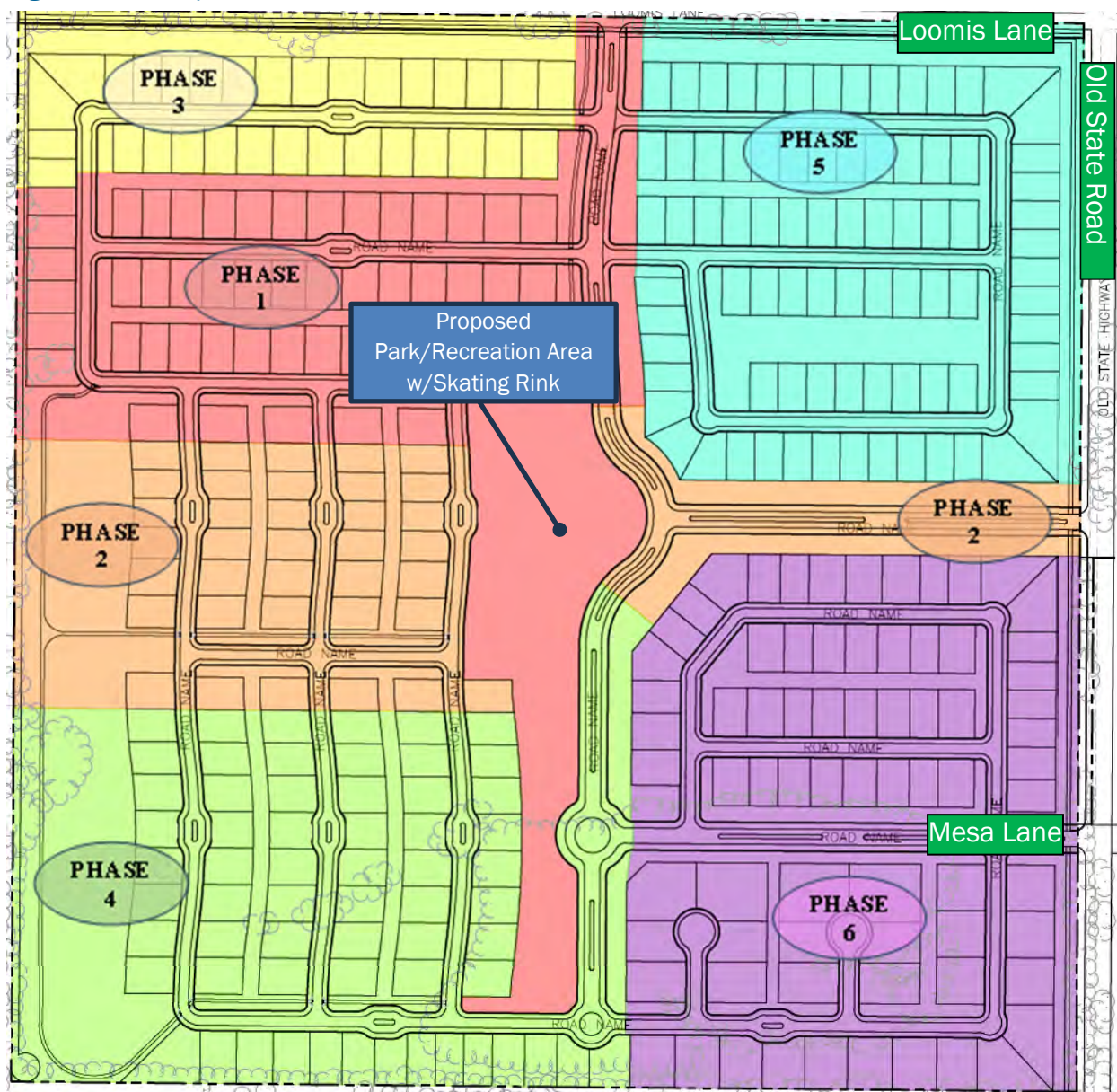
In an effort to avoid double counting of vehicular trips, a 20% reduction in internal trips was applied for trips generated by the Community/Open Space/Public Park, Skating Rink, Community Center, and Pub. These trips are accounted for within the trips generated by Land Use Code 210. Updated trip generations are shown in **Table 7**.

**Table 7: Trip Generation Adjusted for Internal Capture (Build 2038)**

LUC	Detail	Factor	Daily	AM Peak Hour			PM Peak Hour		
				IN	OUT	TOTAL	IN	OUT	TOTAL
210	Single-Family Detached Housing	335 DU	3,068	58	166	224	195	115	310
411	Public Park	8.24 Ac	75	0	0	0	10	8	18
465	Skating Rink	17,000 SF	n/a	1	2	2	10	8	18
495	Rec. Comm. Center	4,000 SF	94	4	2	6	10	11	22
971	Brewery Tap	2,000 SF	99	1	0	1	10	6	16
<b>Totals</b>			<b>3,337</b>	<b>64</b>	<b>170</b>	<b>234</b>	<b>236</b>	<b>149</b>	<b>384</b>

(Trips highlighted in grey have been adjusted for 20% Internal Capture)

Figure 7. Conceptual Site Plan



#### C.4. Trip Distribution and Assignment

Site traffic was distributed in consideration of existing travel patterns, site layout, and other developments in the study area. It is assumed that 70% of the site traffic will head north towards Donnelly via SH 55 and 20% of traffic is assumed to head south towards Cascade via SH 55. 5% of traffic is expected to travel to the west of the development via Loomis Lane, while the remaining 5% is expected to travel to the southwest of the development via Old State Road.

The intersection-specific percentages and assignment of the site trips are shown in Figure 8. The total assigned traffic is shown in Figure 9. The future Build 2038 traffic volume is shown in Figure 10. Additional figures for Build years 2028 and 2033 are shown in the appendix.

Figure 8. Trip Distribution (Build 2038)

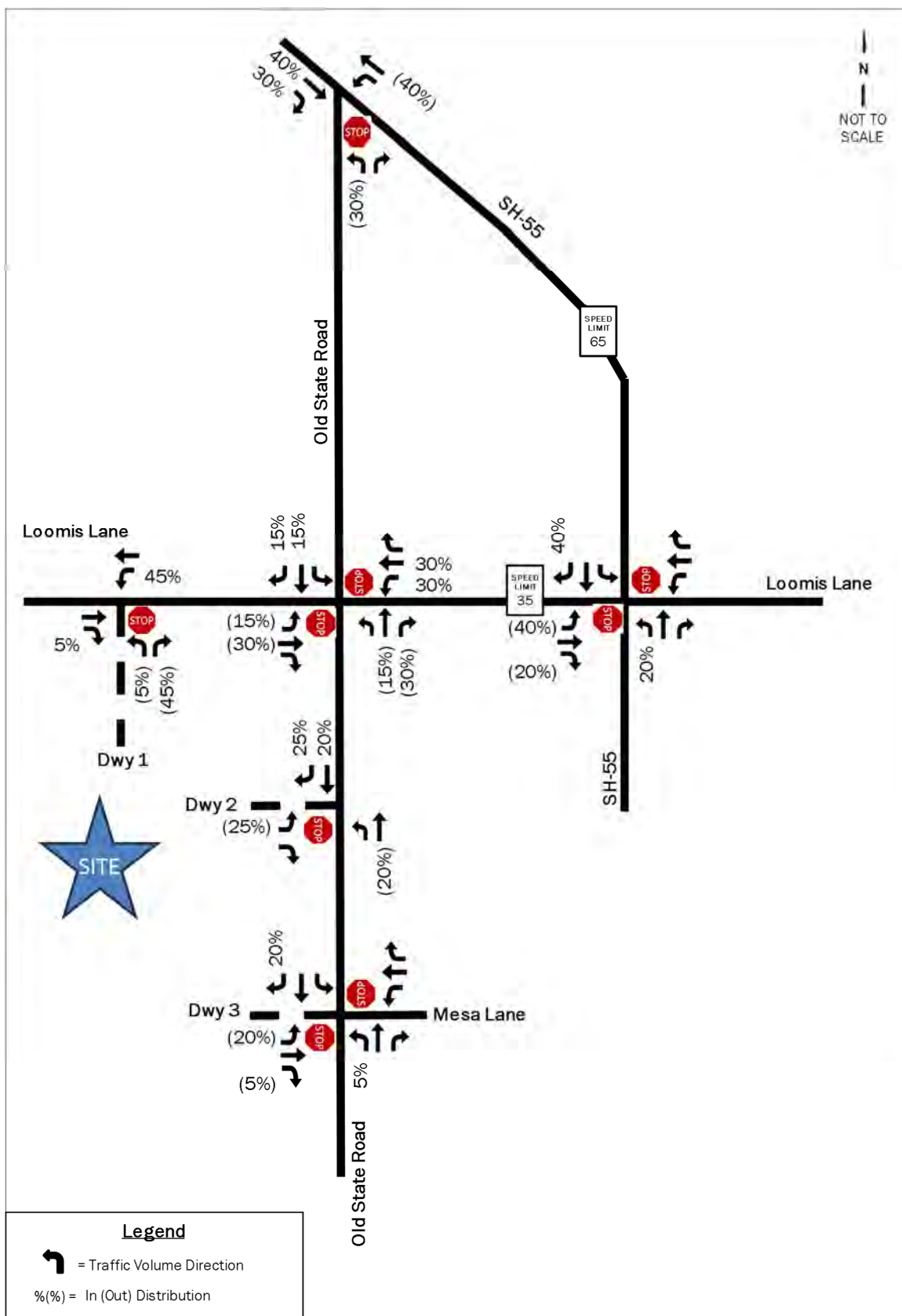


Figure 9. Total Project Trips (Build 2038)

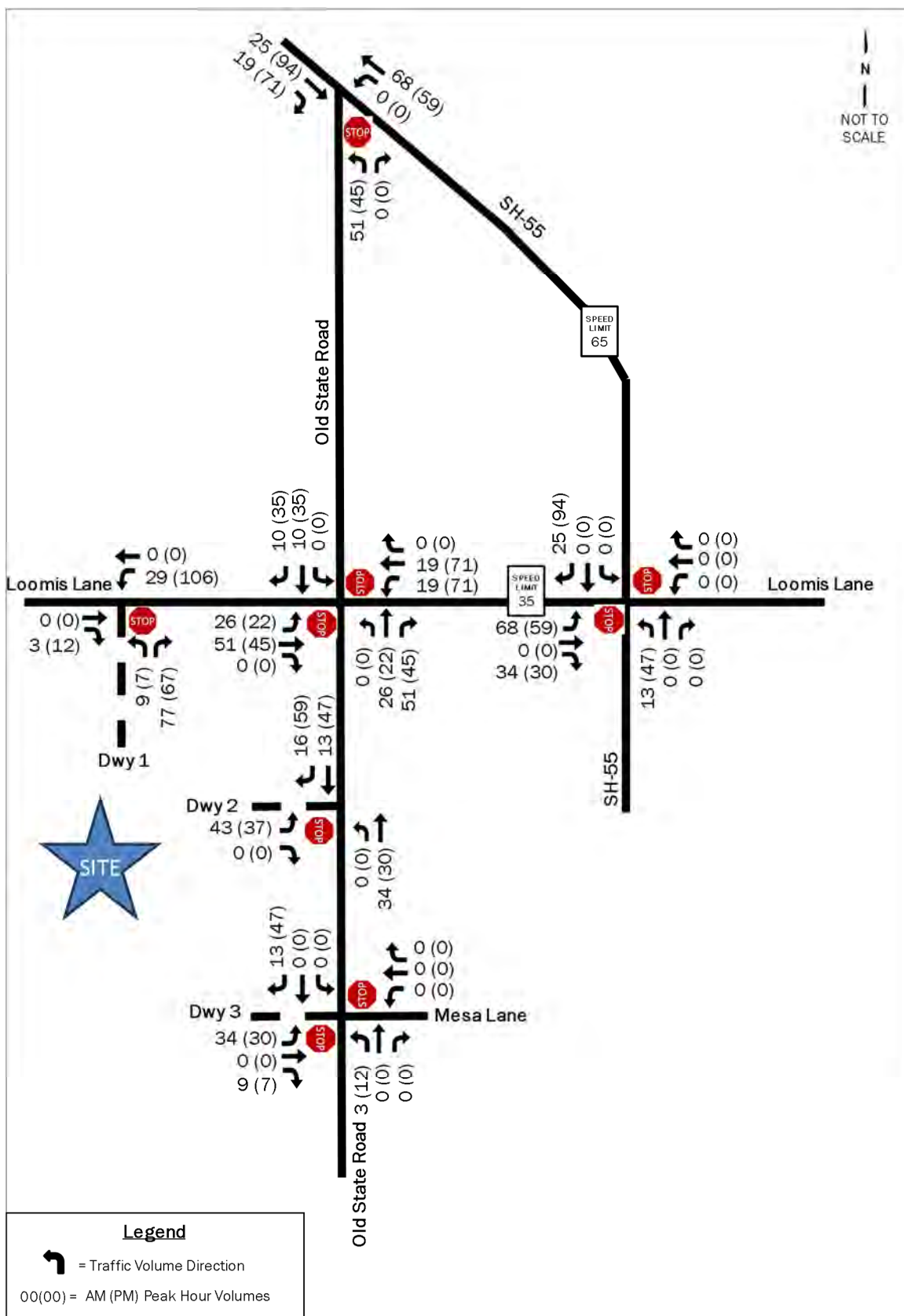
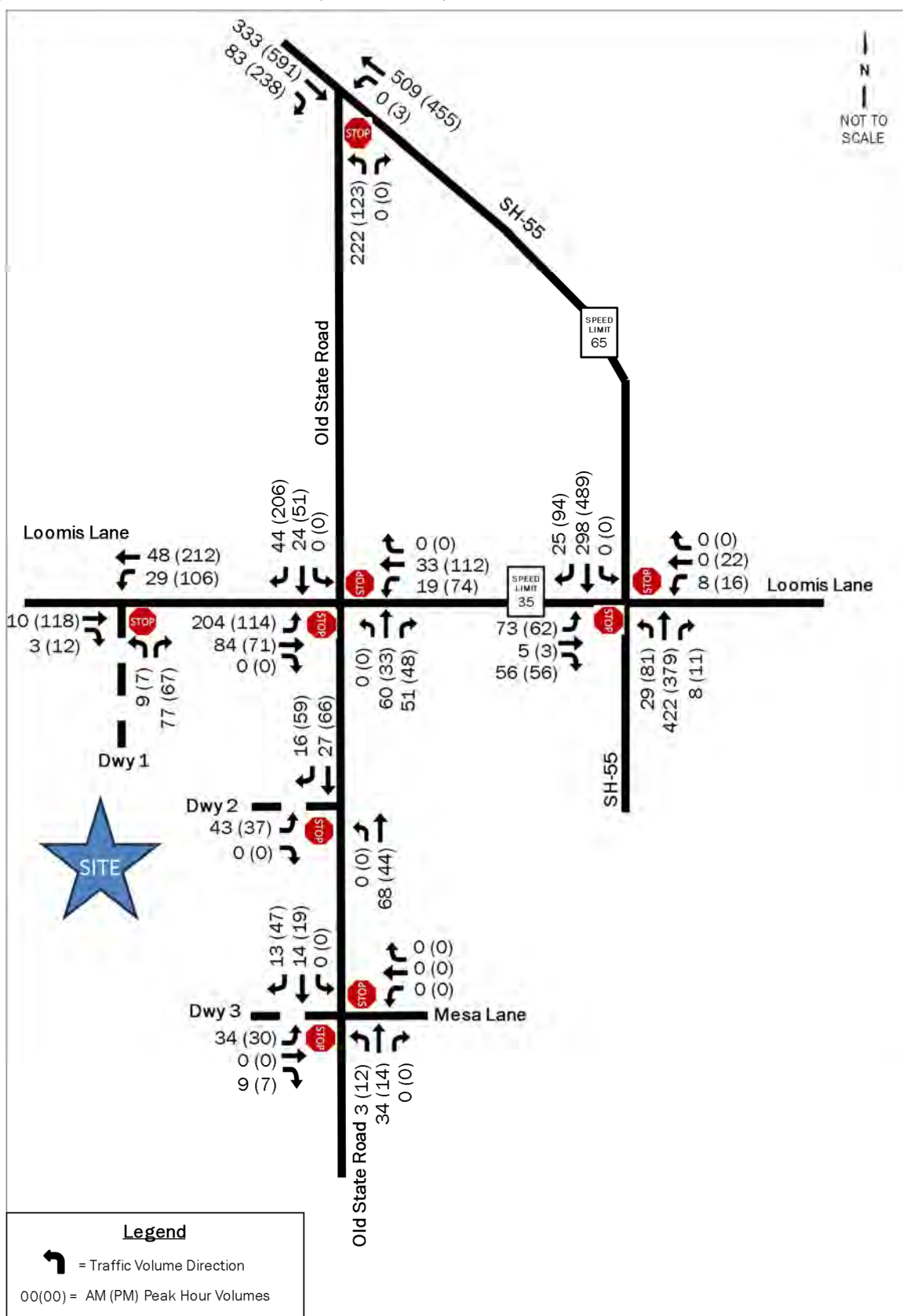


Figure 10. Build Traffic Volumes (Build 2038)



### C.5. Build Condition Capacity Analysis (2028, 2033, 2038)

The results of Build 2028, 2033, and 2038 conditions capacity for intersection are shown in **Table 8** (AM) and **Table 9** (PM).

**Table 8: Intersection Level of Service Results –AM Build Conditions**

AM PEAK HOUR									
ID	Intersection	Control	Movement	Build 2028		Build 2033		Build 2038	
				LOS	Delay	LOS	Delay	LOS	Delay
1	Loomis Ln. & Old State Road	Side-Street Stop Control	EB	B	10.1	B	10.8	B	12.2
			WB	A	9.5	A	9.8	B	10.3
			NB	A	0.0	A	0.0	A	0.0
			SB	A	0.0	A	0.0	A	0.0
2	Loomis Ln. & SH55	Side-Street Stop Control	EB	B	12.2	B	14.2	C	18.6
			WB	B	14.0	C	15.8	C	18.6
			NB	A	0.4	A	0.4	A	0.5
			SB	A	0.0	A	0.0	A	0.0
3	Old State Road & SH55	Side-Street Stop Control	EB	A	0.0	A	0.0	A	0.0
			WB	A	0.0	A	0.0	A	0.0
			NB	C	16.6	C	22.1	E	40.2
4	Driveway 1 Loomis Ln.	Side-Street Stop Control	EB	A	0.0	A	0.0	A	0.0
			WB	A	1.6	A	2.2	A	2.9
			NB	A	9.3	A	9.5	A	10.0
5	Driveway 2 Old State Road	Side-Street Stop Control	EB	A	8.8	A	8.9	A	9.2
			NB	A	0.3	A	0.5	A	0.0
			SB	A	0.0	A	0.0	A	0.0
6	Driveway 3 Old State Road	Side-Street Stop Control	EB	-	-	-	-	A	8.9
			WB	-	-	-	-	A	0.0
			NB	-	-	-	-	A	0.6
			SB	-	-	-	-	A	0.0

As volume increases in the study area, the study intersections will see slight increases in delays as compared to existing and background conditions. Starting in 2038 the Old State Road and SH55 intersection's northbound approach drops below acceptable levels of service. All other intersections are within acceptable ranges.

Table 9: Intersection Level of Service Results –PM Build Conditions

PM PEAK HOUR									
ID	Intersection	Control	Movement	Build 2028		Build 2033		Build 2038	
				LOS	Delay	LOS	Delay	LOS	Delay
1	Loomis Ln. & Old State Road	Side-Street Stop Control	EB	B	10.6	B	11.6	B	13.5
			WB	B	10.5	B	11.2	B	12.8
			NB	A	0.0	A	0.0	A	0.0
			SB	A	0.0	A	0.0	A	0.0
2	Loomis Ln. & SH55	Side-Street Stop Control	EB	C	15.3	C	20.3	E	36.2
			WB	C	17.9	C	22.2	D	31.2
			NB	A	1.1	A	1.3	A	1.5
			SB	A	0.0	A	0.0	A	0.0
3	Old State Road & SH55	Side-Street Stop Control	EB	A	0.0	A	0.0	A	0.0
			WB	A	0.1	A	0.1	A	0.1
			NB	C	18.2	C	24.4	E	43.2
4	Driveway 1 Loomis Ln.	Side-Street Stop Control	EB	A	0.0	A	0.0	A	0.0
			WB	A	1.6	A	2.0	A	2.6
			NB	A	9.0	A	9.3	A	9.7
5	Driveway 2 Old State Road	Side-Street Stop Control	EB	A	8.9	A	9.1	A	9.4
			NB	A	2.4	A	2.7	A	0.0
			SB	A	0.0	A	0.0	A	0.0
6	Driveway 3 Old State Road	Side-Street Stop Control	EB	-	-	-	-	A	9.1
			WB	-	-	-	-	A	0.0
			NB	-	-	-	-	A	3.4
			SB	-	-	-	-	A	0.0

As volume increases in the study area, the study intersections will see slight increases in delays as compared to existing and background conditions. As with the AM Peak hour in 2038 the Old State Road and SH55 intersection's northbound approach drops below acceptable levels of service. Additionally, in 2038 the Loomis Lane and SH55 intersection's eastbound approach drops below acceptable levels of service. All other intersections are within acceptable ranges.

### C.6. Turn Lane Analysis – Build Condition (2026, 2027, 2028)

Right-turn lanes were analyzed for all intersections using the *Idaho Supplementary Guidance to the MUTCD Figure 3B-1 Right-Turn Lane Warrant*. Left-turn lanes were analyzed for all intersections using *AASHTO Green Book Table 9-23 Guide for Left-Turn Lanes on Two-Lane Highways*. Figures are provided in the **Appendix**.

- By the build year of 2028 the turning volumes warrant a right-turn lane for the southbound approach at the intersection of State Highway 55/Loomis Lane.

## Conclusions and Recommendations

This traffic impact study was prepared in accordance with the Idaho Transportation Department guidelines provided by ITD District 3. It evaluates the traffic impacts to the surrounding roadway network associated with the McGregor Subdivision. The study's findings and recommendations are summarized below.

### D.1. Capacity Analysis Conclusions

An analysis of the LOS and delays shows that there appears to be issues at the State Highway 55/Loomis Lane intersection as well as the State Highway 55/Old State Road intersection. All other intersection delays are expected to increase slightly with the full build of the development, but still perform at or above acceptable LOS D.

### D.2. Proposed Mitigation for Existing Traffic (2023)

All intersections perform above acceptable LOS D however the turning volumes were evaluated with the following results:

- A right-turn lane is warranted for the southbound approach during the PM peak hour for the intersection of State Highway 55/Old State Road.

**With existing turning volumes, a southbound right-turn lane is recommended at the intersection of State Highway 55 and Old State Road.**

### D.3. Proposed Mitigation for Background Traffic (No-Build 2038)

All intersections perform above acceptable LOS D however the turning volumes were evaluated with the following results:

- A right-turn lane is warranted for the southbound approach during the PM Peak Hour of 2028 No-Build for the intersection of Loomis Lane/Old State Road.
- A left-turn lane is warranted for the northbound approach during the PM Peak Hour of the 2033 No-Build condition as well as the AM Peak Hour of the 2038 No-Build condition for the intersection of State Highway 55/Loomis Lane.

**Because ambient growth of the existing network warrants turn lanes without the contribution of traffic by the development, a southbound right-turn lane is recommended at the intersection of Old State Road and Loomis Lane . Additionally due to ambient growth, a northbound left-turn lane is warranted and recommended at the intersection of State Highway 55 and Loomis Lane.**

#### D.4. Proposed Mitigation for Site Plus Background Traffic (Build 2028, 2033, 2038)

All intersections perform above acceptable LOS D with the exception of the State Highway 55 and Loomis Lane intersection and the State Highway 55 and Old State Road intersection. These intersections have approaches which experience LOS E by the build year 2038.

The 2028 Build turning volumes warrant a southbound right-turn lane at the intersection of State Highway 55 and Loomis Lane.

With the implementation of mitigations recommended during the Existing conditions, during the No-Build conditions, as well as newly warranted right-turn lane for the Build conditions at the intersection of State Highway 55 and Loomis Lane, all approaches perform at or above acceptable LOS D as shown in **Table 10** below:

**Table 10: Build (2038) with Mitigations**

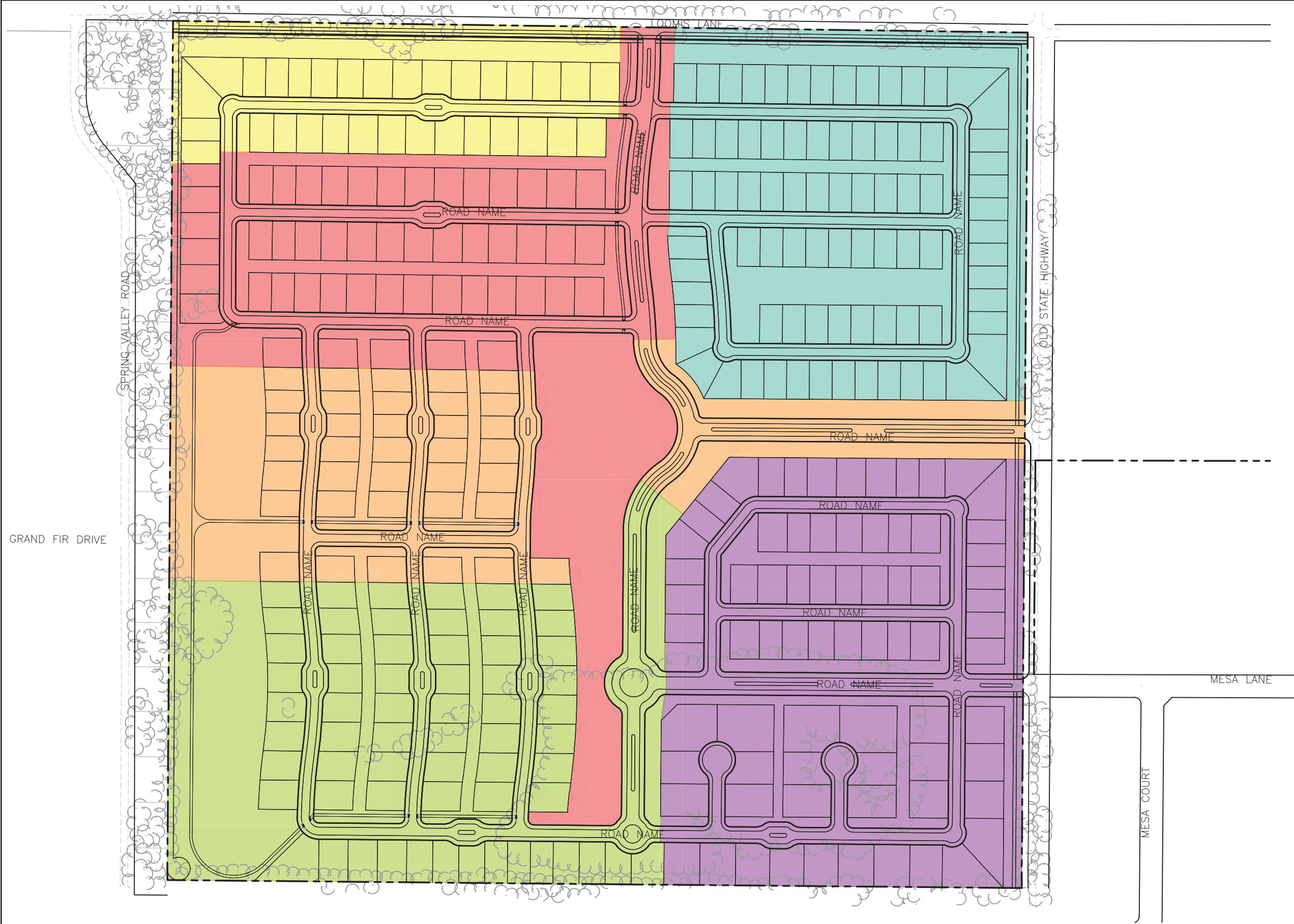
2038 Build with Mitigations							
ID	Intersection	Control	Movement	AM		PM	
				LOS	Delay	LOS	Delay
2	Loomis Ln. & SH55	Side-Street Stop Control	EB	C	18.2	D	31.3
			WB	C	18.4	D	30.2
			NB	A	0.5	A	1.5
			SB	A	0.0	A	0.0
3	Old State Road & SH55	Side-Street Stop Control	EB	A	0.0	A	0.0
			WB	A	0.0	A	0.1
			NB	D	34.7	D	32.7

With the generated turning volumes during the build condition, a southbound right-turn lane is recommended at the intersection of State Highway 55 and Loomis Lane.

## APPENDIX

## APPENDIX A: Site Plan

Path: \\M01\G\Drawings\23025\Civil\Drawings\23025\_Figure-3\_PhasingPlan.dwg File Name: 23025\_Figure-3\_PhasingPlan.dwg Plt Date: 11/15/2023 2:34 PM Author: amd



DEVELOPMENT DATA:

PHASE 1:  
AREA - 31.84 ACRES  
RESIDENTIAL LOTS - 50 LOTS  
STREET - 6 PRIVATE  
OPENS SPACE - 14.70 ACRES  
DENSITY - 1.57 DU/ACRE

PHASE 2:  
AREA - 22.69 ACRES  
RESIDENTIAL LOTS - 36 LOTS  
STREET - 6 PRIVATE  
OPEN SPACE - 9.61 ACRES  
DENSITY - 1.59 DU/ACRE

PHASE 3:  
AREA - 12.62 ACRES  
RESIDENTIAL LOTS - 31 LOTS  
STREET - 1 PRIVATE  
OPEN SPACE - 3.79 ACRES  
DENSITY - 2.46 DU/ACRE

PHASE 4:  
AREA - 30.54 ACRES  
RESIDENTIAL LOTS - 62 LOTS  
STREET - 4 PRIVATE  
OPEN SPACE - 9.88 ACRES  
DENSITY - 2.03 DU/ACRE

PHASE 5:  
AREA - 28.22 ACRES  
RESIDENTIAL LOTS - 82 LOTS  
STREET - 2 PRIVATE  
OPEN SPACE - 7.45 ACRES  
DENSITY - 2.91 DU/ACRE

PHASE 6:  
AREA - 32.79 ACRES  
RESIDENTIAL LOTS - 74 LOTS  
STREET - 6 PRIVATE  
OPEN SPACE - 5.60 ACRES  
DENSITY - 2.26 DU/ACRE

LEGEND:

- PROPERTY BOUNDARY
  - ADJACENT PROPERTY LINE
  - EXISTING RIGHT-OF-WAY
  - PROPOSED RIGHT-OF-WAY
  - PROPOSED LOT LINE
  - EXISTING EDGE OF ASPHALT
  - PROPOSED EDGE OF ASPHALT
  - PROPOSED EDGE OF PATHWAY/SIDEWALK
- PHASE 1 AREA
  - PHASE 2 AREA
  - PHASE 3 AREA
  - PHASE 4 AREA
  - PHASE 5 AREA
  - PHASE 6 AREA



NORTH



SCALE: 1" = 150'

NO.	REVISION	BY	DATE	DESIGN
				AMD
				DRAWN
				LJE
				CHECKED
				AMD
				APPROVED
				GTT

**CRESTLINE**  
ENGINEERS  
323 DEINHARD LANE, SUITE C · PO BOX 2330  
McCALL, IDAHO 83638

MACGREGOR TOWNSITE PUD  
VALLEY COUNTY, IDAHO  
PHASING PLAN

VERIFY SCALE	
BAR IS ONE INCH ON FULL SIZE DRAWING	
PROJECT	23025
DATE	11/22/2023
DRAWING NO.	SHEET NO.
FIGURE 3	3 OF 4

## APPENDIX B: Traffic Counts

# Quality Counts

Idaho [REDACTED] Utah [REDACTED]

Study: NV50049  
Intersection: Old State Rd / Loomis Lane  
City, State: Donnelly, Idaho  
Control: Stop Sign

File Name : Old State Rd & Loomis Ln  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 1

## Groups Printed- General Traffic

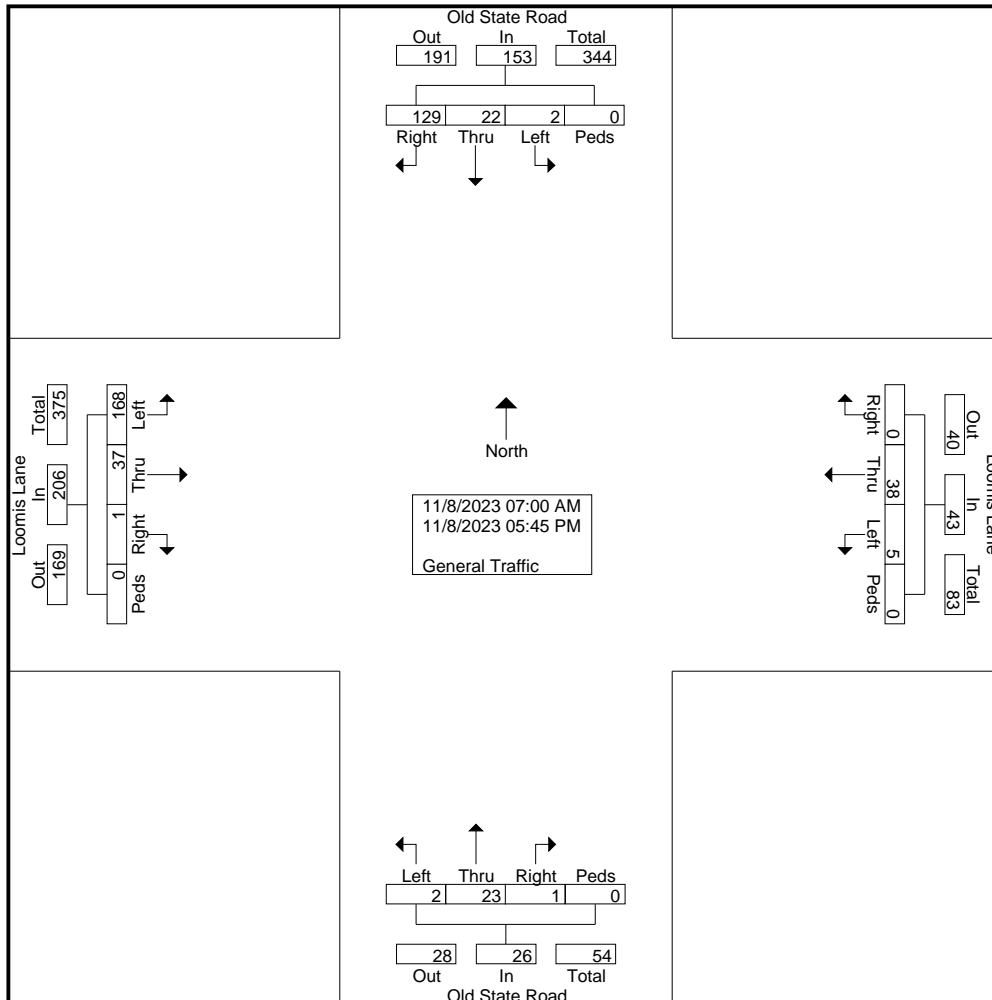
Start Time	Old State Road From North					Loomis Lane From East					Old State Road From South					Loomis Lane From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	2	15	0	17	22
07:15 AM	2	0	0	0	2	0	3	0	0	3	0	2	0	0	2	0	3	20	0	23	30
07:30 AM	8	2	0	0	10	0	1	0	0	1	0	6	0	0	6	0	1	14	0	15	32
07:45 AM	3	1	0	0	4	0	1	0	0	1	0	2	0	0	2	0	6	17	0	23	30
Total	13	5	0	0	18	0	5	0	0	5	0	13	0	0	13	0	12	66	0	78	114
08:00 AM	6	1	0	0	7	0	1	0	0	1	0	0	0	0	0	0	2	10	0	12	20
08:15 AM	3	1	0	0	4	0	2	1	0	3	0	0	0	0	0	0	4	10	0	14	21
08:30 AM	3	1	0	0	4	0	0	0	0	0	0	1	0	0	1	0	0	11	0	11	16
08:45 AM	5	2	0	0	7	0	0	0	0	0	0	0	0	0	0	0	1	6	0	7	14
Total	17	5	0	0	22	0	3	1	0	4	0	1	0	0	1	0	7	37	0	44	71
-----																					
04:00 PM	6	0	0	0	6	0	3	0	0	3	0	0	1	0	1	0	3	7	0	10	20
04:15 PM	8	1	1	0	10	0	5	2	0	7	0	1	0	0	1	0	3	6	0	9	27
04:30 PM	15	3	0	0	18	0	3	0	0	3	0	0	0	0	0	0	3	5	0	8	29
04:45 PM	17	2	0	0	19	0	6	1	0	7	0	0	0	0	0	0	3	9	0	12	38
Total	46	6	1	0	53	0	17	3	0	20	0	1	1	0	2	0	12	27	0	39	114
05:00 PM	15	0	0	0	15	0	2	0	0	2	0	1	0	0	1	0	0	8	0	8	26
05:15 PM	17	1	0	0	18	0	4	0	0	4	1	3	0	0	4	0	4	12	0	16	42
05:30 PM	8	4	0	0	12	0	2	1	0	3	0	2	0	0	2	1	2	7	0	10	27
05:45 PM	13	1	1	0	15	0	5	0	0	5	0	2	1	0	3	0	0	11	0	11	34
Total	53	6	1	0	60	0	13	1	0	14	1	8	1	0	10	1	6	38	0	45	129
Grand Total	129	22	2	0	153	0	38	5	0	43	1	23	2	0	26	1	37	168	0	206	428
Apprch %	84.3	14.4	1.3	0		0	88.4	11.6	0		3.8	88.5	7.7	0		0.5	18	81.6	0		
Total %	30.1	5.1	0.5	0	35.7	0	8.9	1.2	0	10	0.2	5.4	0.5	0	6.1	0.2	8.6	39.3	0	48.1	

