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TECHNICAL MEMORANDUM

Date:	March 2024	Project #: 27246
To:	Brandon Hammond, Carla McLane, Rick Stokoe, & Mike Lees; City of Boardman Teresa Penninger; Oregon Department of Transportation	
From:	Matt Hughart, AICP and Ali Razmpa, PE	
Project:	Boardman Main Street Circulation Assessment	
Subject:	Existing Conditions, Future Conditions, and Circulation Improvements	

This report provides an update to the planning level analysis first documented in the 2009 *Boardman Main Street Interchange Area Management Plan (IAMP)*. The purpose of the study is to provide the City of Boardman with an updated list of improvement projects to support multi-modal circulation improvements along Boardman's Main Street corridor and the I-84/Main Street interchange.

BACKGROUND

In 2009, the City of Boardman and Oregon Department of Transportation (ODOT) adopted the *Boardman Main Street IAMP*. The purpose of the IAMP was to formally identify circulation and access management improvements that would be needed to keep the I-84/Main Street interchange and the supporting local roadway network functioning safely and efficiently. Since 2009, Boardman and the adjacent Port of Morrow (POM) have experienced significant residential and employment growth which has led to a measurable increase in traffic volumes along the Main Street corridor. This growth has necessitated an updated look at operations along the Main Street corridor stretching from Columbia Avenue to Wilson Lane.

Consistent with the original IAMP planning process, a planning-level update was performed, documenting the current IAMP study area conditions (existing infrastructure and traffic conditions), the future no-build conditions (assuming expected local and regional growth with no infrastructure improvements), and the evaluation and selection of new/additional corridor capacity, access, and intersection improvements.

Main Street Study Area

To help define the extent of the land use and traffic operations review for this update, the study area includes the Main Street corridor from Columbia Avenue to Wilson Lane and select intersections as illustrated in Figure 1.

Exhibit 1 –Study Area and Study Intersections

EXISTING CONDITIONS

Existing Traffic Volumes and Peak Hour Operations

Intersection turning movement counts were collected at the following study intersections in March 2022:

1. N Main Street/Columbia Avenue
2. N Main Street/Boardman Avenue
3. N Main Street/N Front Street
4. N Main Street/I-84 WB Ramp Terminal
5. S Main Street/I-84 EB Ramp Terminal
6. S Main Street/S Front Street
7. S Main Street/Oregon Trail Boulevard
8. S Main Street/City Center Circle
9. S Main Street/Kincade Road
10. S Main Street/Willow Fork Drive
11. S Main Street/Wilson Lane

A description of the analysis conducted with this data is summarized in the following sections. *Appendix A contains the traffic count worksheets*.

Seasonal Adjustments

Following the methodology outlined by ODOT's Analysis Procedures Manual (APM), a seasonal adjustment factor was applied to the traffic counts collected for the existing conditions analysis to estimate 30th highest hour volumes given Boardman's significant level of highway-oriented retail establishments. Consistent with the previous 2009 IAMP, ATR #25-008, located on I-84 west of US 730, was determined to have the most similar traffic characteristics within the study area. The seasonal adjustment factor calculations for the intersection counts collected in March is 1.28 as noted in Table 2.

Table 1 - Seasonal Adjustment Factor Calculations

	2019	2018	2017	2016	2015	Avg
ATR 25-008						
Peak Month (August)	123	122	~~125~~	~~122~~	124	123
Count Month (March)	96	97	~~99~~	~~96~~	96	96

- The average peak month (August) is: (122% + 123% + 124%) / 3 = 123%
- The average count month (March) is: (96% + 97% + 96%) / 3 = 96.3%
- The seasonal adjustment factor is 123%/96.3% = **1.28**

After applying the 1.28 seasonal adjustment factor, the intersection turning movement volumes at the I-84/Main Street interchange were analyzed to discern any notable traffic patterns that would help inform the IAMP update process as noted in the following sections.

Existing Intersection Operations

ODOT uses volume-to-capacity (v/c) ratios to assess intersection operations. Table 6 of the *Oregon Highway Plan* (OHP) provides maximum volume-to-capacity ratio targets for all signalized/roundabout and unsignalized intersections. Table 2 summarizes the applicable v/c ratio that will be used to evaluate the existing and future operations at the ODOT owned/maintained I-84/Main Street ramp terminals.

Table 2 – ODOT Mobility Targets

Intersection	OHP Mobility Target
Main Street/I-84 WB Ramp Terminal	v/c = 0.85 Main Street Approach/0.80 ramp approach
Main Street/I-84 EB Ramp Terminal	v/c = 0.85 Main Street Approach/0.80 ramp approach

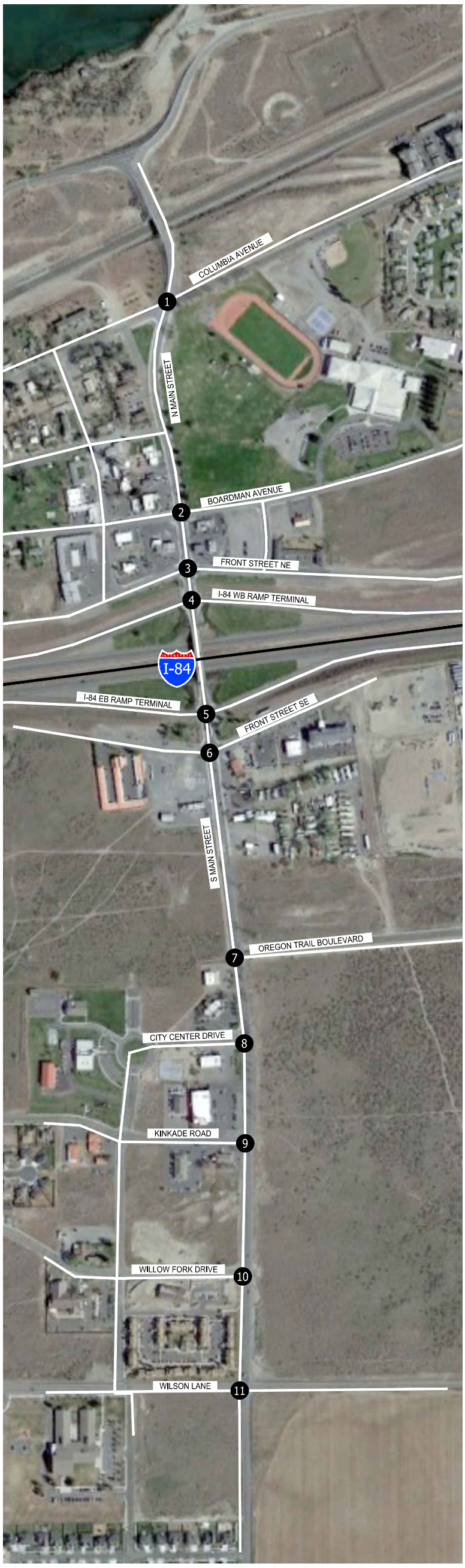
The operational standard for intersections involving only City roadways is based on level-of-service (LOS). The City maintains a LOS standard of "C" or better for all intersections.

Using these standards, an operations assessment was performed at the previously noted intersections. The existing traffic conditions at the study intersections are summarized in Figure 1 during the weekday PM peak hour (4:00-5:00 PM). As shown, the study intersection operations satisfy applicable ODOT and City of Boardman mobility targets/standards. *Appendix B contains the existing traffic operations worksheets.*

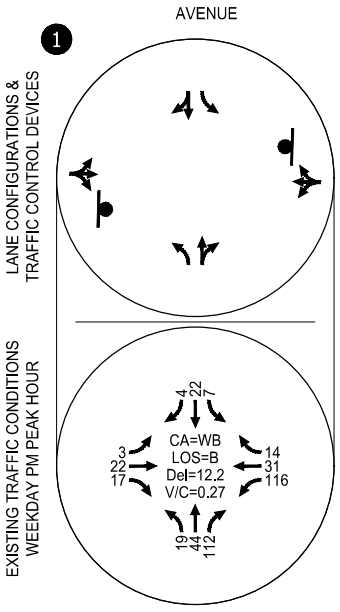
While all of the study intersections have the capacity to accommodate existing PM peak hour demand, observations at the ramp terminal intersections found that offramp movements can experience periods of delay. This delay is attributed to continuous demand along the Main Street corridor, the lack of left-turn lanes onto each on-ramp, the close spacing of the north and south Front Street intersections, and periods of occassional vehicle queue spillback generated by a pedestrian crossing beacon at the Boardman Avenue intersection.

Intersection Crash History

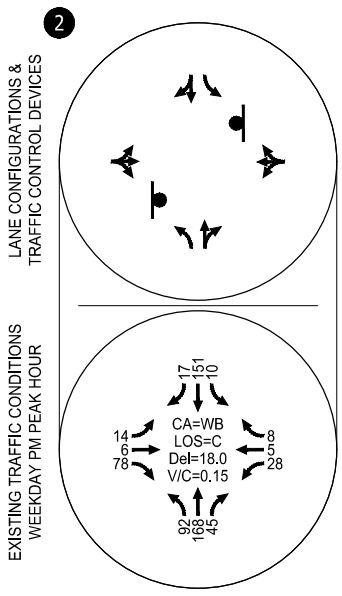
Study intersection crash histories were obtained and reviewed in an effort to identify potential safety issues. ODOT provided crash records for the study intersections for the five-year period from January 1, 2016 through December 31, 2020. *Appendix C provides the ODOT crash report which provides more details on the reported crashes.* Table 3 summarizes the ODOT crash data.



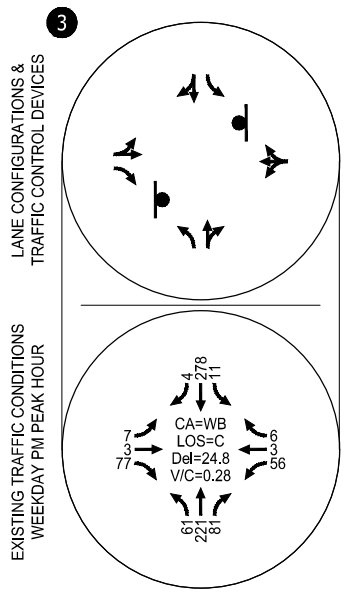
MAIN STREET/ COLUMBIA AVENUE



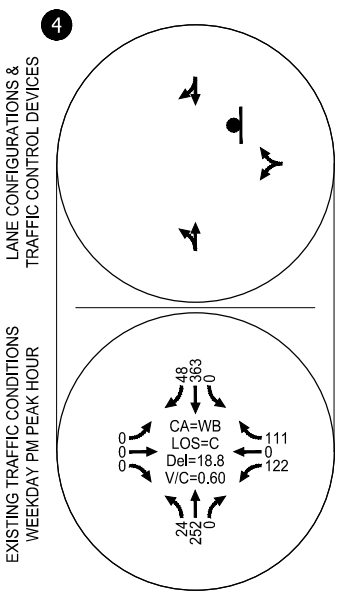
MAIN STREET/ BOARDMAN AVENUE



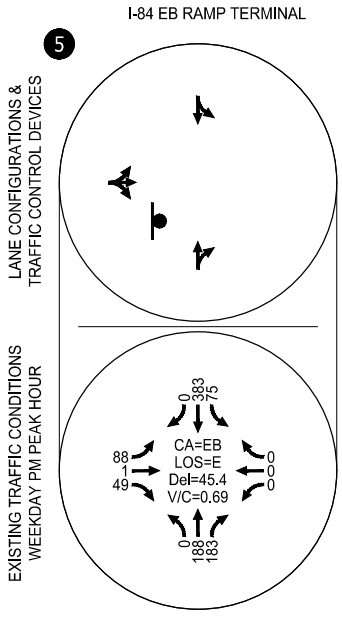
MAIN STREET/ FRONT STREET NE



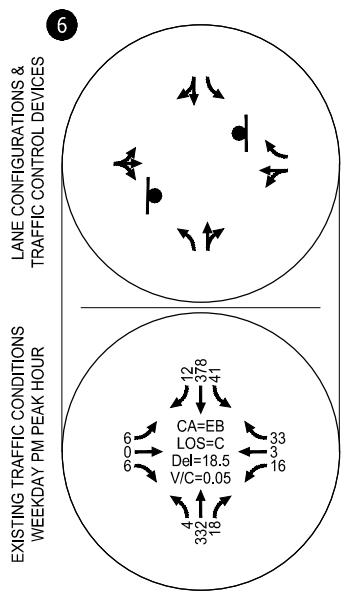
MAIN STREET/ I-84 WB RAMP TERMINAL



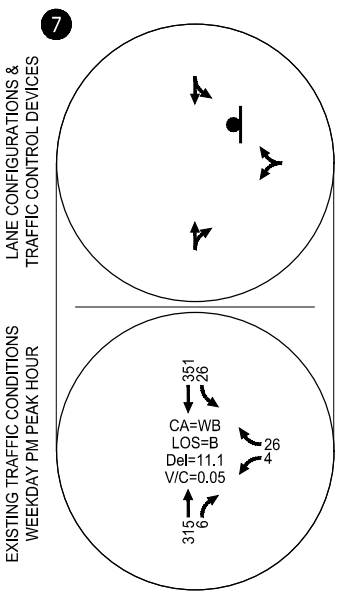
MAIN STREET/ I-84 EB RAMP TERMINAL



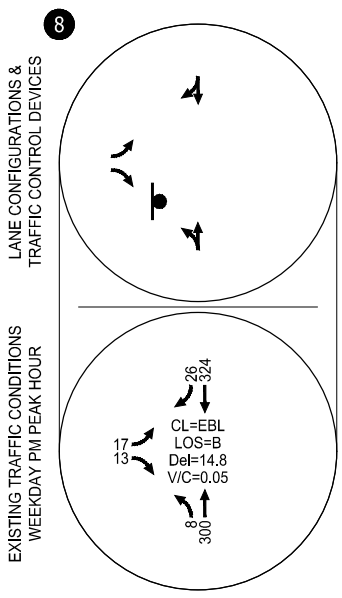
MAIN STREET/ FRONT STREET SE



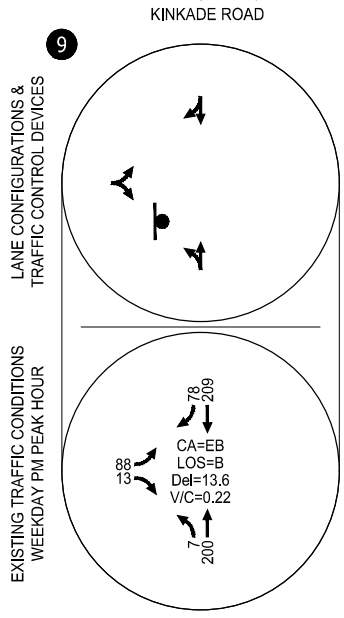
MAIN STREET/ OREGON TRAIL BOULEVARD



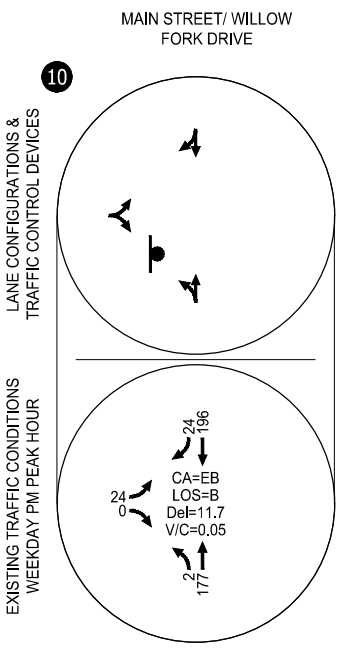
MAIN STREET/ CITY CENTER DRIVE



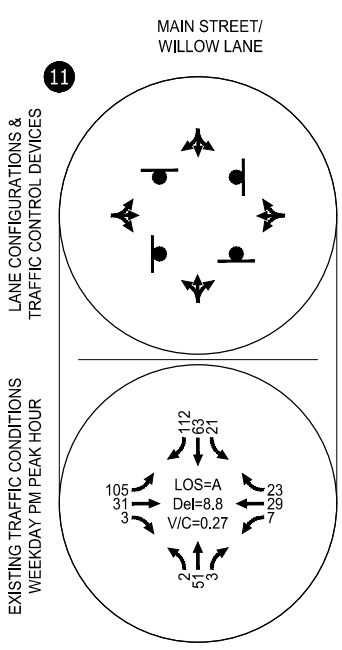
MAIN STREET/ KINKADE ROAD



MAIN STREET/ WILLOW FORK DRIVE



MAIN STREET/ WILLOW LANE



##- Study Intersections

Existing Traffic Conditions
Weekday PM Peak Hour
City of Boardman, Oregon

Figure
1

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Table 3 – Reported Crash History (January 1, 2016 – December 31, 2020)

Study Intersection	Crash Type					Severity			Total
	Angle	Turn	Rear-End	Sideswipe	Other	PDO	Injury	Fatal	
N Main Street/ Columbia Avenue	-	-	-	-	-	0	0	0	0
N Main Street/ Boardman Avenue	1	-	-	-	-	1	0	0	1
N Main Street/ N Front Street	-	1	-	-	-	1	0	0	1
N Main Street/ I-84 WB Ramp Terminal	2	4	3	-	-	4	5	0	9
S Main Street/ I-84 EB Ramp Terminal	1	2	-	-	-	3	0	0	3
S Main Street/ S Front Street	-	-	-	-	-	0	0	0	0
S Main Street/ Oregon Trail Boulevard	-	-	1	-	-	1	0	0	1
S Main Street/ City Center Circle	-	-	-	-	-	0	0	0	0
S Main Street/ Kincade Road	-	-	-	-	-	0	0	0	0
S Main Street/ Willow Fork Drive	-	-	-	-	-	0	0	0	0
S Main Street/ Wilson Lane	2	1	-	-	-	2	1	0	3

PDO = Property Damage Only

Intersection crash rates were calculated and compared to statewide crash rate performance thresholds. For this analysis, the critical crash rate was calculated and compared to the 90th percentile crash rates for urban intersections by traffic control and 3- versus 4-legged configurations (as appropriate). This is shown in Table 4.

Table 4 – Intersection Crash Rate Assessment

Study Intersection	Total Crashes	Observed Crash Rate	90th Percentile Rate by Lane Type and Traffic Control	Observed Crash Rate > 90th Percentile Rate?
N Main Street/ Boardman Avenue	1	0.09	0.41	No
N Main Street/ N Front Street	1	0.07	0.41	No
N Main Street/ I-84 WB Ramp Terminal	9	0.54	0.29	Yes
S Main Street/ I-84 EB Ramp Terminal	3	0.17	0.29	No
S Main Street/ Oregon Trail Boulevard	1	0.08	0.29	No
S Main Street/ Wilson Lane	3	0.37	0.41	No

Existing Operations/Crash Findings

While the operations analysis indicates that all study intersections have capacity during the peak time periods, a review of the crash history and field observations along the Main Street corridor revealed several characteristics that can impact corridor operations:

- Although not summarized in the operations analysis, the EB and WB I-84/Main Street off ramps are single-lane ramps with shared single-lane stop-controlled approaches to Main Street. During peak time periods, volumes on the off ramps can generate some relatively long queues, especially when there are large trucks exiting the freeway.
- The N Main Street/I-84 WB Ramp Terminal intersection exceeds the critical crash rate based on lane type and traffic control. A detailed review of the intersection crash data revealed that all three rear-end crashes occurred on the westbound I-84 offramp approaching the intersection and all seven turning/angle crashes involved vehicles making left- and right-turns from the westbound offramp ramp approach and interacting with northbound or southbound Main Street vehicles.
    - While the crash data is limited in detail, it appears that some of these crashes could be mitigated by improved access management along the N Main Street corridor (the closely spaced north and south Front Street intersections introduce additional turning movements within close proximity of the ramp terminals) and traffic control improvements at the ramp terminal intersections. These mitigation scenarios will be explored later in this report.
- Field observations were made at the N Main Street/Boardman Avenue intersection during multiple days and time periods to better understand how the adjacent Rectangular Rapid Flashing Beacon (RRFB) impacts traffic circulation along the N Main Street corridor. Key findings from these observations include:
    - The highest concentration of pedestrian crossings were observed to occur during the 10:45 – 11:45 AM time period which coincides with Riverside Jr/Sr High School lunch period. During this period, students were observed walking from the campus to various lunch destinations along the N Main Street corridor. The RRFB was consistently utilized to assist in the crossing of the north leg of N Main Street.
    - While students typically crossed in groups, there were instances where repeated back-to-back activations of the RRFB led to the formation of northbound vehicle queues on N Main Street. In some instances, particularly when there were multiple trucks involved, these vehicle queues were observed backing up to and beyond the I-84 WB Ramp Terminal intersection. This is generally a significant safety concern as the interruption of traffic flow can lead to backups on the offramp, which can in turn impact the I-84 westbound freeway lanes under worst case circumstances.
    - Other peak activation periods of the RRFB occurred in the 6:45-7:45 AM time period and 2:45-3:34 PM time period, however the number of pedestrians were observed to be measurably lower, more spread out, and less likely to generate significant vehicle queues along N Main Street.