# Quality Counts

Idaho [REDACTED] Utah [REDACTED]

Study: NV50049  
 Intersection: Old State Rd / Loomis Lane  
 City, State: Donnelly, Idaho  
 Control: Stop Sign

File Name : Old State Rd & Loomis Ln  
 Site Code : 00000000  
 Start Date : 11/8/2023  
 Page No : 2



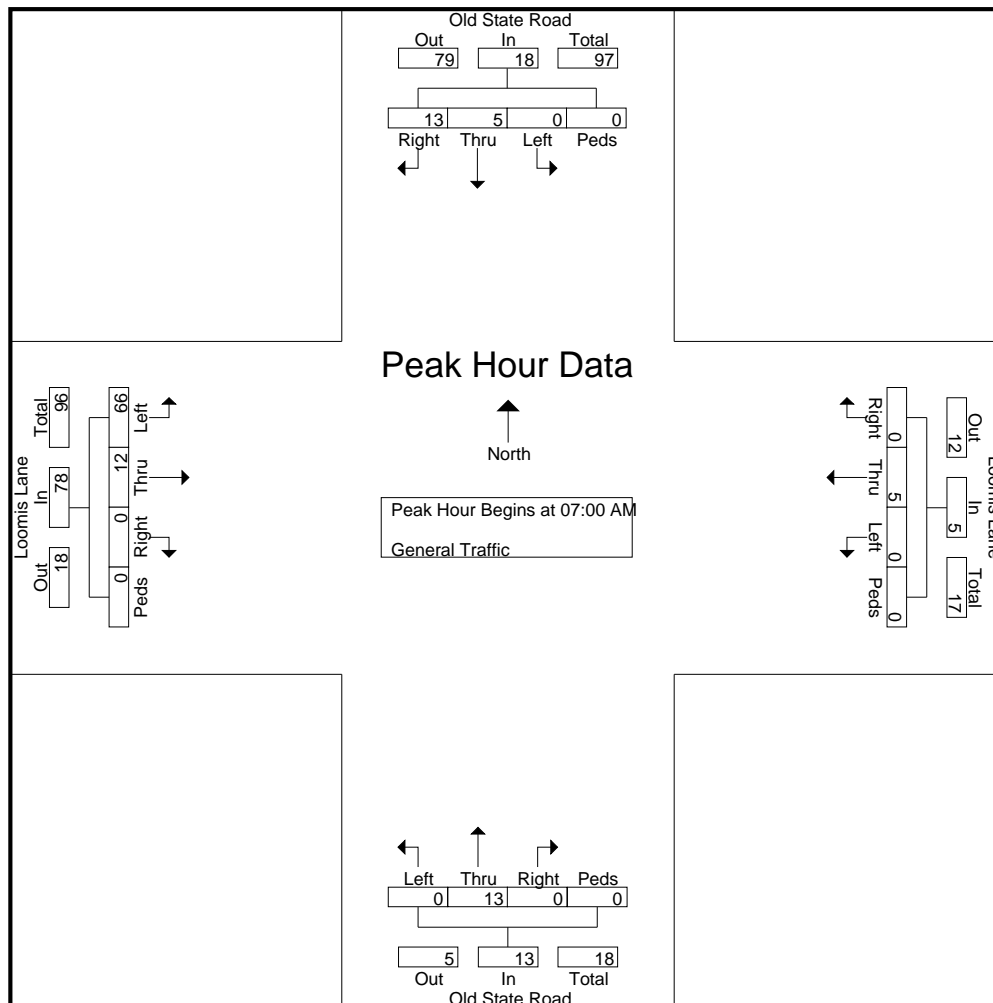
# Quality Counts

Idaho [REDACTED] Utah [REDACTED]

Study: NV50049  
Intersection: Old State Rd / Loomis Lane  
City, State: Donnelly, Idaho  
Control: Stop Sign

File Name : Old State Rd & Loomis Ln  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 3

	Old State Road From North					Loomis Lane From East					Old State Road From South					Loomis Lane From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	2	15	0	17	22
07:15 AM	2	0	0	0	2	0	3	0	0	3	0	2	0	0	2	0	3	20	0	23	30
07:30 AM	8	2	0	0	10	0	1	0	0	1	0	6	0	0	6	0	1	14	0	15	32
07:45 AM	3	1	0	0	4	0	1	0	0	1	0	2	0	0	2	0	6	17	0	23	30
Total Volume	13	5	0	0	18	0	5	0	0	5	0	13	0	0	13	0	12	66	0	78	114
% App. Total	72.2	27.8	0	0		0	100	0	0		0	100	0	0		0	15.4	84.6	0		
PHF	.406	.625	.000	.000	.450	.000	.417	.000	.000	.417	.000	.542	.000	.000	.542	.000	.500	.825	.000	.848	.891



# Quality Counts

Idaho [REDACTED] Utah [REDACTED]

Study: NV50049  
Intersection: Old State Rd / Loomis Lane  
City, State: Donnelly, Idaho  
Control: Stop Sign

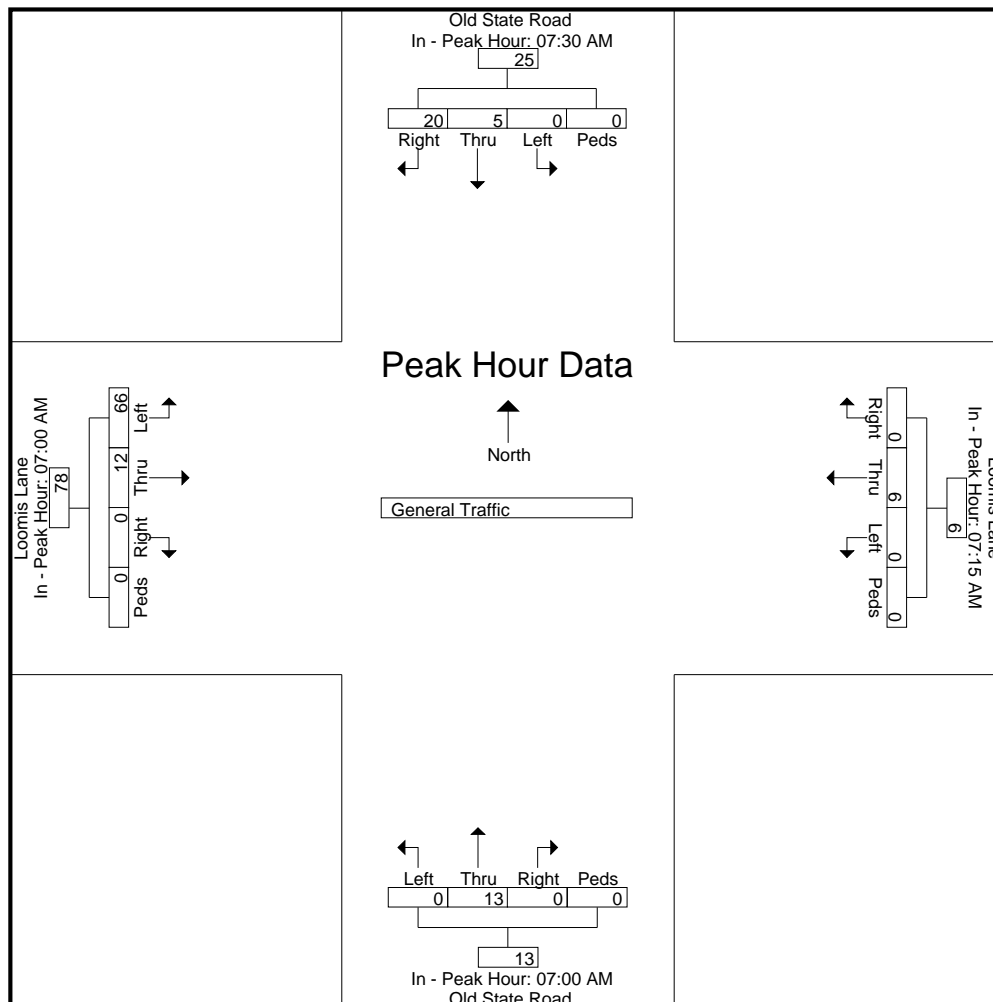
File Name : Old State Rd & Loomis Ln  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 4

	Old State Road From North					Loomis Lane From East					Old State Road From South					Loomis Lane From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

## Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30 AM					07:15 AM					07:00 AM					07:00 AM				
+0 mins.	8	2	0	0	10	0	3	0	0	3	0	3	0	0	3	0	2	15	0	17
+15 mins.	3	1	0	0	4	0	1	0	0	1	0	2	0	0	2	0	3	20	0	23
+30 mins.	6	1	0	0	7	0	1	0	0	1	0	6	0	0	6	0	1	14	0	15
+45 mins.	3	1	0	0	4	0	1	0	0	1	0	2	0	0	2	0	6	17	0	23
Total Volume	20	5	0	0	25	0	6	0	0	6	0	13	0	0	13	0	12	66	0	78
% App. Total	80	20	0	0		0	100	0	0		0	100	0	0		0	15.4	84.6	0	
PHF	.625	.625	.000	.000	.625	.000	.500	.000	.000	.500	.000	.542	.000	.000	.542	.000	.500	.825	.000	.848



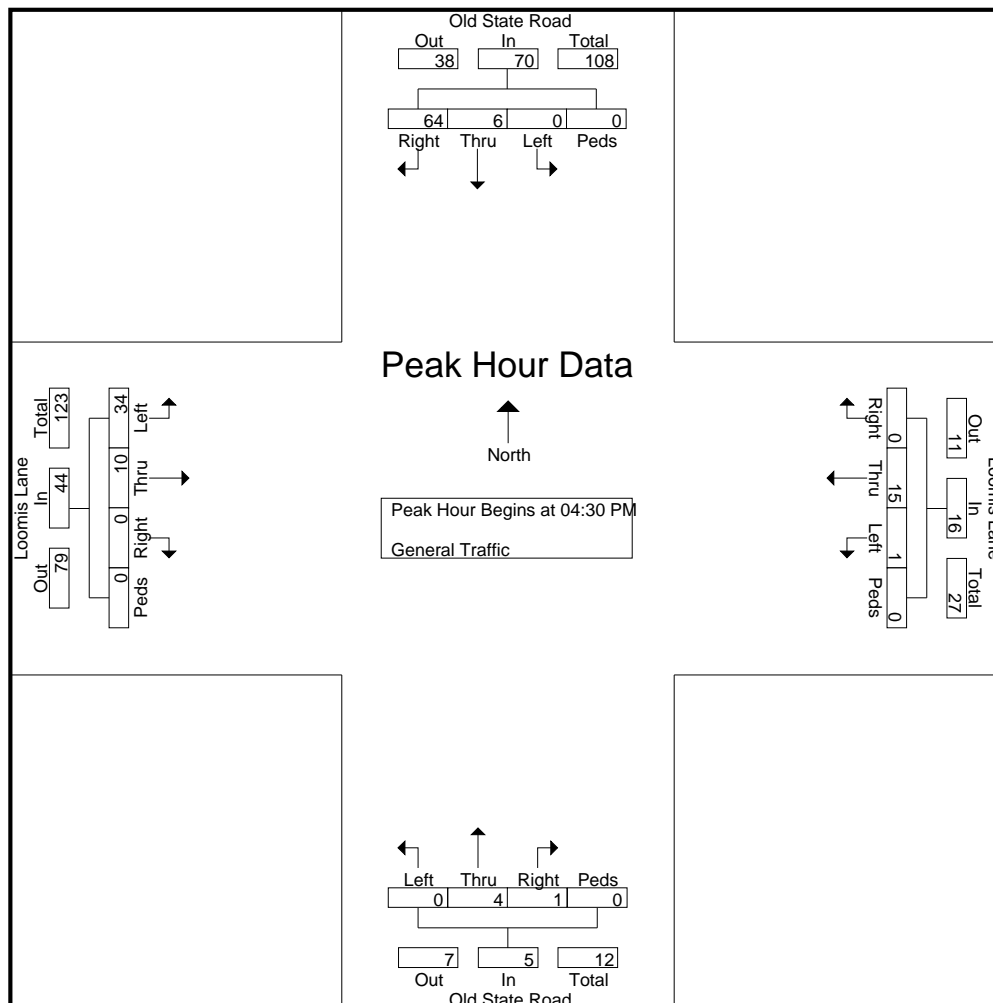
# Quality Counts

Idaho XXXXXXXXXX Utah XXXXXXXXXX

Study: NV50049  
Intersection: Old State Rd / Loomis Lane  
City, State: Donnelly, Idaho  
Control: Stop Sign

File Name : Old State Rd & Loomis Ln  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 5

	Old State Road From North					Loomis Lane From East					Old State Road From South					Loomis Lane From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	15	3	0	0	18	0	3	0	0	3	0	0	0	0	0	0	3	5	0	8	29
04:45 PM	17	2	0	0	19	0	6	1	0	7	0	0	0	0	0	0	3	9	0	12	38
05:00 PM	15	0	0	0	15	0	2	0	0	2	0	1	0	0	1	0	0	8	0	8	26
05:15 PM	17	1	0	0	18	0	4	0	0	4	1	3	0	0	4	0	4	12	0	16	42
Total Volume	64	6	0	0	70	0	15	1	0	16	1	4	0	0	5	0	10	34	0	44	135
% App. Total	91.4	8.6	0	0		0	93.8	6.2	0		20	80	0	0		0	22.7	77.3	0		
PHF	.941	.500	.000	.000	.921	.000	.625	.250	.000	.571	.250	.333	.000	.000	.313	.000	.625	.708	.000	.688	.804



# Quality Counts

Idaho [REDACTED]
Utah [REDACTED]

Study: NV50049

Intersection: Old State Rd / Loomis Lane

City, State: Donnelly, Idaho

Control: Stop Sign

File Name : Old State Rd & Loomis Ln

Site Code : 00000000

Start Date : 11/8/2023

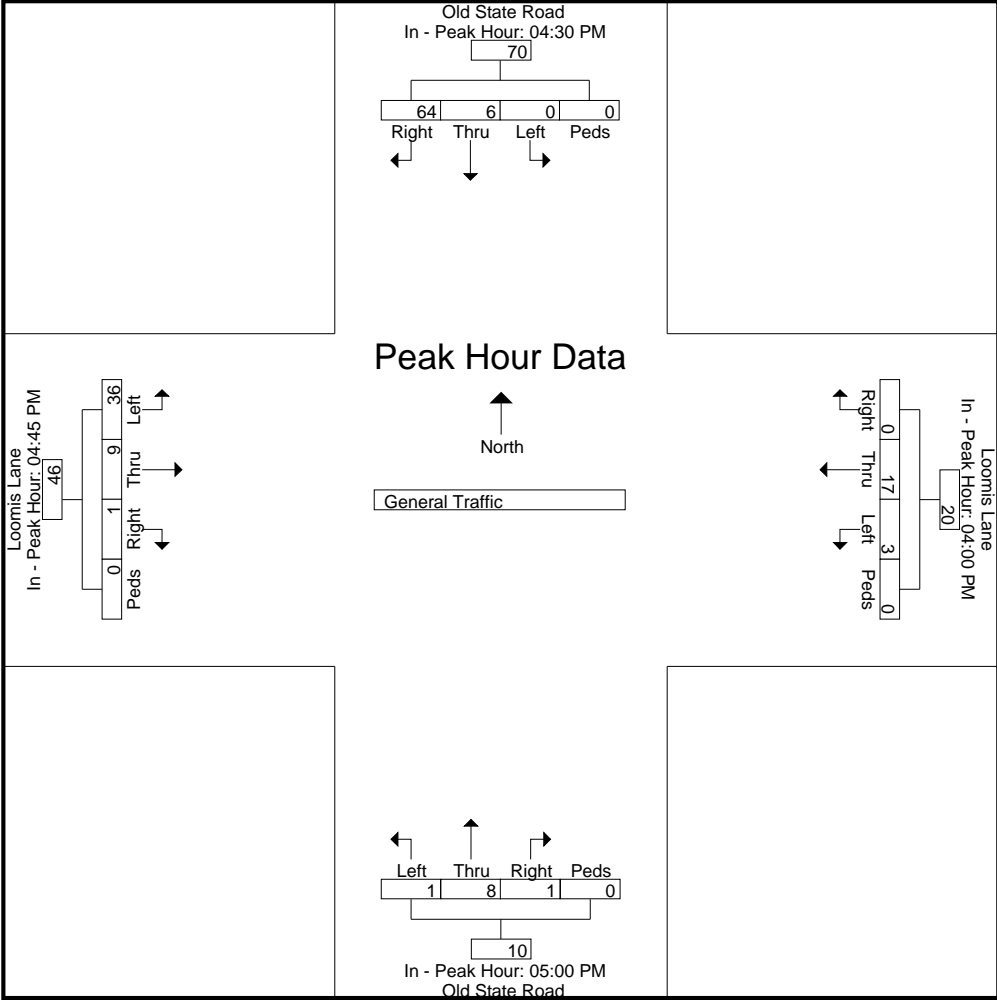
Page No : 6

	Old State Road From North					Loomis Lane From East					Old State Road From South					Loomis Lane From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM					04:00 PM					05:00 PM					04:45 PM				
+0 mins.	15	3	0	0	18	0	3	0	0	3	0	1	0	0	1	0	3	9	0	12
+15 mins.	17	2	0	0	19	0	5	2	0	7	1	3	0	0	4	0	0	8	0	8
+30 mins.	15	0	0	0	15	0	3	0	0	3	0	2	0	0	2	0	4	12	0	16
+45 mins.	17	1	0	0	18	0	6	1	0	7	0	2	1	0	3	1	2	7	0	10
Total Volume	64	6	0	0	70	0	17	3	0	20	1	8	1	0	10	1	9	36	0	46
% App. Total	91.4	8.6	0	0		0	85	15	0		10	80	10	0		2.2	19.6	78.3	0	
PHF	.941	.500	.000	.000	.921	.000	.708	.375	.000	.714	.250	.667	.250	.000	.625	.250	.563	.750	.000	.719



# Quality Counts

Idaho

Utah

Study: NV50049  
Intersection: Old State Rd / Loomis Lane  
City, State: Donnelly, Idaho  
Control: Stop Sign

File Name : Old State Rd & Loomis Ln  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 7

Image 1



# Quality Counts

Idaho XXXXXXXXXX Utah XXXXXXXXXX

Study: NV50049  
Intersection: SH-55 / Loomis Lane  
City, State: Donnelly, Idaho  
Control: Stop Sign

File Name : SH-55 & Loomis Ln  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 1

## Groups Printed- General Traffic

Start Time	SH-55 From North					Loomis Lane From East					SH-55 From South					Loomis Lane From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	20	0	0	20	0	0	0	0	0	0	21	1	0	22	1	0	1	0	2	44
07:15 AM	0	14	0	0	14	0	0	2	0	2	0	38	2	0	40	3	1	0	0	4	60
07:30 AM	0	26	0	0	26	0	0	1	0	1	0	43	1	0	44	1	0	0	0	1	72
07:45 AM	0	26	0	0	26	0	0	1	0	1	1	38	1	0	40	5	0	1	0	6	73
Total	0	86	0	0	86	0	0	4	0	4	1	140	5	0	146	10	1	2	0	13	249
08:00 AM	0	29	0	0	29	0	0	1	0	1	1	31	1	0	33	1	1	0	0	2	65
08:15 AM	0	30	0	0	30	0	0	0	0	0	1	45	3	0	49	1	1	1	0	3	82
08:30 AM	0	28	0	0	28	0	0	1	0	1	1	33	0	0	34	0	0	0	0	0	63
08:45 AM	0	27	0	0	27	0	0	1	0	1	1	34	0	0	35	0	0	0	0	0	63
Total	0	114	0	0	114	0	0	3	0	3	4	143	4	0	151	2	2	1	0	5	273
-----																					
04:00 PM	0	52	0	0	52	0	0	1	0	1	2	35	5	0	42	3	0	0	0	3	98
04:15 PM	0	48	0	0	48	0	6	3	0	9	1	38	1	0	40	2	1	1	0	4	101
04:30 PM	0	37	0	0	37	0	1	1	0	2	1	38	1	0	40	3	0	0	0	3	82
04:45 PM	0	45	0	0	45	0	1	1	0	2	0	30	6	0	36	2	0	0	0	2	85
Total	0	182	0	0	182	0	8	6	0	14	4	141	13	0	158	10	1	1	0	12	366
05:00 PM	0	54	0	0	54	0	0	1	0	1	3	36	0	0	39	2	0	0	0	2	96
05:15 PM	0	41	0	0	41	0	0	3	0	3	0	29	5	0	34	4	1	0	0	5	83
05:30 PM	0	38	0	0	38	0	1	2	0	3	6	40	2	0	48	2	0	0	0	2	91
05:45 PM	0	30	0	0	30	0	1	0	0	1	0	21	3	0	24	0	1	0	0	1	56
Total	0	163	0	0	163	0	2	6	0	8	9	126	10	0	145	8	2	0	0	10	326
Grand Total	0	545	0	0	545	0	10	19	0	29	18	550	32	0	600	30	6	4	0	40	1214
Apprch %	0	100	0	0		0	34.5	65.5	0		3	91.7	5.3	0		75	15	10	0		
Total %	0	44.9	0	0	44.9	0	0.8	1.6	0	2.4	1.5	45.3	2.6	0	49.4	2.5	0.5	0.3	0	3.3	

Study: NV50049

Intersection: SH-55 / Loomis Lane

City, State: Donnelly, Idaho

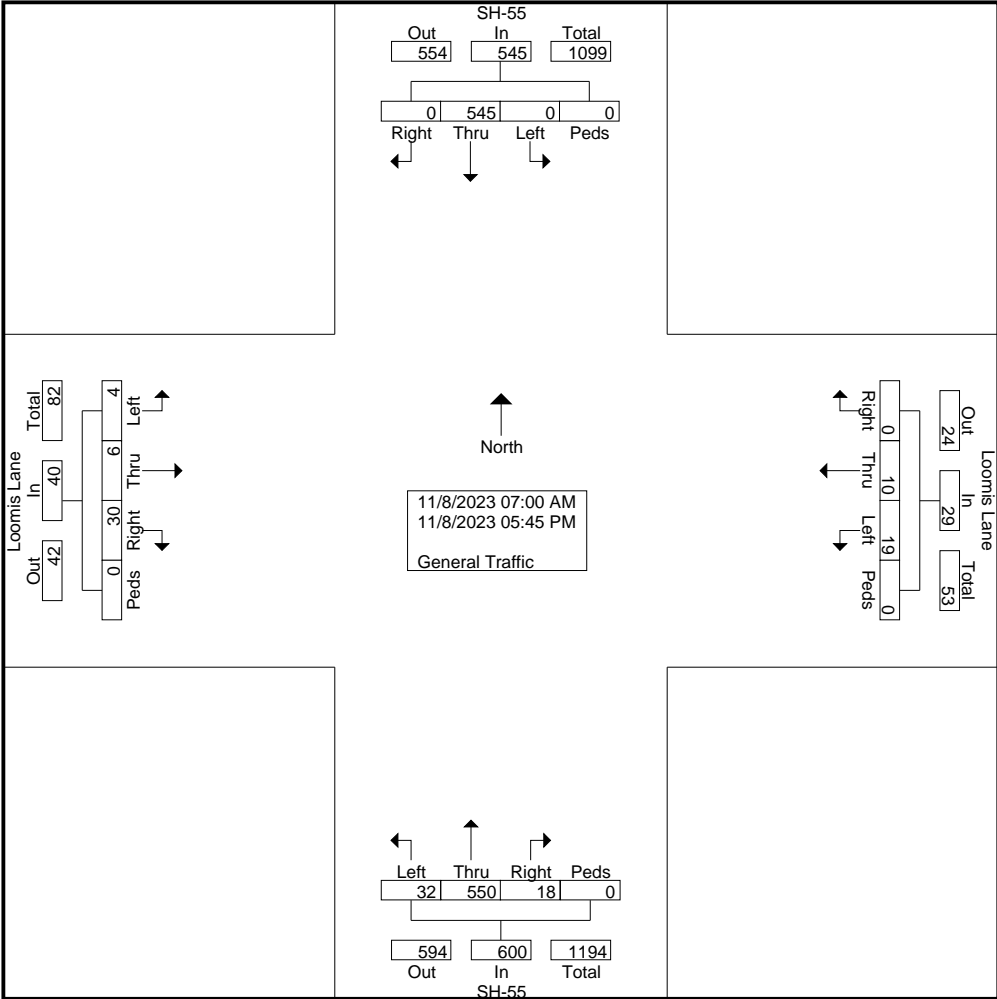
Control: Stop Sign

File Name : SH-55 & Loomis Ln

Site Code : 00000000

Start Date : 11/8/2023

Page No : 2



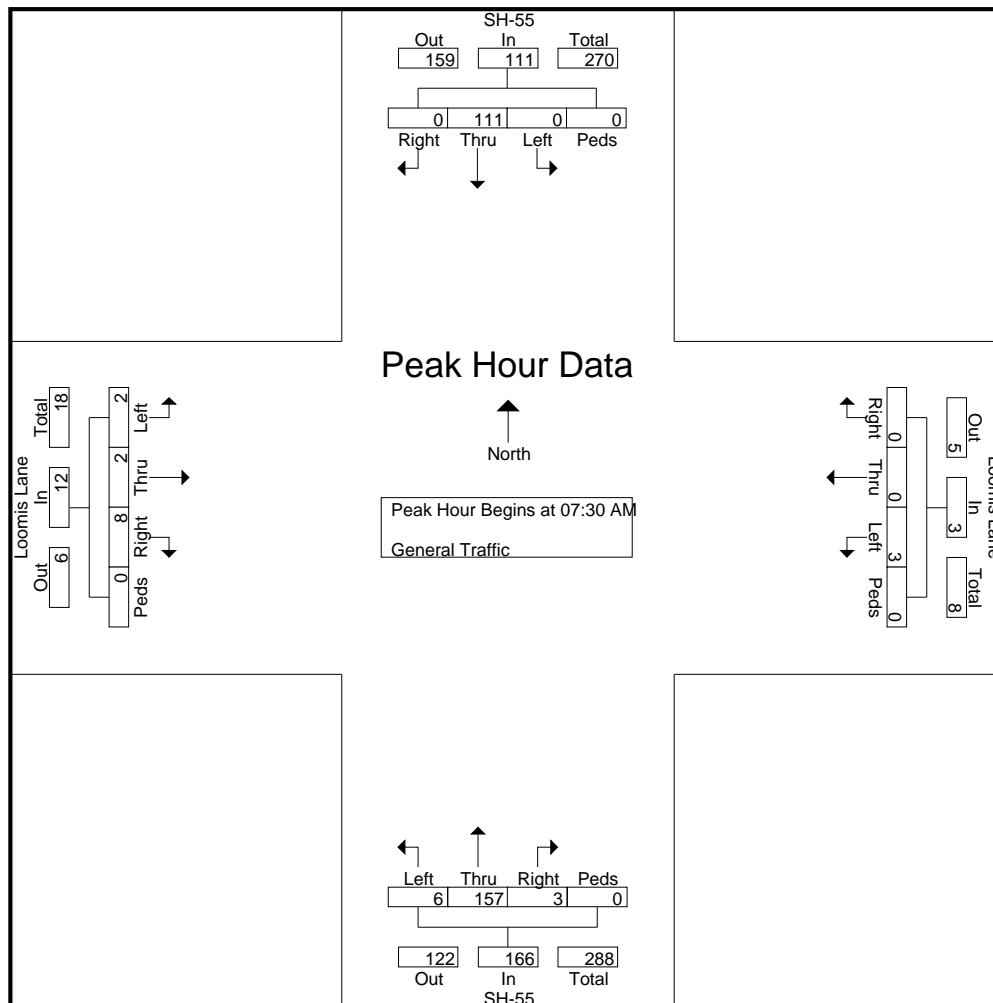
# Quality Counts

Idaho [REDACTED] Utah [REDACTED]

Study: NV50049  
Intersection: SH-55 / Loomis Lane  
City, State: Donnelly, Idaho  
Control: Stop Sign

File Name : SH-55 & Loomis Ln  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 3

	SH-55 From North					Loomis Lane From East					SH-55 From South					Loomis Lane From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	26	0	0	26	0	0	1	0	1	0	43	1	0	44	1	0	0	0	1	72
07:45 AM	0	26	0	0	26	0	0	1	0	1	1	38	1	0	40	5	0	1	0	6	73
08:00 AM	0	29	0	0	29	0	0	1	0	1	1	31	1	0	33	1	1	0	0	2	65
08:15 AM	0	30	0	0	30	0	0	0	0	0	1	45	3	0	49	1	1	1	0	3	82
Total Volume	0	111	0	0	111	0	0	3	0	3	3	157	6	0	166	8	2	2	0	12	292
% App. Total	0	100	0	0		0	0	100	0		1.8	94.6	3.6	0		66.7	16.7	16.7	0		
PHF	.000	.925	.000	.000	.925	.000	.000	.750	.000	.750	.750	.872	.500	.000	.847	.400	.500	.500	.000	.500	.890



# Quality Counts

Idaho [REDACTED]
Utah [REDACTED]

Study: NV50049

Intersection: SH-55 / Loomis Lane

City, State: Donnelly, Idaho

Control: Stop Sign

File Name : SH-55 & Loomis Ln

Site Code : 00000000

Start Date : 11/8/2023

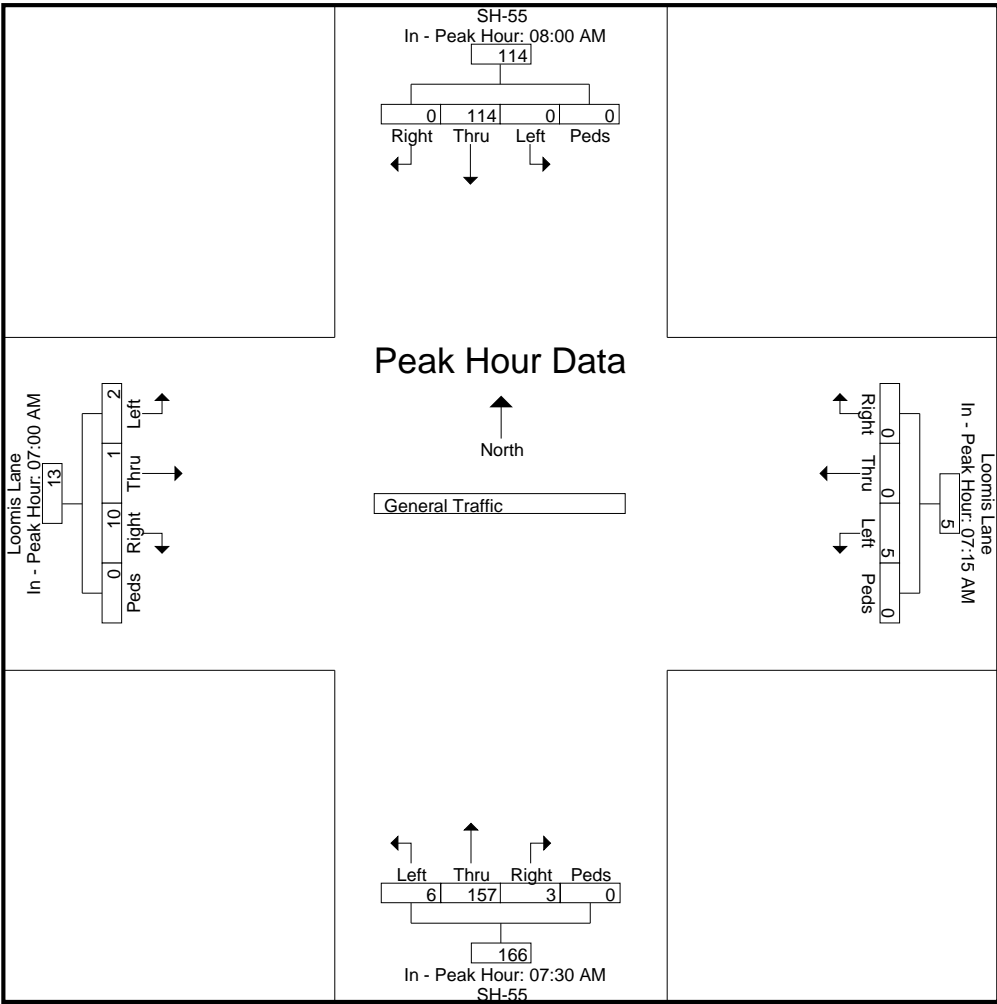
Page No : 4

	SH-55 From North					Loomis Lane From East					SH-55 From South					Loomis Lane From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM					07:15 AM					07:30 AM					07:00 AM				
+0 mins.	0	29	0	0	29	0	0	2	0	2	0	43	1	0	44	1	0	1	0	2
+15 mins.	0	30	0	0	30	0	0	1	0	1	1	38	1	0	40	3	1	0	0	4
+30 mins.	0	28	0	0	28	0	0	1	0	1	1	31	1	0	33	1	0	0	0	1
+45 mins.	0	27	0	0	27	0	0	1	0	1	1	45	3	0	49	5	0	1	0	6
Total Volume	0	114	0	0	114	0	0	5	0	5	3	157	6	0	166	10	1	2	0	13
% App. Total	0	100	0	0		0	0	100	0		1.8	94.6	3.6	0		76.9	7.7	15.4	0	
PHF	.000	.950	.000	.000	.950	.000	.000	.625	.000	.625	.750	.872	.500	.000	.847	.500	.250	.500	.000	.542