FUTURE 2042 CONDITIONS

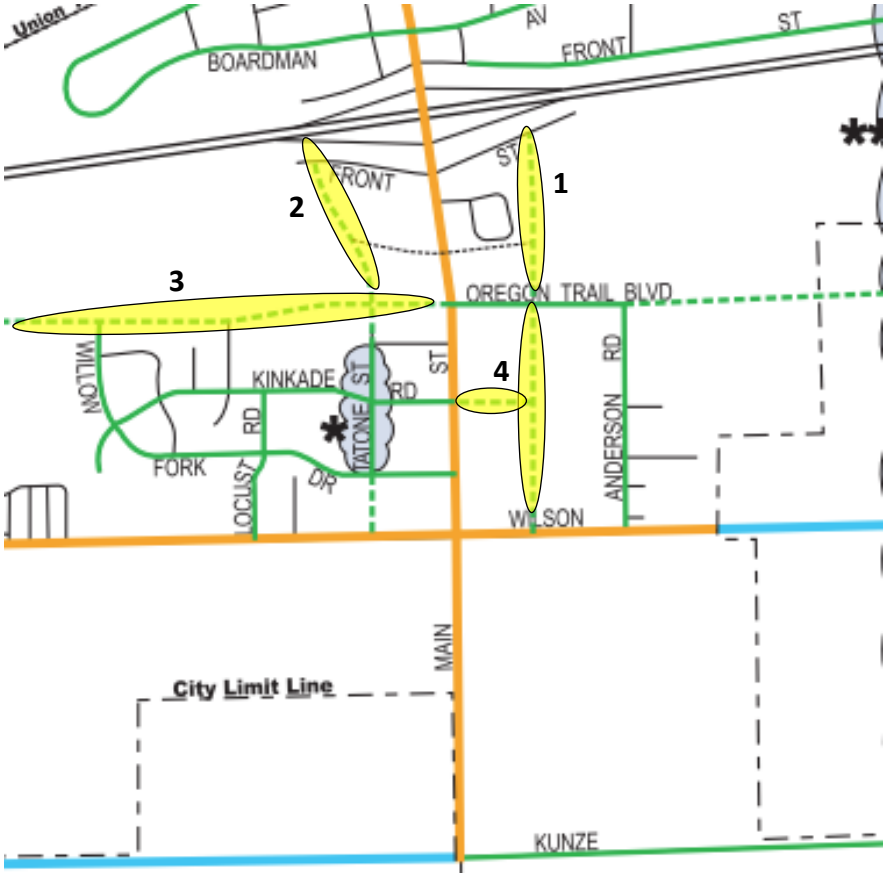
This section documents the future travel demand and forecast traffic operations along the Main Street study corridor. The future traffic projections are based on anticipated land use and development through the year 2042 using the same cumulative traffic forecast methodology from the 2009 IAMP.

Future 2042 Land Uses/Development Projections

Based on an updated land use inventory, a review of current development patterns, and discussions with City of Boardman staff, an updated land use forecast was performed for all vacant/undeveloped parcels located within the larger Main Street study corridor. *Appendix D contains a detailed description of assumed future developments for these parcels*.

From this land use forecast, a future trip generation profile was developed for each vacant parcel with anticipated weekday PM peak hour trips distributed to/from the Main Street corridor and study intersections. This distribution was based on the type of land use (highway-oriented commercial/retail uses with a focus to/from the I-84 corridor, Boardman supporting commercial/retail uses with a focus to/from local residential neighborhoods, and residential uses with a commuting focus to/from local and regional employment centers), and future roadway connections shown in the 2009 IAMP's Roadway Network and Classification Plan (see Exhibit 2).

Exhibit 2 – Excerpt from the 2009 IAMP's Roadway Network and Classification Plan Map



From this map, the following connections were assumed to be constructed as part of future development within the 20-year timeframe of this assessment:

1. A new backage road connection linking SE Front Street to Oregon Trail Boulevard (likely is being constructed in the 2024-2025 period).
2. A new backage road connection linking SW Front Street to a future westerly extension of Oregon Trail Boulevard.
3. A westerly extension of Oregon Trail Boulevard from S Main Street to Faler Road.
4. A new local street grid pattern on the east side of S Main Street connecting Oregon Trail Boulevard to Wilson Lane with a connection to S Main Street.

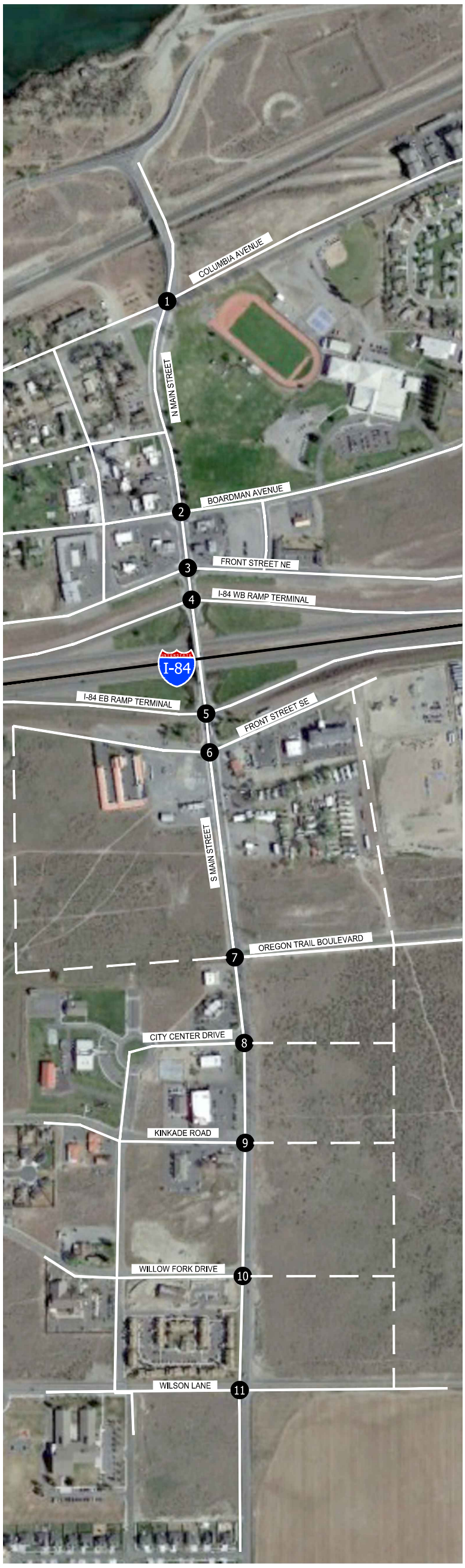
Future 2042 Traffic Conditions

Future year 2042 No-Build weekday PM peak hour traffic volumes were determined by applying the growth projections and development-related trips to the existing traffic network. The resulting future year 2042 No-Build weekday PM peak hour traffic volumes are shown in Figure 2. As shown in the figure, intersection capacity and/or operational performance issues are forecast at the following intersections:

- N Main Street/Boardman Avenue – the critical westbound approach is forecast to operate at LOS E conditions during the weekday PM peak hour. This is primarily due to the limited capacity of the single-lane stop-controlled Boardman Avenue approach and forecast traffic growth along the Boardman Avenue corridor.
- N Main Street/N Front Street – the critical westbound Front Street approach is forecast to operate above capacity during the weekday PM Peak hour. This is primarily due to increasing forecast north/south demand on Main Street and the impacts of anticipated highway-oriented development along the N Front Street corridor.
- N Main Street/I-84 WB Ramp Terminal – the critical westbound offramp approach is forecast to operate above capacity during the weekday PM Peak hour. This is primarily due to anticipated long-term traffic growth and the limited capacity of the single lane stop-controlled offramp approach to Main Street.
- S Main Street/I-84 EB Ramp Terminal – the critical eastbound approach is forecast to operate above capacity during the weekday PM Peak hour. This is primarily due to anticipated traffic growth on Main Street, forecast left-turn demand, and the limited capacity of the single-lane stop-controlled offramp approach to Main Street.
- S. Main Street/Front Street SE – the critical eastbound approach is forecast to operate at LOS E conditions during the weekday PM peak hour. This can be attributed to anticipated highway-oriented retail growth on the southwest corner of the interchange.

Appendix E contains the 2042 no-build traffic conditions worksheets.

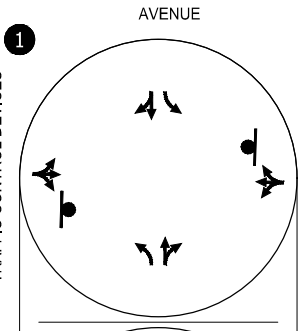
While relatively consistent with the forecast operations from the 2009 IAMP, the forecast operations at the N Main Street/Boardman Avenue and S Main Street/I-84 EB Ramp Terminal intersections necessitated the reinvestigated of several improvement alternatives.



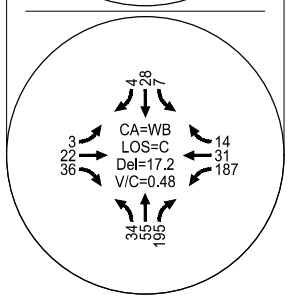
MAIN STREET/ COLUMBIA AVENUE

1

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES



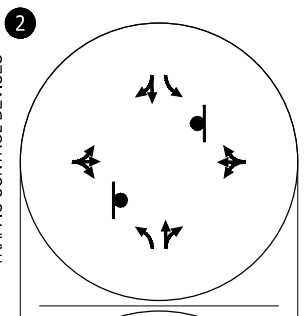
2040 NO-BUILD TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



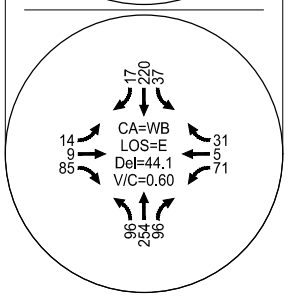
MAIN STREET/ BOARDMAN AVENUE

2

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES



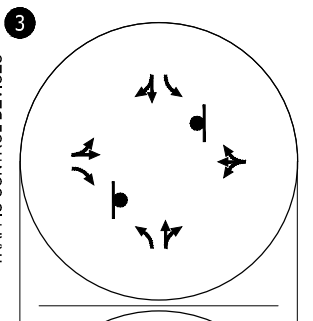
2040 NO-BUILD TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



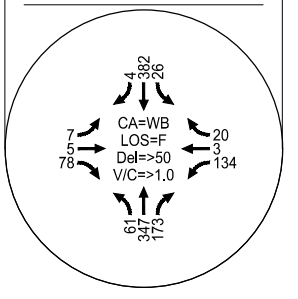
MAIN STREET/ FRONT STREET NE

3

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES



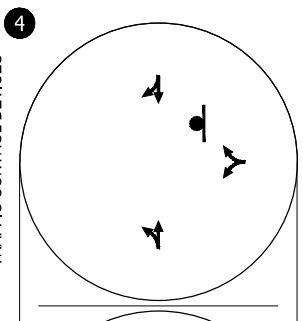
2040 NO-BUILD TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



MAIN STREET/ I-84 WB RAMP TERMINAL

4

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES



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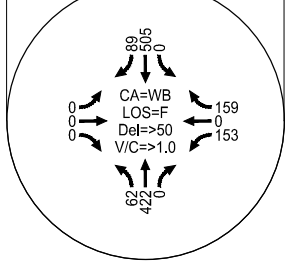
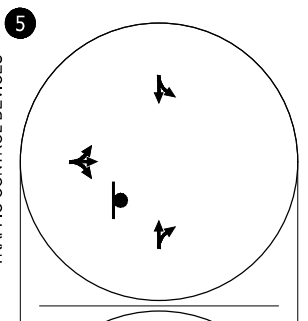


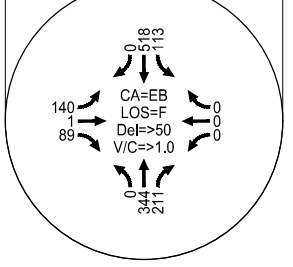
MAIN STREET/ I-84 EB RAMP TERMINAL

5

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES



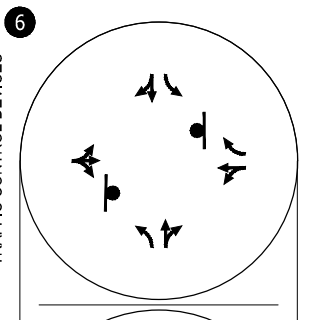
2040 NO-BUILD TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



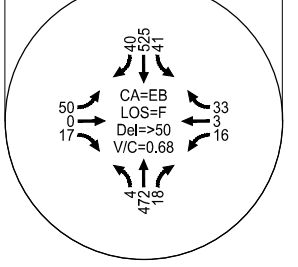
MAIN STREET/ FRONT STREET SE

6

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES



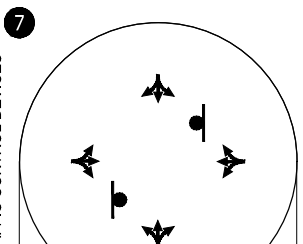
2040 NO-BUILD TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



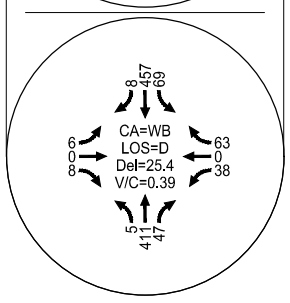
MAIN STREET/ OREGON TRAIL BOULEVARD

7

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES



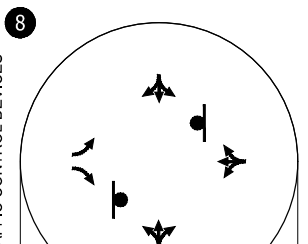
2040 NO-BUILD TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



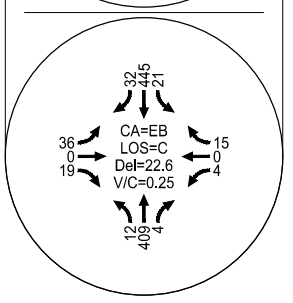
MAIN STREET/ CITY CENTER DRIVE

8

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES



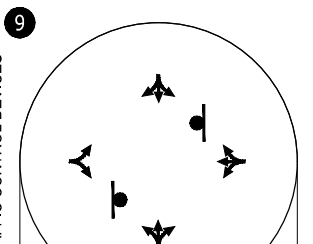
2040 NO-BUILD TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



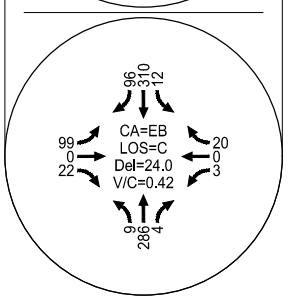
MAIN STREET/ KINKADE ROAD

9

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES



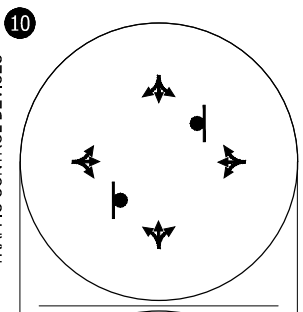
2040 NO-BUILD TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



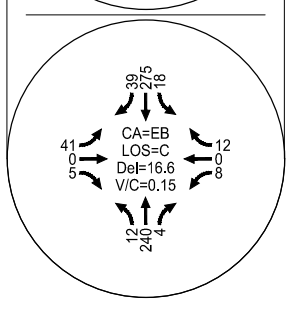
MAIN STREET/ WILLOW FORK DRIVE

10

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES



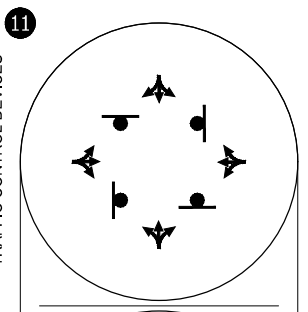
2040 NO-BUILD TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



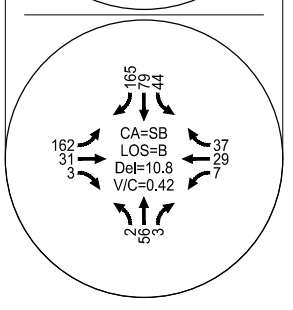
MAIN STREET/ WILLOW LANE

11

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES



2040 NO-BUILD TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



##- Study Intersections

2042 No-Build Future Traffic Conditions
Weekday PM Peak Hour
City of Boardman, Oregon

Figure
2

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INTERCHANGE CONCEPT REDEVELOPMENT & EVALUATION

This section of the report documents the development and evaluation of new interchange and access configuration concepts for Boardman's Main Street corridor.

Initial Interchange Concept Development

The initial interchange improvement concepts considered in this section were developed by the project team to address the existing and forecast capacity, operations, safety, and access management conditions within the study area. In particular, concepts were developed that focus on addressing the following issues:

- Mitigating the forecast LOS constraints at the critical Boardman Avenue approaches to the N Main Street intersection.
- Improving the turning movement conflicts between the closely spaced north and south Front Street intersections with the I-84 Ramp Terminal intersections.
- Mitigating the forecast over capacity conditions at the N Main Street/I-84 Westbound Ramp Terminal and S Main Street/I-84 Eastbound Ramp Terminal intersections without widening the I-84/Main Street overpass.

N Main Street/Boardman Avenue Intersection Improvements

The 2009 IAMP did not specifically identify future improvements at the N Main Street/Boardman Avenue intersection. However, as documented in the existing conditions section of this report, the intersection has an RRFB crossing, that under certain circumstances, can lead to long vehicle queues along the corridor that can extend back to the I-84 WB ramp terminal and interrupt traffic flow from the offramp. In addition to the RRFB-related queuing issues, the westbound Boardman Avenue approach is forecast to operate at LOS E conditions during the weekday PM peak hour. Based on these findings, improvement scenarios were investigated that would better accommodate the pedestrian crossings and address the forecast operational deficiencies.

Traffic Control Options

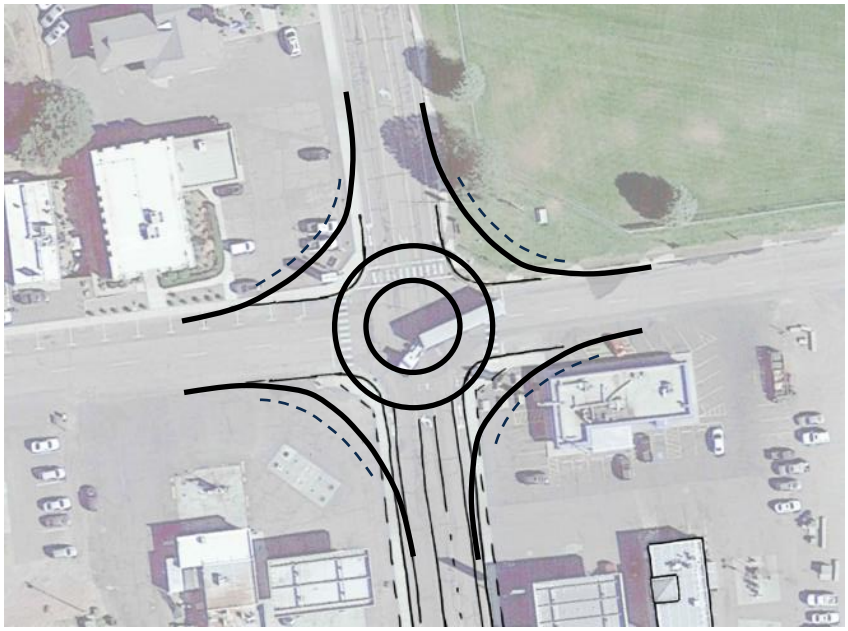
Given the forecast operations and the likely increased volume impacts that could be generated in the near-term by other projects currently in the 2009 IAMP (restrictions of N Front Street to right-in/right-out movements and a raised median along the N Main Street corridor), the need for traffic control improvements was investigated at a planning level.

Roundabout

From an operations perspective and considering it is less than 500 feet north of the I-84 WB ramp terminal, a single lane roundabout would be an appropriate treatment at the N Main Street/Boardman Avenue intersection. However, given the interchange is expected to continue to serve freeway oriented freight traffic, any roundabout treatment would need to be large enough to accommodate the circulation needs of large trucks and trailers. A conceptual sizing footprint of a roundabout large enough to

accommodate WB-67 trucks is shown in Exhibit 3. As shown, there would be significant private property impacts and right-of-way acquisition needs in the northwest, southwest, and southeast quadrants. Based on these impacts, it was determined that a roundabout is not a reasonably viable near or long-term traffic control option.

Exhibit 3 – N Main Street/Boardman Avenue Conceptual Roundabout Footprint



Signalization

Given the existing north, south, east, and west approaches all have adequate width to support separate left-turn and shared through/right movements, a traffic signal was investigated. A planning-level signal warrant analysis was conducted at the intersection in accordance with the procedures outlined in ODOT's preliminary traffic signal warrant analysis. From this analysis, it was found that the intersection would meet this preliminary signal warrant which focuses on high volumes on the intersecting minor street with high volumes on the major street. While meeting this preliminary signal warrant is not an outright indicator that signalization should be implemented, it does suggest there is sufficient projected demand to meet a basic volume-based criteria. In addition, a traffic signal could replace the existing RRFB with a standard signal-integrated pedestrian crossing phase. The pedestrian crossing phase would eliminate repeated back-to-back activations and minimize instances of vehicle queue spillback along the N Main Street corridor. For these reasons, signalization was found to be a reasonably viable and implementable near- or long-term traffic control treatment at the N Main Street/Boardman Avenue intersection. A more detailed operations analysis of a figure signalization scenario is presented later in this report.

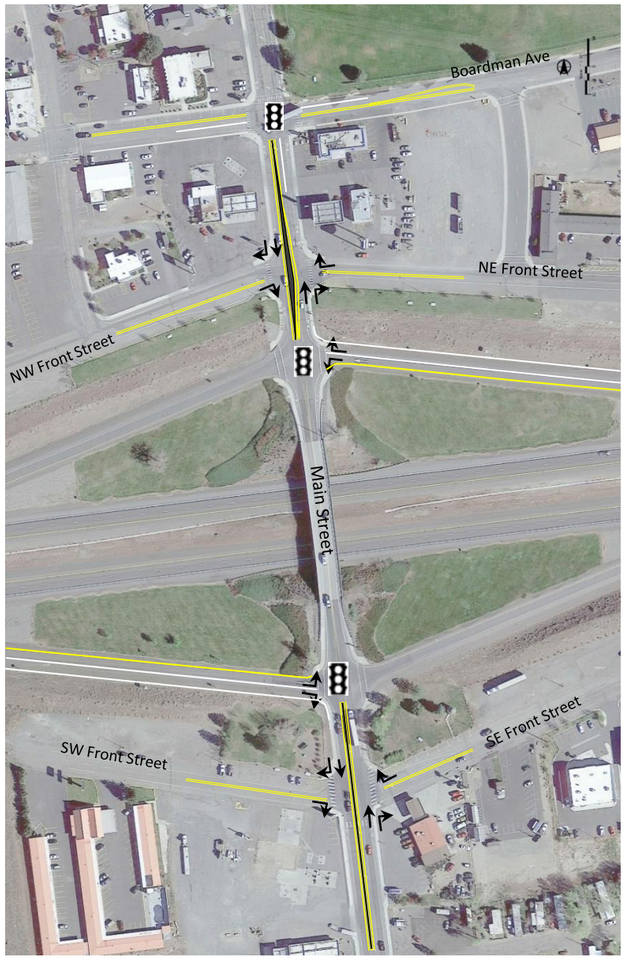
Initial Interchange Concept Evaluation

In response to these issues, two interchange improvement concepts were developed as documented in the following tables. Each table contains the following planning-level evaluation:

- A graphical illustration that conveys the basic components of the concept overlaid on an aerial photograph.
- A short narrative summarizing the main infrastructure components of the concept.
- A planning-level evaluation using the operations/land use/access spacing/cost/constructability evaluation criteria from the original IAMP.

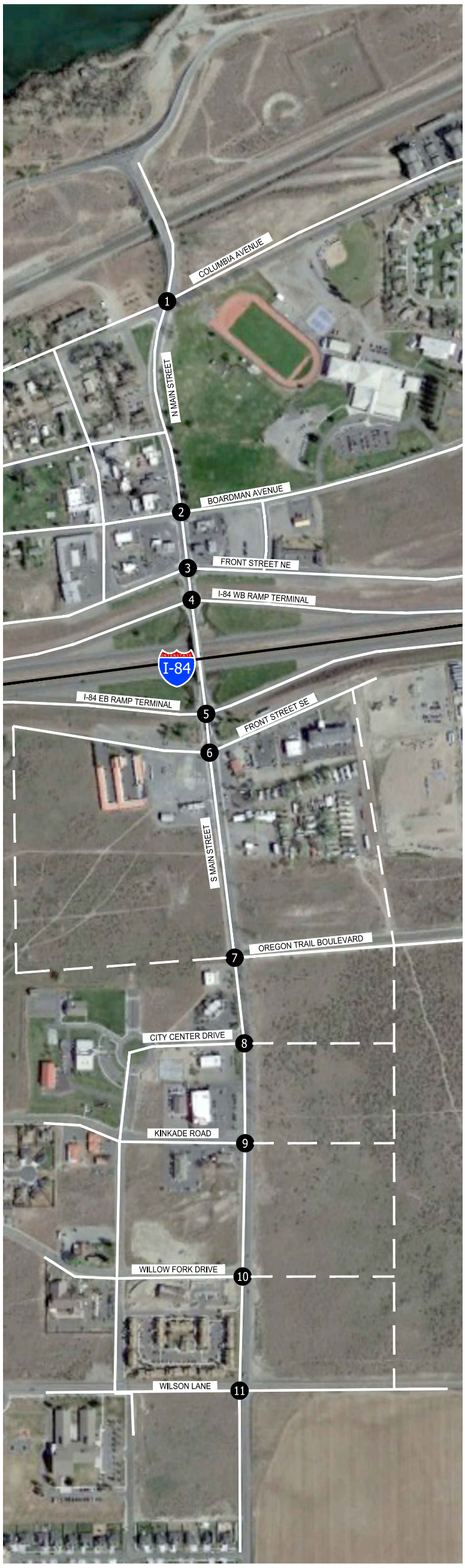
The respective 2042 intersection operations associated with each concept are shown in Figures 3 and 4 which follow each evaluation table. *Appendices F and G contains the traffic conditions worksheets.*

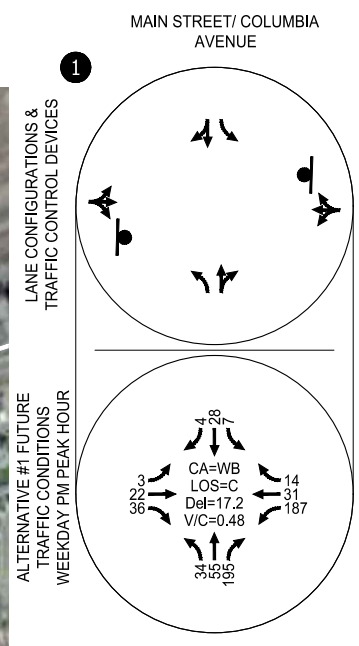
Table 5 – Circulation Alternative #1 Summary and Evaluation

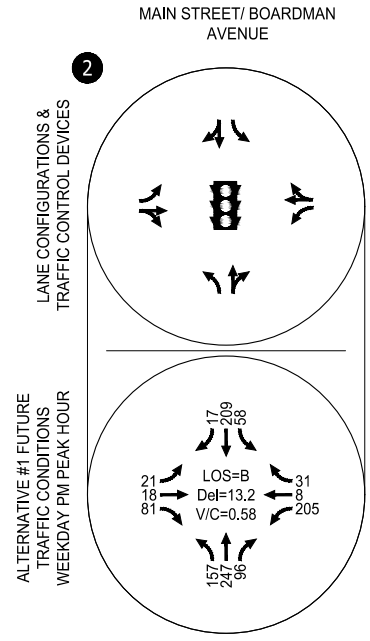
Circulation Alternative #1	Evaluation Information				Evaluation Results	
Concept Description and Illustration	**Category**	**Evaluation Criteria**	**Scoring Key**		**Score**	**Comments**
Circulation Alternative #1 signalizes the two I-84 EB and WB ramp terminals (when warranted) and converts the N Main Street/NE Front Street and S Main Street/SE Front Street intersections to limited access right-in/right-out through a median on Main Street. To accommodate anticipated re-routing of traffic volumes, the N Main Street/Boardman Avenue intersection would be signalized (when warranted) along with widening of the eastbound and westbound Boardman Avenue approaches. Given the complexity and cost, no widening is assumed on the Main Street overpass of I-84. The rationale for this alternative is to develop an attainable (primarily from a cost perspective) corridor improvement that better manages the close spacing of the two Front Street intersections and incorporates long-term intersection traffic control at the adjacent interchange and supporting intersections.  Note: Graphic is for illustrative purposes only.	Transportation	Addresses the identified operational deficiencies at the Front Street, WB ramp terminal, and EB ramp terminals	+1	Fully addresses the identified operation, capacity, and queuing concerns	**-1**	**While the signalization of the WB I-84 ramp terminal intersection would improve intersection operations (see the following Figure 3), the I-84 EB ramp terminal would operate over capacity. In addition, the lack of a NB/SB Main Street left-turn lane at both the EB and WB ramp terminals will create long vehicle queues on Main Street and limit the operational efficiency of the intersections and the Main Street corridor.**
			0	Only partially addresses the identified operations, capacity, and queuing concerns		
			-1	Does not fundamentally address the major operations, capacity, and queueing concerns		
		Improves walking and biking along Main Street	+1	Improves walking and biking to existing and future destinations along Main Street	**+1**	**Pedestrian and bicycle movements along Main Street will improve with fewer turning movement interactions at the two Front Street intersections and signalized crossings at Boardman Avenue and the two I-84 ramp terminal volume intersections.**
			0	Does not improve walking or biking to existing or future destination along Main Street relative to existing conditions.		
	Land Use/ Economic Development	Minimizes right-of-way impacts	+1	Alternative provides for long-term growth in the study area with minimal ROW and/or circulation impacts	**0**	**Likely to be no right-of-way impacts. However, a median along N Main Street will have access impacts to adjacent retail establishments along Main Street and Front Street.**
			0	Alternative provides for long-term growth but has some ROW and/or circulation impacts		
	Access Spacing	Moves in the direction of ODOT access spacing requirements	+1	Improves or moves in the direction meeting of ODOT's access spacing guidelines	**+1**	**While the alternative does not close the two Front Street intersections, the limited access right-in/right-out configuration will minimize turning movements near the two ramp terminals and improve the safety and operations along the Main Street corridor.**
			0	Does not meet, improve, or move in the direction of meeting ODOT's access spacing guidelines relative to existing conditions.		
	Cost	Cost relative to other concepts	+1	Low construction costs	**0**	**This concept has a planning level cost estimate of approximately $2.5M.**
			0	Moderate construction costs		
			-1	Substantial construction costs		
	Implementation	Constructability	+1	Project can be constructed with relative ease and/or can maintain existing traffic during construction.	**+1**	**Minimal implementation issues.**
			0	Construction of improvements will be a physical challenge and/or will require major detours during construction.		
					+2	**Total Score**

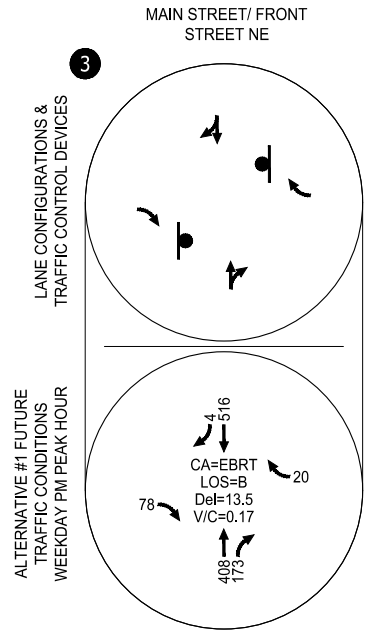
Miscellaneous Evaluation Comments

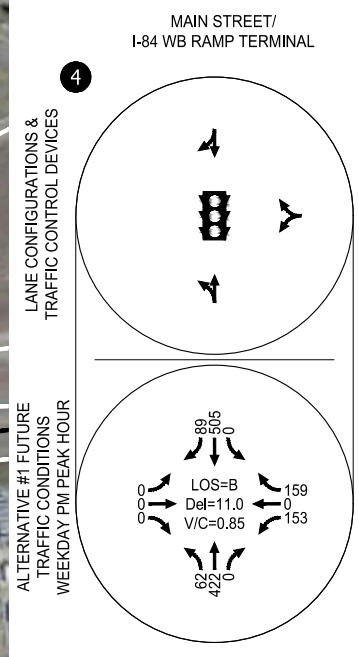
- While signalization of the I-84 WB and EB ramp terminals is possible, it is unlikely that such a mitigation measure would be considered without an affiliated widening of the Main Street overpass structure that would accommodate separate northbound and southbound left-turn lanes.
- Signalization of the I-84 WB and EB ramp terminals would not preclude the ability to accommodate oversized freight loads. ODOT has noted that oversized height-related loads have needed to utilize the off- and on-ramps due to clearance issues with the Main Street overpass over I-84.

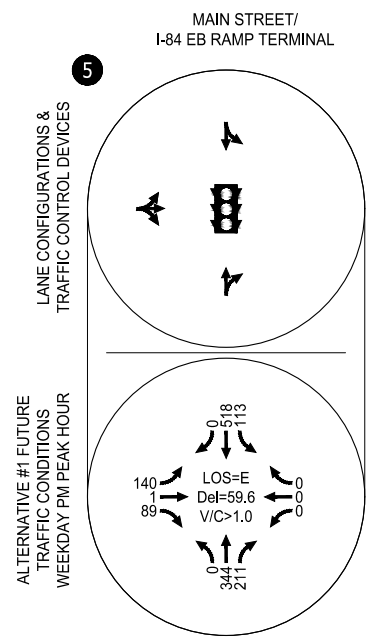


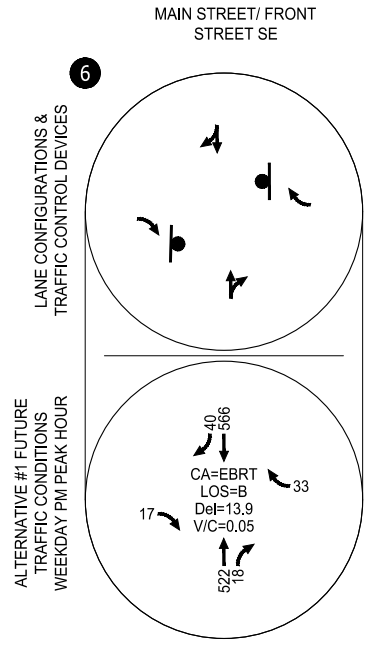


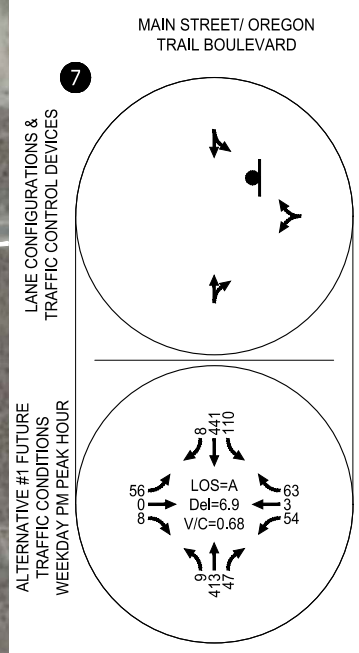


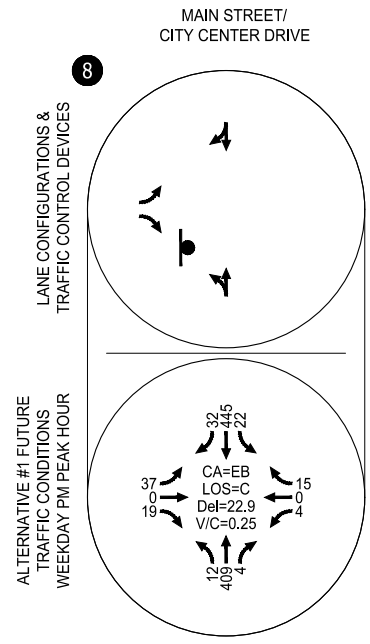


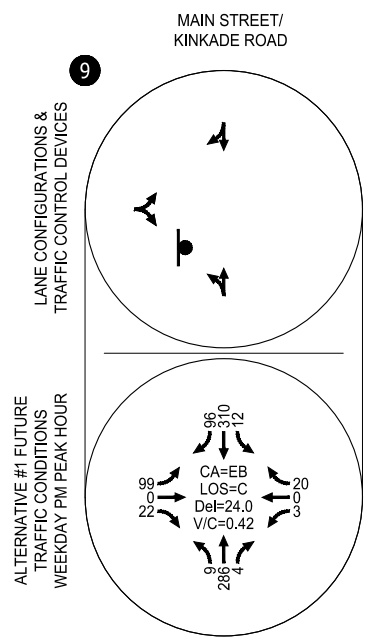


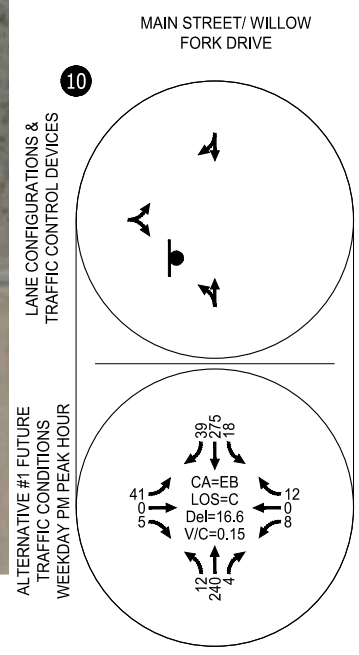


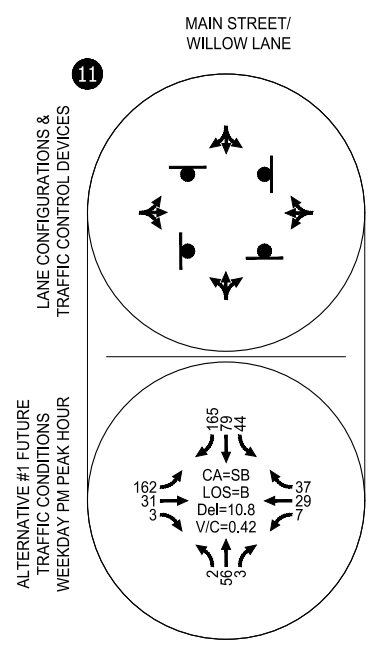












##- Study Intersections

Circulation Alternative #1, Future Traffic Conditions
Weekday PM Peak Hour
City of Boardman, Oregon