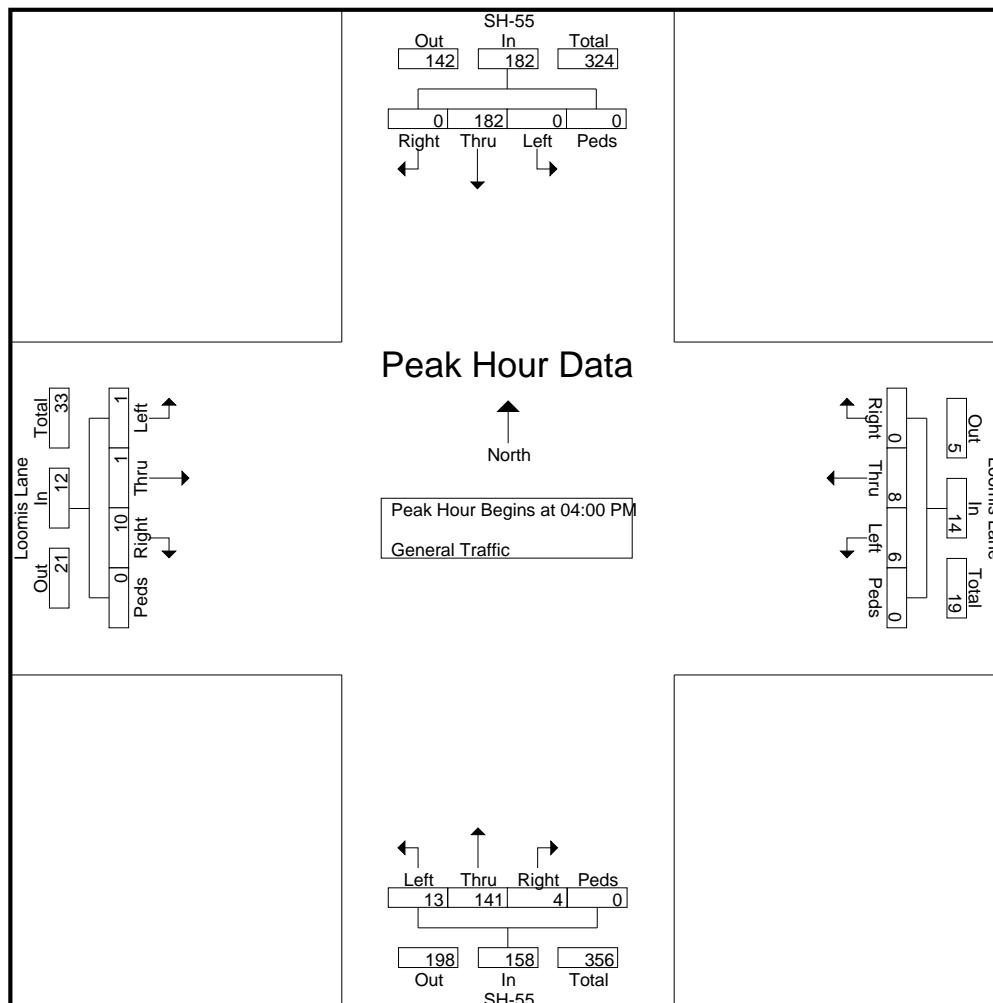
# Quality Counts

Idaho [REDACTED] Utah [REDACTED]

Study: NV50049  
Intersection: SH-55 / Loomis Lane  
City, State: Donnelly, Idaho  
Control: Stop Sign

File Name : SH-55 & Loomis Ln  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 5

	SH-55 From North					Loomis Lane From East					SH-55 From South					Loomis Lane From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	52	0	0	52	0	0	1	0	1	2	35	5	0	42	3	0	0	0	3	98
04:15 PM	0	48	0	0	48	0	6	3	0	9	1	38	1	0	40	2	1	1	0	4	101
04:30 PM	0	37	0	0	37	0	1	1	0	2	1	38	1	0	40	3	0	0	0	3	82
04:45 PM	0	45	0	0	45	0	1	1	0	2	0	30	6	0	36	2	0	0	0	2	85
Total Volume	0	182	0	0	182	0	8	6	0	14	4	141	13	0	158	10	1	1	0	12	366
% App. Total	0	100	0	0		0	57.1	42.9	0		2.5	89.2	8.2	0		83.3	8.3	8.3	0		
PHF	.000	.875	.000	.000	.875	.000	.333	.500	.000	.389	.500	.928	.542	.000	.940	.833	.250	.250	.000	.750	.906



# Quality Counts

Idaho [REDACTED] Utah [REDACTED]

Study: NV50049  
Intersection: SH-55 / Loomis Lane  
City, State: Donnelly, Idaho  
Control: Stop Sign

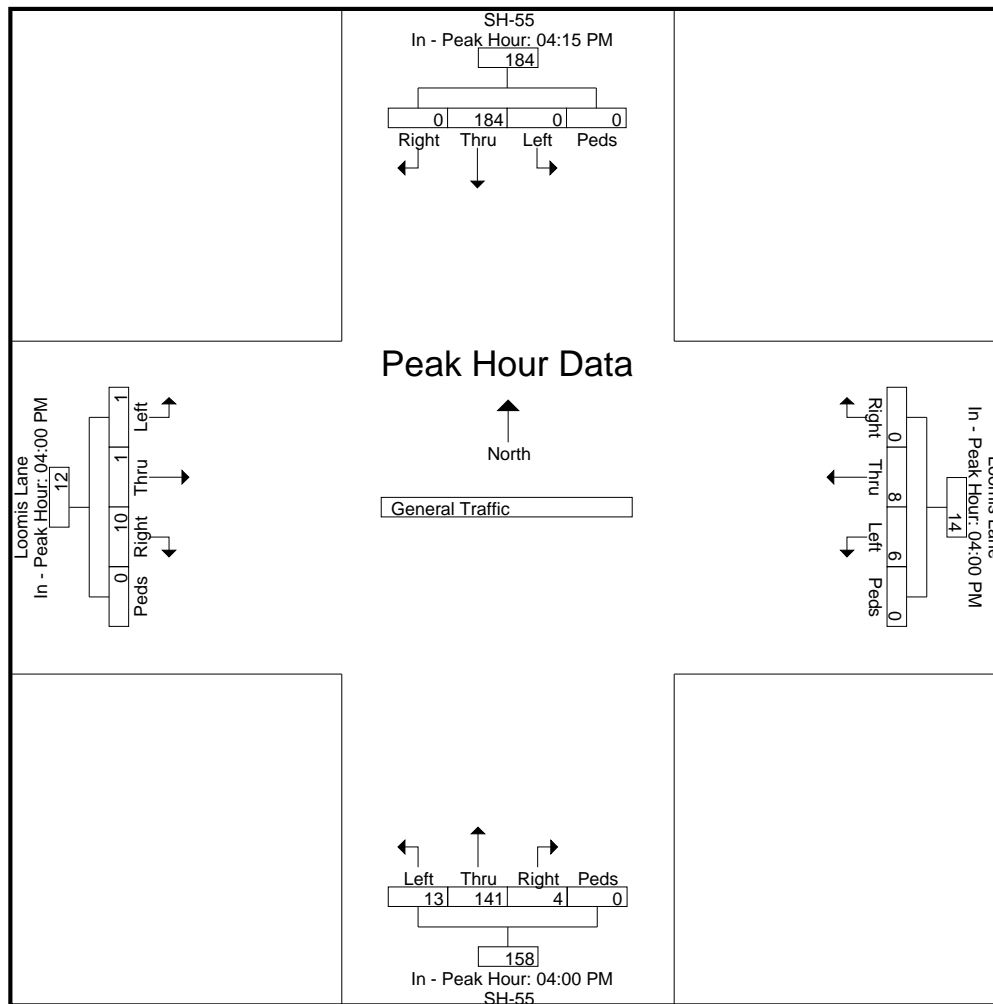
File Name : SH-55 & Loomis Ln  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 6

	SH-55 From North					Loomis Lane From East					SH-55 From South					Loomis Lane From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM					04:00 PM					04:00 PM					04:00 PM				
+0 mins.	0	48	0	0	48	0	0	1	0	1	2	35	5	0	42	3	0	0	0	3
+15 mins.	0	37	0	0	37	0	6	3	0	9	1	38	1	0	40	2	1	1	0	4
+30 mins.	0	45	0	0	45	0	1	1	0	2	1	38	1	0	40	3	0	0	0	3
+45 mins.	0	54	0	0	54	0	1	1	0	2	0	30	6	0	36	2	0	0	0	2
Total Volume	0	184	0	0	184	0	8	6	0	14	4	141	13	0	158	10	1	1	0	12
% App. Total	0	100	0	0		0	57.1	42.9	0		2.5	89.2	8.2	0		83.3	8.3	8.3	0	
PHF	.000	.852	.000	.000	.852	.000	.333	.500	.000	.389	.500	.928	.542	.000	.940	.833	.250	.250	.000	.750



# Quality Counts

Idaho

Utah

Study: NV50049  
Intersection: SH-55 / Loomis Lane  
City, State: Donnelly, Idaho  
Control: Stop Sign

File Name : SH-55 & Loomis Ln  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 7

Image 1



# Quality Counts

Idaho [REDACTED] Utah [REDACTED]

Study: NV50049  
Intersection: SH-55 / Old State Road  
City, State: Donnelly, Idaho  
Control: Stop Sign

File Name : SH-55 & Old State Rd  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 1

## Groups Printed- General Traffic

Start Time	SH-55 From Northwest				SH-55 From Southeast				Old State Road From South				Int. Total
	Bear Right	Thru	Peds	App. Total	Thru	Hard Left	Peds	App. Total	Hard Right	Bear Left	Peds	App. Total	
07:00 AM	3	19	0	22	25	0	0	25	0	13	0	13	60
07:15 AM	2	12	0	14	35	0	0	35	1	24	0	25	74
07:30 AM	10	28	0	38	49	0	0	49	0	23	0	23	110
07:45 AM	3	31	0	34	39	0	0	39	0	19	0	19	92
Total	18	90	0	108	148	0	0	148	1	79	0	80	336
08:00 AM	7	26	0	33	30	0	0	30	0	12	0	12	75
08:15 AM	4	30	0	34	46	0	0	46	0	11	0	11	91
08:30 AM	5	31	0	36	28	0	0	28	0	10	0	10	74
08:45 AM	7	28	0	35	33	0	0	33	0	9	0	9	77
Total	23	115	0	138	137	0	0	137	0	42	0	42	317
-----													
04:00 PM	7	52	0	59	36	0	0	36	0	11	0	11	106
04:15 PM	12	49	0	61	39	0	0	39	0	7	0	7	107
04:30 PM	18	35	0	53	39	0	0	39	0	4	0	4	96
04:45 PM	21	49	0	70	30	0	0	30	0	7	0	7	107
Total	58	185	0	243	144	0	0	144	0	29	0	29	416
05:00 PM	11	52	0	63	39	1	0	40	0	11	0	11	114
05:15 PM	19	37	0	56	23	0	0	23	0	13	0	13	92
05:30 PM	12	40	0	52	44	0	0	44	0	9	0	9	105
05:45 PM	16	27	0	43	22	0	0	22	0	12	0	12	77
Total	58	156	0	214	128	1	0	129	0	45	0	45	388
Grand Total	157	546	0	703	557	1	0	558	1	195	0	196	1457
Apprch %	22.3	77.7	0		99.8	0.2	0		0.5	99.5	0		
Total %	10.8	37.5	0	48.2	38.2	0.1	0	38.3	0.1	13.4	0	13.5	

Study: NV50049

Intersection: SH-55 / Old State Road

City, State: Donnelly, Idaho

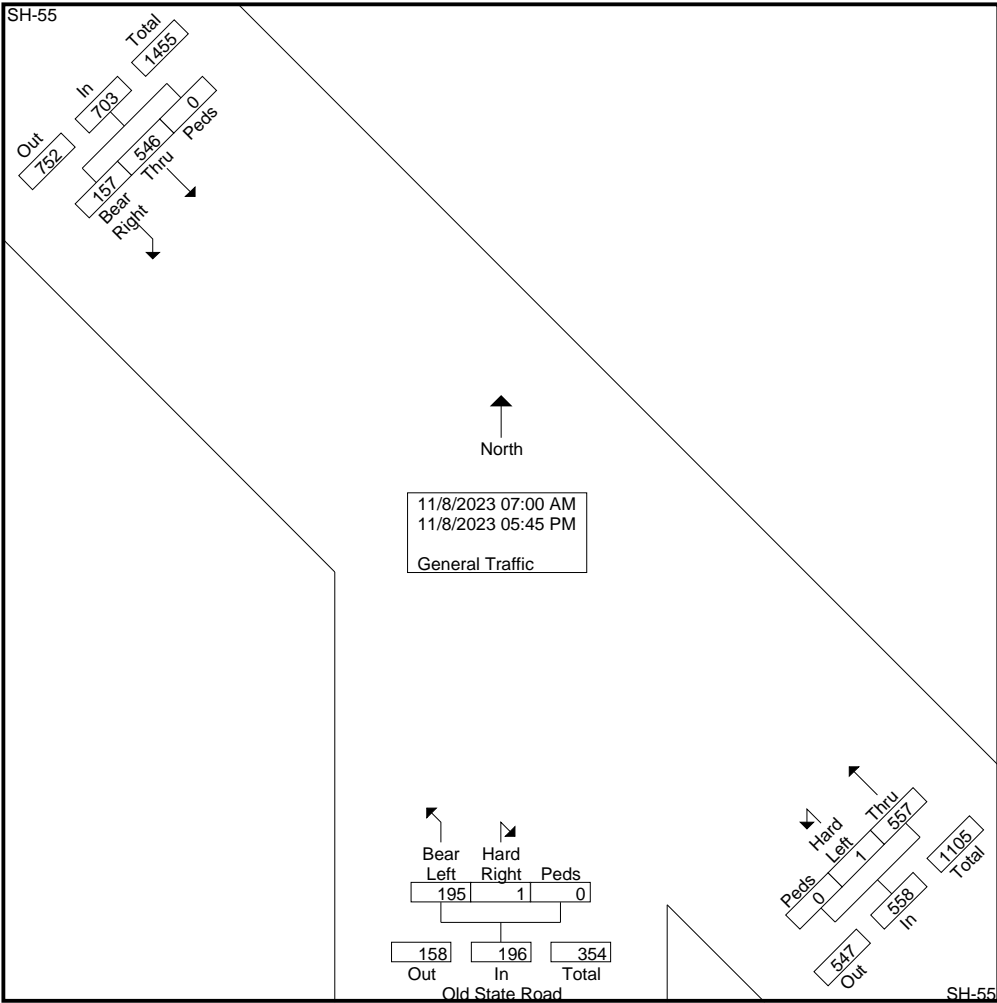
Control: Stop Sign

File Name : SH-55 & Old State Rd

Site Code : 00000000

Start Date : 11/8/2023

Page No : 2



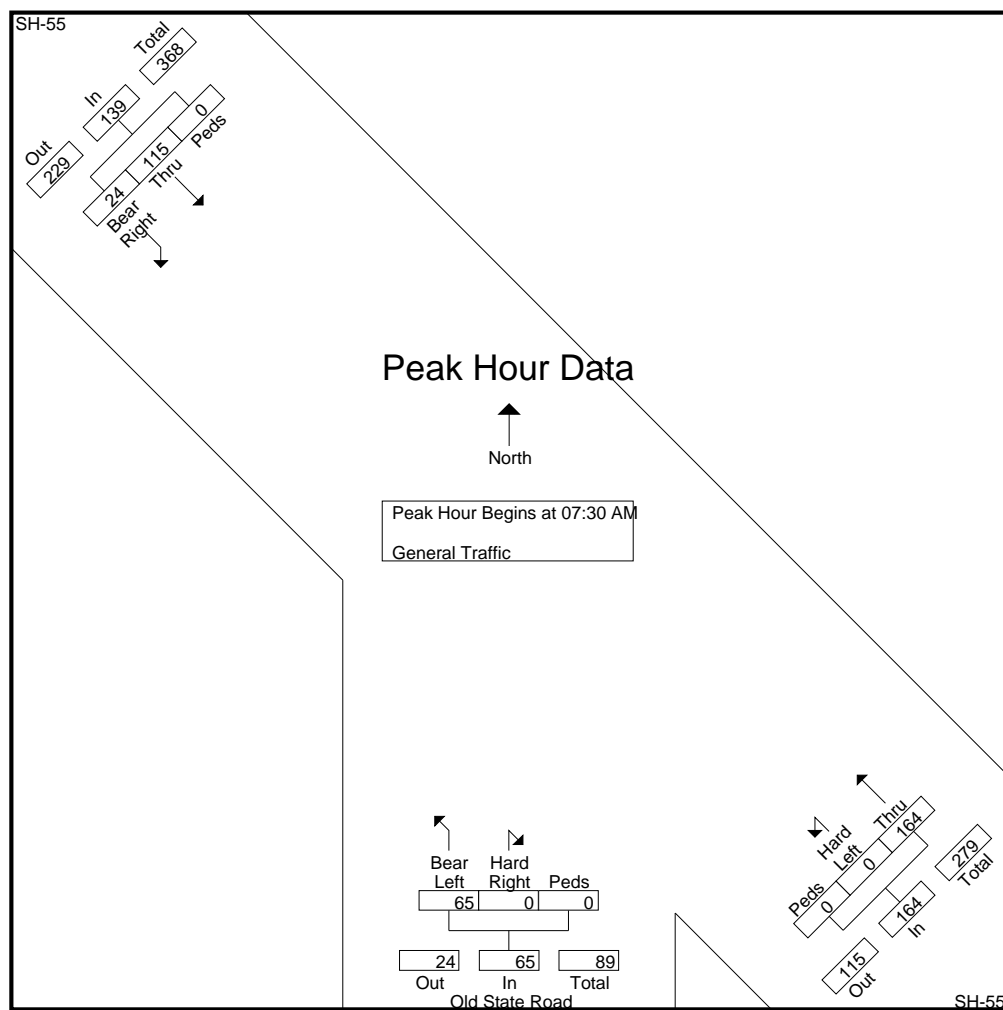
# Quality Counts

Idaho ( ) Utah ( )

Study: NV50049  
Intersection: SH-55 / Old State Road  
City, State: Donnelly, Idaho  
Control: Stop Sign

File Name : SH-55 & Old State Rd  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 3

	SH-55 From Northwest				SH-55 From Southeast				Old State Road From South				
Start Time	Bear Right	Thru	Peds	App. Total	Thru	Hard Left	Peds	App. Total	Hard Right	Bear Left	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1</b>													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	10	28	0	38	49	0	0	49	0	23	0	23	110
07:45 AM	3	31	0	34	39	0	0	39	0	19	0	19	92
08:00 AM	7	26	0	33	30	0	0	30	0	12	0	12	75
08:15 AM	4	30	0	34	46	0	0	46	0	11	0	11	91
Total Volume	24	115	0	139	164	0	0	164	0	65	0	65	368
% App. Total	17.3	82.7	0		100	0	0		0	100	0		
PHF	.600	.927	.000	.914	.837	.000	.000	.837	.000	.707	.000	.707	.836



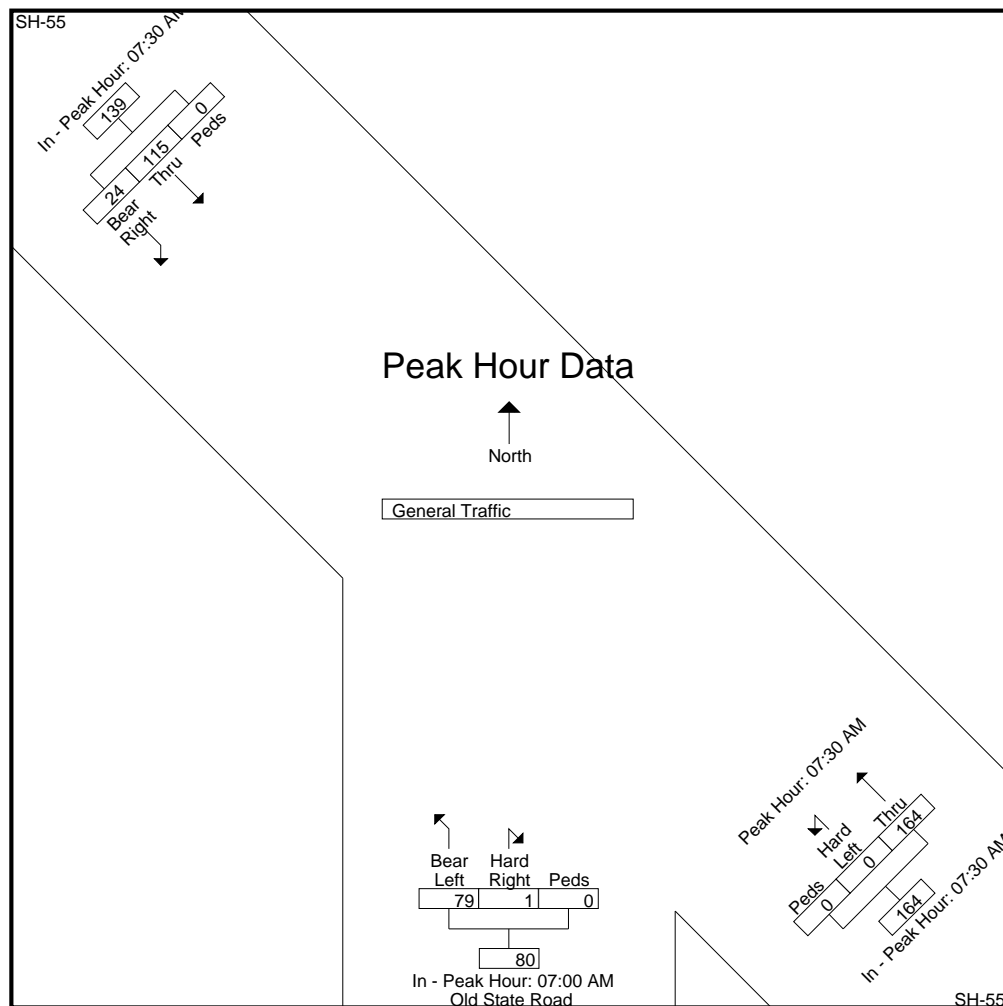
# Quality Counts

Idaho [REDACTED] Utah [REDACTED]

Study: NV50049  
Intersection: SH-55 / Old State Road  
City, State: Donnelly, Idaho  
Control: Stop Sign

File Name : SH-55 & Old State Rd  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 4

	SH-55 From Northwest				SH-55 From Southeast				Old State Road From South				
Start Time	Bear Right	Thru	Peds	App. Total	Thru	Hard Left	Peds	App. Total	Hard Right	Bear Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	07:30 AM				07:30 AM				07:00 AM				
+0 mins.	10	28	0	38	49	0	0	49	0	13	0	13	
+15 mins.	3	31	0	34	39	0	0	39	1	24	0	25	
+30 mins.	7	26	0	33	30	0	0	30	0	23	0	23	
+45 mins.	4	30	0	34	46	0	0	46	0	19	0	19	
Total Volume	24	115	0	139	164	0	0	164	1	79	0	80	
% App. Total	17.3	82.7	0		100	0	0		1.2	98.8	0		
PHF	.600	.927	.000	.914	.837	.000	.000	.837	.250	.823	.000	.800	



Study: NV50049

Intersection: SH-55 / Old State Road

City, State: Donnelly, Idaho

Control: Stop Sign

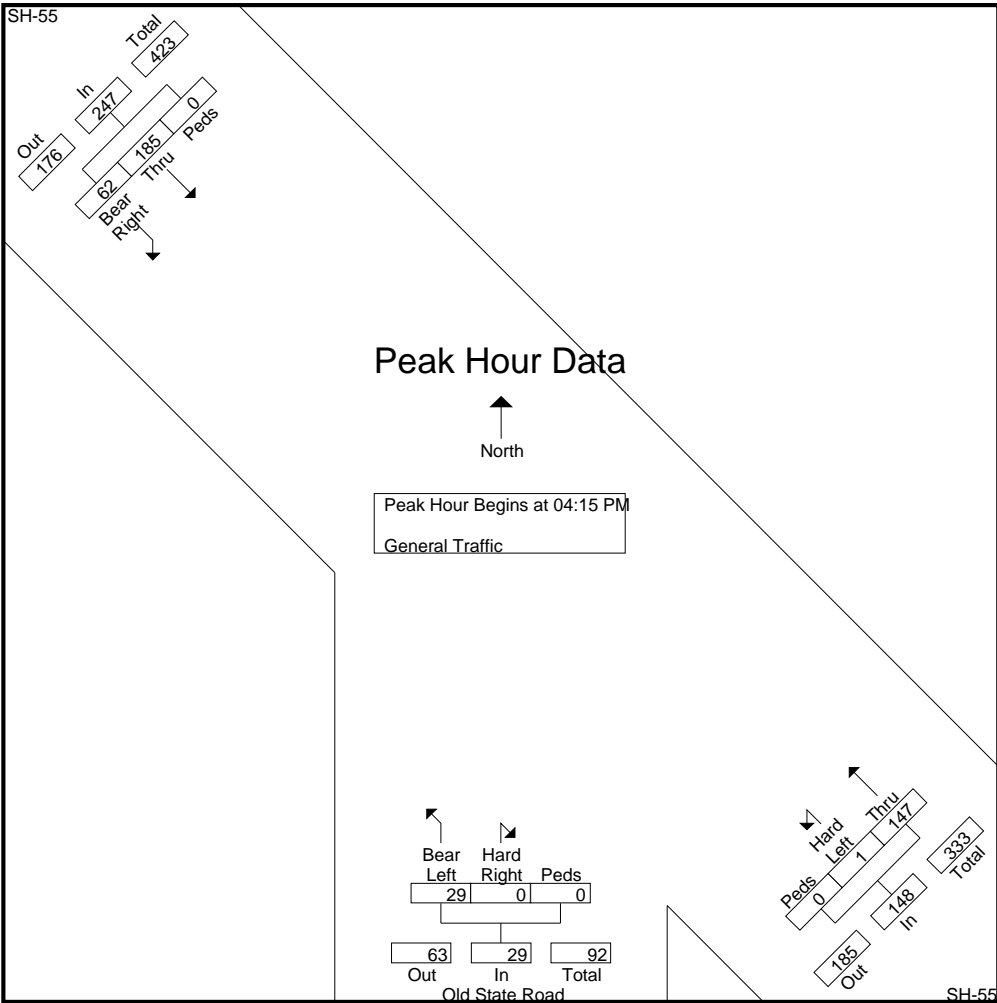
File Name : SH-55 & Old State Rd

Site Code : 00000000

Start Date : 11/8/2023

Page No : 5

	SH-55 From Northwest				SH-55 From Southeast				Old State Road From South				
Start Time	Bear Right	Thru	Peds	App. Total	Thru	Hard Left	Peds	App. Total	Hard Right	Bear Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	12	49	0	61	39	0	0	39	0	7	0	7	107
04:30 PM	18	35	0	53	39	0	0	39	0	4	0	4	96
04:45 PM	21	49	0	70	30	0	0	30	0	7	0	7	107
05:00 PM	11	52	0	63	39	1	0	40	0	11	0	11	114
Total Volume	62	185	0	247	147	1	0	148	0	29	0	29	424
% App. Total	25.1	74.9	0		99.3	0.7	0		0	100	0		
PHF	.738	.889	.000	.882	.942	.250	.000	.925	.000	.659	.000	.659	.930



Study: NV50049

Intersection: SH-55 / Old State Road

City, State: Donnelly, Idaho

Control: Stop Sign

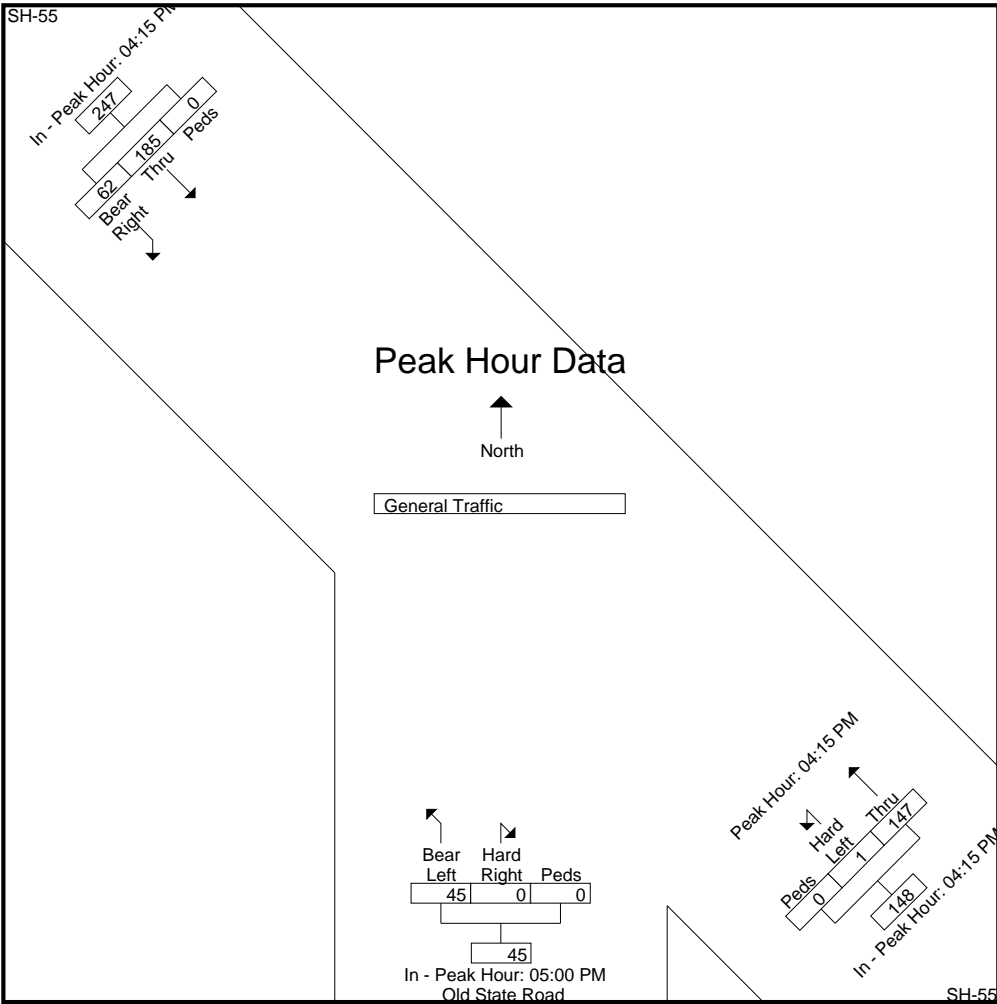
File Name : SH-55 & Old State Rd

Site Code : 00000000

Start Date : 11/8/2023

Page No : 6

	SH-55 From Northwest				SH-55 From Southeast				Old State Road From South				
Start Time	Bear Right	Thru	Peds	App. Total	Thru	Hard Left	Peds	App. Total	Hard Right	Bear Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	04:15 PM				04:15 PM				05:00 PM				
+0 mins.	12	49	0	61	39	0	0	39	0	11	0	11	
+15 mins.	18	35	0	53	39	0	0	39	0	13	0	13	
+30 mins.	21	49	0	70	30	0	0	30	0	9	0	9	
+45 mins.	11	52	0	63	39	1	0	40	0	12	0	12	
Total Volume	62	185	0	247	147	1	0	148	0	45	0	45	
% App. Total	25.1	74.9	0		99.3	0.7	0		0	100	0		
PHF	.738	.889	.000	.882	.942	.250	.000	.925	.000	.865	.000	.865	



# Quality Counts

Idaho ( [REDACTED] )

Utah ( [REDACTED] )

Study: NV50049  
Intersection: SH-55 / Old State Road  
City, State: Donnelly, Idaho  
Control: Stop Sign

File Name : SH-55 & Old State Rd  
Site Code : 00000000  
Start Date : 11/8/2023  
Page No : 7

Image 1



# L2 Data Collection

L2DataCollection.com

Idaho [REDACTED] Utah [REDACTED]

Study: NV50049

Type: Volume / Direction / Classification

Tech: Judd / Klaren / McComb

Count: Vehicle Classification

Loomis Ln west of Old State Rd

Start Date: 11/8/2023

End Date: 11/8/2023

Loomis Lane west of Old State Road

Donnelly, Idaho

Direction: Westbound

11/8/2023 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
6:00	0	1	4	1	0	0	0	0	0	0	0	0	0	0	6
7:00	0	2	8	1	7	0	0	0	0	0	0	0	0	0	18
8:00	0	10	4	0	5	1	0	0	0	0	0	0	0	0	20
9:00	0	7	7	2	7	3	0	2	0	0	0	0	0	2	30
10:00	0	11	12	1	7	1	0	2	2	0	0	0	0	1	37
11:00	1	13	18	1	6	0	0	5	0	0	0	0	0	2	46
12:00 PM	0	17	16	3	9	1	0	3	0	0	0	0	0	3	52
1:00	0	12	17	1	10	1	0	2	0	0	0	0	0	0	43
2:00	1	19	10	1	8	2	0	1	0	1	0	0	0	0	43
3:00	0	24	13	3	9	1	0	2	0	1	0	0	0	1	54
4:00	0	33	18	0	11	0	0	1	0	0	0	0	0	2	65
5:00	1	27	20	0	16	0	0	1	0	0	0	0	0	0	65
6:00	0	22	12	0	3	0	0	2	0	0	0	0	0	1	40
7:00	0	14	9	0	6	0	0	0	0	0	0	0	0	0	29
8:00	0	8	7	0	4	0	0	0	0	0	0	0	0	0	19
9:00	0	6	2	0	0	0	0	0	0	0	0	0	0	1	9
10:00	0	4	2	0	1	0	0	0	0	0	0	0	0	0	7
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	232	179	14	109	10	0	21	2	2	0	0	0	13	585
Percent	0.5%	39.7%	30.6%	2.4%	18.6%	1.7%	0.0%	3.6%	0.3%	0.3%	0.0%	0.0%	0.0%	2.2%	
AM Peak	11:00	11:00	11:00	9:00	7:00	9:00		11:00	10:00					9:00	11:00
	1	13	18	2	7	3	*	5	2	*	*	*	*	2	46
PM Peak	2:00	4:00	5:00	12:00 PM	5:00	2:00		12:00 PM		2:00				12:00 PM	4:00
	1	33	20	3	16	2	*	3	*	1	*	*	*	3	65
Grand Total	3	232	179	14	109	10	0	21	2	2	0	0	0	13	585
Percent	0.5%	39.7%	30.6%	2.4%	18.6%	1.7%	0.0%	3.6%	0.3%	0.3%	0.0%	0.0%	0.0%	2.2%	

# L2 Data Collection

L2DataCollection.com

Idaho [REDACTED] Utah [REDACTED]

Study: NV50049

Type: Volume / Direction / Classification

Tech: Judd / Klaren / McComb

Count: Vehicle Classification

Loomis Ln west of Old State Rd

Start Date: 11/8/2023

End Date: 11/8/2023

Loomis Lane west of Old State Road

Donnelly, Idaho

Direction: Eastbound

11/8/2023 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
1:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
5:00	0	7	5	0	3	0	0	0	0	0	0	0	0	0	15
6:00	0	10	11	0	7	0	0	0	0	0	0	0	0	0	28
7:00	0	33	19	2	25	0	0	0	0	0	0	0	0	0	79
8:00	0	20	16	0	6	0	0	1	0	0	0	0	0	0	43
9:00	0	11	9	0	10	1	0	1	0	0	0	0	0	1	33
10:00	0	13	9	4	5	1	0	0	0	0	0	0	0	1	33
11:00	0	19	10	1	13	0	0	2	1	0	0	0	0	1	47
12:00 PM	2	16	10	3	6	1	0	3	0	0	0	0	0	5	46
1:00	0	12	17	1	8	0	0	3	0	0	0	0	0	1	42
2:00	1	11	19	2	8	3	0	4	1	0	0	0	0	0	49
3:00	0	15	11	2	8	0	0	1	1	0	0	0	0	0	38
4:00	0	10	13	0	13	0	0	2	0	0	0	0	0	0	38
5:00	0	17	16	0	12	0	0	0	0	1	0	0	0	1	47
6:00	0	11	4	0	5	0	0	0	0	0	0	0	0	0	20
7:00	0	3	3	0	1	0	0	0	0	0	0	0	0	0	7
8:00	0	2	3	0	1	0	0	0	0	0	0	0	0	0	6
9:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	213	175	16	132	7	0	17	3	1	0	0	0	10	577
Percent	0.5%	36.9%	30.3%	2.8%	22.9%	1.2%	0.0%	2.9%	0.5%	0.2%	0.0%	0.0%	0.0%	1.7%	
AM Peak		7:00	7:00	10:00	7:00	12:00 AM		11:00	11:00					9:00	7:00
	*	33	19	4	25	1	*	2	1	*	*	*	*	1	79
PM Peak	12:00 PM	5:00	2:00	12:00 PM	4:00	2:00		2:00	2:00	5:00				12:00 PM	2:00
	2	17	19	3	13	3	*	4	1	1	*	*	*	5	49
Grand Total	3	213	175	16	132	7	0	17	3	1	0	0	0	10	577
Percent	0.5%	36.9%	30.3%	2.8%	22.9%	1.2%	0.0%	2.9%	0.5%	0.2%	0.0%	0.0%	0.0%	1.7%	