Figure 3

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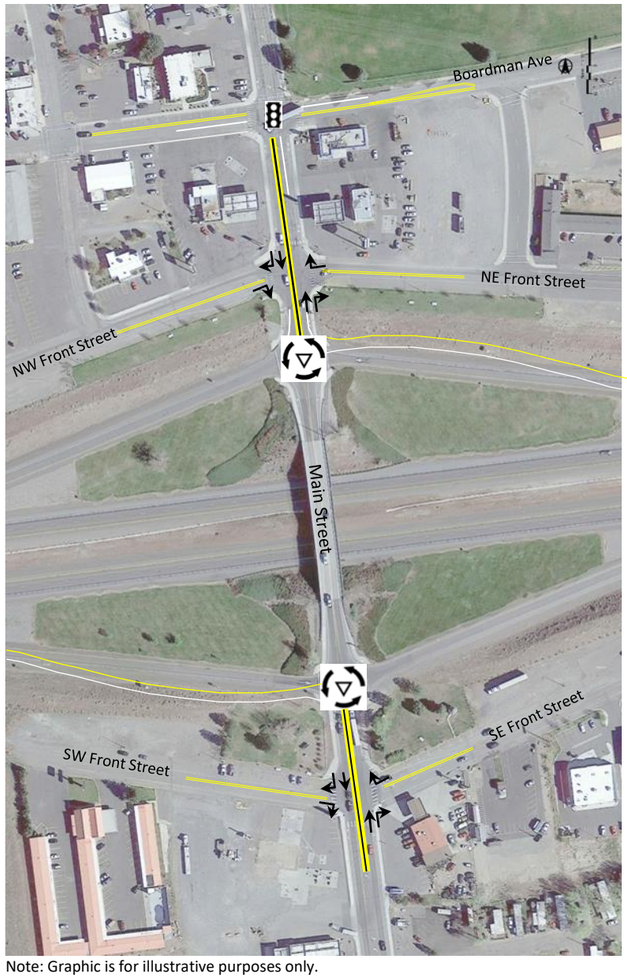
Table 6 – Circulation Alternative #2 Summary and Evaluation

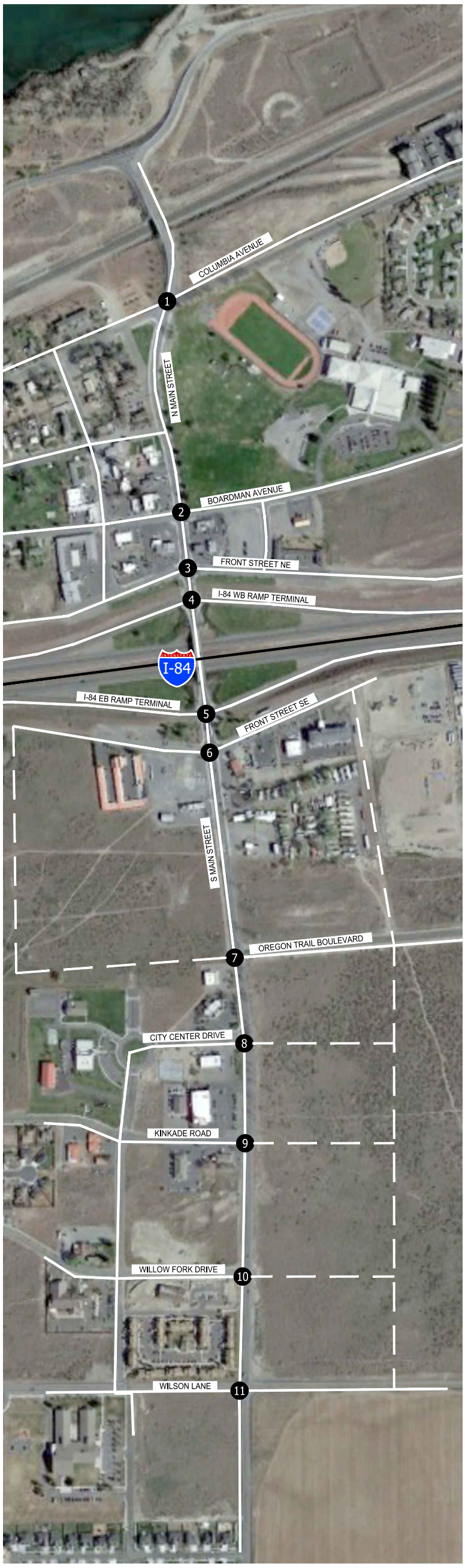
Circulation Alternative #2	Evaluation Information				Evaluation Results	
Concept Description and Illustration	**Category**	**Evaluation Criteria**	**Scoring Key**		**Score**	**Comments**
Circulation Alternative #2 includes single lane roundabouts at the two I-84 EB and WB ramp terminals and converts the N Main Street/NE Front Street and S Main Street/SE Front Street intersections to limited access right-in/right-out through medians on Main Street. To accommodate anticipated re-routing of traffic volumes, the N Main Street/Boardman Avenue intersection would be signalized (when warranted). The rationale for this alternative is to better manage the close spacing of the two Front Street intersections and address the long-term operations at the I-84 ramp terminals without a widening of Main Street over I-84.	Transportation	Addresses the identified operational deficiencies at the Front Street, WB ramp terminal, and EB ramp terminals	+1	Fully addresses the identified operation, capacity, and queuing concerns	**+1**	**Roundabouts at the I-84 ramp terminals will provide improved long-term capacity (see the following Figure 4) and address northbound and southbound left-turn movement without a widening of the Main Street overpass. The limited access restrictions at the two Front Street intersections will improve operations along the Main Street corridor.**
			0	Only partially addresses the identified operations, capacity, and queuing concerns		
			-1	Does not fundamentally address the major operations, capacity, and queueing concerns		
		Improves walking and biking along Main Street	+1	Improves walking and biking to existing and future destinations along Main Street	**+1**	**Pedestrian and bicycle movements along Main Street will improve with fewer turning movement interactions at the two Front Street intersections a signalized crossings at Boardman Avenue, and pedestrian crossing accommodations at the I-84 ramp terminal roundabouts.**
			0	Does not improve walking or biking to existing or future destination along Main Street relative to existing conditions.		
	Land Use/ Economic Development	Minimizes right-of-way impacts	+1	Alternative provides for long-term growth in the study area with minimal ROW and/or circulation impacts	**0**	**Likely to be no right-of-way impacts to private properties as the roundabouts can likely be constructed within existing ODOT right-of-way. However, a median along N Main Street will have access impacts to adjacent retail establishments along Main Street and Front Street.**
			0	Alternative precludes long-term growth or has significant ROW and/or circulation impacts		
	Access Spacing	Moves in the direction of ODOT access spacing requirements	+1	Improves or moves in the direction meeting of ODOT's access spacing guidelines	**+1**	**While the alternative does not close the two Front Street intersections, the limited access right-in/right-out configuration will minimize turning movements near the two ramp terminals and improve the safety and operations along the Main Street corridor.**
			0	Does not meet, improve, or move in the direction of meeting ODOT's access spacing guidelines relative to existing conditions.		
	Cost	Cost relative to other concepts	+1	Low construction costs	**-1**	**This concept has a planning level cost estimate of approximately $10M.**
			0	Moderate construction costs		
			-1	Substantial construction costs		
	Implementation	Constructability	+1	Project can be constructed with relative ease and/or can maintain existing traffic during construction.	**0**	**Construction of the roundabouts is likely to require some detours and/or temporary lanes to maintain traffic flow.**
			0	Construction of improvements will be a physical challenge and/or will require detours during construction.		
					+2	**Total Score**



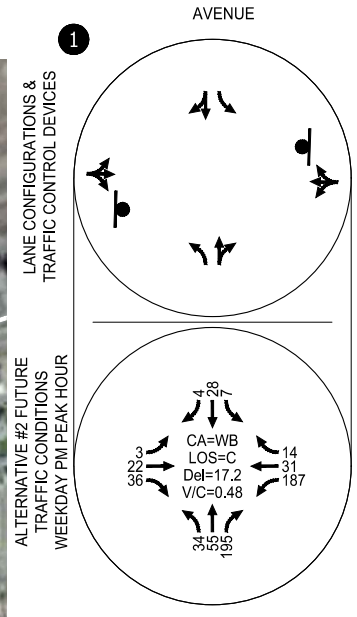
Note: Graphic is for illustrative purposes only.

Miscellaneous Evaluation Comments

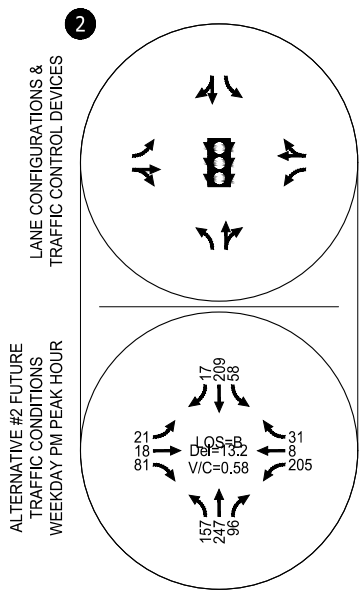
- The accommodation of roundabouts at the I-84 EB and WB ramp terminals will require realignment of the respective offramps. Additional design efforts would need to explore the ramifications of accommodating the offramp realignments considering the sloped embankments at the interchange.
- Additional design efforts would need to explore the size of the roundabouts and their ability to accommodate oversized freight movements.



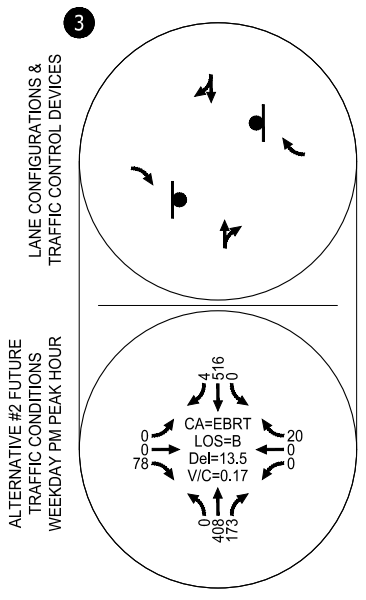
MAIN STREET/ COLUMBIA AVENUE



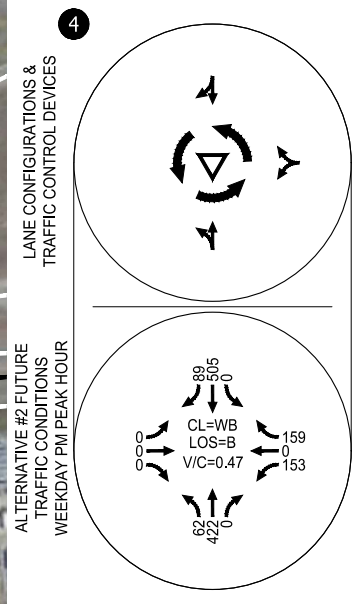
MAIN STREET/ BOARDMAN AVENUE



MAIN STREET/ FRONT STREET NE



MAIN STREET/ I-84 WB RAMP TERMINAL



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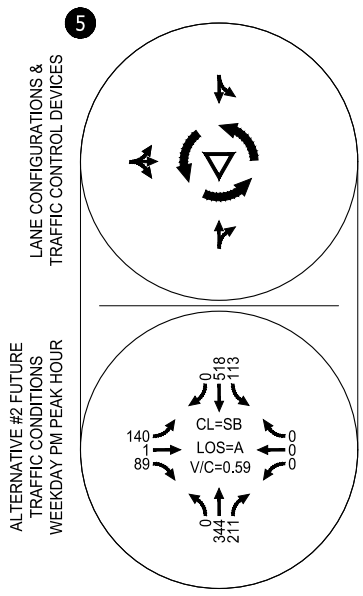

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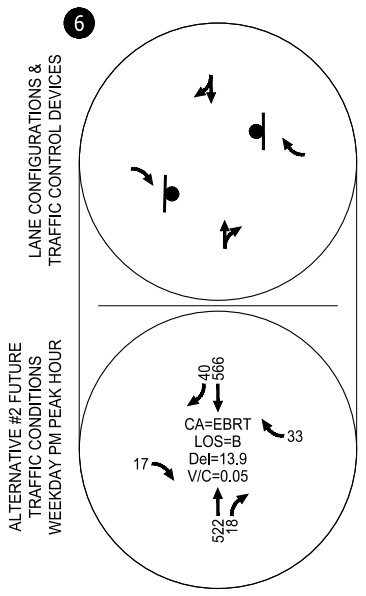
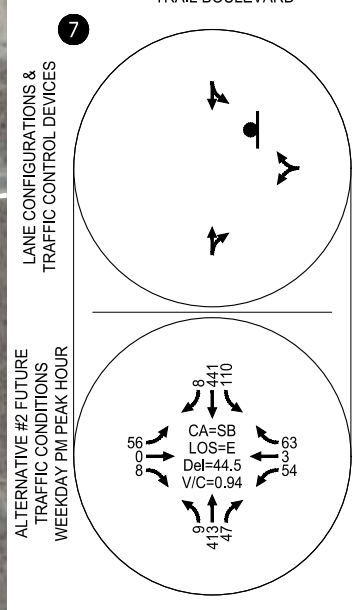
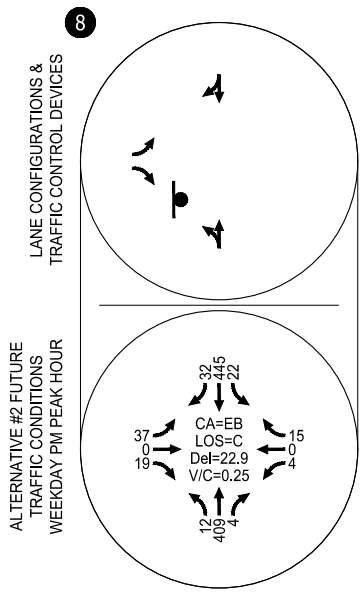


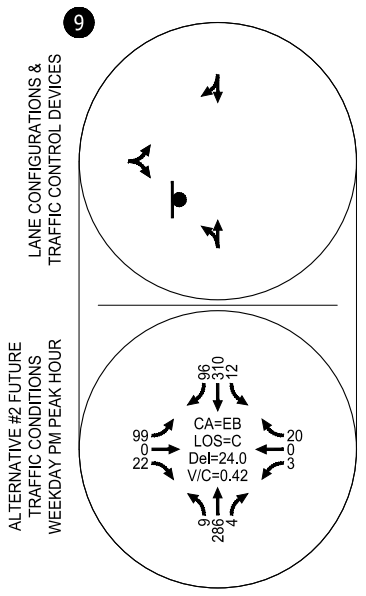
MAIN STREET/ OREGON TRAIL BOULEVARD



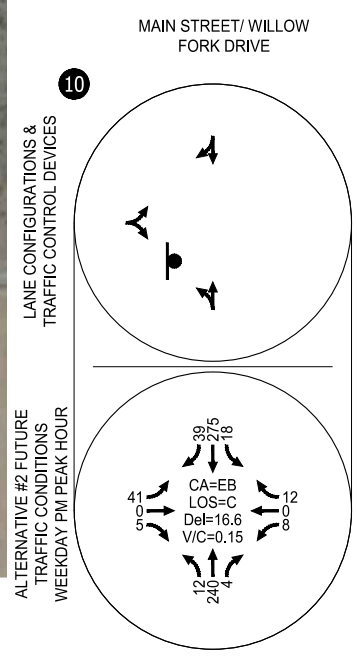
MAIN STREET/ CITY CENTER DRIVE



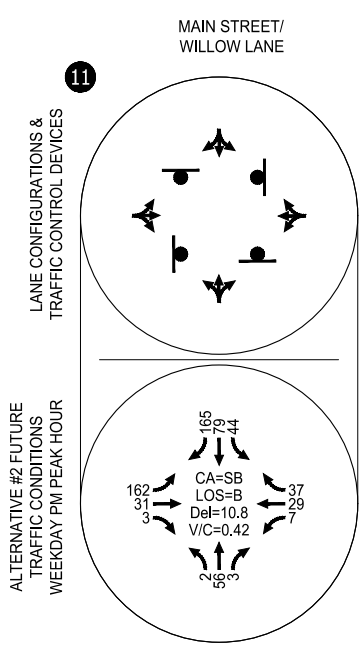
MAIN STREET/ KINKADE ROAD



MAIN STREET/ WILLOW FORK DRIVE



MAIN STREET/ WILLOW LANE



##- Study Intersections

Circulation Alternative #2 Future Traffic Conditions
Weekday PM Peak Hour
City of Boardman, Oregon

Figure
4

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Preferred Circulation Alternative Evaluation

As documented in the previous section, Circulation Alternative #1 and #2 both meet many of the important multimodal circulation and access spacing evaluation criteria. However, when reviewing the detailed intersection operations of Circulation Alternative #1 at the I-84 ramp terminals, the lack of a NB/SB left-turn lane (which can only be achieved with a widening or complete rebuild of the Main Street I-84 overpass structure) will significantly limit the long-term capacity and operational efficiency of the ramp terminal intersections as well as the Main Street corridor. For this reason, Circulation Alternative #1 was determined to not fundamentally address the long-term needs of the Main Street corridor. Despite the higher cost and constructability challenges of the roundabout treatments, Circulation Alternative #2 was further evaluated from a geometric, access management, and freight accommodations perspective.