## L2 Data Collection

L2DataCollection.com

Idaho [REDACTED] Utah [REDACTED]

Study: NV50049

Type: Volume / Direction / Classification

Tech: Judd / Klaren / McComb

Count: Vehicle Classification

Loomis Ln west of Old State Rd

Start Date: 11/8/2023

End Date: 11/8/2023

Loomis Lane west of Old State Road

Donnelly, Idaho

Direction: Combined

11/8/2023 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
5:00	0	9	5	0	3	0	0	0	0	0	0	0	0	0	17
6:00	0	11	15	1	7	0	0	0	0	0	0	0	0	0	34
7:00	0	35	27	3	32	0	0	0	0	0	0	0	0	0	97
8:00	0	30	20	0	11	1	0	1	0	0	0	0	0	0	63
9:00	0	18	16	2	17	4	0	3	0	0	0	0	0	3	63
10:00	0	24	21	5	12	2	0	2	2	0	0	0	0	2	70
11:00	1	32	28	2	19	0	0	7	1	0	0	0	0	3	93
12:00 PM	2	33	26	6	15	2	0	6	0	0	0	0	0	8	98
1:00	0	24	34	2	18	1	0	5	0	0	0	0	0	1	85
2:00	2	30	29	3	16	5	0	5	1	1	0	0	0	0	92
3:00	0	39	24	5	17	1	0	3	1	1	0	0	0	1	92
4:00	0	43	31	0	24	0	0	3	0	0	0	0	0	2	103
5:00	1	44	36	0	28	0	0	1	0	1	0	0	0	1	112
6:00	0	33	16	0	8	0	0	2	0	0	0	0	0	1	60
7:00	0	17	12	0	7	0	0	0	0	0	0	0	0	0	36
8:00	0	10	10	0	5	0	0	0	0	0	0	0	0	0	25
9:00	0	7	2	0	1	0	0	0	0	0	0	0	0	1	11
10:00	0	4	2	0	1	0	0	0	0	0	0	0	0	0	7
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	6	445	354	30	241	17	0	38	5	3	0	0	0	23	1162
Percent	0.5%	38.3%	30.5%	2.6%	20.7%	1.5%	0.0%	3.3%	0.4%	0.3%	0.0%	0.0%	0.0%	2.0%	
AM Peak	11:00	7:00	11:00	10:00	7:00	9:00		11:00	10:00					9:00	7:00
	1	35	28	5	32	4	*	7	2	*	*	*	*	3	97
PM Peak	12:00 PM	5:00	5:00	12:00 PM	5:00	2:00		12:00 PM	2:00	2:00				12:00 PM	5:00
	2	44	36	6	28	5	*	6	1	1	*	*	*	8	112
Grand Total	6	445	354	30	241	17	0	38	5	3	0	0	0	23	1162
Percent	0.5%	38.3%	30.5%	2.6%	20.7%	1.5%	0.0%	3.3%	0.4%	0.3%	0.0%	0.0%	0.0%	2.0%	

# L2 Data Collection

L2DataCollection.com

Study: NV50049  
Type: Volume / Direction  
Tech: Judd / Klaren / McComb  
Count: VehicleVolume

Idaho ( [REDACTED] ) Utah ( [REDACTED] )

Loomis Ln west of Old State Rd  
Start Date: 11/8/2023  
End Date: 11/8/2023  
Loomis Lane west of Old State Road  
Donnelly, Idaho

11/8/2023	Westbound	Eastbound	Total
Time			
12:00 AM	0	1	1
12:15	0	0	0
12:30	0	0	0
12:45	0	0	0
1:00	0	0	0
1:15	0	0	0
1:30	0	1	1
1:45	0	0	0
2:00	0	0	0
2:15	0	0	0
2:30	0	0	0
2:45	0	0	0
3:00	0	0	0
3:15	0	0	0
3:30	0	0	0
3:45	0	0	0
4:00	0	0	0
4:15	0	1	1
4:30	0	0	0
4:45	0	1	1
5:00	1	3	4
5:15	0	4	4
5:30	0	2	2
5:45	1	6	7
6:00	0	4	4
6:15	1	2	3
6:30	2	19	21
6:45	3	3	6
7:00	0	18	18
7:15	5	23	28
7:30	9	16	25
7:45	4	22	26
8:00	7	11	18
8:15	5	14	19
8:30	3	12	15
8:45	5	6	11
9:00	8	6	14
9:15	8	8	16
9:30	7	7	14
9:45	7	12	19
10:00	8	8	16
10:15	11	8	19
10:30	8	9	17
10:45	10	8	18
11:00	11	10	21
11:15	14	11	25
11:30	13	15	28
11:45	8	11	19
Total	159	282	441
Percent	36.1%	63.9%	
Peak	10:45	7:00	7:00
Volume	48	79	97
Peak Factor	0.857	0.859	0.866

# L2 Data Collection

L2DataCollection.com

Study: NV50049  
Type: Volume / Direction  
Tech: Judd / Klaren / McComb  
Count: VehicleVolume

Idaho [REDACTED] Utah [REDACTED]

Loomis Ln west of Old State Rd  
Start Date: 11/8/2023  
End Date: 11/8/2023  
Loomis Lane west of Old State Road  
Donnelly, Idaho

11/8/2023	Westbound	Eastbound	Total
Time			
12:00 PM	10	5	15
12:15	11	15	26
12:30	15	17	32
12:45	16	9	25
1:00	7	11	18
1:15	8	14	22
1:30	20	9	29
1:45	8	8	16
2:00	19	10	29
2:15	5	14	19
2:30	6	11	17
2:45	13	14	27
3:00	9	8	17
3:15	18	8	26
3:30	15	10	25
3:45	12	12	24
4:00	10	9	19
4:15	14	9	23
4:30	18	8	26
4:45	23	12	35
5:00	15	9	24
5:15	22	16	38
5:30	10	10	20
5:45	18	12	30
6:00	9	3	12
6:15	14	7	21
6:30	7	6	13
6:45	10	4	14
7:00	7	0	7
7:15	11	5	16
7:30	7	1	8
7:45	4	1	5
8:00	4	1	5
8:15	5	2	7
8:30	6	2	8
8:45	4	1	5
9:00	1	0	1
9:15	4	1	5
9:30	4	1	5
9:45	0	0	0
10:00	0	0	0
10:15	3	0	3
10:30	2	0	2
10:45	2	0	2
11:00	0	0	0
11:15	2	0	2
11:30	2	1	3
11:45	1	0	1
Total	431	296	727
Percent	59.3%	40.7%	
Peak	4:30	12:15	4:30
Volume	78	52	123
Peak Factor	0.848	0.765	0.809
Grand Total	590	578	1168
Percent	50.5%	49.5%	
AADT	ADT: 1,168		AADT: 1,168

# Quality Counts

Qualitycounts.net

Study: NV50049

Type: Volume / Direction / Classification

Tech: Judd / Klaren / McComb

Count: Vehicle Classification

Idaho ( ) Utah ( )

Old State Rd south of Loomis Ln

Start Date: 11/8/2023

End Date: 11/8/2023

Old State Road south of Loomis Lane

Donnelly, Idaho

Direction: Southbound

11/8/2023 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00	0	2	3	0	0	0	0	0	0	0	0	0	0	1	6
8:00	0	2	3	0	1	1	0	0	0	0	0	0	0	0	7
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	2	1	0	1	0	0	0	0	0	0	0	0	0	4
11:00	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2
12:00 PM	0	3	1	0	3	0	0	1	0	0	0	0	0	0	8
1:00	0	0	4	0	2	0	0	0	0	0	0	0	0	0	6
2:00	0	2	3	0	1	0	0	0	0	0	0	0	0	0	6
3:00	1	1	2	1	3	0	0	0	0	0	0	0	0	3	11
4:00	0	5	2	0	2	0	0	0	0	0	0	0	0	0	9
5:00	0	2	1	0	5	0	0	0	0	2	0	0	0	0	10
6:00	0	0	1	0	2	0	0	0	0	0	0	0	0	0	3
7:00	0	2	3	0	1	0	0	0	0	0	0	0	0	0	6
8:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
9:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
10:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	23	26	1	22	2	0	2	0	2	0	0	0	4	83
Percent	1.2%	27.7%	31.3%	1.2%	26.5%	2.4%	0.0%	2.4%	0.0%	2.4%	0.0%	0.0%	0.0%	4.8%	
AM Peak		7:00	7:00		8:00	8:00								7:00	8:00
	*	2	3	*	1	1	*	*	*	*	*	*	*	1	7
PM Peak	3:00	4:00	1:00	3:00	5:00			12:00 PM		5:00				3:00	3:00
	1	5	4	1	5	*	*	1	*	2	*	*	*	3	11
Grand Total	1	23	26	1	22	2	0	2	0	2	0	0	0	4	83
Percent	1.2%	27.7%	31.3%	1.2%	26.5%	2.4%	0.0%	2.4%	0.0%	2.4%	0.0%	0.0%	0.0%	4.8%	

# Quality Counts

Qualitycounts.net

Study: NV50049

Type: Volume / Direction / Classification

Tech: Judd / Klaren / McComb

Count: Vehicle Classification

Idaho

Utah

Old State Rd south of Loomis Ln

Start Date: 11/8/2023

End Date: 11/8/2023

Old State Road south of Loomis Lane

Donnelly, Idaho

Direction: Northbound

11/8/2023 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
5:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
6:00	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
7:00	0	5	5	0	4	0	0	0	0	0	0	0	0	0	14
8:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
9:00	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
10:00	0	3	3	0	1	0	0	0	0	0	0	0	0	0	7
11:00	0	0	0	0	2	0	0	2	0	0	0	0	0	1	5
12:00 PM	0	1	5	0	0	0	0	1	0	0	0	0	0	0	7
1:00	0	2	1	0	1	1	0	0	0	0	0	0	0	0	5
2:00	1	3	2	0	2	0	0	0	0	0	0	0	0	0	8
3:00	0	0	3	2	2	0	0	0	0	0	0	0	0	0	7
4:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
5:00	0	3	3	0	4	0	0	0	0	2	0	0	0	0	12
6:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	24	31	2	18	2	0	3	0	2	0	0	0	1	84
Percent	1.2%	28.6%	36.9%	2.4%	21.4%	2.4%	0.0%	3.6%	0.0%	2.4%	0.0%	0.0%	0.0%	1.2%	
AM Peak		7:00	7:00		7:00	9:00		11:00						11:00	7:00
	*	5	5	*	4	1	*	2	*	*	*	*	*	1	14
PM Peak	2:00	2:00	12:00 PM	3:00	5:00	1:00		12:00 PM		5:00					5:00
	1	3	5	2	4	1	*	1	*	2	*	*	*	*	12
Grand Total	1	24	31	2	18	2	0	3	0	2	0	0	0	1	84
Percent	1.2%	28.6%	36.9%	2.4%	21.4%	2.4%	0.0%	3.6%	0.0%	2.4%	0.0%	0.0%	0.0%	1.2%	

# Quality Counts

Qualitycounts.net

Study: NV50049

Type: Volume / Direction / Classification

Tech: Judd / Klaren / McComb

Count: Vehicle Classification

Idaho

Utah

Old State Rd south of Loomis Ln

Start Date: 11/8/2023

End Date: 11/8/2023

Old State Road south of Loomis Lane

Donnelly, Idaho

Direction: Combined

11/8/2023 Time	Motor Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	No Class	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
5:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
6:00	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
7:00	0	7	8	0	4	0	0	0	0	0	0	0	0	1	20
8:00	0	3	4	0	1	1	0	0	0	0	0	0	0	0	9
9:00	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
10:00	0	5	4	0	2	0	0	0	0	0	0	0	0	0	11
11:00	0	1	0	0	2	1	0	2	0	0	0	0	0	1	7
12:00 PM	0	4	6	0	3	0	0	2	0	0	0	0	0	0	15
1:00	0	2	5	0	3	1	0	0	0	0	0	0	0	0	11
2:00	1	5	5	0	3	0	0	0	0	0	0	0	0	0	14
3:00	1	1	5	3	5	0	0	0	0	0	0	0	0	3	18
4:00	0	6	2	0	3	0	0	0	0	0	0	0	0	0	11
5:00	0	5	4	0	9	0	0	0	0	4	0	0	0	0	22
6:00	0	1	1	0	2	0	0	0	0	0	0	0	0	0	4
7:00	0	2	6	0	1	0	0	0	0	0	0	0	0	0	9
8:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
9:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
10:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	47	57	3	40	4	0	5	0	4	0	0	0	5	167
Percent	1.2%	28.1%	34.1%	1.8%	24.0%	2.4%	0.0%	3.0%	0.0%	2.4%	0.0%	0.0%	0.0%	3.0%	
AM Peak		7:00	7:00		7:00	8:00		11:00						7:00	7:00
	*	7	8	*	4	1	*	2	*	*	*	*	*	1	20
PM Peak	2:00	4:00	12:00 PM	3:00	5:00	1:00		12:00 PM		5:00				3:00	5:00
	1	6	6	3	9	1	*	2	*	4	*	*	*	3	22
Grand Total	2	47	57	3	40	4	0	5	0	4	0	0	0	5	167
Percent	1.2%	28.1%	34.1%	1.8%	24.0%	2.4%	0.0%	3.0%	0.0%	2.4%	0.0%	0.0%	0.0%	3.0%	

# Quality Counts

Qualitycounts.net

Study: NV50049  
Type: Volume / Direction  
Tech: Judd / Klaren / McComb  
Count: Vehicle Volume

Idaho [REDACTED] Utah [REDACTED]

Old State Rd south of Loomis Ln  
Start Date: 11/8/2023  
End Date: 11/8/2023  
Old State Road south of Loomis  
Lane  
Donnelly, Idaho

11/8/2023	Southbound	Northbound	Total
Time			
12:00 AM	0	0	0
12:15	0	0	0
12:30	0	0	0
12:45	0	0	0
1:00	0	0	0
1:15	0	0	0
1:30	0	0	0
1:45	0	0	0
2:00	0	0	0
2:15	0	0	0
2:30	0	0	0
2:45	0	0	0
3:00	0	0	0
3:15	0	0	0
3:30	0	0	0
3:45	1	0	1
4:00	0	1	1
4:15	0	1	1
4:30	0	0	0
4:45	0	0	0
5:00	0	0	0
5:15	0	0	0
5:30	0	1	1
5:45	0	0	0
6:00	0	0	0
6:15	0	0	0
6:30	0	0	0
6:45	1	6	7
7:00	2	3	5
7:15	0	2	2
7:30	2	6	8
7:45	2	3	5
8:00	1	0	1
8:15	2	0	2
8:30	1	2	3
8:45	3	0	3
9:00	0	2	2
9:15	0	0	0
9:30	0	0	0
9:45	0	0	0
10:00	1	2	3
10:15	1	3	4
10:30	1	0	1
10:45	1	2	3
11:00	1	0	1
11:15	0	1	1
11:30	0	1	1
11:45	1	3	4
Total	21	39	60
Percent	35.0%	65.0%	
Peak	7:30	6:45	6:45
Volume	7	17	22
Peak Factor	0.875	0.708	0.688

# Quality Counts

Qualitycounts.net

Study: NV50049  
Type: Volume / Direction  
Tech: Judd / Klaren / McComb  
Count: Vehicle Volume

Idaho ( ) Utah ( )

Old State Rd south of Loomis Ln  
Start Date: 11/8/2023  
End Date: 11/8/2023  
Old State Road south of Loomis  
Lane  
Donnelly, Idaho





11/8/2023	Southbound	Northbound	Total
Time			
12:00 PM	4	0	4
12:15	1	0	1
12:30	1	3	4
12:45	2	4	6
1:00	1	1	2
1:15	1	2	3
1:30	2	1	3
1:45	2	1	3
2:00	2	3	5
2:15	1	2	3
2:30	2	1	3
2:45	1	2	3
3:00	2	0	2
3:15	3	1	4
3:30	5	5	10
3:45	1	1	2
4:00	0	1	1
4:15	3	1	4
4:30	3	0	3
4:45	3	0	3
5:00	1	2	3
5:15	1	4	5
5:30	7	4	11
5:45	1	2	3
6:00	0	0	0
6:15	0	0	0
6:30	2	0	2
6:45	1	1	2
7:00	1	1	2
7:15	0	1	1
7:30	2	1	3
7:45	3	0	3
8:00	0	0	0
8:15	0	0	0
8:30	0	0	0
8:45	1	0	1
9:00	0	0	0
9:15	1	0	1
9:30	0	0	0
9:45	0	0	0
10:00	0	0	0
10:15	1	0	1
10:30	0	0	0
10:45	0	0	0
11:00	0	0	0
11:15	0	0	0
11:30	0	0	0
11:45	0	0	0
Total	62	45	107
Percent	57.9%	42.1%	
Peak	4:45	5:00	4:45
Volume	12	12	22
Peak Factor	0.429	0.750	0.500
Grand Total	83	84	167
Percent	49.7%	50.3%	
AADT		ADT: 167	AADT: 167

## APPENDIX C: HCM Reports

## Synchro Output – Existing Conditions Analysis

HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	114	21	0	0	9	0	0	22	0	0	9	22
Future Vol, veh/h	114	21	0	0	9	0	0	22	0	0	9	22
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	114	21	0	0	9	0	0	22	0	0	9	22
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	47	42	20	42	53	22	31	0	0	22	0	0
Stage 1	20	20	-	22	22	-	-	-	-	-	-	-
Stage 2	27	22	-	20	31	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	955	850	1058	962	838	1055	1582	-	-	1593	-	-
Stage 1	999	879	-	996	877	-	-	-	-	-	-	-
Stage 2	991	877	-	999	869	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	945	850	1058	938	838	1055	1582	-	-	1593	-	-
Mov Cap-2 Maneuver	945	850	-	938	838	-	-	-	-	-	-	-
Stage 1	999	879	-	996	877	-	-	-	-	-	-	-
Stage 2	981	877	-	976	869	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s/v	9.54		9.34			0			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1582	-	-	928	838	1593	-	-				
HCM Lane V/C Ratio	-	-	-	0.145	0.011	-	-	-				
HCM Control Delay (s/veh)	0	-	-	9.5	9.3	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.5	0	0	-	-				

HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	3	14	5	0	0	10	271	5	0	191	0
Future Vol, veh/h	3	3	14	5	0	0	10	271	5	0	191	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	3	14	5	0	0	10	271	5	0	191	0




Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	482	487	191	486	485	274	191	0	0	276	0	0
Stage 1	191	191	-	294	294	-	-	-	-	-	-	-
Stage 2	291	296	-	193	191	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	495	481	851	492	482	765	1383	-	-	1287	-	-
Stage 1	811	742	-	715	670	-	-	-	-	-	-	-
Stage 2	717	668	-	809	742	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	490	477	851	476	478	765	1383	-	-	1287	-	-
Mov Cap-2 Maneuver	490	477	-	476	478	-	-	-	-	-	-	-
Stage 1	811	742	-	709	664	-	-	-	-	-	-	-
Stage 2	711	663	-	793	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v10.35		12.64	0.27	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	63	-	-	693	476	1287	-
HCM Lane V/C Ratio	0.007	-	-	0.029	0.01	-	-
HCM Control Delay (s/veh)	7.6	0	-	10.4	12.6	0	-
HCM Lane LOS	A	A	-	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-




HCM 7th TWSC  
3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	198	41	0	283	112	0
Future Vol, veh/h	198	41	0	283	112	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	198	41	0	283	112	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	239	0	502	219
Stage 1	-	-	-	-	219	-
Stage 2	-	-	-	-	283	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1328	-	529	821
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	765	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1328	-	529	821
Mov Cap-2 Maneuver	-	-	-	-	529	-
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	765	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		13.62		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	529	-	-	1328	-	
HCM Lane V/C Ratio	0.212	-	-	-	-	
HCM Control Delay (s/veh)	13.6	-	-	0	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.8	-	-	0	-	




HCM 7th TWSC  
4: Driveway 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	135	0	0	31	0	0
Future Vol, veh/h	135	0	0	31	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	135	0	0	31	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	135	0	166	135
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	31	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1449	-	824	914
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	992	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1449	-	824	914
Mov Cap-2 Maneuver	-	-	-	-	824	-
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	992	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1449	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

HCM 7th TWSC  
5: Old State & Driveway 2

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	22	9	0
Future Vol, veh/h	0	0	0	22	9	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	22	9	0





Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	31	9	9	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	22	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	983	1073	1611	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	983	1073	1611	-	-	-
Mov Cap-2 Maneuver	983	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1001	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1611	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	17	0	2	26	0	0	7	2	0	10	110
Future Vol, veh/h	59	17	0	2	26	0	0	7	2	0	10	110
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	59	17	0	2	26	0	0	7	2	0	10	110
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	85	74	65	27	128	8	120	0	0	9	0	0
Stage 1	65	65	-	8	8	-	-	-	-	-	-	-
Stage 2	20	9	-	19	120	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	901	816	999	984	763	1074	1468	-	-	1611	-	-
Stage 1	946	841	-	1013	889	-	-	-	-	-	-	-
Stage 2	999	888	-	1001	796	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	871	816	999	963	763	1074	1468	-	-	1611	-	-
Mov Cap-2 Maneuver	871	816	-	963	763	-	-	-	-	-	-	-
Stage 1	946	841	-	1013	889	-	-	-	-	-	-	-
Stage 2	970	888	-	980	796	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s/v	9.6		9.83			0			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1468	-	-	858	774	1611	-	-				
HCM Lane V/C Ratio	-	-	-	0.089	0.036	-	-	-				
HCM Control Delay (s/veh)	0	-	-	9.6	9.8	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-				

HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	2	17	10	14	0	22	243	7	0	314	0
Future Vol, veh/h	2	2	17	10	14	0	22	243	7	0	314	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	2	17	10	14	0	22	243	7	0	314	0




Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	608	608	314	606	605	247	314	0	0	250	0	0
Stage 1	314	314	-	291	291	-	-	-	-	-	-	-
Stage 2	294	294	-	315	314	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	408	410	726	409	412	792	1246	-	-	1316	-	-
Stage 1	697	656	-	717	672	-	-	-	-	-	-	-
Stage 2	714	670	-	696	656	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	386	402	726	390	404	792	1246	-	-	1316	-	-
Mov Cap-2 Maneuver	386	402	-	390	404	-	-	-	-	-	-	-
Stage 1	697	656	-	703	658	-	-	-	-	-	-	-
Stage 2	685	656	-	678	656	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v10.95		14.63	0.64	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	145	-	-	626	398	1316	-
HCM Lane V/C Ratio	0.018	-	-	0.034	0.06	-	-
HCM Control Delay (s/veh)	7.9	0	-	11	14.6	0	-
HCM Lane LOS	A	A	-	B	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0	-




HCM 7th TWSC  
3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	319	107	2	254	50	0
Future Vol, veh/h	319	107	2	254	50	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	319	107	2	254	50	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	426	0	631	373
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	258	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1133	-	445	673
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	785	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1133	-	444	673
Mov Cap-2 Maneuver	-	-	-	-	444	-
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	783	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.06		14.13		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	444	-	-	14	-	
HCM Lane V/C Ratio	0.113	-	-	0.002	-	
HCM Control Delay (s/veh)	14.1	-	-	8.2	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	




HCM 7th TWSC  
4: Driveway 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	76	0	0	136	0	0
Future Vol, veh/h	76	0	0	136	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	0	0	136	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	76	0	212	76
Stage 1	-	-	-	-	76	-
Stage 2	-	-	-	-	136	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1523	-	776	985
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1523	-	776	985
Mov Cap-2 Maneuver	-	-	-	-	776	-
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	890	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1523	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

HCM 7th TWSC  
5: Old State & Driveway 2

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	9	12	0
Future Vol, veh/h	0	0	0	9	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	9	12	0

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	21	12	12	0	-	0
Stage 1	12	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	996	1069	1607	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	996	1069	1607	-	-	-
Mov Cap-2 Maneuver	996	-	-	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	1014	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1607	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

## Synchro Output – Background Conditions Analysis

HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	7.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	132	24	0	0	10	0	0	26	0	0	10	26
Future Vol, veh/h	132	24	0	0	10	0	0	26	0	0	10	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	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	132	24	0	0	10	0	0	26	0	0	10	26
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	54	49	23	48	62	26	36	0	0	26	0	0
Stage 1	23	23	-	26	26	-	-	-	-	-	-	-
Stage 2	31	26	-	22	36	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	944	843	1054	953	829	1050	1575	-	-	1588	-	-
Stage 1	995	876	-	992	874	-	-	-	-	-	-	-
Stage 2	986	874	-	996	865	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	933	843	1054	925	829	1050	1575	-	-	1588	-	-
Mov Cap-2 Maneuver	933	843	-	925	829	-	-	-	-	-	-	-
Stage 1	995	876	-	992	874	-	-	-	-	-	-	-
Stage 2	974	874	-	969	865	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s/v	9.73		9.4			0			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1575	-	-	918	829	1588	-	-				
HCM Lane V/C Ratio	-	-	-	0.17	0.012	-	-	-				
HCM Control Delay (s/veh)	0	-	-	9.7	9.4	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.6	0	0	-	-				




HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	3	16	6	0	0	12	314	6	0	221	0
Future Vol, veh/h	3	3	16	6	0	0	12	314	6	0	221	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	3	16	6	0	0	12	314	6	0	221	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	559	565	221	564	562	317	221	0	0	320	0	0
Stage 1	221	221	-	341	341	-	-	-	-	-	-	-
Stage 2	338	344	-	223	221	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	440	434	819	437	436	724	1348	-	-	1240	-	-
Stage 1	781	720	-	674	639	-	-	-	-	-	-	-
Stage 2	676	637	-	780	720	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	435	429	819	421	431	724	1348	-	-	1240	-	-
Mov Cap-2 Maneuver	435	429	-	421	431	-	-	-	-	-	-	-
Stage 1	781	720	-	667	632	-	-	-	-	-	-	-
Stage 2	669	630	-	762	720	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v10.66			13.68		0.28		0					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	65	-	-	658	421	1240	-	-				
HCM Lane V/C Ratio	0.009	-	-	0.033	0.014	-	-	-				
HCM Control Delay (s/veh)	7.7	0	-	10.7	13.7	0	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-				




HCM 7th TWSC  
3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	230	48	0	328	130	0
Future Vol, veh/h	230	48	0	328	130	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	230	48	0	328	130	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	278	0	582	254
Stage 1	-	-	-	-	254	-
Stage 2	-	-	-	-	328	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1285	-	475	785
Stage 1	-	-	-	-	788	-
Stage 2	-	-	-	-	730	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1285	-	475	785
Mov Cap-2 Maneuver	-	-	-	-	475	-
Stage 1	-	-	-	-	788	-
Stage 2	-	-	-	-	730	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		15.4		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	475	-	-	1285	-	
HCM Lane V/C Ratio	0.274	-	-	-	-	
HCM Control Delay (s/veh)	15.4	-	-	0	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	1.1	-	-	0	-	




HCM 7th TWSC  
4: Driveway 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	157	0	0	36	0	0
Future Vol, veh/h	157	0	0	36	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	157	0	0	36	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	157	0	193	157
Stage 1	-	-	-	-	157	-
Stage 2	-	-	-	-	36	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1423	-	796	889
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	986	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1423	-	796	889
Mov Cap-2 Maneuver	-	-	-	-	796	-
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	986	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1423	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

HCM 7th TWSC  
5: Old State & Driveway 2

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	26	10	0
Future Vol, veh/h	0	0	0	26	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	26	10	0

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	36	10	10	0	-	0
Stage 1	10	-	-	-	-	-
Stage 2	26	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	977	1071	1610	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	997	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	977	1071	1610	-	-	-
Mov Cap-2 Maneuver	977	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	997	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1610	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	153	28	0	0	12	0	0	30	0	0	12	30
Future Vol, veh/h	153	28	0	0	12	0	0	30	0	0	12	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	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	153	28	0	0	12	0	0	30	0	0	12	30
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	63	57	27	56	72	30	42	0	0	30	0	0
Stage 1	27	27	-	30	30	-	-	-	-	-	-	-
Stage 2	36	30	-	26	42	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	932	834	1048	941	818	1044	1567	-	-	1583	-	-
Stage 1	990	873	-	987	870	-	-	-	-	-	-	-
Stage 2	980	870	-	992	860	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	918	834	1048	910	818	1044	1567	-	-	1583	-	-
Mov Cap-2 Maneuver	918	834	-	910	818	-	-	-	-	-	-	-
Stage 1	990	873	-	987	870	-	-	-	-	-	-	-
Stage 2	966	870	-	960	860	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s/v	9.98		9.46			0			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1567	-	-	904	818	1583	-	-				
HCM Lane V/C Ratio	-	-	-	0.2	0.015	-	-	-				
HCM Control Delay (s/veh)	0	-	-	10	9.5	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.7	0	0	-	-				

HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

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	4	4	19	7	0	0	13	364	7	0	257	0
Future Vol, veh/h	4	4	19	7	0	0	13	364	7	0	257	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	4	19	7	0	0	13	364	7	0	257	0




Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	647	654	257	653	651	368	257	0	0	371	0	0
Stage 1	257	257	-	394	394	-	-	-	-	-	-	-
Stage 2	390	397	-	259	257	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	384	386	782	381	388	678	1308	-	-	1188	-	-
Stage 1	748	695	-	631	606	-	-	-	-	-	-	-
Stage 2	634	603	-	746	695	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	379	381	782	363	383	678	1308	-	-	1188	-	-
Mov Cap-2 Maneuver	379	381	-	363	383	-	-	-	-	-	-	-
Stage 1	748	695	-	623	598	-	-	-	-	-	-	-
Stage 2	626	596	-	723	695	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v11.33		15.11	0.26	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	61	-	-	595	363	1188	-
HCM Lane V/C Ratio	0.01	-	-	0.045	0.019	-	-
HCM Control Delay (s/veh)	7.8	0	-	11.3	15.1	0	-
HCM Lane LOS	A	A	-	B	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-




HCM 7th TWSC  
3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	266	55	0	380	151	0
Future Vol, veh/h	266	55	0	380	151	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	266	55	0	380	151	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	321	0	674	294
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	380	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1239	-	420	746
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	691	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1239	-	420	746
Mov Cap-2 Maneuver	-	-	-	-	420	-
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	691	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		18.29		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	420	-	-	1239	-	
HCM Lane V/C Ratio	0.359	-	-	-	-	
HCM Control Delay (s/veh)	18.3	-	-	0	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	1.6	-	-	0	-	




HCM 7th TWSC  
4: Driveway 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	181	0	0	42	0	0
Future Vol, veh/h	181	0	0	42	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	181	0	0	42	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	181	0	223	181
Stage 1	-	-	-	-	181	-
Stage 2	-	-	-	-	42	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1394	-	765	862
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	980	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1394	-	765	862
Mov Cap-2 Maneuver	-	-	-	-	765	-
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	980	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1394	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

HCM 7th TWSC  
5: Old State & Driveway 2

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	30	12	0
Future Vol, veh/h	0	0	0	30	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	30	12	0

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	42	12	12	0	-	0
Stage 1	12	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	969	1069	1607	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	969	1069	1607	-	-	-
Mov Cap-2 Maneuver	969	-	-	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	993	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1607	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	7.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	178	33	0	0	14	0	0	34	0	0	14	34
Future Vol, veh/h	178	33	0	0	14	0	0	34	0	0	14	34
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	178	33	0	0	14	0	0	34	0	0	14	34
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	72	65	31	65	82	34	48	0	0	34	0	0
Stage 1	31	31	-	34	34	-	-	-	-	-	-	-
Stage 2	41	34	-	31	48	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	919	826	1043	929	808	1039	1559	-	-	1578	-	-
Stage 1	986	869	-	982	867	-	-	-	-	-	-	-
Stage 2	974	867	-	986	855	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	903	826	1043	892	808	1039	1559	-	-	1578	-	-
Mov Cap-2 Maneuver	903	826	-	892	808	-	-	-	-	-	-	-
Stage 1	986	869	-	982	867	-	-	-	-	-	-	-
Stage 2	958	867	-	949	855	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s/v	10.3		9.53			0			0			
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1559	-	-	890	808	1578	-	-				
HCM Lane V/C Ratio	-	-	-	0.237	0.017	-	-	-				
HCM Control Delay (s/veh)	0	-	-	10.3	9.5	0	-	-				
HCM Lane LOS	A	-	-	B	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.9	0.1	0	-	-				

HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

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	5	5	22	8	0	0	16	422	8	0	298	0
Future Vol, veh/h	5	5	22	8	0	0	16	422	8	0	298	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	5	22	8	0	0	16	422	8	0	298	0




Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	752	760	298	759	756	426	298	0	0	430	0	0
Stage 1	298	298	-	458	458	-	-	-	-	-	-	-
Stage 2	454	462	-	301	298	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	327	336	741	323	337	628	1263	-	-	1129	-	-
Stage 1	711	667	-	583	567	-	-	-	-	-	-	-
Stage 2	586	565	-	709	667	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	321	330	741	304	332	628	1263	-	-	1129	-	-
Mov Cap-2 Maneuver	321	330	-	304	332	-	-	-	-	-	-	-
Stage 1	711	667	-	573	558	-	-	-	-	-	-	-
Stage 2	576	555	-	682	667	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v12.23		17.17	0.28	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	64	-	-	530 304	1129	-	-
HCM Lane V/C Ratio	0.013	-	-	0.06 0.026	-	-	-
HCM Control Delay (s/veh)	7.9	0	-	12.2 17.2	0	-	-
HCM Lane LOS	A	A	-	B C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2 0.1	0	-	-




HCM 7th TWSC  
3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	4.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	308	64	0	441	174	0
Future Vol, veh/h	308	64	0	441	174	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	308	64	0	441	174	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	372	0	781	340
Stage 1	-	-	-	-	340	-
Stage 2	-	-	-	-	441	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1186	-	363	702
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	648	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1186	-	363	702
Mov Cap-2 Maneuver	-	-	-	-	363	-
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	648	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		23.68		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	363	-	-	1186	-	
HCM Lane V/C Ratio	0.479	-	-	-	-	
HCM Control Delay (s/veh)	23.7	-	-	0	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	2.5	-	-	0	-	




HCM 7th TWSC  
4: Dwy 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	210	0	0	48	0	0
Future Vol, veh/h	210	0	0	48	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	210	0	0	48	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	210	0	258	210
Stage 1	-	-	-	-	210	-
Stage 2	-	-	-	-	48	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1361	-	731	830
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	974	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1361	-	731	830
Mov Cap-2 Maneuver	-	-	-	-	731	-
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	974	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1361	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

HCM 7th TWSC  
5: Dwy 2 & Old State

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	34	14	0
Future Vol, veh/h	0	0	0	34	14	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	34	14	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	48	14	14	0	-	0
Stage 1	14	-	-	-	-	-
Stage 2	34	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	962	1066	1604	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	962	1066	1604	-	-	-
Mov Cap-2 Maneuver	962	-	-	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1604	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 7th TWSC  
6: Old State & Dwy 3/Mesa

01/31/2024

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	34	0	0	14	0
Future Vol, veh/h	0	0	0	0	0	0	0	34	0	0	14	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	34	0	0	14	0





Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	48	48	14	48	48	34	14	0	0	34	0	0
Stage 1	14	14	-	34	34	-	-	-	-	-	-	-
Stage 2	34	34	-	14	14	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	953	844	1066	953	844	1039	1604	-	-	1578	-	-
Stage 1	1006	884	-	982	867	-	-	-	-	-	-	-
Stage 2	982	867	-	1006	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	953	844	1066	953	844	1039	1604	-	-	1578	-	-
Mov Cap-2 Maneuver	953	844	-	953	844	-	-	-	-	-	-	-
Stage 1	1006	884	-	982	867	-	-	-	-	-	-	-
Stage 2	982	867	-	1006	884	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	-	1578	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	0	-	-
HCM Lane LOS	A	-	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	-	-

HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	20	0	2	30	0	0	8	2	0	12	128
Future Vol, veh/h	68	20	0	2	30	0	0	8	2	0	12	128
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	20	0	2	30	0	0	8	2	0	12	128
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	99	86	76	31	149	9	140	0	0	10	0	0
Stage 1	76	76	-	9	9	-	-	-	-	-	-	-
Stage 2	23	10	-	22	140	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	883	804	985	977	743	1073	1443	-	-	1610	-	-
Stage 1	933	832	-	1012	888	-	-	-	-	-	-	-
Stage 2	995	887	-	996	781	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	847	804	985	953	743	1073	1443	-	-	1610	-	-
Mov Cap-2 Maneuver	847	804	-	953	743	-	-	-	-	-	-	-
Stage 1	933	832	-	1012	888	-	-	-	-	-	-	-
Stage 2	962	887	-	972	781	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s/v	9.81		9.99			0			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1443	-	-	837	753	1610	-	-				
HCM Lane V/C Ratio	-	-	-	0.105	0.043	-	-	-				
HCM Control Delay (s/veh)	0	-	-	9.8	10	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.4	0.1	0	-	-				

HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

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	2	2	20	12	16	0	26	282	8	0	364	0
Future Vol, veh/h	2	2	20	12	16	0	26	282	8	0	364	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	2	20	12	16	0	26	282	8	0	364	0




Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	706	706	364	703	702	286	364	0	0	290	0	0
Stage 1	364	364	-	338	338	-	-	-	-	-	-	-
Stage 2	342	342	-	365	364	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	351	361	681	352	362	753	1195	-	-	1272	-	-
Stage 1	655	624	-	676	641	-	-	-	-	-	-	-
Stage 2	673	638	-	654	624	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	326	351	681	331	353	753	1195	-	-	1272	-	-
Mov Cap-2 Maneuver	326	351	-	331	353	-	-	-	-	-	-	-
Stage 1	655	624	-	659	624	-	-	-	-	-	-	-
Stage 2	639	621	-	633	624	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v11.44		16.42	0.66	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	147	-	-	583 343	1272	-	-
HCM Lane V/C Ratio	0.022	-	-	0.041 0.082	-	-	-
HCM Control Delay (s/veh)	8.1	0	-	11.4 16.4	0	-	-
HCM Lane LOS	A	A	-	B C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1 0.3	0	-	-




# HCM 7th TWSC 3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	370	124	2	294	58	0
Future Vol, veh/h	370	124	2	294	58	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	370	124	2	294	58	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	494	0	730	432
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	298	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1070	-	389	624
Stage 1	-	-	-	-	655	-
Stage 2	-	-	-	-	753	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1070	-	389	624
Mov Cap-2 Maneuver	-	-	-	-	389	-
Stage 1	-	-	-	-	655	-
Stage 2	-	-	-	-	751	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.06		15.89	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	389	-	-	12	-	
HCM Lane V/C Ratio	0.149	-	-	0.002	-	
HCM Control Delay (s/veh)	15.9	-	-	8.4	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	




HCM 7th TWSC  
4: Driveway 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	4.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	88	0	158	0	0	0
Future Vol, veh/h	88	0	158	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	0	158	0	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	88	0	404	88
Stage 1	-	-	-	-	88	-
Stage 2	-	-	-	-	316	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1508	-	603	970
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1508	-	539	970
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	662	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	7.67		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1508	-	
HCM Lane V/C Ratio	-	-	-	0.105	-	
HCM Control Delay (s/veh)	0	-	-	7.7	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	-	-	-	0.4	-	

HCM 7th TWSC  
5: Old State & Driveway 2

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	10	14	0
Future Vol, veh/h	0	0	0	10	14	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	10	14	0





Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	24	14	14	0	-	0
Stage 1	14	-	-	-	-	-
Stage 2	10	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	992	1066	1604	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	992	1066	1604	-	-	-
Mov Cap-2 Maneuver	992	-	-	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	1013	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1604	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-





HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

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	79	23	0	3	35	0	0	9	3	0	13	148
Future Vol, veh/h	79	23	0	3	35	0	0	9	3	0	13	148
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	23	0	3	35	0	0	9	3	0	13	148
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	114	99	87	35	172	11	161	0	0	12	0	0
Stage 1	87	87	-	11	11	-	-	-	-	-	-	-
Stage 2	27	12	-	25	161	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	864	791	971	971	722	1071	1418	-	-	1607	-	-
Stage 1	921	823	-	1010	887	-	-	-	-	-	-	-
Stage 2	991	886	-	993	765	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	822	791	971	943	722	1071	1418	-	-	1607	-	-
Mov Cap-2 Maneuver	822	791	-	943	722	-	-	-	-	-	-	-
Stage 1	921	823	-	1010	887	-	-	-	-	-	-	-
Stage 2	952	886	-	966	765	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v10.05			10.16		0		0					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1418	-	-	815	735	1607	-	-				
HCM Lane V/C Ratio	-	-	-	0.125	0.052	-	-	-				
HCM Control Delay (s/veh)	0	-	-	10.1	10.2	0	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	0	-	-				




HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

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	3	3	23	13	19	0	30	327	9	0	422	0
Future Vol, veh/h	3	3	23	13	19	0	30	327	9	0	422	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	3	23	13	19	0	30	327	9	0	422	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	819	818	422	815	814	332	422	0	0	336	0	0
Stage 1	422	422	-	392	392	-	-	-	-	-	-	-
Stage 2	397	396	-	424	422	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	295	311	632	296	312	710	1137	-	-	1223	-	-
Stage 1	609	588	-	633	607	-	-	-	-	-	-	-
Stage 2	629	604	-	608	588	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	268	300	632	273	302	710	1137	-	-	1223	-	-
Mov Cap-2 Maneuver	268	300	-	273	302	-	-	-	-	-	-	-
Stage 1	609	588	-	612	587	-	-	-	-	-	-	-
Stage 2	589	584	-	583	588	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s/v12.59			18.96			0.68			0			
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	147	-	-	503	290	1223	-	-				
HCM Lane V/C Ratio	0.026	-	-	0.058	0.11	-	-	-				
HCM Control Delay (s/veh)	8.3	0	-	12.6	19	0	-	-				
HCM Lane LOS	A	A	-	B	C	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.4	0	-	-				




HCM 7th TWSC  
3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	429	144	3	341	67	0
Future Vol, veh/h	429	144	3	341	67	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	429	144	3	341	67	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	573	0	848	501
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	347	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1000	-	332	570
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1000	-	331	570
Mov Cap-2 Maneuver	-	-	-	-	331	-
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	713	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.08		18.64		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	331	-	-	16	-	
HCM Lane V/C Ratio	0.203	-	-	0.003	-	
HCM Control Delay (s/veh)	18.6	-	-	8.6	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	0.7	-	-	0	-	




HCM 7th TWSC  
4: Driveway 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	102	0	0	183	0	0
Future Vol, veh/h	102	0	0	183	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	102	0	0	183	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	102	0	285	102
Stage 1	-	-	-	-	102	-
Stage 2	-	-	-	-	183	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1490	-	705	953
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1490	-	705	953
Mov Cap-2 Maneuver	-	-	-	-	705	-
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	848	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1490	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

HCM 7th TWSC  
5: Old State & Driveway 2

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	12	16	0
Future Vol, veh/h	0	0	0	12	16	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	12	16	0





Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	28	16	16	0	-	0
Stage 1	16	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	987	1063	1602	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	1011	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	987	1063	1602	-	-	-
Mov Cap-2 Maneuver	987	-	-	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1602	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-





HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	92	26	0	3	41	0	0	11	3	0	16	171
Future Vol, veh/h	92	26	0	3	41	0	0	11	3	0	16	171
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	92	26	0	3	41	0	0	11	3	0	16	171
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	133	116	102	42	200	13	187	0	0	14	0	0
Stage 1	102	102	-	13	13	-	-	-	-	-	-	-
Stage 2	32	14	-	29	187	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	839	775	954	962	696	1068	1387	-	-	1604	-	-
Stage 1	905	811	-	1008	885	-	-	-	-	-	-	-
Stage 2	985	884	-	988	745	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	789	775	954	930	696	1068	1387	-	-	1604	-	-
Mov Cap-2 Maneuver	789	775	-	930	696	-	-	-	-	-	-	-
Stage 1	905	811	-	1008	885	-	-	-	-	-	-	-
Stage 2	939	884	-	956	745	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s/v10.39			10.42			0			0			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1387	-	-	786	708	1604	-	-				
HCM Lane V/C Ratio	-	-	-	0.15	0.062	-	-	-				
HCM Control Delay (s/veh)	0	-	-	10.4	10.4	0	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.5	0.2	0	-	-				




HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

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	3	3	26	16	22	0	34	379	11	0	489	0
Future Vol, veh/h	3	3	26	16	22	0	34	379	11	0	489	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	3	26	16	22	0	34	379	11	0	489	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	947	947	489	943	942	385	489	0	0	390	0	0
Stage 1	489	489	-	453	453	-	-	-	-	-	-	-
Stage 2	458	458	-	491	489	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	241	261	579	243	263	663	1074	-	-	1169	-	-
Stage 1	561	549	-	587	570	-	-	-	-	-	-	-
Stage 2	583	567	-	560	549	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	212	251	579	220	252	663	1074	-	-	1169	-	-
Mov Cap-2 Maneuver	212	251	-	220	252	-	-	-	-	-	-	-
Stage 1	561	549	-	563	547	-	-	-	-	-	-	-
Stage 2	537	544	-	531	549	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v	13.6		23.02		0.68		0					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	144	-	-	451	238	1169	-	-				
HCM Lane V/C Ratio	0.032	-	-	0.071	0.16	-	-	-				
HCM Control Delay (s/veh)	8.5	0	-	13.6	23	0	-	-				
HCM Lane LOS	A	A	-	B	C	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.6	0	-	-				




HCM 7th TWSC  
3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	497	167	3	396	78	0
Future Vol, veh/h	497	167	3	396	78	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	497	167	3	396	78	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	664	0	983	581
Stage 1	-	-	-	-	581	-
Stage 2	-	-	-	-	402	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	925	-	276	514
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	676	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	925	-	275	514
Mov Cap-2 Maneuver	-	-	-	-	275	-
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	673	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.07		23.2		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	275	-	-	14	-	
HCM Lane V/C Ratio	0.284	-	-	0.003	-	
HCM Control Delay (s/veh)	23.2	-	-	8.9	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	1.1	-	-	0	-	




HCM 7th TWSC  
4: Dwy 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	118	0	0	212	0	0
Future Vol, veh/h	118	0	0	212	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	118	0	0	212	0	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	118	0	330	118
Stage 1	-	-	-	-	118	-
Stage 2	-	-	-	-	212	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1470	-	665	934
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	823	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1470	-	665	934
Mov Cap-2 Maneuver	-	-	-	-	665	-
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	823	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1470	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

HCM 7th TWSC  
5: Dwy 2 & Old State





01/31/2024

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	14	19	0
Future Vol, veh/h	0	0	0	14	19	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	14	19	0

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	33	19	19	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	14	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	980	1059	1597	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	980	1059	1597	-	-	-
Mov Cap-2 Maneuver	980	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1597	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	0	0	0	0	14	0	0	19	0
Future Vol, veh/h	0	0	0	0	0	0	0	14	0	0	19	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	14	0	0	19	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	33	33	19	33	33	14	19	0	0	14	0	0
Stage 1	19	19	-	14	14	-	-	-	-	-	-	-
Stage 2	14	14	-	19	19	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	974	860	1059	974	860	1066	1597	-	-	1604	-	-
Stage 1	1000	880	-	1006	884	-	-	-	-	-	-	-
Stage 2	1006	884	-	1000	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	974	860	1059	974	860	1066	1597	-	-	1604	-	-
Mov Cap-2 Maneuver	974	860	-	974	860	-	-	-	-	-	-	-
Stage 1	1000	880	-	1006	884	-	-	-	-	-	-	-
Stage 2	1006	884	-	1000	880	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s/v	0		0			0			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1597	-	-	-	-	1604	-	-				
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-				
HCM Control Delay (s/veh)	0	-	-	0	0	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	-	-	0	-	-				

## Synchro Output – Build Conditions Analysis

HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	6.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	140	40	0	7	17	0	0	34	16	0	13	29
Future Vol, veh/h	140	40	0	7	17	0	0	34	16	0	13	29
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	140	40	0	7	17	0	0	34	16	0	13	29

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	70	78	28	75	84	42	42	0	0	50	0	0
Stage 1	28	28	-	42	42	-	-	-	-	-	-	-
Stage 2	43	50	-	33	42	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	922	813	1048	915	806	1029	1567	-	-	1557	-	-
Stage 1	990	872	-	972	860	-	-	-	-	-	-	-
Stage 2	972	853	-	983	860	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	902	813	1048	870	806	1029	1567	-	-	1557	-	-
Mov Cap-2 Maneuver	902	813	-	870	806	-	-	-	-	-	-	-
Stage 1	990	872	-	972	860	-	-	-	-	-	-	-
Stage 2	953	853	-	938	860	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v10.13			9.5		0		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1567	-	-	881 824	1557	-	-
HCM Lane V/C Ratio	-	-	-	0.204 0.029	-	-	-
HCM Control Delay (s/veh)	0	-	-	10.1 9.5	0	-	-
HCM Lane LOS	A	-	-	B A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8 0.1	0	-	-

HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

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	24	3	26	6	0	0	17	314	6	0	221	9
Future Vol, veh/h	24	3	26	6	0	0	17	314	6	0	221	9
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	3	26	6	0	0	17	314	6	0	221	9




Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	574	580	226	574	581	317	230	0	0	320	0	0
Stage 1	226	226	-	351	351	-	-	-	-	-	-	-
Stage 2	348	354	-	223	230	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	430	426	814	430	425	724	1338	-	-	1240	-	-
Stage 1	777	717	-	666	632	-	-	-	-	-	-	-
Stage 2	668	630	-	780	714	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	423	419	814	407	419	724	1338	-	-	1240	-	-
Mov Cap-2 Maneuver	423	419	-	407	419	-	-	-	-	-	-	-
Stage 1	777	717	-	655	622	-	-	-	-	-	-	-
Stage 2	658	621	-	752	714	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v12.19		13.98	0.39	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	90	-	-	553	407	1240	-
HCM Lane V/C Ratio	0.013	-	-	0.096	0.015	-	-
HCM Control Delay (s/veh)	7.7	0	-	12.2	14	0	-
HCM Lane LOS	A	A	-	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0	-




HCM 7th TWSC  
3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	239	55	0	349	146	0
Future Vol, veh/h	239	55	0	349	146	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	239	55	0	349	146	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	294	0	616	267
Stage 1	-	-	-	-	267	-
Stage 2	-	-	-	-	349	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1268	-	454	772
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	714	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1268	-	454	772
Mov Cap-2 Maneuver	-	-	-	-	454	-
Stage 1	-	-	-	-	778	-
Stage 2	-	-	-	-	714	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0		16.63	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	454	-	-	1268	-	
HCM Lane V/C Ratio	0.321	-	-	-	-	
HCM Control Delay (s/veh)	16.6	-	-	0	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	1.4	-	-	0	-	




HCM 7th TWSC  
4: Driveway 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	157	1	10	36	3	23
Future Vol, veh/h	157	1	10	36	3	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	157	1	10	36	3	23
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	158	0	214	158
Stage 1	-	-	-	-	158	-
Stage 2	-	-	-	-	56	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1422	-	775	888
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	967	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1422	-	769	888
Mov Cap-2 Maneuver	-	-	-	-	769	-
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	960	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	1.64		9.25		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	872	-	-	391	-	
HCM Lane V/C Ratio	0.03	-	-	0.007	-	
HCM Control Delay (s/veh)	9.3	-	-	7.6	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 7th TWSC  
5: Old State & Driveway 2

01/31/2024

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	3	1	26	10	10
Future Vol, veh/h	23	3	1	26	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	3	1	26	10	10

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	43	15	20	0	-	0
Stage 1	15	-	-	-	-	-
Stage 2	28	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	968	1065	1596	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	967	1065	1596	-	-	-
Mov Cap-2 Maneuver	967	-	-	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	995	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.78	0.27	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	67	-	978	-	-
HCM Lane V/C Ratio	0.001	-	0.027	-	-
HCM Control Delay (s/veh)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	168	57	0	12	24	0	0	45	29	0	18	36
Future Vol, veh/h	168	57	0	12	24	0	0	45	29	0	18	36
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	168	57	0	12	24	0	0	45	29	0	18	36

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	93	110	36	106	114	60	54	0	0	74	0	0
Stage 1	36	36	-	60	60	-	-	-	-	-	-	-
Stage 2	57	74	-	47	54	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	891	780	1037	873	777	1006	1551	-	-	1526	-	-
Stage 1	980	865	-	952	845	-	-	-	-	-	-	-
Stage 2	955	833	-	967	850	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	863	780	1037	810	777	1006	1551	-	-	1526	-	-
Mov Cap-2 Maneuver	863	780	-	810	777	-	-	-	-	-	-	-
Stage 1	980	865	-	952	845	-	-	-	-	-	-	-
Stage 2	928	833	-	903	850	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v10.84			9.79		0		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1551	-	-	840 787	1526	-	-
HCM Lane V/C Ratio	-	-	-	0.268 0.046	-	-	-
HCM Control Delay (s/veh)	0	-	-	10.8 9.8	0	-	-
HCM Lane LOS	A	-	-	B A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1 0.1	0	-	-

HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	43	4	39	7	0	0	21	364	7	0	257	15
Future Vol, veh/h	43	4	39	7	0	0	21	364	7	0	257	15
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	4	39	7	0	0	21	364	7	0	257	15




Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	671	678	265	669	682	368	272	0	0	371	0	0
Stage 1	265	265	-	410	410	-	-	-	-	-	-	-
Stage 2	406	413	-	259	272	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	370	374	774	372	372	678	1291	-	-	1188	-	-
Stage 1	741	690	-	619	596	-	-	-	-	-	-	-
Stage 2	622	594	-	746	685	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	363	367	774	342	365	678	1291	-	-	1188	-	-
Mov Cap-2 Maneuver	363	367	-	342	365	-	-	-	-	-	-	-
Stage 1	741	690	-	606	584	-	-	-	-	-	-	-
Stage 2	609	581	-	704	685	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v14.17		15.75	0.42	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	96	-	-	478	342	1188	-
HCM Lane V/C Ratio	0.016	-	-	0.18	0.02	-	-
HCM Control Delay (s/veh)	7.8	0	-	14.2	15.8	0	-
HCM Lane LOS	A	A	-	B	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.1	0	-




HCM 7th TWSC  
3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	4.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	281	67	0	419	180	0
Future Vol, veh/h	281	67	0	419	180	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	281	67	0	419	180	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	348	0	734	315
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	419	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1211	-	388	726
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	664	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1211	-	388	726
Mov Cap-2 Maneuver	-	-	-	-	388	-
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	664	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		22.09		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	388	-	-	1211	-	
HCM Lane V/C Ratio	0.464	-	-	-	-	
HCM Control Delay (s/veh)	22.1	-	-	0	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	2.4	-	-	0	-	




HCM 7th TWSC  
4: Driveway 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	181	2	17	42	5	44
Future Vol, veh/h	181	2	17	42	5	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	181	2	17	42	5	44
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	183	0	258	182
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	76	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1392	-	731	861
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	947	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1392	-	722	861
Mov Cap-2 Maneuver	-	-	-	-	722	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	935	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	2.2		9.53		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	844	-	-	519	-	
HCM Lane V/C Ratio	0.058	-	-	0.012	-	
HCM Control Delay (s/veh)	9.5	-	-	7.6	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0	-	

HCM 7th TWSC  
5: Old State & Driveway 2

01/31/2024

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	5	2	30	12	17
Future Vol, veh/h	44	5	2	30	12	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	44	5	2	30	12	17
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	55	21	29	0	-	0
Stage 1	21	-	-	-	-	-
Stage 2	34	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	953	1057	1584	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	952	1057	1584	-	-	-
Mov Cap-2 Maneuver	952	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s/v	8.94	0.45		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	113	-	962	-	-	
HCM Lane V/C Ratio	0.001	-	0.051	-	-	
HCM Control Delay (s/veh)	7.3	0	8.9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	7.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	204	84	0	19	33	0	0	60	51	0	24	44
Future Vol, veh/h	204	84	0	19	33	0	0	60	51	0	24	44
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	204	84	0	19	33	0	0	60	51	0	24	44

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	123	157	46	152	154	86	68	0	0	111	0	0
Stage 1	46	46	-	86	86	-	-	-	-	-	-	-
Stage 2	77	111	-	66	68	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	852	735	1023	816	738	973	1533	-	-	1479	-	-
Stage 1	968	857	-	922	824	-	-	-	-	-	-	-
Stage 2	933	804	-	945	838	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	814	735	1023	723	738	973	1533	-	-	1479	-	-
Mov Cap-2 Maneuver	814	735	-	723	738	-	-	-	-	-	-	-
Stage 1	968	857	-	922	824	-	-	-	-	-	-	-
Stage 2	895	804	-	852	838	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v12.16		10.29	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1533	-	-	789 732	1479	-	-
HCM Lane V/C Ratio	-	-	-	0.365 0.071	-	-	-
HCM Control Delay (s/veh)	0	-	-	12.2 10.3	0	-	-
HCM Lane LOS	A	-	-	B B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.7 0.2	0	-	-

HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	73	5	56	8	0	0	29	422	8	0	298	25
Future Vol, veh/h	73	5	56	8	0	0	29	422	8	0	298	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	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	5	56	8	0	0	29	422	8	0	298	25




Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	791	799	311	785	807	426	323	0	0	430	0	0
Stage 1	311	311	-	484	484	-	-	-	-	-	-	-
Stage 2	480	488	-	301	323	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	308	319	730	310	315	628	1237	-	-	1129	-	-
Stage 1	700	659	-	564	552	-	-	-	-	-	-	-
Stage 2	567	550	-	709	650	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	298	309	730	273	305	628	1237	-	-	1129	-	-
Mov Cap-2 Maneuver	298	309	-	273	305	-	-	-	-	-	-	-
Stage 1	700	659	-	547	535	-	-	-	-	-	-	-
Stage 2	549	533	-	649	650	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v18.63		18.56	0.5	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	113	-	-	397	273	1129	-
HCM Lane V/C Ratio	0.023	-	-	0.338	0.029	-	-
HCM Control Delay (s/veh)	8	0	-	18.6	18.6	0	-
HCM Lane LOS	A	A	-	C	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.5	0.1	0	-




HCM 7th TWSC  
3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	7.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	333	83	0	509	225	0
Future Vol, veh/h	333	83	0	509	225	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	333	83	0	509	225	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	416	0	884	375
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	509	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1143	-	316	672
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	604	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1143	-	316	672
Mov Cap-2 Maneuver	-	-	-	-	316	-
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	604	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		40.16		
HCM LOS	E					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	316	-	-	1143	-	
HCM Lane V/C Ratio	0.712	-	-	-	-	
HCM Control Delay (s/veh)	40.2	-	-	0	-	
HCM Lane LOS	E	-	-	A	-	
HCM 95th %tile Q(veh)	5.1	-	-	0	-	




HCM 7th TWSC  
4: Dwy 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	210	3	29	48	9	77
Future Vol, veh/h	210	3	29	48	9	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	210	3	29	48	9	77
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	213	0	318	212
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	106	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1357	-	676	829
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	918	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1357	-	661	829
Mov Cap-2 Maneuver	-	-	-	-	661	-
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	898	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		2.9		9.99	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	807	-	-	678	-	
HCM Lane V/C Ratio	0.107	-	-	0.021	-	
HCM Control Delay (s/veh)	10	-	-	7.7	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-	

HCM 7th TWSC  
5: Dwy 2 & Old State

01/31/2024

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	43	0	0	68	27	16
Future Vol, veh/h	43	0	0	68	27	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	0	0	68	27	16





Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	103	35	43	0	-	0
Stage 1	35	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	895	1038	1566	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	895	1038	1566	-	-	-
Mov Cap-2 Maneuver	895	-	-	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	955	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.22	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1566	-	895	-	-
HCM Lane V/C Ratio	-	-	0.048	-	-
HCM Control Delay (s/veh)	0	-	9.2	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-





HCM 7th TWSC  
6: Old State & Dwy 3/Mesa

01/31/2024

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	0	9	0	0	0	3	34	0	0	14	13
Future Vol, veh/h	34	0	9	0	0	0	3	34	0	0	14	13
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	0	9	0	0	0	3	34	0	0	14	13
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	61	61	21	54	67	34	27	0	0	34	0	0
Stage 1	21	21	-	40	40	-	-	-	-	-	-	-
Stage 2	40	40	-	14	27	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	935	830	1057	944	824	1039	1587	-	-	1578	-	-
Stage 1	998	878	-	975	862	-	-	-	-	-	-	-
Stage 2	975	862	-	1006	873	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	933	829	1057	934	822	1039	1587	-	-	1578	-	-
Mov Cap-2 Maneuver	933	829	-	934	822	-	-	-	-	-	-	-
Stage 1	998	878	-	973	860	-	-	-	-	-	-	-
Stage 2	973	860	-	998	873	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s/v	8.94		0			0.59			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	146	-	-	957	-	1578	-	-				
HCM Lane V/C Ratio	0.002	-	-	0.045	-	-	-	-				
HCM Control Delay (s/veh)	7.3	0	-	8.9	0	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-	-				





HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

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	78	40	0	30	58	0	0	18	22	0	26	142
Future Vol, veh/h	78	40	0	30	58	0	0	18	22	0	26	142
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	40	0	30	58	0	0	18	22	0	26	142
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	144	137	97	75	197	29	168	0	0	40	0	0
Stage 1	97	97	-	29	29	-	-	-	-	-	-	-
Stage 2	47	40	-	46	168	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	825	754	959	915	699	1046	1410	-	-	1570	-	-
Stage 1	910	815	-	988	871	-	-	-	-	-	-	-
Stage 2	967	862	-	968	759	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	757	754	959	866	699	1046	1410	-	-	1570	-	-
Mov Cap-2 Maneuver	757	754	-	866	699	-	-	-	-	-	-	-
Stage 1	910	815	-	988	871	-	-	-	-	-	-	-
Stage 2	902	862	-	920	759	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s/v10.64			10.45			0			0			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1410	-	-	756	748	1570	-	-				
HCM Lane V/C Ratio	-	-	-	0.156	0.118	-	-	-				
HCM Control Delay (s/veh)	0	-	-	10.6	10.5	0	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.6	0.4	0	-	-				




HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

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	28	2	33	12	16	0	45	282	8	0	364	38
Future Vol, veh/h	28	2	33	12	16	0	45	282	8	0	364	38
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	2	33	12	16	0	45	282	8	0	364	38
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	763	763	383	741	778	286	402	0	0	290	0	0
Stage 1	383	383	-	376	376	-	-	-	-	-	-	-
Stage 2	380	380	-	365	402	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	321	334	664	332	328	753	1157	-	-	1272	-	-
Stage 1	640	612	-	645	616	-	-	-	-	-	-	-
Stage 2	642	614	-	654	600	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	291	319	664	299	312	753	1157	-	-	1272	-	-
Mov Cap-2 Maneuver	291	319	-	299	312	-	-	-	-	-	-	-
Stage 1	640	612	-	615	588	-	-	-	-	-	-	-
Stage 2	596	585	-	620	600	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v15.25			17.92		1.11		0					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	240	-	-	414	307	1272	-	-				
HCM Lane V/C Ratio	0.039	-	-	0.152	0.091	-	-	-				
HCM Control Delay (s/veh)	8.2	0	-	15.2	17.9	0	-	-				
HCM Lane LOS	A	A	-	C	C	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.3	0	-	-				




HCM 7th TWSC  
3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	408	152	2	320	78	0
Future Vol, veh/h	408	152	2	320	78	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	408	152	2	320	78	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	560	0	808	484
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	324	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1011	-	350	583
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	733	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1011	-	349	583
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	731	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.05		18.24		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	349	-	-	11	-	
HCM Lane V/C Ratio	0.223	-	-	0.002	-	
HCM Control Delay (s/veh)	18.2	-	-	8.6	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	0.8	-	-	0	-	




HCM 7th TWSC  
4: Driveway 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	88	5	43	158	3	30
Future Vol, veh/h	88	5	43	158	3	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	5	43	158	3	30
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	93	0	335	91
Stage 1	-	-	-	-	91	-
Stage 2	-	-	-	-	244	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1501	-	661	967
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	797	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1501	-	640	967
Mov Cap-2 Maneuver	-	-	-	-	640	-
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	772	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		1.6		9.04	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	924	-	-	385	-	
HCM Lane V/C Ratio	0.036	-	-	0.029	-	
HCM Control Delay (s/veh)	9	-	-	7.5	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	

HCM 7th TWSC  
5: Old State & Driveway 2

01/31/2024

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	3	5	10	14	43
Future Vol, veh/h	30	3	5	10	14	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	3	5	10	14	43

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	56	36	57
Stage 1	36	-	-
Stage 2	20	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	952	1037	1547
Stage 1	987	-	-
Stage 2	1003	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	949	1037	1547
Mov Cap-2 Maneuver	949	-	-
Stage 1	984	-	-
Stage 2	1003	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.9	2.44	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	600	-	957	-	-
HCM Lane V/C Ratio	0.003	-	0.034	-	-
HCM Control Delay (s/veh)	7.3	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	94	52	0	48	80	0	0	24	32	0	35	170
Future Vol, veh/h	94	52	0	48	80	0	0	24	32	0	35	170
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	94	52	0	48	80	0	0	24	32	0	35	170





Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	184	176	120	101	245	40	205	0	0	56	0	0
Stage 1	120	120	-	40	40	-	-	-	-	-	-	-
Stage 2	64	56	-	61	205	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	777	717	931	880	657	1031	1366	-	-	1549	-	-
Stage 1	884	796	-	975	862	-	-	-	-	-	-	-
Stage 2	947	848	-	950	732	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	682	717	931	816	657	1031	1366	-	-	1549	-	-
Mov Cap-2 Maneuver	682	717	-	816	657	-	-	-	-	-	-	-
Stage 1	884	796	-	975	862	-	-	-	-	-	-	-
Stage 2	859	848	-	888	732	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.56	11.19	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1366	-	-	694	709	1549	-	-
HCM Lane V/C Ratio	-	-	-	0.21	0.181	-	-	-
HCM Control Delay (s/veh)	0	-	-	11.6	11.2	0	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.7	0	-	-




HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

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	42	3	43	13	19	0	60	327	9	0	422	60
Future Vol, veh/h	42	3	43	13	19	0	60	327	9	0	422	60
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	3	43	13	19	0	60	327	9	0	422	60
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	909	908	452	875	934	332	482	0	0	336	0	0
Stage 1	452	452	-	452	452	-	-	-	-	-	-	-
Stage 2	457	456	-	424	482	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	256	275	608	270	266	710	1081	-	-	1223	-	-
Stage 1	587	570	-	587	571	-	-	-	-	-	-	-
Stage 2	584	568	-	608	553	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	221	256	608	231	248	710	1081	-	-	1223	-	-
Mov Cap-2 Maneuver	221	256	-	231	248	-	-	-	-	-	-	-
Stage 1	587	570	-	547	532	-	-	-	-	-	-	-
Stage 2	524	529	-	562	553	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v20.25			22.24		1.29		0					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	271	-	-	323 241	1223	-	-					
HCM Lane V/C Ratio	0.056	-	-	0.272 0.133	-	-	-					
HCM Control Delay (s/veh)	8.5	0	-	20.2 22.2	0	-	-					
HCM Lane LOS	A	A	-	C C	A	-	-					
HCM 95th %tile Q(veh)	0.2	-	-	1.1 0.5	0	-	-					




HCM 7th TWSC  
3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	489	189	3	380	96	0
Future Vol, veh/h	489	189	3	380	96	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	489	189	3	380	96	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	678	0	970	584
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	386	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	914	-	281	512
Stage 1	-	-	-	-	558	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	914	-	280	512
Mov Cap-2 Maneuver	-	-	-	-	280	-
Stage 1	-	-	-	-	558	-
Stage 2	-	-	-	-	684	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.07		24.43		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	280	-	-	14	-	
HCM Lane V/C Ratio	0.343	-	-	0.003	-	
HCM Control Delay (s/veh)	24.4	-	-	9	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	1.5	-	-	0	-	




HCM 7th TWSC  
4: Driveway 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	102	7	67	183	5	44
Future Vol, veh/h	102	7	67	183	5	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	102	7	67	183	5	44
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	109	0	423	106
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	317	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1481	-	588	949
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	738	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1481	-	558	949
Mov Cap-2 Maneuver	-	-	-	-	558	-
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	701	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	2.02		9.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	886	-	-	482	-	
HCM Lane V/C Ratio	0.055	-	-	0.045	-	
HCM Control Delay (s/veh)	9.3	-	-	7.5	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	

HCM 7th TWSC  
5: Old State & Driveway 2

01/31/2024

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	5	7	12	16	67
Future Vol, veh/h	44	5	7	12	16	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	44	5	7	12	16	67

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	76	50	83
Stage 1	50	-	-
Stage 2	26	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	928	1019	1514
Stage 1	973	-	-
Stage 2	997	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	923	1019	1514
Mov Cap-2 Maneuver	923	-	-
Stage 1	968	-	-
Stage 2	997	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.08	2.72	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	663	-	932	-	-
HCM Lane V/C Ratio	0.005	-	0.053	-	-
HCM Control Delay (s/veh)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM 7th TWSC  
1: Old State & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	6.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	114	71	0	74	112	0	0	33	48	0	51	206
Future Vol, veh/h	114	71	0	74	112	0	0	33	48	0	51	206
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	114	71	0	74	112	0	0	33	48	0	51	206

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	243	235	154	144	314	57	257	0	0	81	0	0
Stage 1	154	154	-	57	57	-	-	-	-	-	-	-
Stage 2	89	81	-	87	257	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	711	666	892	826	601	1009	1308	-	-	1517	-	-
Stage 1	848	770	-	955	847	-	-	-	-	-	-	-
Stage 2	918	828	-	921	695	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	579	666	892	738	601	1009	1308	-	-	1517	-	-
Mov Cap-2 Maneuver	579	666	-	738	601	-	-	-	-	-	-	-
Stage 1	848	770	-	955	847	-	-	-	-	-	-	-
Stage 2	797	828	-	836	695	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v13.47			12.76		0		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1308	-	-	609 649	1517	-	-
HCM Lane V/C Ratio	-	-	-	0.304 0.287	-	-	-
HCM Control Delay (s/veh)	0	-	-	13.5 12.8	0	-	-
HCM Lane LOS	A	-	-	B B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.3 1.2	0	-	-