Refined Geometric Layouts

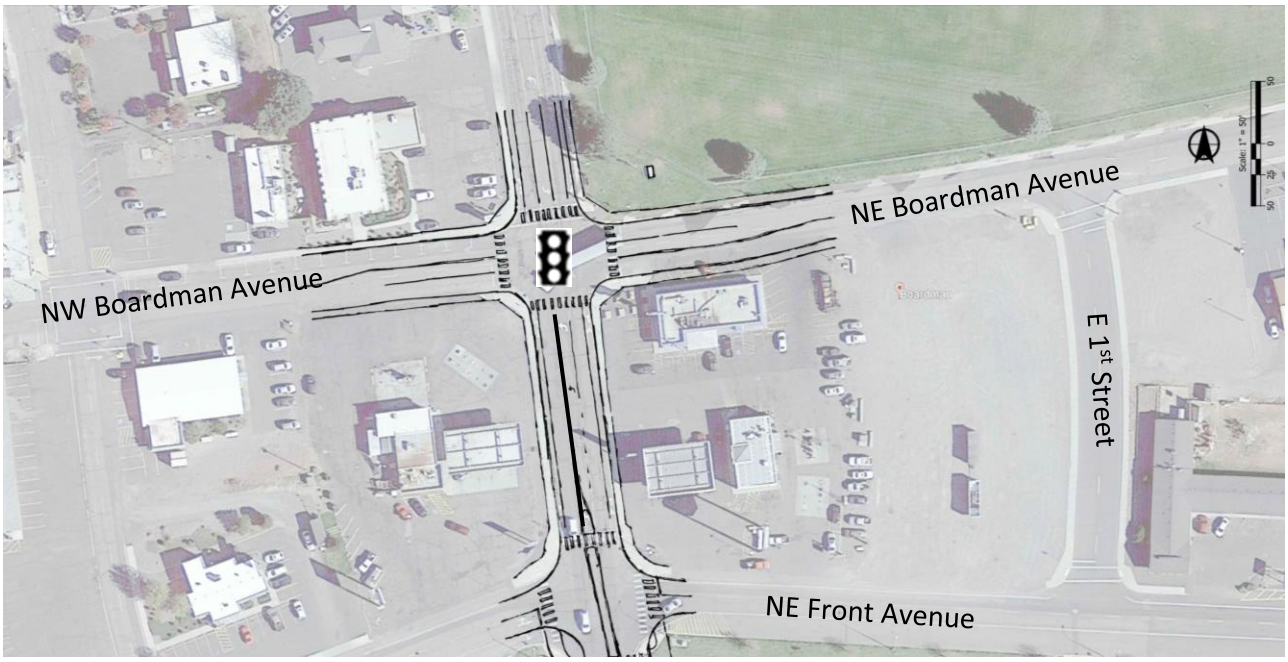
Refined geometric layouts of various components of Circulation Alternative #2 were prepared taking into consideration known right-of-way constraints, forecast traffic demands, the vehicle/truck types associated with the I-84 Main Street interchange, and multimodal considerations. The refined components of Circulation Alternative #2 are summarized and illustrated in the following sections of this report.

Main Street/Boardman Avenue

Figure 5 illustrates a refined layout of the Main Street/Boardman Avenue intersection as a widened signalized intersection. Specific improvements associated with this project would include:

- Installation of a traffic signal and the removal of the existing rectangular rapid flashing beacon (RRFB) on the north leg of the intersection.
- Widening of NE Boardman Avenue to accommodate a three-lane section. This widening would include removal of the head-in parking along the north side of the C&D Drive-in.
- Reallocation of the NW Boardman Avenue travel lanes to accommodate a three-lane section. This would include the partial removal of the on-street parking along the north curb line between Main Street and W 1st Street.
- Installation of a raised median on Main Street from the Boardman Avenue intersection to terminate near the I-84 WB Ramp Terminal intersection. The raised median would modify Front Avenue and all commercial driveways in this section to right-in/right-out movements.

Figure 5 – Refined Sketch Level Layout of Main Street/Boardman Avenue (for illustrative purposes only)



Signalized Queuing Conditions

As noted in either Figure 3 or Figure 4, future signalization of the Main Street/Boardman Avenue intersection under a simple permissive phasing configuration will allow the intersection to operate at LOS B conditions with a V/C ratio of 0.58 during the weekday PM peak hour. This phasing set up will also result in 95th percentile queues that can be accommodated within the defined lane storage areas as summarized in *Appendix F or G*.

I-84/EB & WB Ramp Terminals

Figure 6 illustrates three potential configurations for roundabout treatments at the I-84 EB and WB ramp terminal intersections. It is noted that the refined layout configurations were prepared at a scaled proof-of-concept level. While still a sketch, the following characteristics were included in each layout:

- Maximizing the spacing between the roundabouts and the Main Street overpass structure while also still maintaining spacing and viable geometrics at the north and south Front Street intersections. It is recognized that further refinement of the design would be needed to identify potential impacts to the overpass structure.
- Inscribed circle diameter of 140 feet which is typically the minimum size needed to support the turning movement requirements for a WB-67 truck. The wheel paths for this design vehicle are also shown in Figure 5.
- Pedestrian and bicycle accommodations.

A high-level assessment of each roundabout concept is outlined below.

Traditional Single Lane Roundabout

This configuration includes a traditional single-lane roundabout that would incorporate right-in/right-out access to Front Street.

- With access restrictions to Front Street, the design would accommodate all circulation movements, providing an efficient u-turn maneuver for specific movements exiting both north and south Front Street.
- At a sketch level layout, the design would need additional refinement to determine the ability to not impact the I-84 overpass structure.

Tear-Drop Single Lane Roundabout

This configuration is like the traditional shaped roundabout but includes a tear-drop shaped circulating island that would restrict full internal circulating movements.

- Tear-drop shape circulating island would eliminate the u-turn movement demand that would be generated by the access restrictions to north and south Front Street. This would be particularly problematic for S Front Street where there is a near-term parallel local street network.
- At a sketch level layout, the design would not result in a smaller roundabout or provide the ability to locate the roundabouts further away from the I-84 overpass bridge structure.

5-Legged Single-Lane Roundabout

This single-lane roundabout configuration incorporates Front Street movements resulting in a 5-legged design.

- As shown, incorporating Front Street into the roundabout design would necessitate a much larger oval shaped roundabout footprint.

- The incorporation of Front Street movements into the roundabout is inconsistent with Oregon and Federal Highway Administration (FHWA) local access and hierarchy practices involving direct local street access at an interchange ramp terminal.
- There are likely more constructability challenges associated with the larger footprint.

Following the three roundabout concept sketches shown in Figure 6, Figures 7 and 8 provide a detailed image of the traditional single lane roundabout with the signalized configuration of the Main Street/Boardman Avenue intersection.

Figure 6 – Refined Sketch Level Layout of the I-84 EB and WB Ramp Terminals (for illustrative purposes only)

Figure 7 – Refined Circulation Alternative #2 Sketch-Level Layout (for illustrative purposes only)

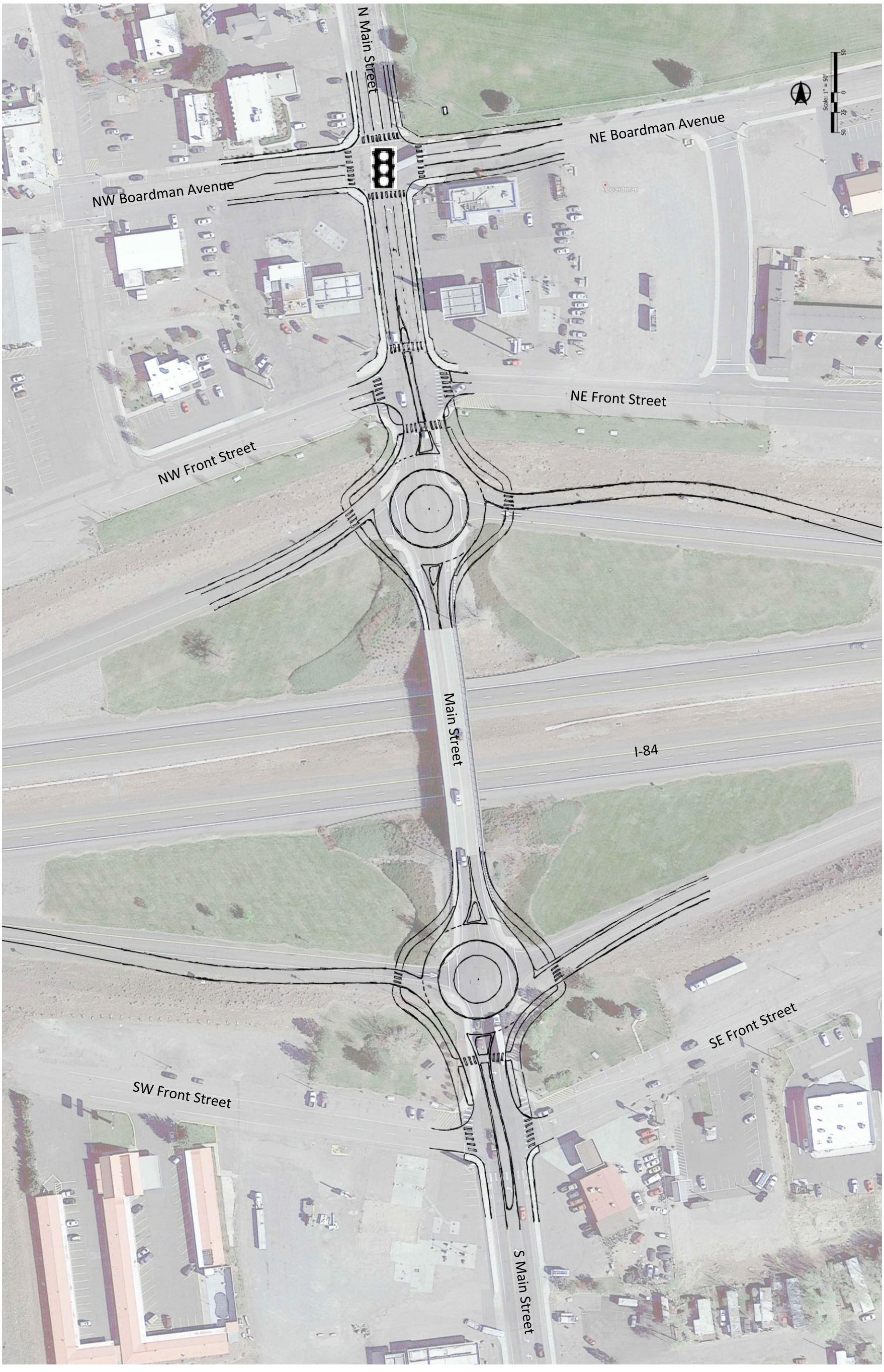
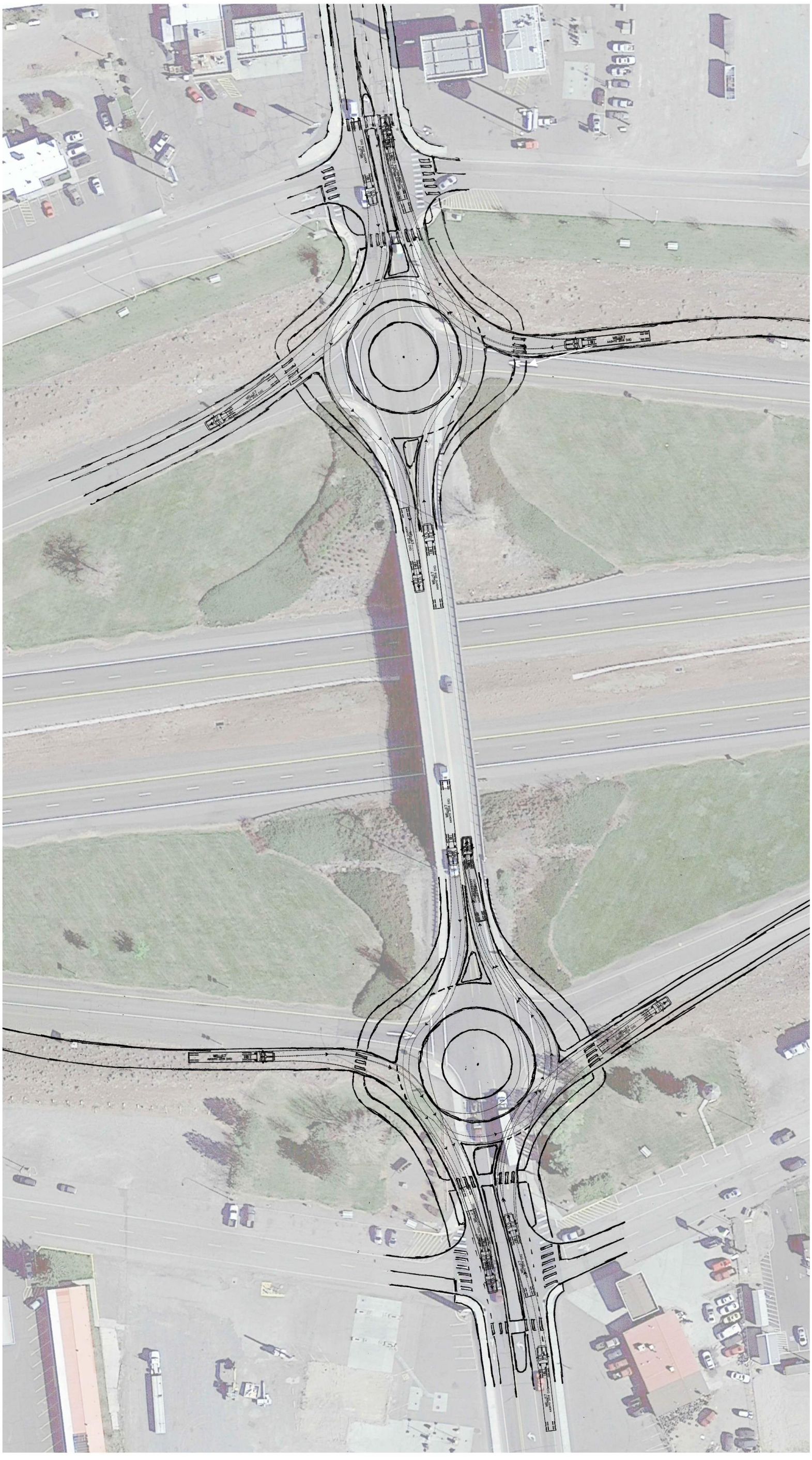


Figure 8 – Refined Circulation Alternative #2 Sketch-Level Layout (with WB-67 Truck Turning Template)



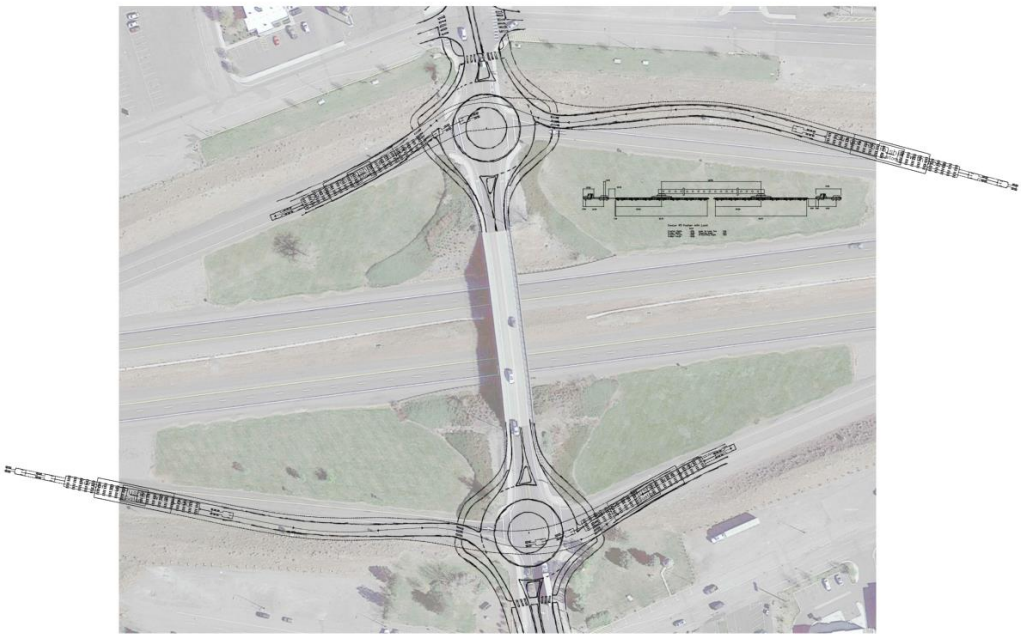
Truck Turning Evaluation

Recognizing that roundabouts have traditionally been a source of concern from truck drivers and businesses that operate large fleets of trucks (such as many of the businesses in the POM), a truck turning analysis was performed using the preliminary roundabout sketch shown in Figure 7. Based on discussions with City and ODOT officials, a WB-67 truck is the most common large vehicle that frequents businesses served by the Main Street corridor. Using this design vehicle, turning movement paths were added to the sketch layout using AutoTurn software as illustrated in Figure 8. As shown, this large design vehicle can reasonably maneuver through the roundabout. It should be noted that since this is just an illustrative sketch, some of the approaching roadway layouts would likely need to be adjusted to better meet some of the tighter turning movements. This can be accomplished in a future design phase.

From an oversized load perspective, planning projects typically include an assessment of oversized loads, particularly when they involve major interchange terminals. Based on feedback from ODOT, the OXBO_MEGA transport vehicle is the largest truck that has frequented this segment of I-84 in recent years.

To conceptually illustrate the circulation challenges associated with this design vehicle, a custom trailer was created in AutoTurn and applied to the sketch interchange layout shown in Figure 9. As shown, special care would need to be taken in future design stages to ensure a vehicle trailer and load of this magnitude could be accommodated through one of the roundabout treatments.

Figure 9 – Overside Load Accommodation



Although the turn exhibits illustrate special care would need to undertaken in a future design phase, it should be noted that Port of Morrow officials have established routes in place for all high, wide, and heavy loads that are generated through the port terminals. Exhibit 6 illustrates how the POM has historically and plans to continue to handle loads of this magnitude. As shown, all oversized loads could be oriented to the US 730 access via Lewis and Clark Drive depending upon the load and terminal. These routes do not rely upon the I-84/Main Street interchange due to internal bridge load constraints on multiple roadway facilities within POM.

Exhibit 4 – High Wide and Heavy Travel Path Options for the Port of Morrow (Source: POM)

COORDINATION WITH 2009 IAMP

The 2009 IAMP remains a key planning document for addressing long-term transportation infrastructure improvements along the Main Street corridor. Through this reevaluation process, three changes are recommended:

- The N Main Street/Boardman Avenue intersection:
  - Signalize the intersection when warranted. Warrants will most likely be met if/when the N Main Street/N Front Street intersection is restricted to right-in/right-out movements (see N Main Street/I-84 Westbound Ramp Terminal improvements below) or from new development along the Boardman Avenue corridor.
  - Widen the east and west Boardman Avenue approaches to include separate left-turn and shared through/right-turn lanes. This widening will require coordination with adjacent properties to remove some head-in parking and modify the location of access driveways. There is also a strip of on-street parking along the north side of NW Boardman Avenue that will have to be removed.
- N Main Street/I-84 Westbound Ramp Terminal intersection:
  - Modify the long-term mitigation plan to include the potential for a single-lane roundabout at the intersection.
  - Modify the westbound offramp to meet the approach deflection angles needed with a roundabout.
  - Modify the N Main Street/N Front Street intersection to right-in/right-out access through the construction of a raised median. This median would need to be modified if/when a roundabout is installed at the I-84 westbound ramp terminal intersection.
- S Main Street/I-84 Eastbound Ramp Terminal intersection:
  - Construct a single-lane roundabout at the intersection.
  - Modify the eastbound offramp to better meet the unique geometric configuration of the roundabout.
  - Modify the S Main Street/S Front Street intersection to right-in/right-out access to meet the unique geometric configuration of the adjacent roundabout. This median would need to be modified if/when a roundabout is installed at the I-84 westbound ramp terminal intersection.

All other previously identified Local Connectivity Plan and multi-modal improvements in the 2009 IAMP are still valid. A complete list of combined projects is summarized in Table 7 below.

Table 7 – Main Street Transportation Improvement Plan

Project	Near/Medium-Term Improvement	Trigger(s) for Improvement	Planning Level Cost	Potential Funding Source
Local Circulation Improvements 1. Construct north-south collector street connecting SE Front Street to Oregon Trail Boulevard. 2. Construct westerly extension of Oregon Trail Boulevard (collector street) from S Main Street to Faler Road SW. 3. Construct north-south collector street connecting SW Front Street to the Oregon Trail Boulevard extension. 4. Construct north-south collector street connecting Oregon Trail Boulevard to Wilson Lane SE. Such a connection would also include east-west connections back to S Main Street at Kinkade Road and Willow Fork Drive.		New private development		- PDF
Widen S Main Street to full Arterial standards from just north of Oregon Trail Boulevard to Wilson Lane		- Private development frontage improvements. - When funding becomes available	$5M	- City funds - PDF
Medium range actions from access management plan		- Increase in crashes - Recurring public complaint - Property (re)development	N/A	- PDF
Project	**Long-Term Improvement**	**Trigger(s) for Improvement**	**Planning Level Cost**	**Potential Funding Source**
Signalize the N Main Street/Boardman Avenue intersection and widen the Boardman Avenue approaches to include separate left-turn and shared through/right-turn lanes.		- LOS drops below standards, and - When the intersection meets traffic signal warrants.	$750k	- City funds - PDF
Construct a single lane roundabout at the N Main Street/I-84 Westbound Ramp Terminal		- Increase in crashes - V/C ratio drops below mobility target - Vehicle queues on offramp regularly back up to I-84 mainline	$5M	- STIP
Construct a single lane roundabout at the S Main Street/I-84 Eastbound Ramp Terminal		- Increase in crashes - V/C ratio drops below mobility target - Vehicle queues on offramp regularly back up to I-84 mainline	$5M	- STIP
Convert the N Front Street and S Front Street intersections at Main Street to right-in/right-out configurations through temporary median treatments or as part of the long-term roundabout treatments at the I-84 Ramp Terminal Intersections.		- Increase in crashes - Construction of I-84 Ramp Terminal Roundabouts	$50-$100k	- City funds - PDF
Long range actions from access management plan		- Increase in crashes - Recurring public complaint - Property (re)development	N/A	- PDF

Appendix A Traffic Count Worksheets

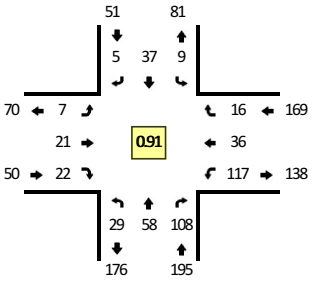
Type of peak hour being reported: Intersection Peak

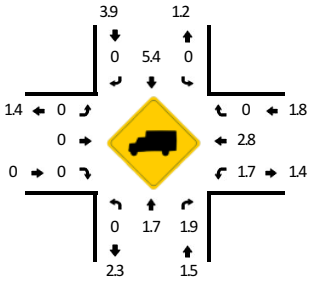
Method for determining peak hour: Total Entering Volume

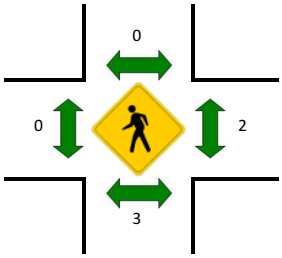
LOCATION: N Main St -- Columbia Ave NE
CITY/STATE: Boardman, OR

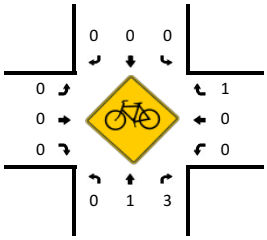
QC JOB #: 15762801
DATE: Thu, Mar 31 2022

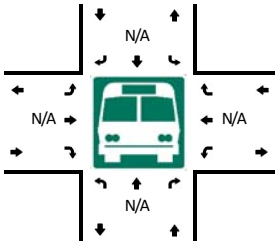
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

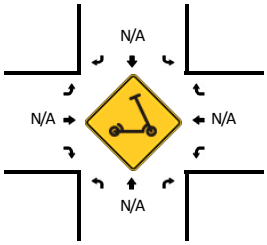












5-Min Count Period Beginning At	N Main St (Northbound)				N Main St (Southbound)				Columbia Ave NE (Eastbound)				Columbia Ave NE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	5	2	0	0	3	2	0	1	0	1	0	5	4	2	0	25	
3:05 PM	1	1	4	0	0	1	0	0	1	0	2	0	15	1	1	0	27	
3:10 PM	1	3	7	0	0	5	0	0	0	2	0	0	18	3	0	0	39	
3:15 PM	2	0	12	0	0	4	0	0	3	0	3	0	8	3	0	0	35	
3:20 PM	2	0	8	0	0	2	0	0	0	3	1	0	8	3	0	0	27	
3:25 PM	1	2	9	0	1	5	2	0	0	2	0	0	6	2	0	0	30	
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3:35 PM	5	4	8	0	1	3	0	0	0	4	1	0	17	3	0	0	46	
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4:10 PM	2	1	7	0	1	4	0	0	1	0	2	0	18	2	3	0	41	415
4:15 PM	3	5	9	0	0	1	0	0	0	2	1	0	8	5	0	0	34	414
4:20 PM	1	1	10	0	0	1	0	0	1	4	0	0	7	4	0	0	29	416
4:25 PM	2	4	11	0	1	1	0	0	0	2	0	0	13	3	0	0	37	423
4:30 PM	1	6	9	0	1	2	0	0	0	4	2	0	13	1	3	0	42	426
4:35 PM	4	5	14	0	0	0	1	0	0	2	2	0	5	2	0	0	35	415
4:40 PM	2	3	10	0	0	5	1	0	0	1	2	0	8	5	3	0	40	416
4:45 PM	2	2	9	0	1	2	0	0	0	1	0	0	7	1	2	0	27	415
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4:55 PM	2	4	5	0	1	1	0	0	1	2	1	0	8	3	0	0	28	411
5:00 PM	3	5	4	0	0	5	2	0	1	0	1	0	13	1	1	0	36	421
5:05 PM	4	1	7	0	0	2	1	0	0	0	2	0	12	5	1	0	35	418
5:10 PM	2	4	8	0	0	4	0	0	0	4	1	0	13	6	1	0	43	420
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5:35 PM	2	7	11	0	0	1	0	0	2	0	1	0	14	1	2	0	41	438
5:40 PM	3	7	8	0	2	2	1	0	2	2	2	0	6	4	1	0	40	438
5:45 PM	2	2	4	0	1	7	0	0	1	1	0	0	5	4	3	0	30	441
5:50 PM	2	3	11	0	0	2	0	0	1	2	4	0	8	3	1	0	37	444
5:55 PM	4	4	12	0	0	1	0	0	0	3	3	0	14	6	2	0	49	465

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	68	128	0	12	52	0	0	0	28	20	0	128	32	20	0	512
Heavy Trucks	0	0	0		0	8	0		0	0	0		4	0	0		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	4		0	0	0		0	0	0		0	0	0		4
Scooters																	
Comments:																	

Report generated on 4/6/2022 2:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

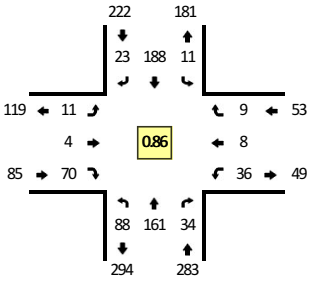
Type of peak hour being reported: Intersection Peak

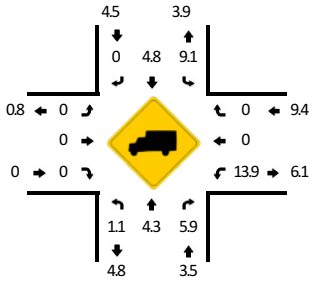
Method for determining peak hour: Total Entering Volume

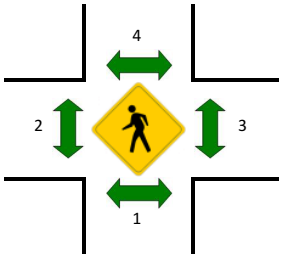
LOCATION: N Main St -- Boardman Ave NW
CITY/STATE: Boardman, OR

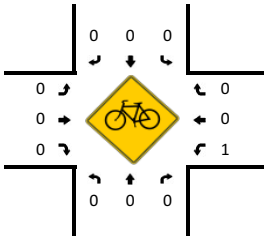
QC JOB #: 15762802
DATE: Thu, Mar 31 2022

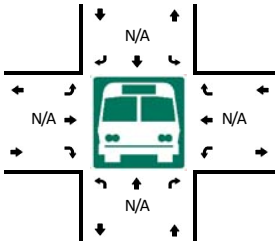
Peak-Hour: 3:30 PM -- 4:30 PM
Peak 15-Min: 3:30 PM -- 3:45 PM

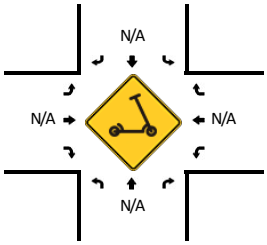












5-Min Count Period Beginning At	N Main St (Northbound)				N Main St (Southbound)				Boardman Ave NW (Eastbound)				Boardman Ave NW (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	2	8	2	0	1	9	2	0	0	1	2	0	16	1	2	0	46	
3:05 PM	6	11	5	0	1	15	1	0	1	0	6	0	15	3	0	0	64	
3:10 PM	4	9	4	0	0	29	0	0	1	1	1	0	8	1	4	0	62	
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5:00 PM	7	10	0	0	0	18	0	0	2	0	12	0	5	0	1	0	55	636
5:05 PM	3	10	5	0	1	18	0	0	0	0	4	0	2	0	1	0	44	620
5:10 PM	9	17	2	0	0	17	3	0	1	0	2	0	2	0	0	0	53	612
5:15 PM	11	20	0	0	2	7	2	0	2	0	0	0	3	0	0	0	47	601
5:20 PM	5	15	4	0	2	17	3	0	0	0	3	0	2	0	2	0	53	610
5:25 PM	4	13	5	0	3	9	0	0	3	2	2	0	3	3	2	0	49	603
5:30 PM	11	19	4	0	2	9	3	0	0	1	3	0	3	1	0	0	56	603
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5:40 PM	6	13	3	0	0	7	1	0	0	1	1	0	3	0	0	0	35	595
5:45 PM	9	6	6	0	0	14	1	0	1	1	6	0	4	0	2	0	50	596
5:50 PM	7	16	4	0	0	12	0	0	1	0	6	0	3	0	1	0	50	600
5:55 PM	9	21	1	0	1	16	1	0	1	0	3	0	2	0	1	0	56	615

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	80	208	52	0	12	216	36	0	8	8	64	0	44	12	12	0	752
Heavy Trucks	4	12	4		0	4	0		0	0	0		4	0	0		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		4	0	0		4
Scooters																	
Comments:																	

Report generated on 4/6/2022 2:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

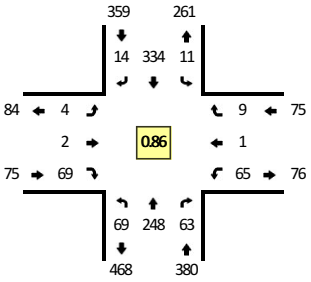
Type of peak hour being reported: Intersection Peak

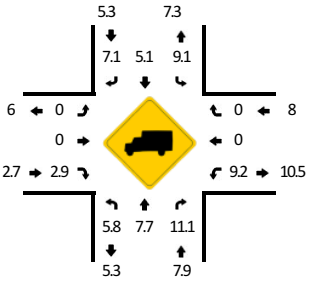
Method for determining peak hour: Total Entering Volume

LOCATION: N Main St -- Front St NE
CITY/STATE: Boardman, OR

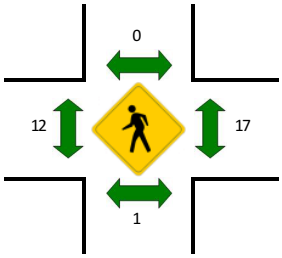
QC JOB #: 15762803
DATE: Thu, Mar 31 2022

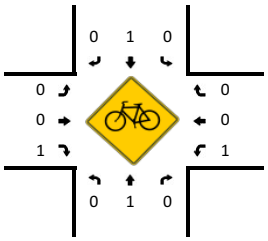
Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:00 PM -- 3:15 PM

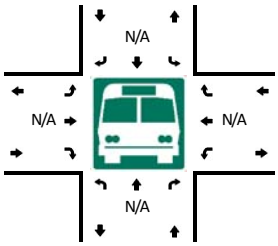


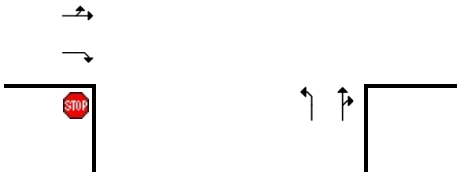


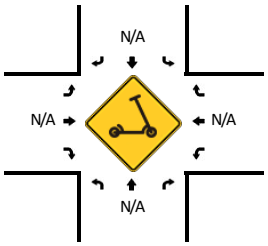
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	N Main St (Northbound)				N Main St (Southbound)				Front St NE (Eastbound)				Front St NE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	7	14	4	0	1	34	2	0	0	0	9	0	9	0	2	0	82	
3:05 PM	6	23	4	0	1	41	4	0	0	1	9	0	9	0	1	0	99	
3:10 PM	5	12	2	0	0	41	1	0	2	0	3	0	10	0	1	0	77	
3:15 PM	7	13	3	0	4	30	2	0	0	0	9	0	5	0	0	0	73	
3:20 PM	7	17	6	0	1	14	0	0	0	0	4	0	3	0	0	0	52	
3:25 PM	4	28	2	0	0	28	0	0	1	0	1	0	2	0	1	0	67	
3:30 PM	9	34	9	0	1	20	1	0	0	0	4	0	1	1	1	0	81	
3:35 PM	5	26	4	0	1	33	2	0	0	1	7	0	3	0	0	0	82	
3:40 PM	3	22	8	0	1	31	0	0	0	0	5	0	6	0	0	0	76	
3:45 PM	7	20	7	0	1	28	0	0	0	0	4	0	5	0	2	0	74	
3:50 PM	4	21	4	0	0	19	2	0	0	0	9	0	6	0	1	0	66	
3:55 PM	5	18	10	0	0	15	0	0	1	0	5	0	6	0	0	0	60	889
4:00 PM	3	16	3	0	3	21	0	0	1	0	4	0	7	0	2	0	60	867
4:05 PM	0	18	6	0	1	34	0	0	1	0	5	0	4	0	0	0	69	837
4:10 PM	3	29	8	0	0	27	0	0	0	0	4	0	5	0	0	0	76	836
4:15 PM	3	20	4	0	0	30	0	0	1	1	8	0	6	1	0	0	74	837
4:20 PM	7	24	3	0	1	24	0	0	1	0	5	0	5	0	0	0	70	855
4:25 PM	6	34	7	0	0	23	0	0	0	1	7	0	2	0	1	0	81	869
4:30 PM	10	33	6	0	0	18	2	0	2	0	6	0	3	1	0	0	81	869
4:35 PM	8	24	10	0	1	20	1	0	1	0	6	0	6	1	1	0	79	866
4:40 PM	3	23	6	0	2	25	0	0	0	0	8	0	4	0	1	0	72	862
4:45 PM	5	33	4	0	2	18	1	0	0	1	8	0	5	0	0	0	77	865
4:50 PM	3	21	9	0	0	17	0	0	0	0	11	0	7	0	1	0	69	868
4:55 PM	3	22	5	0	1	21	0	0	0	0	5	0	2	0	0	0	59	867
5:00 PM	3	22	6	0	2	30	0	0	0	0	4	0	1	0	1	0	69	876
5:05 PM	4	16	4	0	0	23	3	0	0	0	6	0	4	1	0	0	61	868
5:10 PM	2	31	8	0	0	23	0	0	0	0	4	0	2	0	2	0	72	864
5:15 PM	7	28	6	0	0	17	0	0	0	0	11	0	5	0	2	0	76	866
5:20 PM	7	22	8	0	1	21	1	0	1	0	7	0	5	0	0	0	73	869
5:25 PM	4	20	4	0	0	14	0	0	2	0	4	0	2	0	0	0	50	838
5:30 PM	1	33	8	0	0	22	0	0	0	0	5	0	7	0	0	0	76	833
5:35 PM	4	36	3	0	1	22	0	0	0	0	2	0	9	1	2	0	80	834
5:40 PM	7	21	7	0	0	13	0	0	0	0	6	0	1	0	0	0	55	817
5:45 PM	3	23	8	0	0	25	1	0	0	0	6	0	0	0	1	0	67	807
5:50 PM	4	27	3	0	0	26	1	0	1	0	2	0	2	0	0	0	66	804
5:55 PM	4	34	2	0	0	20	1	0	2	1	8	0	3	0	0	0	75	820

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	72	196	40	0	8	464	28	0	8	4	84	0	112	0	16	0	1032
Heavy Trucks	0	28	8		0	20	4		0	0	4		12	0	0		76
Buses																	
Pedestrians		4				0				32				60			96
Bicycles	0	0	0		0	0	0		0	0	0		4	0	0		4
Scooters																	

Comments:

Report generated on 4/6/2022 2:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

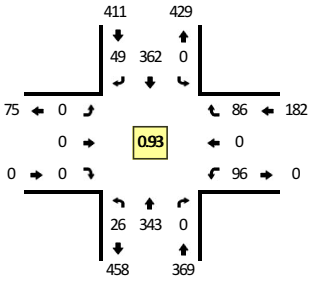
Type of peak hour being reported: Intersection Peak

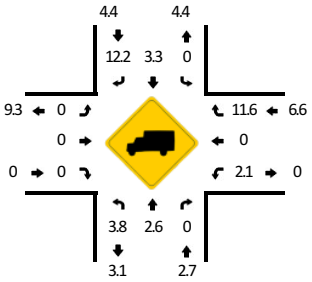
Method for determining peak hour: Total Entering Volume

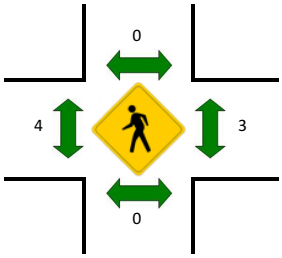
LOCATION: N Main St -- I-84 WB Ramp Terminal
CITY/STATE: Boardman, OR

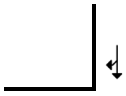
QC JOB #: 15762804
DATE: Thu, Mar 31 2022

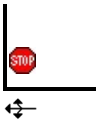
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