HCM 7th TWSC  
2: HW 55 & Loomis

01/31/2024

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	62	3	56	16	22	0	81	379	11	0	489	94
Future Vol, veh/h	62	3	56	16	22	0	81	379	11	0	489	94
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	3	56	16	22	0	81	379	11	0	489	94

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1088	1088	536	1037	1130	385	583	0	0	390	0	0
Stage 1	536	536	-	547	547	-	-	-	-	-	-	-
Stage 2	552	552	-	491	583	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	193	216	545	209	204	663	991	-	-	1169	-	-
Stage 1	529	523	-	522	518	-	-	-	-	-	-	-
Stage 2	518	515	-	560	499	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	154	193	545	166	183	663	991	-	-	1169	-	-
Mov Cap-2 Maneuver	154	193	-	166	183	-	-	-	-	-	-	-
Stage 1	529	523	-	467	464	-	-	-	-	-	-	-
Stage 2	442	461	-	499	499	-	-	-	-	-	-	-




Approach	EB		WB		NB		SB	
HCM Control Delay, s/v36.17			31.16		1.54		0	
HCM LOS	E		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	308	-	-	232 175	1169	-	-
HCM Lane V/C Ratio	0.082	-	-	0.521 0.217	-	-	-
HCM Control Delay (s/veh)	9	0	-	36.2 31.2	0	-	-
HCM Lane LOS	A	A	-	E D	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	2.7 0.8	0	-	-

# HCM 7th TWSC




## 3: Old State & HW55

01/31/2024

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	591	238	3	455	123	0
Future Vol, veh/h	591	238	3	455	123	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	591	238	3	455	123	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	829	0	1171	710
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	461	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	803	-	213	434
Stage 1	-	-	-	-	487	-
Stage 2	-	-	-	-	635	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	803	-	212	434
Mov Cap-2 Maneuver	-	-	-	-	212	-
Stage 1	-	-	-	-	487	-
Stage 2	-	-	-	-	632	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.06		43.16		
HCM LOS	E					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	212	-	-	12	-	
HCM Lane V/C Ratio	0.581	-	-	0.004	-	
HCM Control Delay (s/veh)	43.2	-	-	9.5	0	
HCM Lane LOS	E	-	-	A	A	
HCM 95th %tile Q(veh)	3.2	-	-	0	-	




HCM 7th TWSC  
4: Dwy 1 & Loomis

01/31/2024

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	118	12	106	212	7	67
Future Vol, veh/h	118	12	106	212	7	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	118	12	106	212	7	67
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	130	0	548	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	424	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1455	-	497	927
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	660	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1455	-	456	927
Mov Cap-2 Maneuver	-	-	-	-	456	-
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	606	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	2.56		9.67		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	844	-	-	600	-	
HCM Lane V/C Ratio	0.088	-	-	0.073	-	
HCM Control Delay (s/veh)	9.7	-	-	7.7	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-	

HCM 7th TWSC  
5: Dwy 2 & Old State

01/31/2024

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	0	0	44	66	59
Future Vol, veh/h	37	0	0	44	66	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	0	0	44	66	59

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	140	96	125	0	-	0
Stage 1	96	-	-	-	-	-
Stage 2	44	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	854	961	1462	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	978	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	854	961	1462	-	-	-
Mov Cap-2 Maneuver	854	-	-	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.41	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1462	-	854	-	-
HCM Lane V/C Ratio	-	-	0.043	-	-
HCM Control Delay (s/veh)	0	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

HCM 7th TWSC  
6: Old State & Dwy 3/Mesa

01/31/2024

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	0	7	0	0	0	12	14	0	0	19	47
Future Vol, veh/h	30	0	7	0	0	0	12	14	0	0	19	47
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	0	7	0	0	0	12	14	0	0	19	47

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	81	81	43	57	104	14	66	0	0	14	0	0
Stage 1	43	43	-	38	38	-	-	-	-	-	-	-
Stage 2	38	38	-	19	66	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	907	810	1028	940	786	1066	1536	-	-	1604	-	-
Stage 1	972	860	-	977	863	-	-	-	-	-	-	-
Stage 2	977	863	-	1000	840	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	900	803	1028	926	780	1066	1536	-	-	1604	-	-
Mov Cap-2 Maneuver	900	803	-	926	780	-	-	-	-	-	-	-
Stage 1	972	860	-	970	857	-	-	-	-	-	-	-
Stage 2	970	857	-	993	840	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.07	0	3.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	831	-	-	922	1604	-	-
HCM Lane V/C Ratio	0.008	-	-	0.04	-	-	-
HCM Control Delay (s/veh)	7.4	0	-	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	-	-

## Synchro Output – MITIGATIONS Analysis

HCM 7th TWSC  
2: HW 55 & Loomis

02/01/2024

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	73	5	56	8	0	0	29	422	8	0	298	25
Future Vol, veh/h	73	5	56	8	0	0	29	422	8	0	298	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	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	5	56	8	0	0	29	422	8	0	298	25

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	778	786	298	785	807	426	323	0	0	430	0	0
Stage 1	298	298	-	484	484	-	-	-	-	-	-	-
Stage 2	480	488	-	301	323	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	314	324	741	310	315	628	1237	-	-	1129	-	-
Stage 1	711	667	-	564	552	-	-	-	-	-	-	-
Stage 2	567	550	-	709	650	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	306	317	741	276	308	628	1237	-	-	1129	-	-
Mov Cap-2 Maneuver	306	317	-	276	308	-	-	-	-	-	-	-
Stage 1	711	667	-	551	539	-	-	-	-	-	-	-
Stage 2	554	537	-	650	650	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v18.15			18.43		0.5		0	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1237	-	-	406	276	1129	-
HCM Lane V/C Ratio	0.023	-	-	0.33	0.029	-	-
HCM Control Delay (s/veh)	8	-	-	18.2	18.4	0	-
HCM Lane LOS	A	-	-	C	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.4	0.1	0	-







# HCM 7th TWSC 3: Old State & HW55

02/01/2024

Intersection						
Int Delay, s/veh	6.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	
Traffic Vol, veh/h	333	83	0	509	222	0
Future Vol, veh/h	333	83	0	509	222	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	333	83	0	509	222	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	416	0	842	333
Stage 1	-	-	-	-	333	-
Stage 2	-	-	-	-	509	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1143	-	334	709
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	604	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1143	-	334	709
Mov Cap-2 Maneuver	-	-	-	-	334	-
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	604	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0		34.65	
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	334	-	-	1143	-	
HCM Lane V/C Ratio	0.664	-	-	-	-	
HCM Control Delay (s/veh)	34.6	-	-	0	-	
HCM Lane LOS	D	-	-	A	-	
HCM 95th %tile Q(veh)	4.5	-	-	0	-	

HCM 7th TWSC  
2: HW 55 & Loomis

02/01/2024

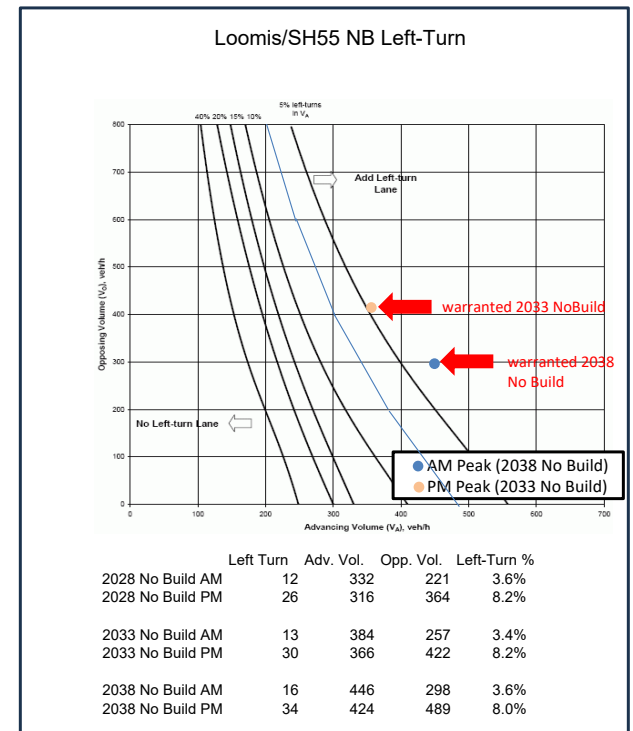
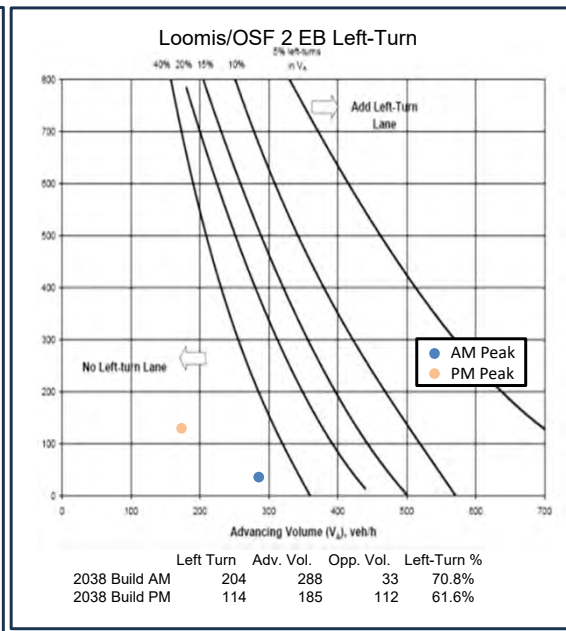
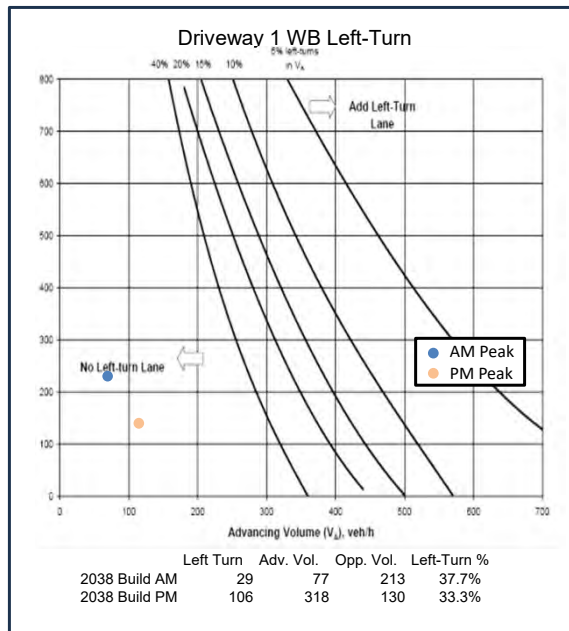
Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	3	56	16	22	0	81	379	11	0	489	94
Future Vol, veh/h	62	3	56	16	22	0	81	379	11	0	489	94
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	3	56	16	22	0	81	379	11	0	489	94
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1041	1041	489	1037	1130	385	583	0	0	390	0	0
Stage 1	489	489	-	547	547	-	-	-	-	-	-	-
Stage 2	552	552	-	491	583	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	208	230	579	209	204	663	991	-	-	1169	-	-
Stage 1	561	549	-	522	518	-	-	-	-	-	-	-
Stage 2	518	515	-	560	499	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	170	211	579	171	187	663	991	-	-	1169	-	-
Mov Cap-2 Maneuver	170	211	-	171	187	-	-	-	-	-	-	-
Stage 1	561	549	-	479	475	-	-	-	-	-	-	-
Stage 2	454	473	-	503	499	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s/v	31.3		30.24		1.54		0					
HCM LOS	D		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	991	-	-	255	180	1169	-	-				
HCM Lane V/C Ratio	0.082	-	-	0.475	0.211	-	-	-				
HCM Control Delay (s/veh)	9	-	-	31.3	30.2	0	-	-				
HCM Lane LOS	A	-	-	D	D	A	-	-				
HCM 95th %tile Q(veh)	0.3	-	-	2.4	0.8	0	-	-				

HCM 7th TWSC  
3: Old State & HW55

02/01/2024

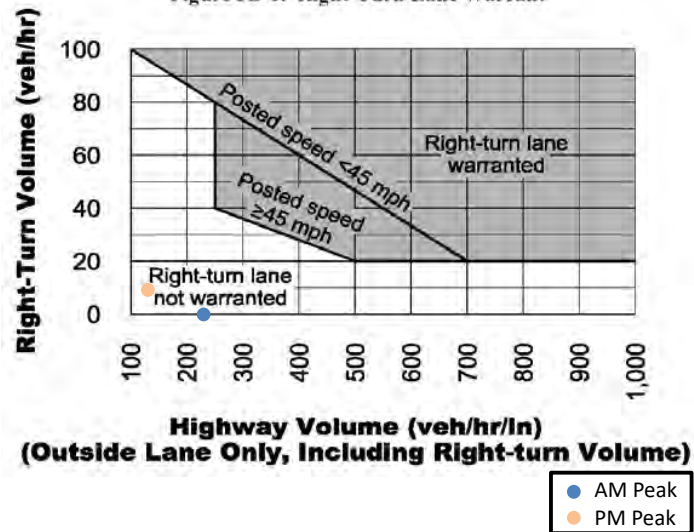
Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	
Traffic Vol, veh/h	591	238	3	455	123	0
Future Vol, veh/h	591	238	3	455	123	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	591	238	3	455	123	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	829	0	1052	591
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	461	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	803	-	251	507
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	635	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	803	-	250	507
Mov Cap-2 Maneuver	-	-	-	-	250	-
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	632	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.06		32.66	
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	250		-	-	12	-
HCM Lane V/C Ratio	0.493		-	-	0.004	-
HCM Control Delay (s/veh)	32.7		-	-	9.5	0
HCM Lane LOS	D		-	-	A	A
HCM 95th %tile Q(veh)	2.5		-	-	0	-

## APPENDIX D: Turn Lane Warrant



Driveway 1 EB Right-Turn  
2038 BUILD

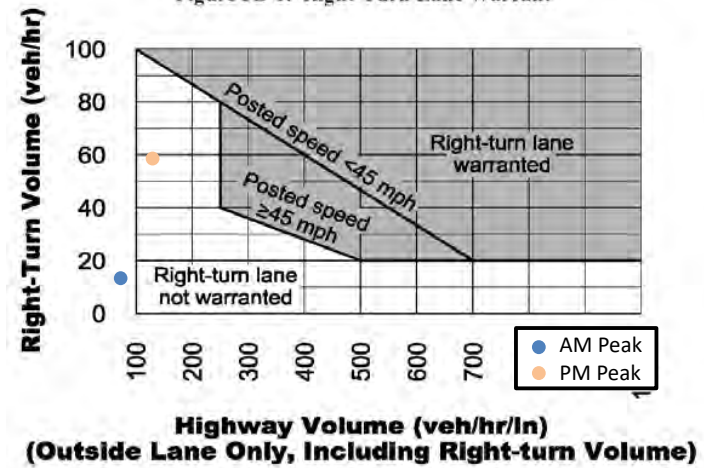
Figure 3B-1. Right-Turn Lane Warrant



	Major Rd	Rt Turn
AM	213	3
PM	130	12

Driveway 2 SB Right-Turn  
2038 BUILD

Figure 3B-1. Right-Turn Lane Warrant

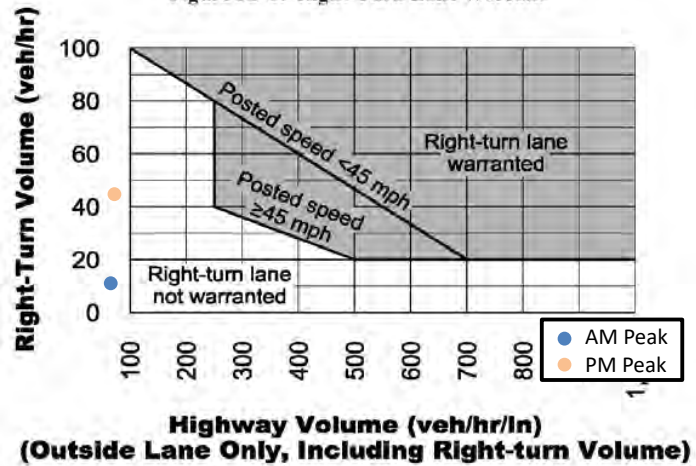


	Major Rd	Rt Turn
AM	43	16
PM	125	59

### Driveway 3 SB Right-Turn

2038 BUILD

Figure 3B-1. Right-Turn Lane Warrant

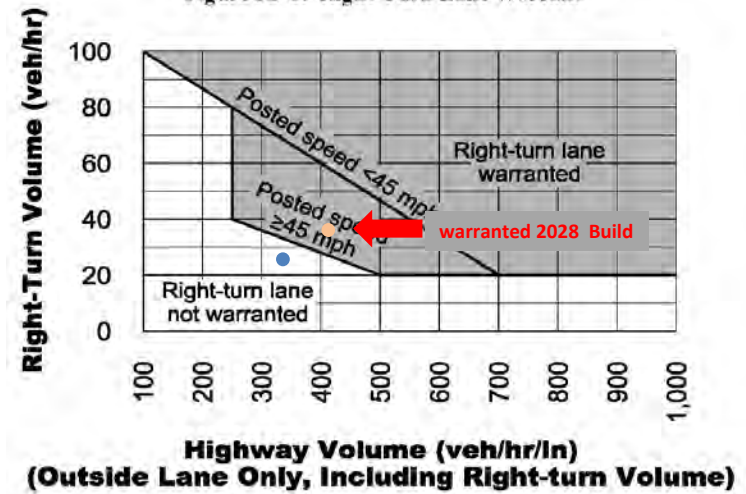


	Major Rd	Rt Turn
AM	27	13
PM	66	47

### Loomis/SH55 SB Right-Turn Build

BUILD

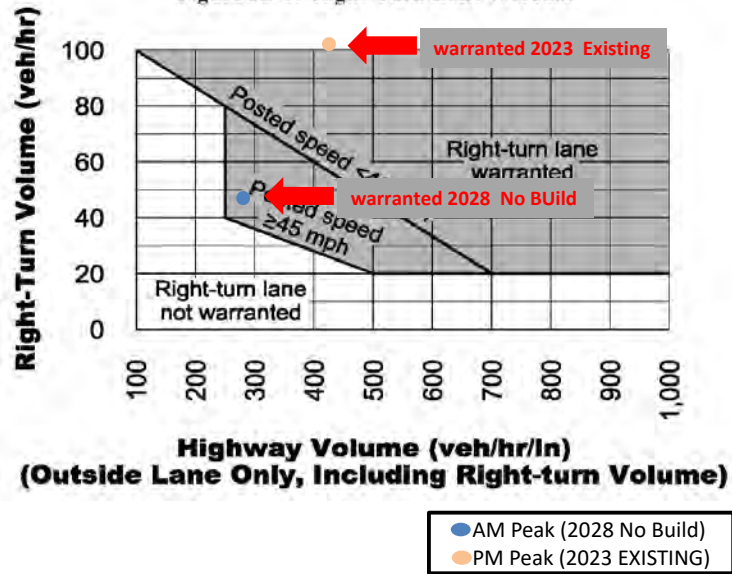
Figure 3B-1. Right-Turn Lane Warrant



	2028 BUILD		2033 BUILD		2038 BUILD	
	Major Rd	Rt Turn	Major Rd	Rt Turn	Major Rd	Rt Turn
AM	230	9	272	15	323	25
PM	402	38	482	60	583	94

### Old State Rd/SH55 SB Right-Turn No Build

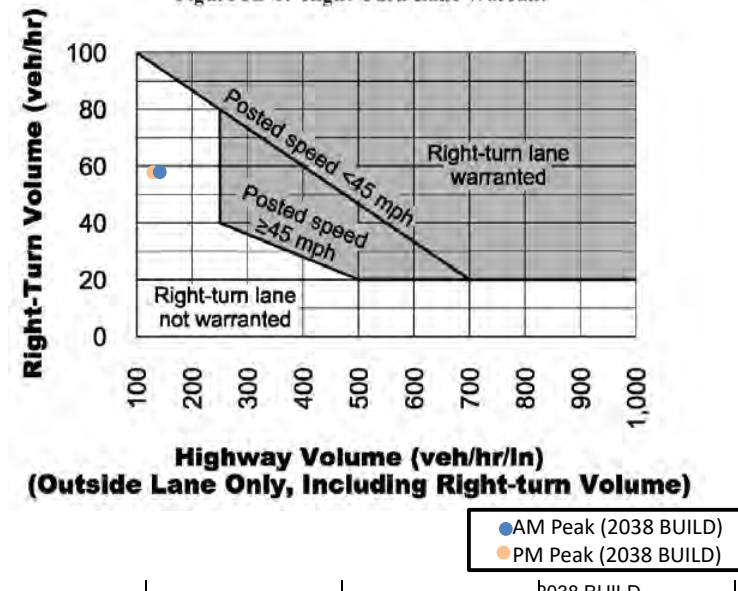
Figure 3B-1. Right-Turn Lane Warrant



	2023 EXISTING		2028 No BUILD	
	Major Rd	Rt Turn	Major Rd	Rt Turn
AM	239	41	278	48
PM	426	107	494	124

### Loomis/SH55 EB Right-Turn Build

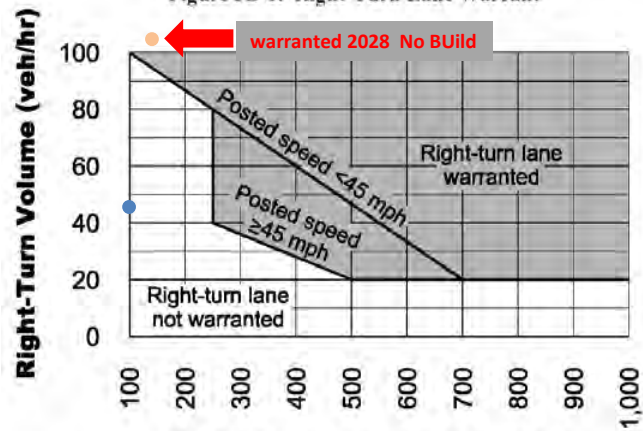
Figure 3B-1. Right-Turn Lane Warrant



	2038 BUILD	
	Major Rd	Rt Turn
AM	134	56
PM	121	56

### Loomis/OSR SB Right-Turn Build

Figure 3B-1. Right-Turn Lane Warrant



**Highway Volume (veh/hr/ln)**  
(Outside Lane Only, Including Right-turn Volume)

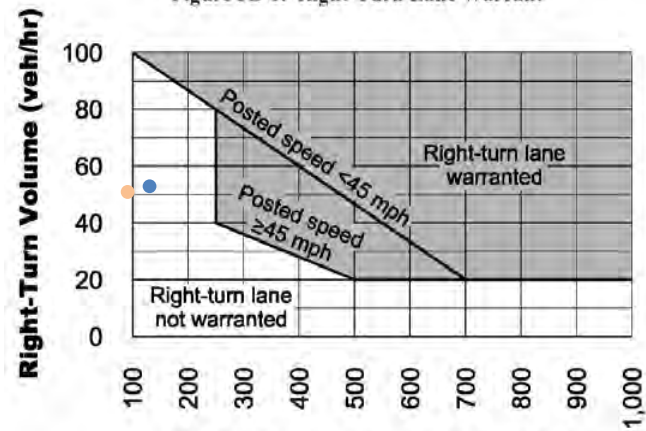
● AM Peak (2038 BUILD)  
● PM Peak (2028 NoBuild)

	2028 No Build		2038 No BUILD		2038 BUILD	
	Major Rd	Rt Turn	Major Rd	Rt Turn	Major Rd	Rt Turn
AM	36	26	48	34	68	44
PM	140	128	187	171	257	206

### Loomis/OSR NB Right-Turn Build

BUILD

Figure 3B-1. Right-Turn Lane Warrant



**Highway Volume (veh/hr/ln)**  
(Outside Lane Only, Including Right-turn Volume)

● AM Peak (2038 BUILD)  
● PM Peak (2028 BUILD)

	2038 BUILD	
	Major Rd	Rt Turn
AM	111	51
PM	81	48

## APPENDIX E: Growth Rate Calculations

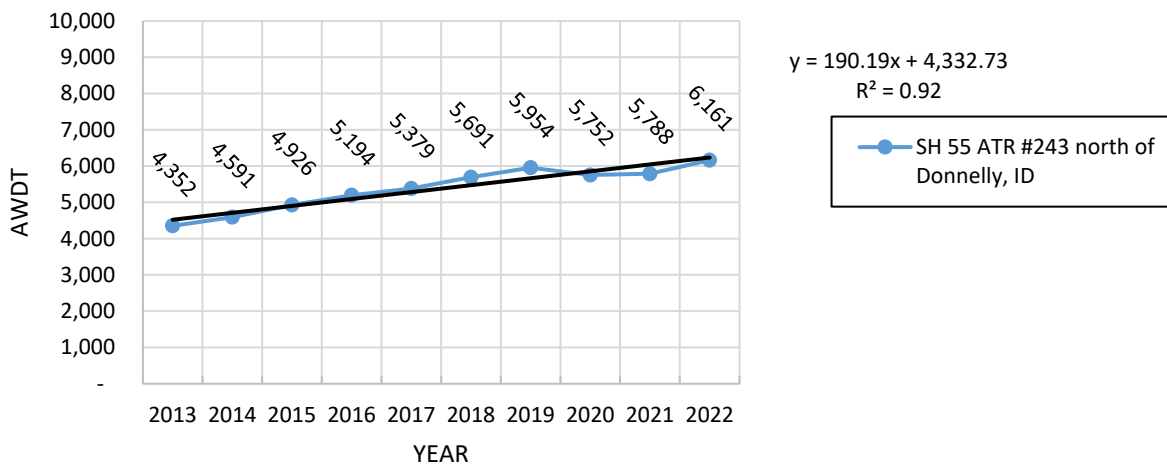
## Background Growth

Without a metropolitan planning organization in the study area, existing volume trends along State Highway 55 from the Idaho Transportation Department Roadway Data Section have been used to indicate a historical growth rate of **3.0%** for the roadway network. This was determined using data from ATR #243(north of Donnelly) and ATR #43 (south of Donnelly) for the years of 2013 through 2022. During the Covid-19 pandemic of 2020-2022 the traffic patterns recorded did not appear to be significantly affected, so no adjustments were made.

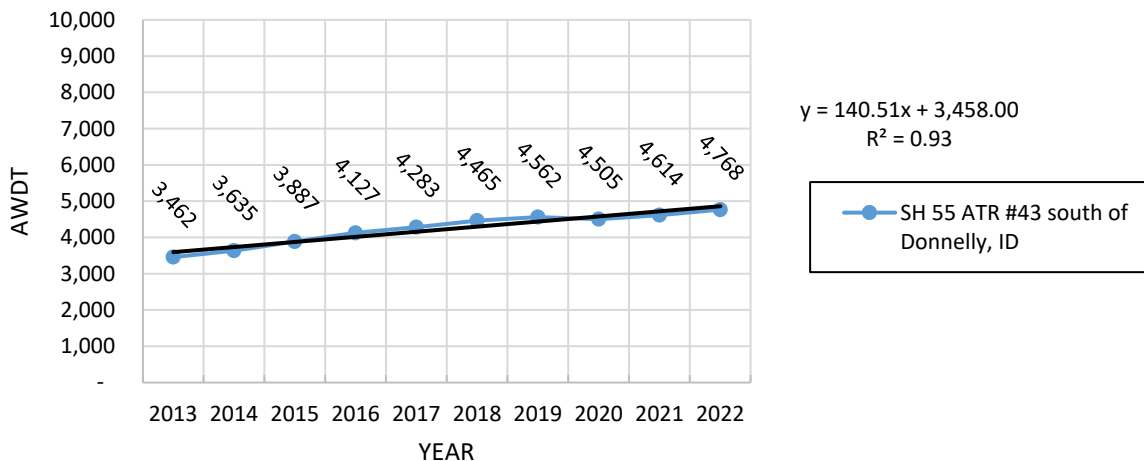
**Recommended Growth Rate for study: 3.0% / year**

HISTORIC GROWTH RATE TABLE															
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		B	A		
													Annual Increase (Tredline)	Growth Rate=A/B	Growth Rate %
SH 55 ATR #243 north of Donnelly, ID	4,352	4,591	4,926	5,194	5,379	5,691	5,954	5,752	5,788	6,161			veh/day		Rate USE
SH 55 ATR #43 south of Donnelly, ID	3,462	3,635	3,887	4,127	4,283	4,465	4,562	4,505	4,614	4,768			141	0.03	3.1%
															3.0%

SH 55 ATR #243 north of Donnelly, ID



SH 55 ATR #43 south of Donnelly, ID



# Automatic Counter Volumes

## Report Types

Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	24-Hour	Annual	Avg.
1990	1551	1471	1673	1911	2602	3190	4208	3919	3204	2490	1925	1578	2484		
1991	1456	2275	1737	1798	2500	3315	4568	4248	3441	2774	2030	2005	2683		
1992	1808	2417	2057	2163	3232	3697	4626	4579	3378	3079	2273	1690	2928		
1993	1711	2055	1918	2110	3117	3632	4843	4245	3583	3030	2412	2037	2898		
1994	2169	1936	2080	2288	3269	3678	4495	3940	3347	2987	2072	1947	2858		
1995	1812	2479	2095	2266	3388	3922	5044	4639	3782	3168	2473	2073	3095		
1996	1932	2325	2120	2352	2924	3815	4847	4740	3590	3186	2301	1819	2996		
1997	1311	2475	2050	2146	2978	3692	4572	4555	3500	3127	2459	2043	2909		
1998	1971	2426	2097	2209	2820	3652	5044	4710	3775	3056	2427	2083	3023		
1999	2081	1980	2036	2126	2729	3810	5121	4716	3717	3149	2552	2048	3005		
2000	2045	2374	2150	2340	3141	3945	5047	4729	3608	3127	2374	2063	3079		
2001	2149	2282	2081	2267	3374	3936	4890	4682	3656	3089	2525	1993	3077		
2002	2145	2412	2190	2282	3182	4132	5150	5047	3760	3314	2631	2254	3208		
2003	2264	2697	2379	2398	3360	4310	5329	5227	3893	3587	2686	2584	3393		
2004	2335	2742	2580	2792	3620	4661	5990	5244	4707	4130	3478	3083	3780		
2005	3109	3453	3083	3041	3827	4827	6281	5986	4945	4176	3678	3246	4138		
2006	3113	3352	3193	3113	3920	5235	6580	6152	5348	4738	3691	3455	4324		
2007	3603	3662	3410	3469	4398	5288	6428	6112	4796	4197	3458	3081	4325		
2008	2970	3066	2839	2555	3195	4342	5679	5350	4058	3550	2897	2445	3579		
2009	2935	3123	2523	2482	3356	4255	5748	4977	4133	3308	2694	2410	3495		
2010	2702	2756	2472	2455	3162	4149	5611	5294	4079	3391	2522	2399	3416		
2011	2646	2703	2423	2199	2898	3950	5675	4801	3957	3172			3392		
2012	2593	2678	2390	2355	2876	4341	5606	4658	3927	3154	2557	2460	3300		
2013	2578	2756	2526	2378	3319	4432	6008	5437	3614	3330	2635	2538	3462		
2014	3079	2753	2668	2532	3062	4815	6230	5466	4134	3625	2646	2607	3635		
2015	3016	3287	2907	2780	3828	5024	6110	5507	4522	3829	2914	2924	3887		
2016	3300	3375	2925	2968	4066	5408	6620	5942	4845	3885	3278	2917	4127		
2017	3139	3236	3024	3034	4101	5597	7235	6574	5016	4112	3135	3190	4283		
2018	3772	3383	3013	3167	4512	5884	7214	6467	5281	4263	3156	3463	4465		
2019	3973	3150	3265	2966	4162	5941	7626	6730	5308	4393	3684	3544	4562		
2020	3914	3776	2692	2022	4239	6103	7256	7201	5617	4415	3238	3587	4505		
2021	3798	3693	2816	3078	4476	6647	7885	7018	5569	4516	2778	3095	4614		
2022	3620	4194	3584	3153	4241	6022	7512	7118	5754	4985	3493	3545	4768		
2023	4176	4256	3714	3251	4777	6626	8207	7284	6225	5227					

# Automatic Counter Volumes

## Report Types

Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	24-Hour	Annual	Avg.
2011			3038		3862	4631	6330	5334	4754	3971	3054	3195			
2012	3431	3496	3139	3112	3854	4944	6495	5643	4726	3928	3299	3226	4108		
2013	3382	3654	3296	3237	4137	5299	7019	6348	4686	4253	3493	3413	4352		
2014	3955	3631	3441	3370	4364	5635	7233	6613	5180	4579	3545	3547	4591		
2015	3968	4322	3872	3783	4618	6085	7205	6653	5692	4977	3952	3978	4926		
2016	4404	4478	3947	4098	5113	6443	7698	7046	5959	4952	4244	3947	5194		
2017	4286	4389	4097	4110	5230	6683	8390	7607	6125	5174	4206	4252	5379		
2018	4791	4531	4207	4347	5614	7059	8511	7678	6591	5639	4736	4586	5691		
2019	5173	5175		4316	5590	7351	8914	8069	6722	5780	4935	4804	5954		
2020	5108	5138	3839	2989	5295	7366	8415	8465	7157	5904	4565	4787	5752		
2021	4999	5005	4436	4538	5868	7987	9175	7360	5958	5328	4423	4378	5788		
2022	5015	5566	4874	4476	5669	7465	9005	8536	7296	6423	4779	4831	6161		
2023	5553	5678	4994	4812	6202	7890	9616	8599	7609	6645					

## APPENDIX F: Seasonal and Day-of-Week Factors

**From:** [Tony Grange](#)  
**To:** [Adam Miera](#)  
**Cc:** [Bonnie Layton](#); [Margaret Pridmore](#)  
**Subject:** RE: Seasonal Adjustment Factor for Manually Collected Counts  
**Date:** Wednesday, January 24, 2024 12:25:46 PM

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Hi Adam – I've dug into this location (we do have a portable count site at the intersection of SH-55 & Loomis Lane), and found the following information (along with some background on our processes):

We last counted the Loomis Lane legs in 2018, and the SH-55 legs in 2022. In years that we do counts, we apply seasonal (monthly) and day-of-week factors, which come from groupings of permanent sites that portable locations are assigned to. In years where sites aren't counted, we apply a growth factor based on overall growth in a particular region. Had we done counts in 2023, the seasonal factor would have been 1.429, and the daily factor (for a count on a Wednesday) would have been 1.15. (Actually, when we do portable counts, we apply the previous year's factors to them, and refactor them after we calculate the factors for the measurement year – that hasn't been done yet for 2023, though I don't expect those factors to change much.)

You can find the estimated AADTs for the roads here:

<https://iplan.maps.arcgis.com/apps/webappviewer/index.html?id=e8b58a3466e74f249cca6aad30e83ba2>

Zoom in and click on the road(s), and a window will pop up with details, including AADT.

Some precautions: We generally try to do a minimum count of 48 hours in order to minimize the effect of something out of the ordinary happening to occur on any given single day. Also, the seasonal factors based on the permanent ATRs on SH-55 may be more affected by the McCall-as-destination aspect than the neighborhood it looks like you're targeting, but in any case, those are the factors we would have used had we done counts at that location this year.

Please let me know if I can provide any additional information – if the ITD D3 Reviewers want to contact me directly with any questions, please feel free to provide my name and contact information.

Thanks,  
Tony

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**From:** Adam Miera [REDACTED]  
**Sent:** Monday, January 22, 2024 1:53 PM  
**To:** Tony Grange [REDACTED]  
**Cc:** Bonnie Layton [REDACTED]  
**Subject:** Seasonal Adjustment Factor for Manually Collected Counts

**CAUTION: This email originated outside the State of Idaho network. Verify links and attachments**

**BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.**

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Hi again Tony,

Just a quick recap, im working on a traffic impact study for a housing development near Donnelly, ID. The development is located on Loomis Lane near SH-55. We collected traffic turning movement volumes on 11/8/2023 and later identified that the month of November was the off peak or shoulder season.