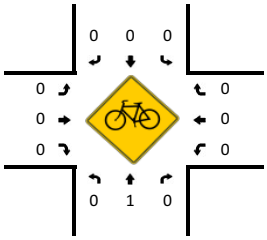


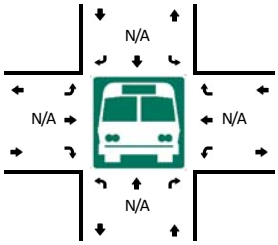


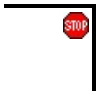


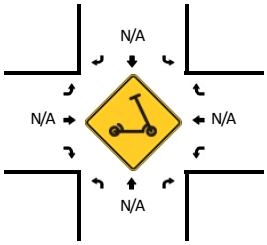












5-Min Count Period Beginning At	N Main St (Northbound)				N Main St (Southbound)				I-84 WB Ramp Terminal (Eastbound)				I-84 WB Ramp Terminal (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	2	21	0	0	0	47	2	0	0	0	0	0	6	0	5	0	83	
3:05 PM	2	22	0	0	0	53	2	0	0	0	0	0	5	0	8	0	92	
3:10 PM	0	17	0	0	0	51	3	0	0	0	0	0	6	0	8	0	85	
3:15 PM	1	17	0	0	0	47	3	0	0	0	0	0	9	0	5	0	82	
3:20 PM	6	24	0	0	0	23	2	0	0	0	0	0	7	0	5	0	67	
3:25 PM	0	31	0	0	0	24	2	0	0	0	0	0	10	0	4	0	71	
3:30 PM	0	35	0	0	0	26	1	0	0	0	0	0	11	0	6	0	79	
3:35 PM	2	27	0	0	0	35	4	0	0	0	0	0	8	0	11	0	87	
3:40 PM	0	34	0	0	0	39	4	0	0	0	0	0	6	0	3	0	86	
3:45 PM	1	20	0	0	0	39	3	0	0	0	0	0	7	0	13	0	83	
3:50 PM	0	27	0	0	0	21	6	0	0	0	0	0	9	0	3	0	66	
3:55 PM	0	26	0	0	0	26	10	0	0	0	0	0	8	0	4	0	74	955
4:00 PM	1	21	0	0	0	26	3	0	0	0	0	0	8	0	6	0	65	937
4:05 PM	2	19	0	0	0	32	3	0	0	0	0	0	9	0	7	0	72	917
4:10 PM	4	32	0	0	0	36	5	0	0	0	0	0	6	0	4	0	87	919
4:15 PM	3	20	0	0	0	45	3	0	0	0	0	0	7	0	9	0	87	924
4:20 PM	1	23	0	0	0	27	5	0	0	0	0	0	8	0	8	0	72	929
4:25 PM	2	42	0	0	0	28	4	0	0	0	0	0	7	0	6	0	89	947
4:30 PM	2	38	0	0	0	23	7	0	0	0	0	0	8	0	4	0	82	950
4:35 PM	3	39	0	0	0	23	3	0	0	0	0	0	8	0	13	0	89	952
4:40 PM	2	20	0	0	0	31	7	0	0	0	0	0	13	0	11	0	84	950
4:45 PM	0	32	0	0	0	29	3	0	0	0	0	0	3	0	9	0	76	943
4:50 PM	2	31	0	0	0	33	4	0	0	0	0	0	8	0	4	0	82	959
4:55 PM	2	23	0	0	0	24	1	0	0	0	0	0	10	0	6	0	66	951
5:00 PM	2	22	0	0	0	35	4	0	0	0	0	0	5	0	6	0	74	960
5:05 PM	3	21	0	0	0	28	3	0	0	0	0	0	13	0	6	0	74	962
5:10 PM	0	29	0	0	0	31	1	0	0	0	0	0	10	0	5	0	76	951
5:15 PM	1	35	0	0	0	24	2	0	0	0	0	0	6	0	10	0	78	942
5:20 PM	2	31	0	0	0	29	5	0	0	0	0	0	10	0	5	0	82	952
5:25 PM	0	25	0	0	0	24	0	0	0	0	0	0	11	0	3	0	63	926
5:30 PM	1	38	0	0	0	27	2	0	0	0	0	0	9	0	4	0	81	925
5:35 PM	2	34	0	0	0	32	4	0	0	0	0	0	12	0	9	0	93	929
5:40 PM	2	28	0	0	0	21	0	0	0	0	0	0	13	0	8	0	72	917
5:45 PM	1	26	0	0	0	31	1	0	0	0	0	0	8	0	5	0	72	913
5:50 PM	0	31	0	0	0	28	2	0	0	0	0	0	15	0	5	0	81	912
5:55 PM	1	36	0	0	0	28	3	0	0	0	0	0	7	0	6	0	81	927

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	476	0	0	0	296	56	0	0	0	0	0	92	0	92	0	1040
Heavy Trucks	0	8	0		0	4	12		0	0	0		4	0	8		36
Buses																	
Pedestrians		0				0				4				8			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 4/6/2022 2:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

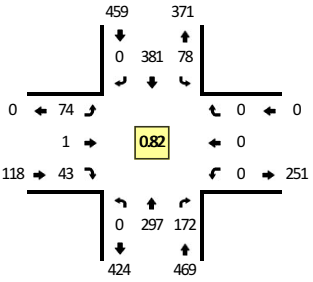
Type of peak hour being reported: Intersection Peak

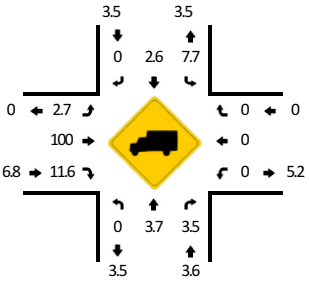
Method for determining peak hour: Total Entering Volume

LOCATION: S Main St -- I-84 EB Ramp Terminal
CITY/STATE: Boardman, OR

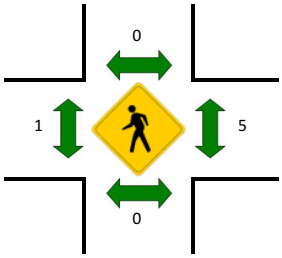
QC JOB #: 15762805
DATE: Thu, Mar 31 2022

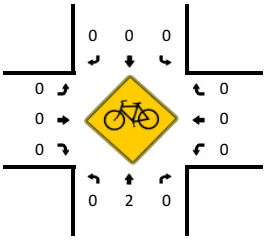
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

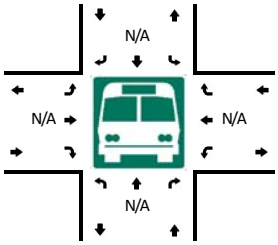


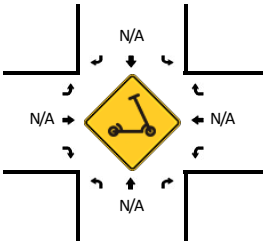


Quality Counts
DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	S Main St (Northbound)				S Main St (Southbound)				I-84 EB Ramp Terminal (Eastbound)				I-84 EB Ramp Terminal (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	17	6	0	7	40	0	0	6	0	1	0	0	0	0	0	77	
3:05 PM	0	19	6	0	12	45	0	0	5	0	1	0	0	0	0	0	88	
3:10 PM	0	15	5	0	1	59	0	0	2	0	0	0	0	0	0	0	82	
3:15 PM	0	12	10	0	11	46	0	0	5	0	0	0	0	0	0	0	84	
3:20 PM	0	26	11	0	3	28	0	0	2	0	2	0	0	0	0	0	72	
3:25 PM	0	27	7	0	7	25	0	0	4	0	0	0	0	0	0	0	70	
3:30 PM	0	29	9	0	7	30	0	0	6	0	2	0	0	0	0	0	83	
3:35 PM	0	28	7	0	10	29	0	0	4	0	2	0	0	0	0	0	80	
3:40 PM	0	31	4	0	9	35	0	0	1	1	1	0	0	0	0	0	82	
3:45 PM	0	19	6	0	9	38	0	0	2	0	1	0	0	0	0	0	75	
3:50 PM	0	23	10	0	6	27	0	0	5	0	3	0	0	0	0	0	74	
3:55 PM	0	26	7	0	3	32	0	0	2	0	7	0	0	0	0	0	77	944
4:00 PM	0	21	18	0	5	26	0	0	2	0	3	0	0	0	0	0	75	942
4:05 PM	0	18	8	0	5	32	0	0	3	0	1	0	0	0	0	0	67	921
4:10 PM	0	26	8	0	8	39	0	0	8	0	3	0	0	0	0	0	92	931
4:15 PM	0	21	13	0	12	36	0	0	5	0	4	0	0	0	0	0	91	938
4:20 PM	0	16	8	0	5	32	0	0	4	1	3	0	0	0	0	0	69	935
4:25 PM	0	38	40	0	7	25	0	0	7	0	4	0	0	0	0	0	121	986
4:30 PM	0	29	29	0	3	33	0	0	11	0	3	0	0	0	0	0	108	1011
4:35 PM	0	29	13	0	4	30	0	0	13	0	2	0	0	0	0	0	91	1022
4:40 PM	0	21	14	0	6	33	0	0	2	0	2	0	0	0	0	0	78	1018
4:45 PM	0	25	10	0	6	27	0	0	5	0	6	0	0	0	0	0	79	1022
4:50 PM	0	33	17	0	7	33	0	0	4	0	3	0	0	0	0	0	97	1045
4:55 PM	0	19	5	0	7	28	0	0	5	0	4	0	0	0	0	0	68	1036
5:00 PM	0	18	8	0	5	34	0	0	5	0	5	0	0	0	0	0	75	1036
5:05 PM	0	22	7	0	8	31	0	0	5	0	4	0	0	0	0	0	77	1046
5:10 PM	0	27	8	0	8	38	0	0	0	0	3	0	0	0	0	0	84	1038
5:15 PM	0	26	6	0	4	24	0	0	8	0	8	0	0	0	0	0	76	1023
5:20 PM	0	27	4	0	7	32	0	0	7	0	7	0	0	0	0	0	84	1038
5:25 PM	0	23	9	0	3	35	0	0	4	0	3	0	0	0	0	0	77	994
5:30 PM	0	30	7	0	6	25	0	0	7	0	3	0	0	0	0	0	78	964
5:35 PM	0	29	5	0	1	43	0	0	6	0	2	0	0	0	0	0	86	959
5:40 PM	0	24	9	0	7	29	0	0	6	0	2	0	0	0	0	0	77	958
5:45 PM	0	22	6	0	7	31	0	0	5	0	1	0	0	0	0	0	72	951
5:50 PM	0	23	5	0	4	42	0	0	9	0	3	0	0	0	0	0	86	940
5:55 PM	0	27	2	0	3	27	0	0	6	0	4	0	0	0	0	0	69	941

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	384	328	0	56	352	0	0	124	0	36	0	0	0	0	0	1280
Heavy Trucks	0	0	12		4	16	0		8	0	0		0	0	0		40
Buses																	
Pedestrians		0				0				4				4			8
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 4/6/2022 2:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

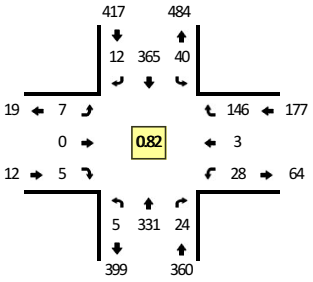
Type of peak hour being reported: Intersection Peak

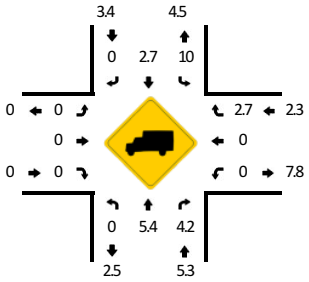
Method for determining peak hour: Total Entering Volume

LOCATION: S Main St -- Front St SE
CITY/STATE: Boardman, OR

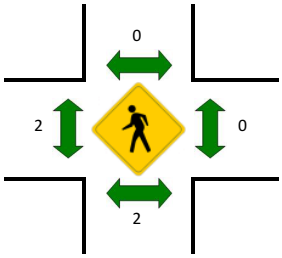
QC JOB #: 15762806
DATE: Thu, Mar 31 2022

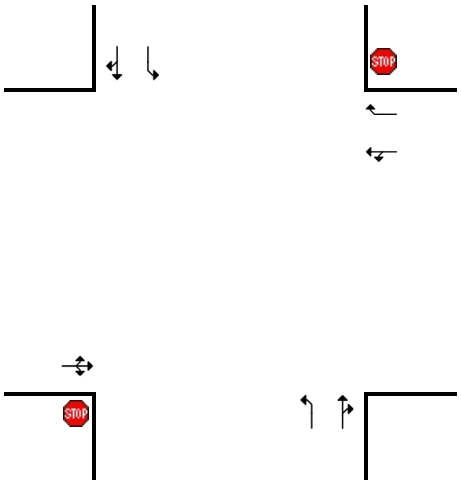
Peak-Hour: 3:55 PM -- 4:55 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

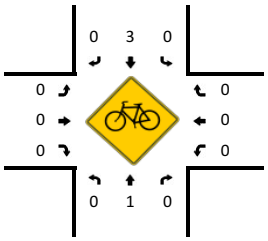


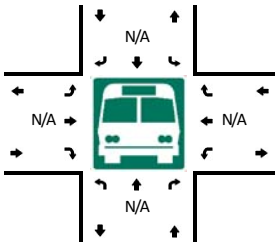


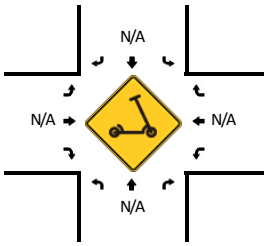
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	S Main St (Northbound)				S Main St (Southbound)				Front St SE (Eastbound)				Front St SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	16	0	0	1	41	1	0	1	0	0	0	2	0	5	0	67	
3:05 PM	0	23	0	0	5	40	0	0	0	0	0	0	0	0	2	0	70	
3:10 PM	0	15	1	0	4	54	1	0	1	0	0	0	1	0	4	0	81	
3:15 PM	0	22	1	0	10	37	0	0	0	0	0	0	0	0	3	0	73	
3:20 PM	0	31	2	0	4	23	2	0	1	0	0	0	4	0	8	0	75	
3:25 PM	1	27	2	0	3	22	1	0	0	0	0	0	0	0	5	0	61	
3:30 PM	0	31	1	0	3	28	0	0	1	0	1	0	3	0	6	0	74	
3:35 PM	0	33	2	0	3	29	0	0	0	0	0	0	4	0	1	0	72	
3:40 PM	0	31	1	0	3	32	0	0	0	0	0	0	3	0	5	0	75	
3:45 PM	1	23	1	0	0	40	1	0	2	0	1	0	0	0	1	0	70	
3:50 PM	1	26	2	0	3	26	1	0	0	0	0	0	1	0	5	0	65	
3:55 PM	1	26	3	0	8	29	2	0	1	0	0	0	0	0	7	0	77	860
4:00 PM	2	20	1	0	4	24	2	0	1	0	0	0	1	1	18	0	74	867
4:05 PM	0	18	1	0	2	31	0	0	1	0	0	0	3	0	7	0	63	860
4:10 PM	0	26	3	0	1	40	0	0	0	0	0	0	1	0	9	0	80	859
4:15 PM	0	28	1	0	3	36	1	0	1	0	0	0	1	0	3	0	74	860
4:20 PM	0	25	3	1	1	34	0	0	0	0	0	0	2	0	1	0	67	852
4:25 PM	0	41	0	0	3	27	0	0	0	0	0	0	6	0	36	0	113	904
4:30 PM	1	28	5	0	3	31	1	0	0	0	1	0	4	0	30	0	104	934
4:35 PM	0	28	2	0	4	28	0	0	1	0	0	0	1	2	11	0	77	939
4:40 PM	0	28	1	0	5	29	1	0	0	0	1	0	3	0	7	0	75	939
4:45 PM	0	32	3	0	2	29	1	0	1	0	1	0	2	0	4	0	75	944
4:50 PM	0	31	1	0	4	27	4	0	1	0	2	0	4	0	13	0	87	966
4:55 PM	0	24	1	0	1	30	2	0	0	0	1	0	1	0	2	0	62	951
5:00 PM	0	23	2	0	6	32	1	0	0	0	0	0	2	0	3	0	69	946
5:05 PM	0	23	0	0	4	31	0	0	1	0	0	0	1	0	3	0	63	946
5:10 PM	0	32	2	0	4	30	5	0	0	0	1	0	3	0	5	0	82	948
5:15 PM	1	29	0	0	6	26	1	0	0	0	0	0	3	0	4	0	70	944
5:20 PM	0	28	3	0	5	33	0	0	1	0	0	0	1	1	2	0	74	951
5:25 PM	0	27	3	0	4	33	2	0	0	0	0	0	2	0	3	0	74	912
5:30 PM	0	33	5	0	2	26	1	0	0	0	0	0	2	0	4	0	73	881
5:35 PM	0	29	1	0	6	38	1	0	1	0	0	0	0	1	4	0	81	885
5:40 PM	0	28	1	0	5	25	1	0	1	0	1	0	2	0	4	0	68	878
5:45 PM	1	23	1	0	2	29	1	0	0	0	0	0	1	0	4	0	62	865
5:50 PM	1	24	0	0	10	34	1	0	1	0	0	0	2	0	3	0	76	854
5:55 PM	0	27	3	0	4	28	0	0	1	0	0	0	2	0	4	0	69	861

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	388	28	0	40	344	4	0	4	0	4	0	44	8	308	0	1176
Heavy Trucks	0	8	0		4	12	0		0	0	0		0	0	8		32
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 4/6/2022 2:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

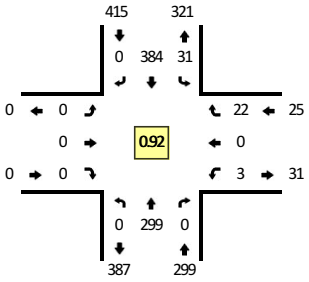
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

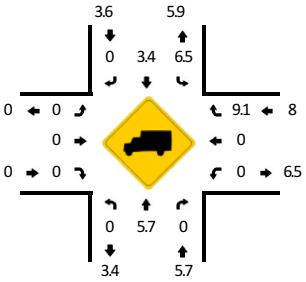
LOCATION: S Main St -- Oregon Trail Blvd
CITY/STATE: Boardman, OR

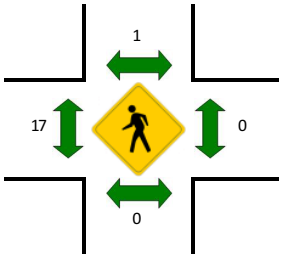
QC JOB #: 15762807
DATE: Thu, Mar 31 2022

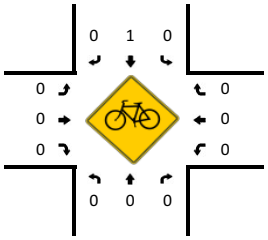
Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:05 PM -- 3:20 PM