Id like to propose to ITD District 3 Reviewers to apply a seasonal adjustment factor to our collected counts rather than wait until July of this year to collect additional turning movement counts. Id greatly appreciate your help in identifying the seasonal adjustment I could apply to our manually collected counts.

On SH-55 the nearest ATR location is #43 about 1.1 miles south of the intersection of SH-55/Loomis Lane. Located about 5 miles north of the intersection is another ATR #243.

Please let me know if there is any additional information I could supply to help with this.  
Thank you again!

**Adam Miera, PE** | Traffic Services Director | [NV5](#)  
6501 Americas Pkwy NE, Ste 400, Albuquerque, NM 87110 | P: [REDACTED]

[Electronic Communications Disclaimer](#)

File Name: C:\Users\ljudd\Dropbox\1 active project dropbox\1 CURRENT\08 Video - Count\1123 NV50049 DON SH-55\ITM File\SH-55 & Old S

Start Date: 11/8/2023

Start Time: 7:00:00 AM

Site Code: 00000000

Comment 1: Study: NV50049

Comment 2: Intersection: SH-55 / Old State Road

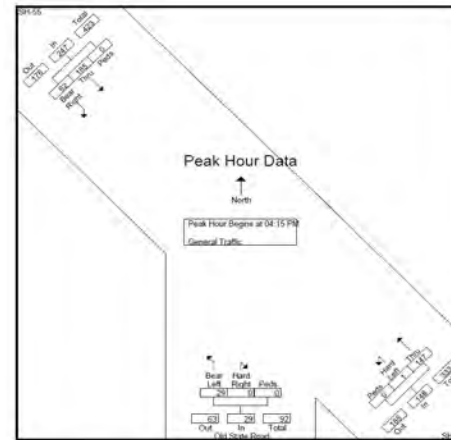
Comment 3: City, State: Donnelly, Idaho

Comment 4: Control: Stop Sign

Start Time	SH-55 From Northwest			SH-55 From Southeast			Old State Road From South		
	Bear Right	Thru	Peds	Thru	Hard Left	Peds	Hard Right	Bear Left	Peds
7:00:00 AM	3	19	0	25	0	0	0	13	0
7:15:00 AM	2	12	0	35	0	0	1	24	0
7:30:00 AM	10	28	0	49	0	0	0	22	0
7:45:00 AM	3	31	0	39	0	0	0	19	0
8:00:00 AM	7	26	0	30	0	0	0	12	0
8:15:00 AM	4	30	0	46	0	0	0	11	0
8:30:00 AM	5	31	0	28	0	0	0	10	0
8:45:00 AM	7	28	0	33	0	0	0	9	0
9:00:00 AM	0	0	0	0	0	0	0	0	0
9:15:00 AM	0	0	0	0	0	0	0	0	0
9:30:00 AM	0	0	0	0	0	0	0	0	0
9:45:00 AM	0	0	0	0	0	0	0	0	0
10:00:00 AM	0	0	0	0	0	0	0	0	0
10:15:00 AM	0	0	0	0	0	0	0	0	0
10:30:00 AM	0	0	0	0	0	0	0	0	0
10:45:00 AM	0	0	0	0	0	0	0	0	0
11:00:00 AM	0	0	0	0	0	0	0	0	0
11:15:00 AM	0	0	0	0	0	0	0	0	0
11:30:00 AM	0	0	0	0	0	0	0	0	0
11:45:00 AM	0	0	0	0	0	0	0	0	0
12:00:00 PM	0	0	0	0	0	0	0	0	0
12:15:00 PM	0	0	0	0	0	0	0	0	0
12:30:00 PM	0	0	0	0	0	0	0	0	0
12:45:00 PM	0	0	0	0	0	0	0	0	0
1:00:00 PM	0	0	0	0	0	0	0	0	0
1:15:00 PM	0	0	0	0	0	0	0	0	0
1:30:00 PM	0	0	0	0	0	0	0	0	0
1:45:00 PM	0	0	0	0	0	0	0	0	0
2:00:00 PM	0	0	0	0	0	0	0	0	0
2:15:00 PM	0	0	0	0	0	0	0	0	0
2:30:00 PM	0	0	0	0	0	0	0	0	0
2:45:00 PM	0	0	0	0	0	0	0	0	0
3:00:00 PM	0	0	0	0	0	0	0	0	0
3:15:00 PM	0	0	0	0	0	0	0	0	0
3:30:00 PM	0	0	0	0	0	0	0	0	0
3:45:00 PM	0	0	0	0	0	0	0	0	0
4:00:00 PM	7	52	0	36	0	0	0	11	0
4:15:00 PM	12	49	0	39	0	0	0	7	0
4:30:00 PM	18	35	0	39	0	0	0	4	0
4:45:00 PM	21	49	0	30	0	0	0	7	0
5:00:00 PM	11	52	0	39	1	0	0	11	0
5:15:00 PM	19	37	0	23	0	0	0	13	0
5:30:00 PM	12	40	0	44	0	0	0	9	0

Grown with Seasonal 1.5% then daily 1.15%

Start Time	SH-55 From Northwest			SH-55 From Southeast			Old State Road From South		
	Bear Right	Thru	Peds	Thru	Hard Left	Peds	Hard Right	Bear Left	Peds
7:30:00 AM	17	48	0	85	0	0	0	38	0
7:45:00 AM	5	53	0	67	0	0	0	33	0
8:00:00 AM	12	45	0	52	0	0	0	21	0
8:15:00 AM	7	52	0	79	0	0	0	19	0
<b>TOTAL</b>	<b>41</b>	<b>198</b>	<b>0</b>	<b>283</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>110</b>	<b>0</b>



Grown with Seasonal 1.5% then daily 1.15%

Start Time	SH-55 From Northwest			SH-55 From Southeast			Old State Road From South		
	Bear Right	Thru	Peds	Thru	Hard Left	Peds	Hard Right	Bear Left	Peds
4:15:00 PM	21	85	0	67	0	0	0	12	0
4:30:00 PM	31	60	0	67	0	0	0	7	0
4:45:00 PM	36	85	0	52	0	0	0	12	0
5:00:00 PM	19	90	0	67	2	0	0	19	0
<b>TOTAL</b>	<b>107</b>	<b>319</b>	<b>0</b>	<b>254</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>50</b>	<b>0</b>

5:45:00 PM	16	27	0	22	0	0	0	12	0
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File Name: C:\Users\judd\Dropbox\1 active project dropbox\1 CURRENT\08 Video - Count\1123 NV50049 DON SH-55\ITM File\Old State Rd &  
Start Date: 11/8/2023  
Start Time: 7:00:00 AM  
Site Code: 00000000  
Comment 1: Study: NV50049  
Comment 2: Intersection: Old State Rd / Loomis Lane  
Comment 3: City, State: Donnelly, Idaho  
Comment 4: Control: Stop Sign

Start Time	Old State Road From North				Loomis Lane From East				Old State Road From South				Loomis Lane From West			
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
7:00:00 AM	0	2	0	0	0	0	0	0	0	3	0	0	0	2	15	0
7:15:00 AM	2	0	0	0	0	3	0	0	0	2	0	0	0	3	20	0
7:30:00 AM	8	2	0	0	0	1	0	0	0	6	0	0	0	1	14	0
7:45:00 AM	3	1	0	0	0	1	0	0	0	2	0	0	0	6	17	0
8:00:00 AM	6	1	0	0	0	1	0	0	0	0	0	0	0	2	10	0
8:15:00 AM	3	1	0	0	0	2	1	0	0	0	0	0	0	4	10	0
8:30:00 AM	3	1	0	0	0	0	0	0	0	1	0	0	0	0	11	0
8:45:00 AM	5	2	0	0	0	0	0	0	0	0	0	0	0	1	6	0
9:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00:00 PM	6	0	0	0	0	3	0	0	0	0	1	0	0	3	7	0
4:15:00 PM	8	1	1	0	0	5	2	0	0	1	0	0	0	3	6	0
4:30:00 PM	15	3	0	0	0	3	0	0	0	0	0	0	0	3	5	0
4:45:00 PM	17	2	0	0	0	6	1	0	0	0	0	0	0	3	9	0
5:00:00 PM	15	0	0	0	0	2	0	0	0	1	0	0	0	0	8	0
5:15:00 PM	17	1	0	0	0	4	0	0	1	3	0	0	0	4	12	0
5:30:00 PM	8	4	0	0	0	2	1	0	0	2	0	0	1	2	7	0
5:45:00 PM	13	1	1	0	0	5	0	0	0	2	1	0	0	0	11	0

Grown with Seasonal 1.5% then daily 1.15%

Start Time	Old State Road From North				Loomis Lane From East				Old State Road From South				Loomis Lane From West			
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
7:00:00 AM	0	3	0	0	0	0	0	0	0	5	0	0	0	3	26	0
7:15:00 AM	3	0	0	0	0	5	20	0	0	3	0	0	0	5	35	0
7:30:00 AM	14	3	0	0	0	2	0	0	0	10	0	0	0	2	24	0
7:45:00 AM	5	2	0	0	0	2	0	0	0	3	0	0	0	10	29	0
TOTAL	22	9	0	0	0	9	0	0	0	22	0	0	0	21	114	0

Grown with Seasonal 1.5% then daily 1.15%

Start Time	Old State Road From North				Loomis Lane From East				Old State Road From South				Loomis Lane From West			
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:30:00 PM	26	5	0	0	0	5	0	0	0	0	0	0	0	5	9	0
4:45:00 PM	29	3	0	0	0	10	2	0	0	0	0	0	0	5	16	0
5:00:00 PM	26	0	0	0	0	3	0	0	0	2	0	0	0	0	14	0
5:15:00 PM	29	2	0	0	0	7	0	0	2	5	0	0	0	7	21	0
TOTAL	110	10	0	0	0	26	2	0	2	7	0	0	0	17	59	0

File Name: C:\Users\judd\Dropbox\1 active project dropbox\1 CURRENT\09 Processing\1123 NV50049 DON SH-55\TM File\SH-55 & Loomis Ln.p  
Start Date: 11/8/2023  
Start Time: 7:00:00 AM  
Site Code: 00000000  
Comment 1: Study: NV50049  
Comment 2: Intersection: SH-55 / Loomis Lane  
Comment 3: City, State: Donnelly, Idaho  
Comment 4: Control: Stop Sign

Start Time	SH-55 From North				Loomis Lane From East				SH-55 From South				Loomis Lane From West			
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
7:00:00 AM	0	20	0	0	0	0	0	0	0	21	1	0	1	0	1	0
7:15:00 AM	0	14	0	0	0	0	2	0	0	38	2	0	3	1	0	0
7:30:00 AM	0	26	0	0	0	0	1	0	0	43	1	0	1	0	0	0
7:45:00 AM	0	26	0	0	0	0	1	0	1	38	1	0	5	0	1	0
8:00:00 AM	0	29	0	0	0	0	1	0	1	31	1	0	1	1	0	0
8:15:00 AM	0	30	0	0	0	0	0	0	1	45	3	0	1	1	1	0
8:30:00 AM	0	28	0	0	0	0	1	0	1	33	0	0	0	0	0	0
8:45:00 AM	0	27	0	0	0	0	1	0	1	34	0	0	0	0	0	0
9:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00:00 PM	0	52	0	0	0	0	1	0	2	35	5	0	3	0	0	0
4:15:00 PM	0	48	0	0	0	6	3	0	1	38	1	0	2	1	1	0
4:30:00 PM	0	37	0	0	0	1	1	0	1	36	1	0	3	0	0	0
4:45:00 PM	0	45	0	0	0	1	1	0	0	30	6	0	2	0	0	0
5:00:00 PM	0	54	0	0	0	0	1	0	3	36	0	0	2	0	0	0
5:15:00 PM	0	41	0	0	0	0	3	0	0	29	5	0	4	1	0	0
5:30:00 PM	0	38	0	0	0	1	2	0	6	40	2	0	2	0	0	0
5:45:00 PM	0	30	0	0	0	1	0	0	0	21	3	0	0	1	0	0

Grown with Seasonal 1.5% then daily 1.15%

Start Time	SH-55				Loomis Lane				SH-55				Loomis Lane			
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
7:30:00 AM	0	45	0	0	0	0	2	0	0	74	2	0	2	0	0	0
7:45:00 AM	0	45	0	0	0	0	2	0	2	66	2	0	9	0	2	0
8:00:00 AM	0	50	0	0	0	0	2	0	2	53	2	0	2	2	0	0
8:15:00 AM	0	52	0	0	0	0	0	0	2	78	5	0	2	2	2	0
TOTAL	0	191	0	0	0	0	5	0	5	271	10	0	14	3	3	0

Grown with Seasonal 1.5% then daily 1.15%

Start Time	SH-55				Loomis Lane				SH-55				Loomis Lane			
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
4:00:00 PM	0	90	0	0	0	0	2	0	3	60	9	0	5	0	0	0
4:15:00 PM	0	83	0	0	0	0	10	5	0	2	66	2	0	3	2	2
4:30:00 PM	0	64	0	0	0	0	2	2	0	2	66	2	0	5	0	0
4:45:00 PM	0	78	0	0	0	0	2	2	0	0	52	10	0	3	0	0
TOTAL	0	314	0	0	0	0	14	10	0	7	243	22	0	17	2	2



7.6. FIR GROVE ALTERNATIVE ANALYSIS

The Fir Grove system has sufficient water rights but lacks the physical ability to deliver the water with a firm capacity supply deficit of approximately 1,370 gpm based on current commitments and the recently committed Timber Creek development. The system is able to maintain pressures above 40 psi during existing PHD with firm capacity but will not be able to do so when current commitments, including the Timber Creek development, come online. Also due to the lack of firm supply capacity, the system is not able to meet the available fire flow planning criteria of 1,500 gpm. The system currently does not have storage; if storage were to be added, a tank with a usable volume of 350,000 gallons is recommended.

To correct the various deficiencies, three alternatives were reviewed. These alternatives include:

7.6.1. FG Alternative 1 – Construct two new groundwater wells

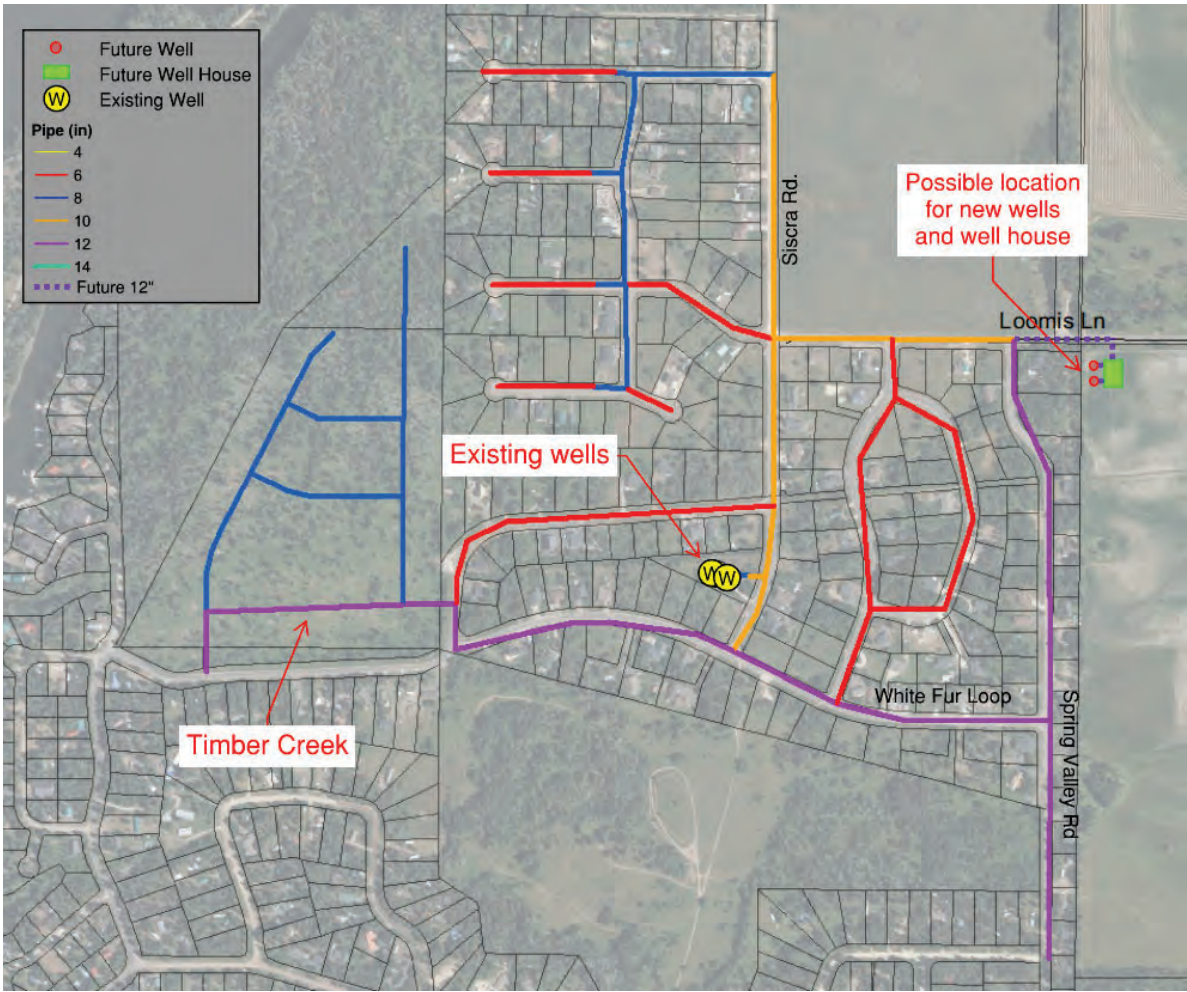
The recommended capacity of each well is 800+ gpm targeting a hydraulic grade of 5,040 feet. With the addition of two new wells the system would be able to meet demands with firm capacity. Table 7-6 shows an updated supply analysis with future demands under this alternative.

The two additional wells could be located at various undeveloped areas along the 10” or 12” mainlines. The District would work with future development to identify the location of these wells. Figure 7-4 shows the wells and the existing system. The location of the wells is flexible, the location shown in Figure 7-4 is shown for illustration purposes only. Adding two new wells to the system would bring the overall supply up to meet existing and future demands. However, without adding storage, the supply would need to continue to meet PHD and MDD plus fire flow.

TABLE 7-6: FIR GROVE ALTERNATIVE 1 SUPPLY SUMMARY

Source	Capacity (gpm)
Well #1	456
Well #2	1,283
New Well A	800
New Well B	800
Total Capacity	3,339
Firm Capacity	2,056
MDD+FF <sup>1</sup>	1,821
PHD <sup>1</sup>	901
Excess Supply <sup>2</sup>	235
1. Committed with Timber Creek	
2. Firm capacity compared to the larger of MDD+FF or PHD	

FIGURE 7-4: FIR GROVE ALTERNATIVE 1 LAYOUT



7.6.2. FG Alternative 2 – Construct one new well, a storage tank, and a booster station

The new well would pump to a ground level tank with a storage capacity of 350,000 gallons. The well is recommended to have a capacity of 500+ gpm to be able to meet the future MDD of the system with some surplus and to fill the tank at a substantial rate. The booster station would have a firm delivery capacity of 1,500 gpm targeting a hydraulic grade of 5,040 feet. The existing wells will remain in their current configuration and maintain the ability to pump into the system to support during peak or fire flows. Table 7-7 shows the updated supply analysis under this alternative, as well as a delivery analysis (sources that can pump directly into the distribution system).

The new well, tank, and booster station could be located in various undeveloped areas along the 10" or 12" mainlines. The District would work with future development to identify the location of these new facilities. Figure 7-5 shows the well, tank, booster, and existing distribution lines. The location of the well, tank, and booster station is flexible, the locations shown in Figure 7-5 are for illustration purposes only.

TABLE 7-7: FIR GROVE ALTERNATIVE 2 SUPPLY SUMMARY

Source	Supply Capacity (gpm)	Delivery Capacity (gpm)
Well #1	456	456
Well #2	1,283	1,283
New Well A	500	-
New Booster	-	1,500
Total Capacity	2,239	3,239
Firm Capacity <sup>3</sup>	956	1,956
MDD <sup>1</sup>	321	-
MDD+FF <sup>1</sup>	-	1,821
PHD <sup>1</sup>	-	901
Excess Supply <sup>4</sup>	635	135

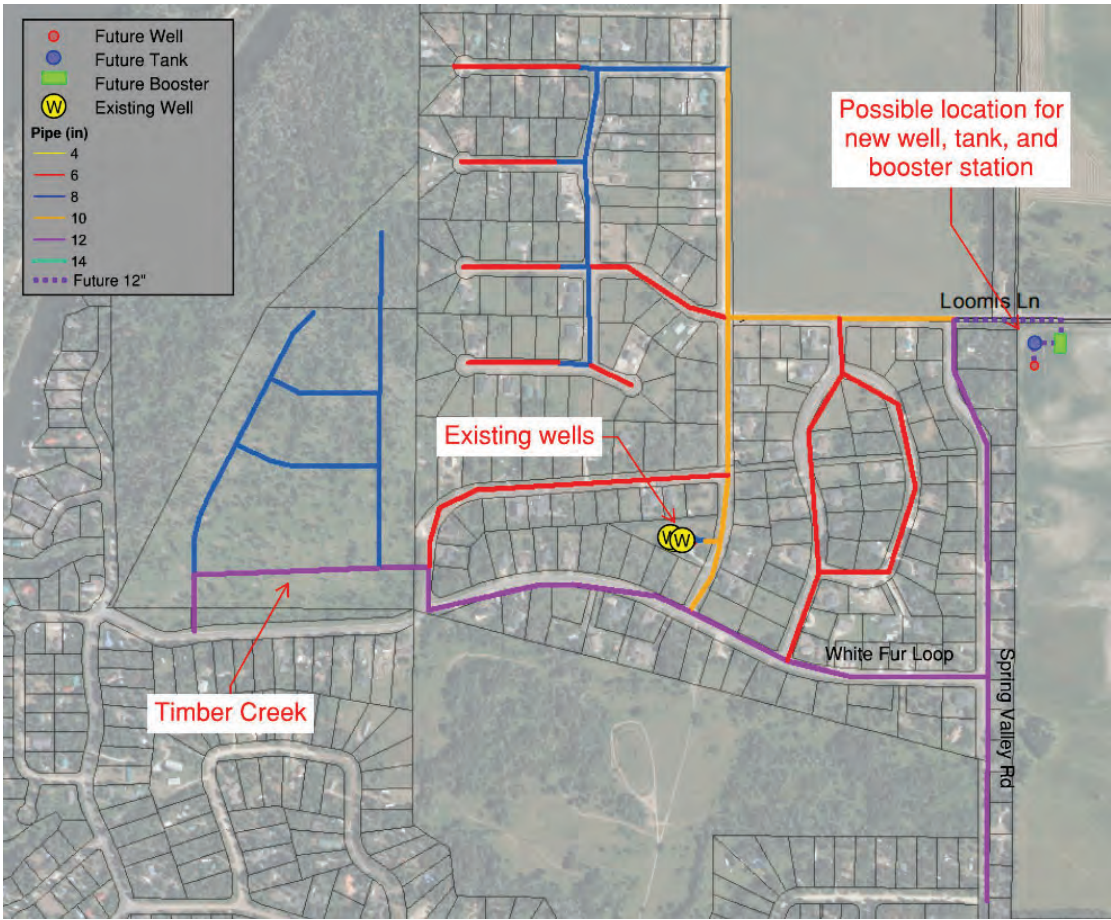
1. Committed with Timber Creek

2. PHD and FF met by booster

3. Assumes Well #2 is the largest pump. This is conservative as the booster station could have a pump larger than the capacity of Well #2.

4. Firm capacity compared to the larger of MDD, MDD+FF, or PHD

FIGURE 7-5: FIR GROVE ALTERNATIVE 2 LAYOUT





7.6.3. FG Alternative 3 – Construct a new tank and booster station on the existing well lot

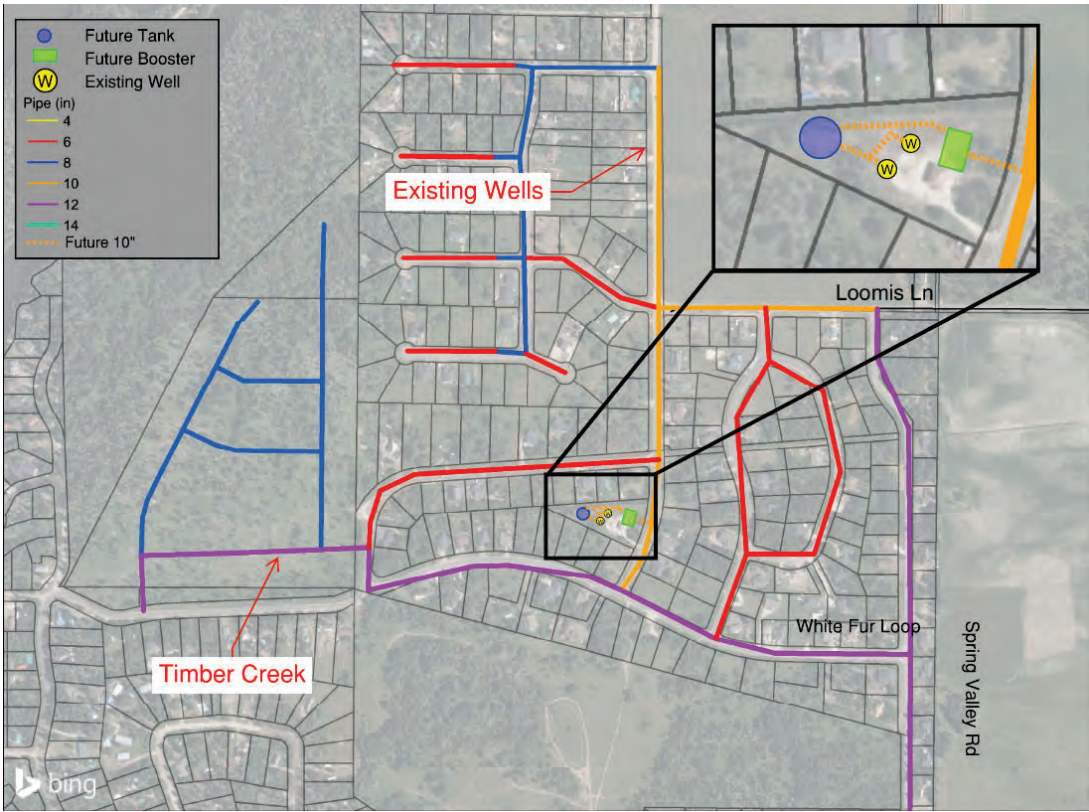
In this alternative, Wells #1 and #2 would be pumped directly to a new ground level tank, and a new booster station would supply the distribution system from the new tank (the tank and booster station would be constructed at the existing well site). The new booster station would have a firm capacity of 2,000 gpm targeting a hydraulic grade of 5,040 feet to meet peak demands including MDD plus fire flow. Table 7-8 shows the updated supply analysis with future demands under this alternative, as well as a delivery analysis (sources that can pump directly into the distribution system).

The tank and booster station would be located within the existing well lot. Figure 7-6 shows the tank, booster, wells and existing distribution lines. The location of the tank and booster station within the existing well site has minimal flexibility as storage tank setbacks would need to be met. The location shown in Figure 7-6 is shown for illustration purposes only. The existing well site is owned by the local homeowners’ associates (HOA). Installing new infrastructure on land not owned by the District may require additional easements/land acquisition and/or agreements.

TABLE 7-8: FIR GROVE ALTERNATIVE 3 SUPPLY SUMMARY

Source	Supply Capacity (gpm)	Delivery Capacity (gpm)
Well #1	456	-
Well #2	1,283	-
New Booster	-	2,000
Total Capacity	1,739	2,000
Firm Capacity <sup>2</sup>	456	2,000
MDD <sup>1</sup>	321	-
MDD+FF <sup>1</sup>	-	1,821
PHD <sup>1</sup>	-	901
Excess Supply <sup>3</sup>	135	179
1. Committed with Timber Creek		
2. Assumes firm capacity of the booster station is met with multiple larger booster pumps		
3. Firm capacity compared to the larger of MDD, MDD+FF, or PHD		

FIGURE 7-6: FIR GROVE ALTERNATIVE 3 LAYOUT



Costs for each of the three alternatives are presented in Table 7-9. Detailed cost estimates are provided in Appendix H.

TABLE 7-9: FIR GROVE ALTERNATIVES ESTIMATED COSTS

Alternative	Description	Estimated Cost <sup>1,2</sup>
1	Construct two new groundwater wells	\$ 7,084,000
2	Construct one new well, a storage tank, and a booster station	\$ 10,960,000
3	Construct new tank and booster station on existing well lot	\$ 9,108,000

1. Costs assume real estate will be provided at no cost to the District by developers.  
2. Cost includes total project cost and 20-year O&M costs. See Appendix H for cost estimate details.

Pros and cons for each alternative are provided in Table 7-10. Although Alternatives 1 and 3 are lower cost alternatives, the District has selected Alternative 2 as the preferred solution to the Fir Grove deficiencies. The District does not own the existing well lot and does not want to invest in infrastructure on property owned by others. Alternative 1 is also not selected due to the fact that adding storage to the system has many benefits such as providing emergency storage. Also, with a tank and booster station, the well capacity can be maximized by only needing to meet the MDD of the system rather than PDH or MDD plus fire flow. As the selected alternative includes the construction of a new well, additional water rights should be acquired to insure adequate supply for future growth. Existing wells within the District service areas have produced water meeting drinking water standards, and only simple chlorination treatment is anticipated with new sources. It is recommended that the District model the improvements at their proposed locations to check the infrastructure is capable of meeting the needs of the system before securing the real estate or implementing the improvements.

TABLE 7-10: FIR GROVE ALTERNATIVES PRO'S &amp; CON'S

Alternative	Pros	Cons
1	<ul style="list-style-type: none"> <li>- Lowest cost alternative.</li> <li>- Least amount of infrastructure.</li> <li>- Greatest increase to total supply.</li> </ul>	<ul style="list-style-type: none"> <li>- Does not add storage to the system.</li> <li>- Does not maximize the existing well supply as under this alternative the system would continue to need to meet peak demands and fire flows with the supply (i.e., wells).</li> </ul>
2	<ul style="list-style-type: none"> <li>- Adds storage to the system.</li> <li>- Maximizes the existing well supply with the addition of storage – wells in this alternative only need to meet the MDD; the tank and booster can meet peak and fire demands.</li> <li>- Adds additional supply (i.e., new well).</li> <li>- Booster station can provide firm capacity with minimal additional infrastructure (i.e., adding space for an additional pump is less costly than drilling and building a new well facility).</li> <li>- Greater available fire flow than Alternative 3 as the system is supplied from multiple locations.</li> </ul>	<ul style="list-style-type: none"> <li>- More infrastructure than Alternative 1.</li> </ul>
3	<ul style="list-style-type: none"> <li>- Adds storage to the system.</li> <li>- Maximizes the existing well supply with the addition of storage – wells in this alternative only need to meet the MDD; the tank and booster can meet peak and fire demands.</li> <li>- Booster station can provide firm capacity with minimal additional infrastructure (i.e., adding space for an additional pump is less costly than drilling and building a new well facility).</li> </ul>	<ul style="list-style-type: none"> <li>- More infrastructure than Alternative 1.</li> <li>- Lower available fire flow than other alternatives as the system is only supplied from one location.</li> <li>- Does not increase the overall supply.</li> <li>- Existing well site not owned by the District.</li> </ul>

## 7.7. DAY STAR ALTERNATIVE ANALYSIS

The Day Star system lacks approximately 80 gpm in water rights and also has a firm capacity supply deficit of approximately 1,300 gpm based on future demands. Due to the lack of firm supply capacity, the system is not able to maintain 40+ psi during peak hour and is not able to meet the available fire flow planning criteria of 1,500 gpm. The system currently does not have storage; if storage were to be added, a tank with a usable volume of 350,000 gallons is recommended.

To correct the various deficiencies three alternatives were reviewed. These alternatives include:

### 7.7.1. DS Alternative 1 – Construct two new groundwater wells

The recommended capacity of each well is 900+ gpm targeting a hydraulic grade of 5,006 feet. With the addition of two new wells the system would be able to meet demands with firm capacity. Table 7-11 shows an updated supply analysis with future demands under this alternative.

The two additional well holes have already been drilled and are located on a District owned lot. The two wells have already been approved by DEQ for use in a public drinking water system. Figure 7-7 shows the wells' locations and the existing distribution system. The location of the well house is flexible, the locations shown in Figure 7-7 are shown for illustration purposes only. Adding two new wells to the system would bring the overall supply up to meet existing and future demands. However, without adding storage, the supply would need to continue to meet PHD and MDD plus fire flow.

### 8.3. BUILDOUT PIPE NETWORK

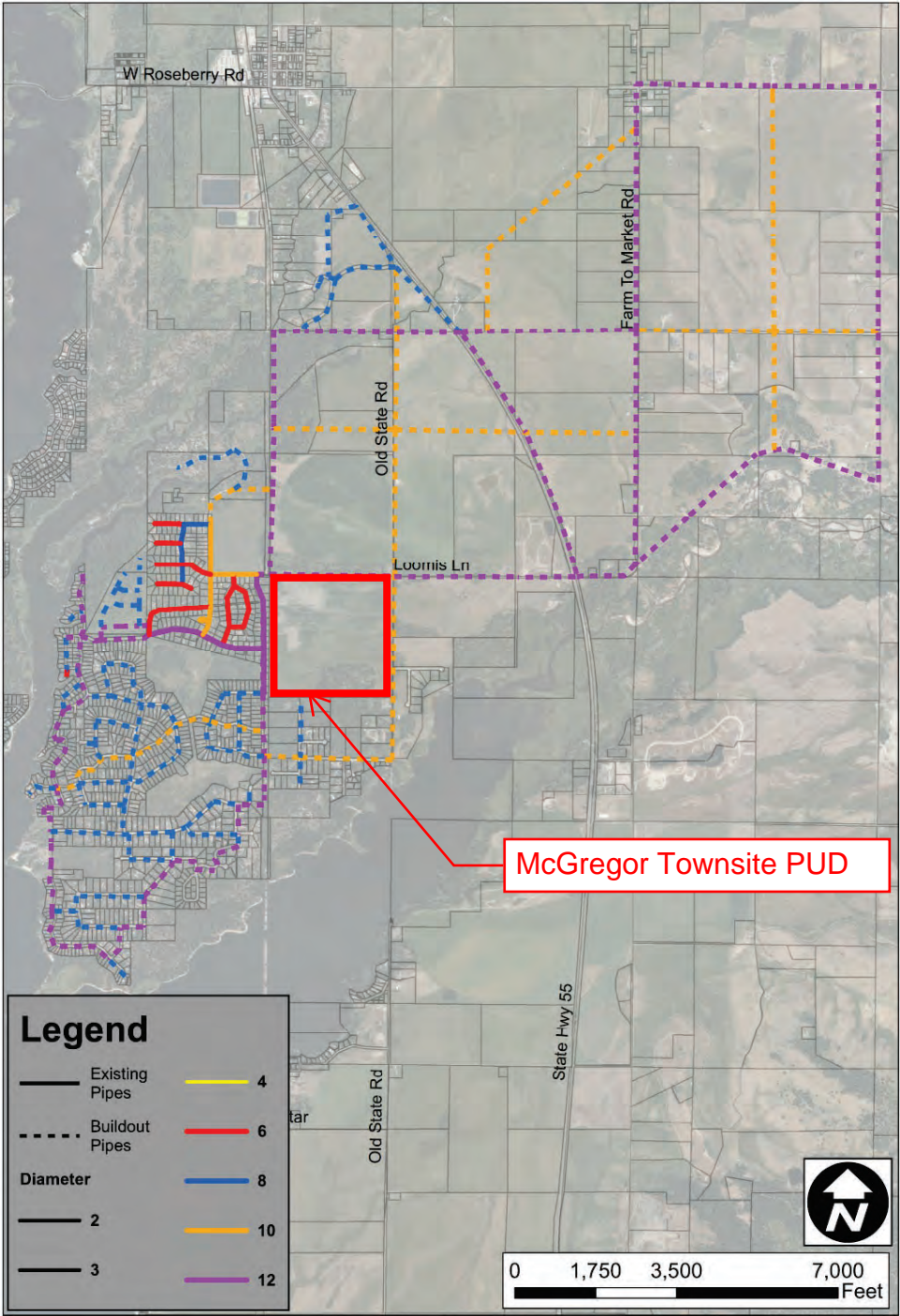
Buildout models were created for the Hawks Bay, Fir Grove, and Day Star systems that included the future 2042 system and a general mainline pipe network for the system's service area. Buildout demands and sufficient supply were added to each system to test the mainline sizes to check that adequate fire flow and peak hour pressures were obtainable with the mainline network. Figure 8-17 through Figure 8-19 show the buildout pipe networks. The Tamarack system shown in Figure 8-4 is the buildout system.

Phasing of development is common, resulting in temporary dead-end waterlines or parts of the system that are not looped. It is recommended that the District model each proposed development, per phase, to check that proposed piping can provide adequate pressures and fire flows. Adjustment to development or the proposed pipe network may be required to accommodate phasing.

For the Day Star buildout system, elevation climbs to the east, which will result in lower pressures. Higher HGLs in sources should be explored near the eastern and northern extremities of this system when development reaches these areas.



FIGURE 8-18: FIR GROVE BUILDOUT SYSTEM





### 7.1.2. Pipeline Replacement Alternatives

As pipelines and manholes approach the end of their useful life, the District will need to look into replacement, rehabilitation, and repair options for all of its aging infrastructure. Aging infrastructure increases the chance of failure and sanitary sewer overflows, and the amount of infiltration into the system generally increases. The District has two main options to address pipeline and manhole condition issues: reconstruct the pipelines and manholes through a traditional open cut construction approach or rehabilitate them utilizing trenchless technologies. These alternatives are discussed briefly here.

#### ➤ Alternative 1: Replace with Traditional Open Cut Technology

As the collection system infrastructure approaches the end of their useful life, they could be replaced with new pipelines and manholes using traditional open cut installation. This alternative would extend the useful life of the pipeline by the life span of a new pipe/manhole. The District could also choose to increase pipe size or correct pipeline grades as they replace the pipelines. Depending on site constraints (pipe depth, surface restoration, sewer bypass requirements, services, groundwater, soil conditions, existing pipe size and grade, etc.), this alternative may be a preferred approach.

#### ➤ Alternative 2: Utilize Trenchless Technology for Repair

Alternatively, the District could utilize trenchless rehabilitation technologies such as pipe bursting, cured-in-place-pipe installation, or slip lining for pipelines and applying special coatings to manholes. Under the right circumstances, these approaches can be less costly than the open cut construction approach. Spot repairs can also be a means of extending the life of a pipeline segment and under certain conditions can be completed without open cut trenching.

#### Recommendation

Keller Associates recommends that each pipeline segment be evaluated to assess the preferred replacement / rehabilitation strategy as part of an ongoing collection system replacement program. This effort includes a careful review of CCTV conditions and other site constraints, and should be completed as part of the concept or pre-design phase of pipeline rehabilitation / replacement projects. Recommended annual collection system replacement budgets are discussed in Chapter 9.

## 7.2. COMMITTED DEFICIENCY CAPACITY ALTERNATIVES

Based on the analysis in Chapter 3, there are several lift station, gravity trunkline, and forcemain deficiencies in the committed scenario evaluated (which corresponds to a population slightly beyond the 20-year planning period). Deficiencies that have a singular straightforward solution are presented in the CIP in chapter 9. The following subsections evaluate the alternatives to address the deficiencies.

### 7.2.1. WW Lake Crossing and Day/Wagon Trunkline Alternatives

As shown in Chapter 3, the trunklines upstream of the WW Lake Crossing and the Day and Wagon lift stations are undersized and experience surcharging in this planning period. The following subsection presents the alternatives for addressing capacity concerns. A visual representation of the alternatives is presented in Figure 7-2, and Table 7-2 presents a summary comparison of benefits and drawbacks for each alternative.

#### ➤ Alternative 1: Upsize Day/Wagon and WW Lake Crossing Trunklines

The first alternative is to upsize the existing trunklines and increase the pumping capacity at the WW Lake Crossing and Day/Wagon lift stations. Increase the trunkline size from a 10-inch to a 15-inch for both these pipelines allows conveyance for committed and anticipated buildout flows. As a potential cost-saving measure, it may be possible to pipe-burst the trunkline.



➤ Alternative 2: Create Regional Lift Station to the WWTP

The second alternative is to construct a regional lift station that collections flow from the Fir Grove subbasin and the DS Lake Crossing Discharge, and pumps flows directly to the WWTP. According to modeling, this alternative would circumvent the need to upsize the existing pipelines. The pumps in the Day/Wagon and WW Lake Crossing lift stations may still require upgrades as they may be undersized in the existing condition (Table 3-1 in Chapter 3), but the upgrades would be less significant due to having to convey less flow. For alternative 2 and 3, one advantage is that this alternative provides additional infrastructure to convey future build-out flows that may want to use the same forcemain to the plant. Additionally, it results in energy efficiencies as wastewater will not have to be pumped over and over ahead in downstream lift stations as it makes its way to the WWTP.

➤ Alternative 3: Extend DS Lake Crossing forcemain to WWTP

A third alternative evaluated includes extending the existing DS forcemain all the way to the forcemain. Similar to Alternative 2, the existing trunklines do not need to be upsized in the 20-year period should the DS Lake Crossing forcemain extend to the WWTP. Additionally, the Day/Wagon and WW Lake Crossing lift stations would require less significant upgrades. To reduce head and the scale of lift station upgrades at the WW Lake Crossing, the extension of the forcemains may be a larger size.



FIGURE 7-2: 20-YEAR SOUTHERN CONVEYANCE ALTERNATIVES

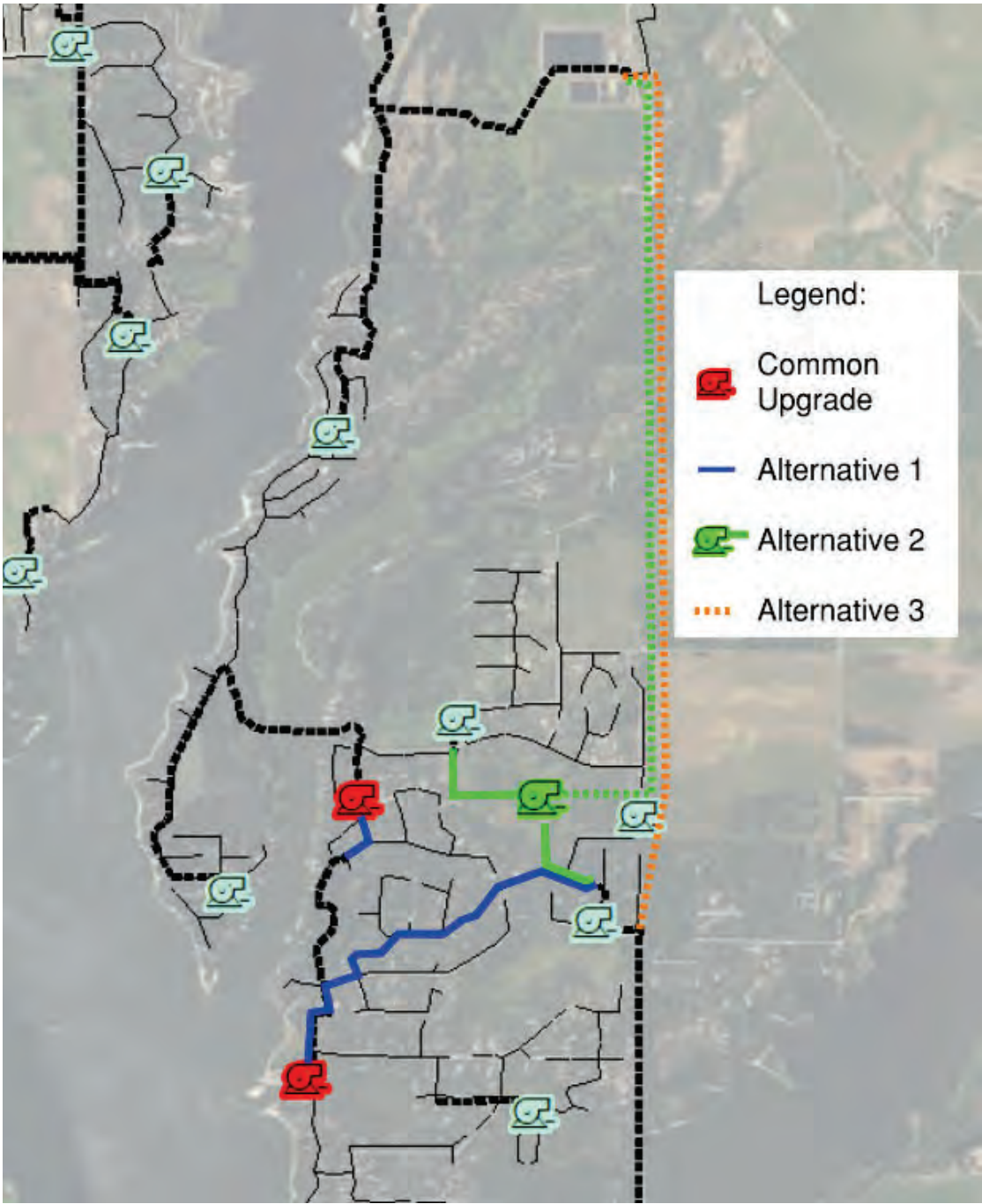




TABLE 7-2: SOUTHERN COLLECTION IMPROVEMENT ADVANTAGES AND DISADVANTAGES

Alternative	Advantages	Disadvantages	40-Year Life Cycle Cost
Alternative 1: Upsize Day/Wagon and WW Lake Crossing Trunklines	<ul style="list-style-type: none"> <li>May utilize existing pipeline routing and manholes</li> <li>May be possible to use trenchless technology to reduce costs</li> <li>Can convey buildout flows</li> </ul>	<ul style="list-style-type: none"> <li>May require additional bypass pumping during construction if new pipeline goes within existing pipeline corridor</li> </ul>	\$5,282,000
Alternative 2: Create Regional Lift Station to the WWTP	<ul style="list-style-type: none"> <li>Eliminate the need to upsize existing pipelines</li> <li>Potential to take Fir Grove, Camas, and RR Village pump stations offline</li> <li>Smaller upgrades required at Day/Wagon and Lake Crossing</li> <li>New forcemain to plant could more efficiently accommodate and deliver build-out flows.</li> </ul>	<ul style="list-style-type: none"> <li>Increased OM with a larger pump station</li> <li>May interfere with wetlands/farmland depending on forcemain alignment</li> <li>Cost of land purchasing/easement acquiring</li> </ul>	\$9,569,000
Alternative 3: Extend DS Lake Crossing forcemain to WWTP	<ul style="list-style-type: none"> <li>Eliminate the need to upsize existing pipelines</li> <li>Smaller upgrades required at Day/Wagon and Lake Crossing</li> <li>New forcemain to plant could more efficiently accommodate and deliver build-out flows.</li> </ul>	<ul style="list-style-type: none"> <li>Similar permitting/easement challenges as Alternative 2</li> </ul>	\$6,357,000

#### Recommendation

The recommended alternative is to upsize the existing trunklines from 10-inch pipe to an 15-inch pipe. This alternative allows the District to service committed and buildout flows, and does not require construction of an additional lift station and/or forcemain at this time (although additional lift stations and forcemains will be required to accommodate the build-out service area).

Additionally, it is recommended that the District monitor flows within the existing trunkline upstream of these lift stations to assess appropriate timing of improvements. Due to unknowns with phasing of developments, it is recommended these alternatives be re-evaluated and refined prior to proceeding with these improvements to better coordinate existing and future needs.

### 7.3. FUTURE SHARED FORCEMAIN ALTERNATIVES

As discussed in Chapter 3, a portion of the Poison Creek forcemain exceeds its trigger velocity for improvement within the committed growth planning period. However, this trigger is only exceeded when the Big Smoky flows are introduced to the Poison Creek trunkline. This can be resolved with a recommended additional parallel pipeline from the Big Smoky/Poison Creek forcemain intersection and the WWTP. This upgrade is recommended for all the alternatives presented below.

However, as more flow is conveyed through the major dual 10-inch forcemains beyond the currently committed flows, the head within the pipe increases and impacts the performance of the pump stations that share this forcemain. At buildout, without any improvements beyond the recommended parallel pipeline above, it is anticipated the Poison Creek lift station will have to be able to pump approximately 450 feet of head (compared to existing head of 190 feet) to accommodate peak hour conditions, leading to larger pumps and power requirements. This in turn, results in higher head pumps being required at many downstream lift stations who share the forcemain.



For all lift stations, when the time comes to replace these pumps, it is recommended that the pumps installed be capable of a larger capacity so anticipated future flows do not exceed firm capacity. Keller further recommends that the SCADA system be upgraded to monitor and report lift station runtimes and flow data where available. Once lift station pump runtimes exceed approximately 10 hours per day (on max day), additional evaluation / monitoring may be warranted.

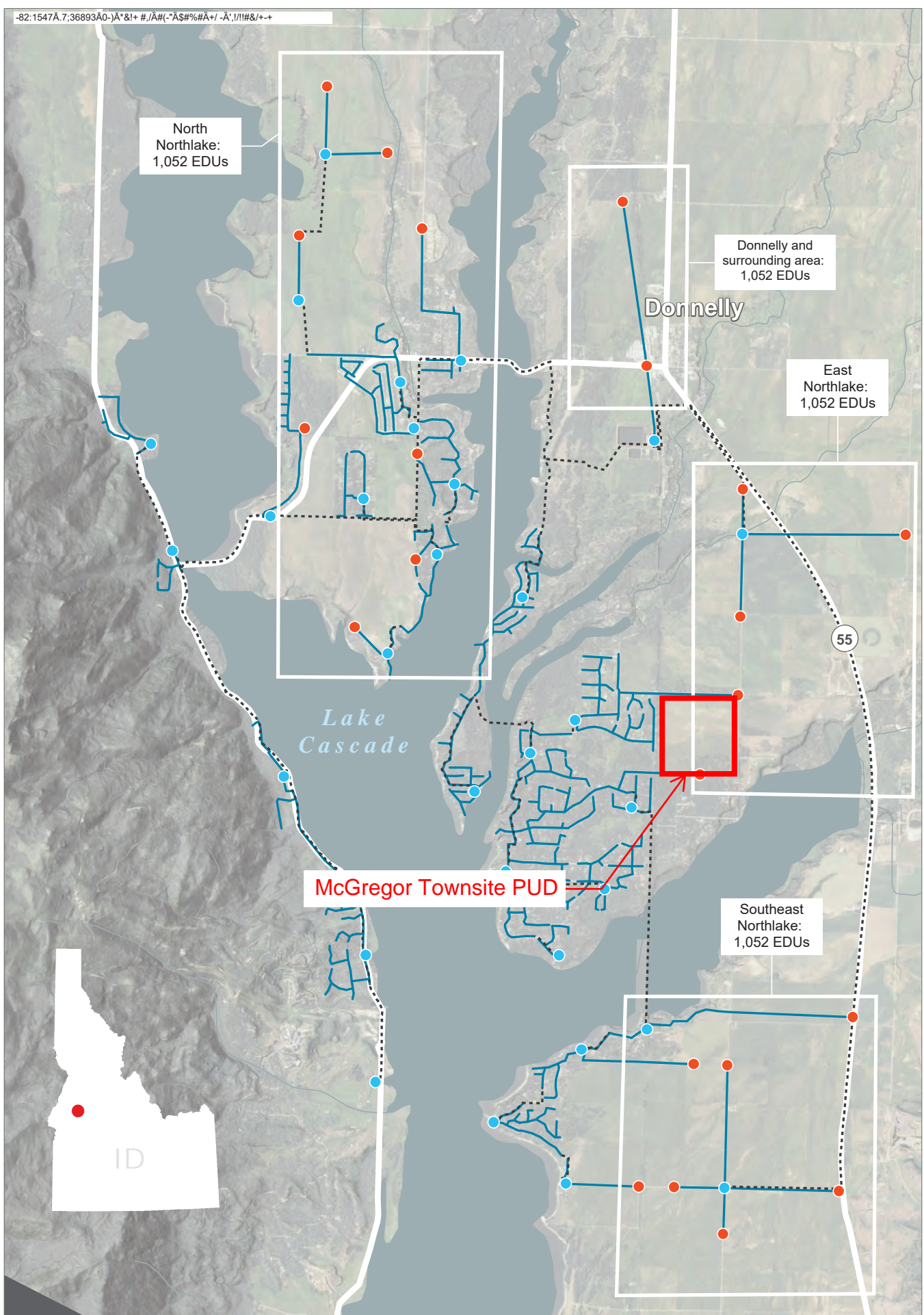
As shown in Table 3-3, the Poison Creek forcemain experiences velocities of greater than 10 fps, and thus is considered undersized downstream of the Big Smoky forcemain intersection. All other lengths prior to the intersection do not have velocities above 9 fps. Undersized forcemains can lead to an excess of head and power usage for the system's lift stations. Alternatives to address forcemain deficiencies are presented in Chapter 7.

### 3.6. BUILDOUT(50-YEAR) DEVELOPMENT CAPACITY LIMITATIONS

Keller Associates utilized the planning criteria and growth projections to calculate loads for the 50-year planning horizon (growth projection of 38,821 people to be serviced by the District). The incremental additional loads from the "committed" scenario to build-out was split into 4 areas, which are depicted in Figure 3-5 in Appendix B. Due to the topology of the District, some areas within the study area cannot be serviced by smaller gravity pipelines, and were assumed to be serviced by lift stations, which is also displayed in the figure.

The gravity system was analyzed, and the results are displayed in Figure 3-6 in Appendix B. As shown, the same problem pipeline displayed in committed scenario analysis has its issues exacerbated in the future system analysis. Additionally, the trunkline upstream of the Mountain Meadows station is considered undersized to handle buildout flows. Downstream trunklines that are undersized result in surcharging of many laterals that feed the trunklines.

Table 3-2 displays that one additional lift station, P-19 The Reserve, is also under capacity at buildout if buildout flows occur upstream of it. The capacity issues with the remainder of the lift stations are exacerbated. Table 3-3 shows that the Poison Creek forcemain velocities increase, and the pipe is undersized for buildout. Additionally, the P-14 Mountain Meadows lift station forcemain is undersized for buildout flows, as its velocity exceeds 10 fps. Velocities in the P-4 Big Smoky and P-6 Lake Crossing forcemains exceed 8 fps.



**Figure 3-5 Buildout Growth Areas**  
NLRSWD Wastewater Facility Planning Study

**Pipelines**

- Buildout Loading Manholes
- Wetwell
- Buildout Gravity Pipeline
- - - Buildout Pressure Pipeline



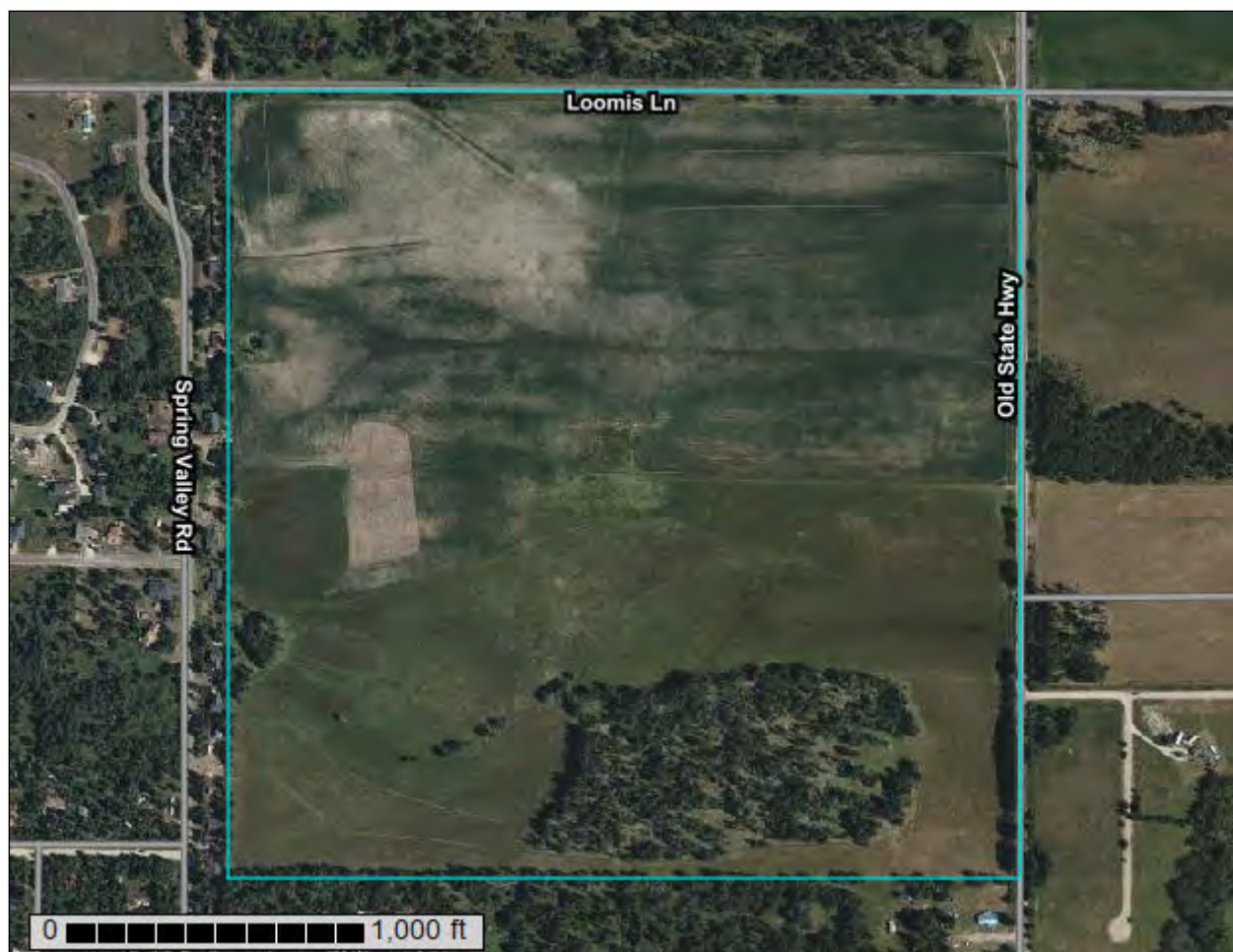
United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Valley Area, Idaho, Parts of Adams and Valley Counties



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# Contents

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<b>Preface</b> .....	2
<b>How Soil Surveys Are Made</b> .....	5
<b>Soil Map</b> .....	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	12
Map Unit Descriptions.....	12
Valley Area, Idaho, Parts of Adams and Valley Counties.....	14
16—Donnel sandy loam, 0 to 2 percent slopes.....	14
17—Donnel sandy loam, 2 to 4 percent slopes.....	15
20—Duston sandy loam, 0 to 2 percent slopes.....	16
47—Roseberry coarse sandy loam.....	17
<b>References</b> .....	19

# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


# Custom Soil Resource Report Soil Map




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## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)


### Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features

 Blowout

 Borrow Pit


 Clay Spot


 Closed Depression

 Gravel Pit

 Gravelly Spot


 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

### Water Features

 Streams and Canals


### Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Valley Area, Idaho, Parts of Adams and Valley Counties  
Survey Area Data: Version 21, Aug 31, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 25, 2020—Jul 26, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

## MAP LEGEND

## MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
16	Donnel sandy loam, 0 to 2 percent slopes	31.4	19.5%
17	Donnel sandy loam, 2 to 4 percent slopes	23.3	14.4%
20	Duston sandy loam, 0 to 2 percent slopes	30.3	18.8%
47	Roseberry coarse sandy loam	76.1	47.2%
<b>Totals for Area of Interest</b>		<b>161.2</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate

pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Valley Area, Idaho, Parts of Adams and Valley Counties

### 16—Donnel sandy loam, 0 to 2 percent slopes

#### Map Unit Setting

*National map unit symbol:* 55dk

*Elevation:* 3,800 to 5,100 feet

*Mean annual precipitation:* 22 to 24 inches

*Mean annual air temperature:* 37 to 43 degrees F

*Frost-free period:* 65 to 75 days

*Farmland classification:* Farmland of statewide importance, if irrigated

#### Map Unit Composition

*Donnel and similar soils:* 80 percent

*Minor components:* 5 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Donnel

##### Setting

*Landform:* Fan remnants

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Mixed alluvium

##### Typical profile

*A - 0 to 15 inches:* sandy loam

*Bw - 15 to 20 inches:* coarse sandy loam

*C - 20 to 60 inches:* stratified loamy sand to sandy loam

##### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 5.8 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 6c

*Land capability classification (nonirrigated):* 6c

*Hydrologic Soil Group:* A

*Ecological site:* R043BY003ID - Loamy 22+ PZ FEID-PSSPS

*Hydric soil rating:* No

#### Minor Components

##### Melton

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Hydric soil rating:* Yes

## 17—Donnel sandy loam, 2 to 4 percent slopes

### Map Unit Setting

*National map unit symbol:* 55dl

*Elevation:* 3,800 to 5,100 feet

*Mean annual precipitation:* 22 to 24 inches

*Mean annual air temperature:* 37 to 43 degrees F

*Frost-free period:* 65 to 75 days

*Farmland classification:* Farmland of statewide importance, if irrigated

### Map Unit Composition

*Donnel and similar soils:* 80 percent

*Minor components:* 5 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Donnel

#### Setting

*Landform:* Fan remnants

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Mixed alluvium

#### Typical profile

*A - 0 to 15 inches:* sandy loam

*Bw - 15 to 20 inches:* coarse sandy loam

*C - 20 to 60 inches:* stratified loamy sand to sandy loam

#### Properties and qualities

*Slope:* 2 to 4 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 5.8 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 6c

*Land capability classification (nonirrigated):* 6c

*Hydrologic Soil Group:* A

*Ecological site:* R043BY003ID - Loamy 22+ PZ FEID-PSSPS

*Hydric soil rating:* No

### Minor Components

#### Melton

*Percent of map unit:* 5 percent

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*Landform:* Flood plains  
*Hydric soil rating:* Yes

### 20—Duston sandy loam, 0 to 2 percent slopes

#### Map Unit Setting

*National map unit symbol:* 55dq  
*Elevation:* 4,900 to 5,300 feet  
*Mean annual precipitation:* 24 to 28 inches  
*Mean annual air temperature:* 41 to 43 degrees F  
*Frost-free period:* 60 to 80 days  
*Farmland classification:* Farmland of statewide importance, if irrigated

#### Map Unit Composition

*Duston and similar soils:* 80 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Duston

##### Setting

*Landform:* Outwash fans, fan remnants  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Mixed alluvium

##### Typical profile

*Oi - 0 to 2 inches:* slightly decomposed plant material  
*Oe - 2 to 3 inches:* moderately decomposed plant material  
*AB - 3 to 8 inches:* sandy loam  
*C1 - 8 to 12 inches:* sandy loam  
*C2 - 12 to 63 inches:* coarse sand

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 19.98 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Low (about 5.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 6c  
*Land capability classification (nonirrigated):* 6c  
*Hydrologic Soil Group:* A  
*Ecological site:* R043BY003ID - Loamy 22+ PZ FEID-PSSPS  
*Hydric soil rating:* No

### Minor Components

#### Jurvannah

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Hydric soil rating:* Yes

## 47—Roseberry coarse sandy loam

### Map Unit Setting

*National map unit symbol:* 55fn

*Elevation:* 3,800 to 5,000 feet

*Mean annual precipitation:* 22 to 32 inches

*Mean annual air temperature:* 36 to 43 degrees F

*Frost-free period:* 60 to 80 days

*Farmland classification:* Farmland of statewide importance, if irrigated and drained

### Map Unit Composition

*Roseberry and similar soils:* 75 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Roseberry

#### Setting

*Landform:* Stream terraces, outwash fans

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Outwash derived from granite

#### Typical profile

*A - 0 to 13 inches:* coarse sandy loam

*C1 - 13 to 35 inches:* loamy coarse sand

*C2 - 35 to 55 inches:* coarse sand

*2C3 - 55 to 60 inches:* fine sandy loam

#### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.57 to 1.98 in/hr)

*Depth to water table:* About 18 to 30 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 5.5 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 6c

*Land capability classification (nonirrigated):* 6c

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*Hydrologic Soil Group:* B

*Ecological site:* R043BY012ID - MOUNTAIN POORLY DRAINED BOTTOM  
ARCAV3-DAFRF/FEID

*Hydric soil rating:* No

### Minor Components

#### **Melton**

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Hydric soil rating:* Yes

#### **Jurvannah**

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Hydric soil rating:* Yes

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We installed slotted PVC pipes within each of the observed test pits for future groundwater monitoring. If requested, ALLWEST can perform monthly groundwater monitoring to help establish a seasonal high groundwater elevation at the site.

## 5.0 LABORATORY TESTING

We performed laboratory testing to supplement field classifications and to assess some of the soil engineering properties and parameters. Laboratory testing included fines content (ASTM D1140), moisture content (ASTM D2216), and liquid and plastic limits (ASTM D4318). The laboratory test results are included in Appendix C, and are also summarized on the test pit logs in Appendix B.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on our field observations, testing, and preliminary evaluation, **in our opinion the site is suitable for the planned development.** However, once final grading and development plans are established, we should be afforded the opportunity to review these plans to determine if additional exploration, testing, and evaluation should be accomplished to provide final recommendations to assist the planned development. These recommendations are based on our understanding of the proposed development at the time of this report, the conditions observed within exploration locations, laboratory test results, and engineering analysis. As such, the following opinions and recommendations should be considered preliminary in nature.

### 6.1 Geotechnical / Geological Constraints and Hazards

The following is a discussion of on-site conditions observed or additional constraints/hazards that should be considered for the proposed subdivision development.

#### Compressible Soils

Surficial soils containing significant vegetation, roots, and/or organic debris were observed during our exploration to depths of 8 to 12 inches below existing ground surfaces. These soils are considered compressible and can degrade with time; as such, these surficial soils should be stripped within planned fill and development areas, prior to earthwork construction.

#### Settlement

Surficial sandy silt and silty sand soils were observed to be soft and loose, respectively, to depths of 1.5 to 2.5 feet below existing ground. These soft and loose soils may be prone to settlement and are not suitable to support fill soils, structures, or other improvements. These soils should be further evaluated prior to construction to determine the appropriate remediation based on the planned development.



### Slope Stability

We understand that ponds may be constructed as part of the development. Slope stability analysis should be performed prior to development to establish suitable pond slope inclinations and heights, as well as structural setbacks (if needed).

### **6.2 Soil Reusability**

Based on observations and laboratory results, the on-site native soils predominately consisted of silt and sand mixtures, and do not meet the gradation requirements of *Idaho Standards for Public Works Construction* (ISPWC) specifications for uncrushed/crushed aggregate. As such, the on-site soils are not suitable to be used as materials for pavement section construction (subbase, base course, asphalt) or as granular structural fill. **On-site soils may be used as general site grading fills or as utility trench backfills.**

### **6.3 General Site Preparation**

- ◆ Prior to conducting site grading, surficial soil containing vegetation, roots, and organics should be removed below proposed site grading fill areas and any other development areas. We anticipate approximately 12 inches of site stripping will be required for most of the site to remove surficial vegetation and roots.
- ◆ Where trees are encountered and will be removed as part of the development, large root systems should be completely over-excavated and replaced with suitable fill soils. Tree roots depths will not fully be known until construction, but we anticipate approximately 3 to 4 feet of over-excavation will be required to remove large tree root systems.
- ◆ Loose test pit backfill will settle with time, so where any test pits are located below proposed development areas, the loose test pit backfill soil should be re-excavated its entire depth and replaced with suitably moisture-conditioned and compacted fill soils. Over-excavated soils can be reused to backfill the test pits, provided the soils are not overly saturated, and they can be suitably compacted. Test pit locations that were observed by ALLWEST may be identified in the field by the presence of white PVC pipes. Approximate test pit locations are shown on *Figure A-2: Exploration Location Plan*. We recommend test pit areas be accurately surveyed so that they may be located and remediated prior to earthwork construction and development.

### **6.4 Stormwater**

During our field exploration we performed field seepage testing in test pits TP-3, -8, -10, -14, and -16 within silty sand, poorly-graded sand, and poorly-graded sand with silt soils. We obtained field-measured seepage rates of less than 0.25 inches per hour (in/hr) within the silty sand soils, and 6 in/hr to greater than 15 in/hr within poorly-graded sand with silt soils, and greater than 15 in/hr within poorly-graded sand soils.



## Anthony Dini

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**From:** Kevin Dyekman [REDACTED]  
**Sent:** Wednesday, November 15, 2023 1:44 PM  
**To:** Gregg Tankersley; Craig Groves [REDACTED]  
**Cc:** Adrian Mascorro; Rob Pair; Anthony Dini  
**Subject:** RE: Loomis Lane Development, Preliminary Geotechnical Evaluation

Hi Gregg,

I reviewed the Valley County Private Road Specifications, and they are very similar to ISPWC with the biggest difference being maximum particle size allowed. The on-site materials were mainly sands and silts (or combinations of the two), that would 100% pass the No. 4 sieve. To meet the specification for uncrushed subbase, the soils would need to have only 15-65% passing the No. 4 sieve for both ISPWC and Valley County. Therefore, the onsite soils do not meet the ISPWC or Valley County Specifications due to the lack of gravel sized particles (> No. 4 sieve). **The on-site soils meet our criteria for "site grading fill" in our report and may be used to build up lots or in other fill areas. The only soils that are restricted to only be used in berms/landscape areas would be any soils generated from site stripping which will contain abundant roots and organic materials.** Hope this helps clarify.

Best Regards,

**Kevin Dyekman, P.G.**  
**ALLWEST | Engineering Services Manager**

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**From:** Gregg Tankersley [REDACTED]  
**Sent:** Wednesday, November 15, 2023 9:31 AM  
**To:** Kevin Dyekman [REDACTED]; Craig Groves [REDACTED]  
[REDACTED]  
**Cc:** Adrian Mascorro [REDACTED] >; Rob Pair [REDACTED] Anthony Dini  
[REDACTED]  
**Subject:** RE: Loomis Lane Development, Preliminary Geotechnical Evaluation

Hey Kevin,

We're working through Land Use Applications and preliminary engineering for this project. It appears that your report references the material not meeting ISPWC specifications for uncrushed/crushed aggregate, but does it not meet Valley County Private Road Specifications which are slightly different than ISPWC? If it did, would we not be able to use it for roadway subbase material? I don't believe there were any gradations in the report to confirm. Additionally, If we would like to build lots up with material generated on-site is ALLWEST suggesting that we can't do so and that any generated material must be used strictly for berms/landscaped areas only?

Thank you,

Gregg

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**Gregg Tankersley, P.E. | Principal Engineer**

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**From:** Kevin Dyekman [REDACTED]  
**Sent:** Thursday, August 3, 2023 1:44 PM  
**To:** Craig Groves [REDACTED]) [REDACTED] >  
**Cc:** Gregg Tankersley [REDACTED] Adrian Mascorro [REDACTED]  
**Subject:** Loomis Lane Development, Preliminary Geotechnical Evaluation

Craig,

Attached is the preliminary geotechnical evaluation for the proposed Loomis Lane Development. Let us know if you have any questions.

Best Regards,

**Kevin Dyekman, P.G.**  
*Engineering Services Manager*



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