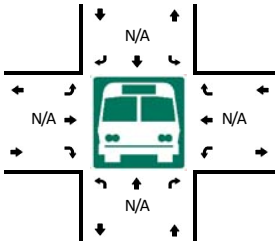


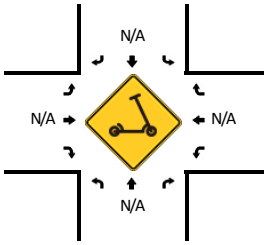
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	S Main St (Northbound)				S Main St (Southbound)				Oregon Trail Blvd (Eastbound)				Oregon Trail Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	14	0	0	5	31	0	0	0	0	0	0	0	0	1	0	51	
3:05 PM	0	21	0	0	3	39	0	0	0	0	0	0	1	0	4	0	68	
3:10 PM	0	14	0	0	5	54	0	0	0	0	0	0	0	0	0	0	73	
3:15 PM	0	23	0	0	3	33	0	0	0	0	0	0	1	0	0	0	60	
3:20 PM	0	39	0	0	2	26	0	0	0	0	0	0	0	0	1	0	68	
3:25 PM	0	29	0	0	0	21	0	0	0	0	0	0	0	0	1	0	51	
3:30 PM	0	31	0	0	3	28	0	0	0	0	0	0	1	0	4	0	67	
3:35 PM	0	31	0	0	2	29	0	0	0	0	0	0	0	0	4	0	66	
3:40 PM	0	24	0	0	1	35	0	0	0	0	0	0	0	0	2	0	62	
3:45 PM	0	21	0	0	3	34	0	0	0	0	0	0	0	0	2	0	60	
3:50 PM	0	31	0	0	2	28	0	0	0	0	0	0	0	0	0	0	61	
3:55 PM	0	21	0	0	2	26	0	0	0	0	0	0	0	0	3	0	52	739
4:00 PM	0	19	1	0	1	18	0	0	0	0	0	0	0	0	4	0	43	731
4:05 PM	0	16	0	0	2	35	0	0	0	0	0	0	2	0	2	0	57	720
4:10 PM	0	25	0	0	1	35	0	0	0	0	0	0	0	0	2	0	63	710
4:15 PM	0	26	1	0	5	30	0	0	0	0	0	0	0	0	2	0	64	714
4:20 PM	0	30	1	0	1	31	0	0	0	0	0	0	0	0	2	0	65	711
4:25 PM	0	35	0	0	4	29	0	0	0	0	0	0	0	0	2	0	70	730
4:30 PM	0	26	0	0	5	31	0	0	0	0	0	0	0	0	4	0	66	729
4:35 PM	0	29	0	0	1	28	0	0	0	0	0	0	0	0	2	0	60	723
4:40 PM	0	23	1	0	0	32	0	0	0	0	0	0	1	0	2	0	59	720
4:45 PM	0	33	0	0	2	27	0	0	0	0	0	0	0	0	4	0	66	726
4:50 PM	0	27	0	0	3	26	0	0	0	0	0	0	0	0	0	0	56	721
4:55 PM	0	26	2	0	1	29	0	0	0	0	0	0	1	0	0	0	59	728
5:00 PM	0	22	0	0	0	28	0	0	0	0	0	0	1	0	2	0	53	738
5:05 PM	0	19	0	0	1	30	0	0	0	0	0	0	2	0	2	0	54	735
5:10 PM	0	15	0	0	2	30	0	0	0	0	0	0	1	0	3	0	51	723
5:15 PM	0	33	0	0	2	31	0	0	0	0	0	0	0	0	1	0	67	726
5:20 PM	0	31	0	0	2	32	0	0	0	0	0	0	0	0	2	0	67	728
5:25 PM	0	33	0	0	1	30	0	0	0	0	0	0	0	0	0	0	64	722
5:30 PM	0	25	0	0	2	18	0	0	0	0	0	0	0	0	4	0	49	705
5:35 PM	0	30	0	0	2	35	0	0	0	0	0	0	0	0	2	0	69	714
5:40 PM	0	21	1	0	3	27	0	0	0	0	0	0	1	0	2	0	55	710
5:45 PM	0	26	0	0	1	26	0	0	0	0	0	0	1	0	2	0	56	700
5:50 PM	0	22	1	0	0	38	0	0	0	0	0	0	1	0	2	0	64	708
5:55 PM	0	31	1	0	1	29	0	0	0	0	0	0	1	0	1	0	64	713

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	232	0	0	44	504	0	0	0	0	0	0	8	0	16	0	804
Heavy Trucks	0	28	0		4	24	0		0	0	0		0	0	0		56
Buses																	
Pedestrians		0				0				24				0			24
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 4/6/2022 2:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

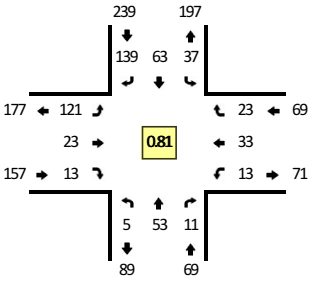
Type of peak hour being reported: Intersection Peak

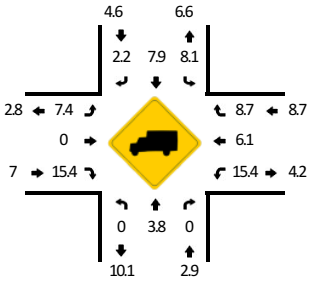
Method for determining peak hour: Total Entering Volume

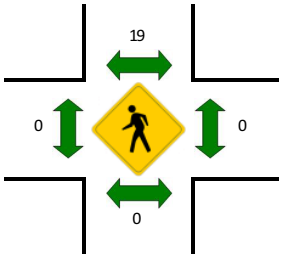
LOCATION: S Main St -- Wilson Ln SE
CITY/STATE: Boardman, OR

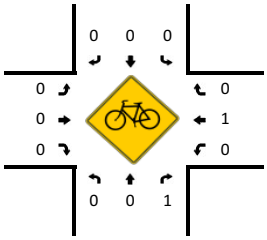
QC JOB #: 15762808
DATE: Thu, Mar 31 2022

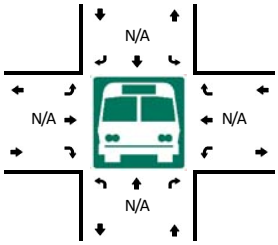
Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:10 PM -- 3:25 PM

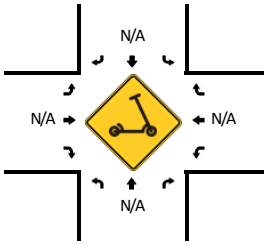












5-Min Count Period Beginning At	S Main St (Northbound)				S Main St (Southbound)				Wilson Ln SE (Eastbound)				Wilson Ln SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	4	0	0	0	7	9	0	5	0	0	0	2	0	3	0	30	
3:05 PM	0	3	0	0	3	5	20	0	6	0	0	0	1	2	3	0	43	
3:10 PM	1	3	0	0	8	7	21	0	5	1	2	0	2	1	1	0	52	
3:15 PM	1	8	1	0	3	7	21	0	9	0	0	0	1	6	2	0	59	
3:20 PM	2	5	3	0	4	5	7	0	14	2	2	0	2	3	5	0	54	
3:25 PM	1	3	0	0	2	3	11	0	18	4	1	0	3	4	0	0	50	
3:30 PM	0	3	3	0	0	5	6	0	15	4	3	0	1	4	3	0	47	
3:35 PM	0	9	3	0	2	6	8	0	20	5	3	0	0	4	1	0	61	
3:40 PM	0	9	0	0	4	5	5	0	2	0	1	0	0	1	0	0	27	
3:45 PM	0	2	0	0	3	10	11	0	9	2	0	0	1	0	2	0	40	
3:50 PM	0	3	1	0	6	1	14	0	10	3	1	0	0	2	2	0	43	
3:55 PM	0	1	0	0	2	2	6	0	8	2	0	0	0	6	1	0	28	534
4:00 PM	1	4	0	0	3	2	3	0	5	2	0	0	1	1	3	0	25	529
4:05 PM	0	5	0	0	3	5	9	0	7	5	1	0	1	2	1	0	39	525
4:10 PM	0	3	1	0	1	6	6	0	7	3	0	0	1	3	1	0	32	505
4:15 PM	0	1	0	0	1	7	14	0	7	3	0	0	0	0	4	0	37	483
4:20 PM	0	3	0	0	2	6	9	0	10	1	0	0	0	5	4	0	40	469
4:25 PM	0	6	1	0	1	7	11	0	12	0	1	0	1	1	1	0	42	461
4:30 PM	0	3	0	0	3	4	8	0	12	2	0	0	0	1	0	0	33	447
4:35 PM	0	4	0	0	2	4	11	0	8	1	0	0	2	5	3	0	40	426
4:40 PM	0	6	1	0	1	6	12	0	7	3	0	0	0	2	0	0	38	437
4:45 PM	1	8	0	0	2	7	12	0	12	3	1	0	1	4	1	0	52	449
4:50 PM	0	4	0	0	1	2	5	0	6	5	0	0	0	4	3	0	30	436
4:55 PM	0	4	0	0	1	7	12	0	12	3	0	0	0	1	2	0	42	450
5:00 PM	0	6	1	0	3	7	8	0	8	2	0	0	0	2	3	0	40	465
5:05 PM	0	5	0	0	3	7	5	0	2	1	1	0	0	4	0	0	28	454
5:10 PM	1	6	0	0	2	6	9	0	10	1	0	0	0	0	2	0	37	459
5:15 PM	0	3	0	0	3	6	6	0	7	2	0	0	1	6	3	0	37	459
5:20 PM	0	3	0	0	2	7	10	0	10	0	1	0	1	0	5	0	39	458
5:25 PM	0	6	0	0	9	6	9	0	6	0	0	0	1	3	1	0	41	457
5:30 PM	0	6	0	0	2	3	7	0	5	0	0	0	0	3	0	0	26	450
5:35 PM	0	6	1	0	2	11	11	0	10	2	0	0	0	5	3	0	51	461
5:40 PM	0	3	1	0	2	9	8	0	8	3	1	0	0	3	3	0	41	464
5:45 PM	1	4	0	0	3	3	3	0	10	2	0	0	0	0	2	0	28	440
5:50 PM	0	4	1	0	2	7	9	0	6	0	1	0	0	1	0	0	31	441
5:55 PM	0	4	0	0	2	5	10	0	11	4	0	0	1	4	2	0	43	442

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	64	16	0	60	76	196	0	112	12	16	0	20	40	32	0	660
Heavy Trucks	0	0	0		0	4	4		16	0	4		4	4	4		40
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	
Comments:																	

Report generated on 4/6/2022 2:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

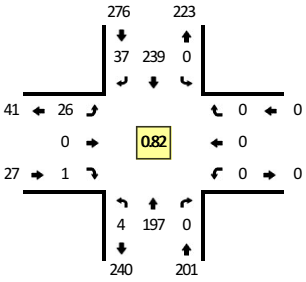
Type of peak hour being reported: Intersection Peak

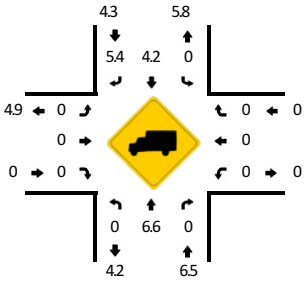
Method for determining peak hour: Total Entering Volume

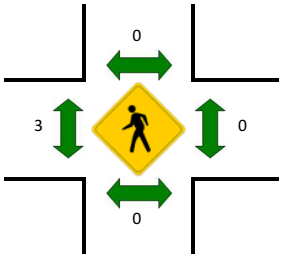
LOCATION: S Main St -- Willow Fork Dr SW
CITY/STATE: Boardman, OR

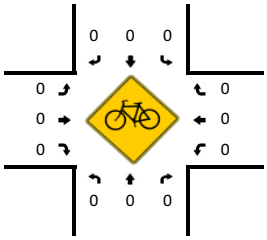
QC JOB #: 15762809
DATE: Thu, Mar 31 2022

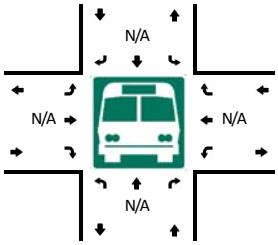
Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:10 PM -- 3:25 PM

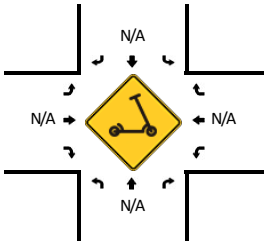












5-Min Count Period Beginning At	S Main St (Northbound)				S Main St (Southbound)				Willow Fork Dr SW (Eastbound)				Willow Fork Dr SW (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	1	11	0	0	0	18	4	0	0	0	0	0	0	0	0	0	34	
3:05 PM	0	11	0	0	0	27	2	0	2	0	0	0	0	0	0	0	42	
3:10 PM	0	10	0	0	0	38	7	0	2	0	1	0	0	0	0	0	58	
3:15 PM	0	18	0	0	0	27	4	0	1	0	0	0	0	0	0	0	50	
3:20 PM	1	23	0	0	0	16	3	0	3	0	0	0	0	0	0	0	46	
3:25 PM	0	22	0	0	0	15	0	0	2	0	0	0	0	0	0	0	39	
3:30 PM	1	19	0	0	0	14	1	0	3	0	0	0	0	0	0	0	38	
3:35 PM	1	30	0	0	0	14	4	0	4	0	0	0	0	0	0	0	53	
3:40 PM	0	12	0	0	0	13	2	0	3	0	0	0	0	0	0	0	30	
3:45 PM	0	13	0	0	0	27	4	0	2	0	0	0	0	0	0	0	46	
3:50 PM	0	14	0	0	0	18	4	0	3	0	0	0	0	0	0	0	39	
3:55 PM	0	14	0	0	0	12	2	0	1	0	0	0	0	0	0	0	29	504
4:00 PM	1	13	0	0	0	8	0	0	1	0	0	0	0	0	0	0	23	493
4:05 PM	0	10	0	0	0	16	0	0	1	0	0	0	0	0	0	0	27	478
4:10 PM	0	13	0	0	0	13	4	0	2	0	0	0	0	0	0	0	32	452
4:15 PM	0	11	0	0	0	23	3	0	3	0	0	0	0	0	0	0	40	442
4:20 PM	1	17	0	0	0	17	3	0	2	0	0	0	0	0	0	0	40	436
4:25 PM	0	19	0	0	0	17	1	0	4	0	0	0	0	0	0	0	41	438
4:30 PM	0	15	0	0	0	20	4	0	1	0	0	0	0	0	0	0	40	440
4:35 PM	0	15	0	0	0	13	2	0	4	0	0	0	0	0	0	0	34	421
4:40 PM	0	13	0	0	0	23	2	0	2	0	0	0	0	0	0	0	40	431
4:45 PM	0	20	0	0	0	16	1	0	2	0	0	0	0	0	0	0	39	424
4:50 PM	0	13	0	0	0	11	3	0	2	0	0	0	0	0	0	0	29	414
4:55 PM	0	18	0	0	0	17	1	0	0	0	0	0	0	0	0	0	36	421
5:00 PM	1	16	0	0	0	18	1	0	3	0	0	0	0	0	0	0	39	437
5:05 PM	0	7	0	0	0	13	2	0	2	0	1	0	0	0	0	0	25	435
5:10 PM	0	17	0	0	0	17	0	0	5	0	0	0	0	0	0	0	39	442
5:15 PM	0	14	0	0	0	15	4	0	3	0	0	0	0	0	0	0	36	438
5:20 PM	0	18	0	0	0	20	2	0	3	0	0	0	0	0	0	0	43	441
5:25 PM	0	12	0	0	0	23	3	0	0	0	1	0	0	0	0	0	39	439
5:30 PM	0	11	0	0	0	12	3	0	2	0	0	0	0	0	0	0	28	427
5:35 PM	0	19	0	0	0	21	1	0	3	0	1	0	0	0	0	0	45	438
5:40 PM	1	14	0	0	0	20	4	0	1	0	0	0	0	0	0	0	40	438
5:45 PM	0	16	0	0	0	10	1	0	1	0	1	0	0	0	0	0	29	428
5:50 PM	0	10	0	0	0	17	8	0	2	0	0	0	0	0	0	0	37	436
5:55 PM	0	16	0	0	0	21	1	0	2	0	0	0	0	0	0	0	40	440

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	204	0	0	0	324	56	0	24	0	4	0	0	0	0	0	616
Heavy Trucks	0	20	0		0	8	4		0	0	0		0	0	0		32
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 4/6/2022 2:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

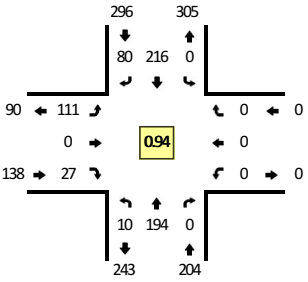
Type of peak hour being reported: Intersection Peak

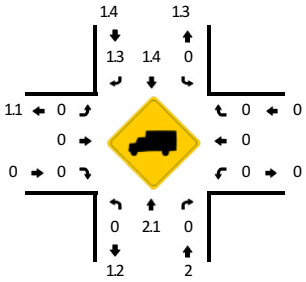
Method for determining peak hour: Total Entering Volume

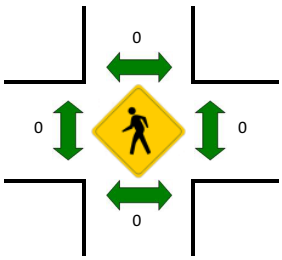
LOCATION: S Main St -- Kinkade Rd
CITY/STATE: Boardman, OR

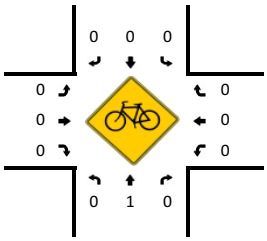
QC JOB #: 15762810
DATE: Thu, Mar 31 2022

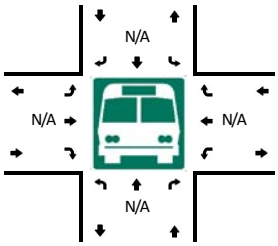
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

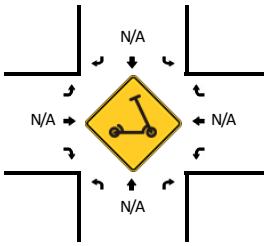












5-Min Count Period Beginning At	S Main St (Northbound)				S Main St (Southbound)				Kinkade Rd (Eastbound)				Kinkade Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	11	0	0	0	19	6	0	4	0	0	0	0	0	0	0	40	
3:05 PM	1	11	0	0	0	30	2	0	3	0	3	0	0	0	0	0	50	
3:10 PM	0	11	0	0	0	43	7	0	3	0	4	0	0	0	0	0	68	
3:15 PM	1	18	0	0	0	29	4	0	5	0	0	0	0	0	0	0	57	
3:20 PM	1	26	0	0	0	18	7	0	12	0	1	0	0	0	0	0	65	
3:25 PM	2	22	0	0	0	14	3	0	5	0	2	0	0	0	0	0	48	
3:30 PM	2	22	0	0	0	13	7	0	7	0	0	0	0	0	0	0	51	
3:35 PM	0	31	0	0	0	18	5	0	4	0	2	0	0	0	0	0	60	
3:40 PM	0	15	0	0	0	15	11	0	3	0	4	0	0	0	0	0	48	
3:45 PM	1	15	0	0	0	29	5	0	2	0	0	0	0	0	0	0	52	
3:50 PM	1	19	0	0	0	15	6	0	10	0	4	0	0	0	0	0	55	
3:55 PM	2	11	0	0	0	13	3	0	6	0	2	0	0	0	0	0	37	631
4:00 PM	0	11	0	0	0	10	5	0	5	0	0	0	0	0	0	0	31	622
4:05 PM	0	13	0	0	0	14	10	0	3	0	2	0	0	0	0	0	42	614
4:10 PM	1	13	0	0	0	18	12	0	9	0	2	0	0	0	0	0	55	601
4:15 PM	1	13	0	0	0	22	7	0	8	0	1	0	0	0	0	0	52	596
4:20 PM	1	21	0	0	0	20	7	0	9	0	0	0	0	0	0	0	58	589
4:25 PM	0	24	0	0	0	21	3	0	7	0	0	0	0	0	0	0	55	596
4:30 PM	0	18	0	0	0	22	6	0	9	0	1	0	0	0	0	0	56	601
4:35 PM	0	18	0	0	0	11	8	0	10	0	0	0	0	0	0	0	47	588
4:40 PM	0	16	0	0	0	22	7	0	6	0	3	0	0	0	0	0	54	594
4:45 PM	1	21	0	0	0	17	2	0	9	0	1	0	0	0	0	0	51	593
4:50 PM	1	16	0	0	0	13	7	0	8	0	1	0	0	0	0	0	46	584
4:55 PM	2	16	0	0	0	19	4	0	5	0	2	0	0	0	0	0	48	595
5:00 PM	1	19	0	0	0	17	6	0	8	0	2	0	0	0	0	0	53	617
5:05 PM	0	9	0	0	0	16	13	0	6	0	3	0	0	0	0	0	47	622
5:10 PM	2	21	0	0	0	17	8	0	13	0	3	0	0	0	0	0	64	631
5:15 PM	0	17	0	0	0	15	4	0	14	0	4	0	0	0	0	0	54	633
5:20 PM	3	18	0	0	0	16	2	0	12	0	1	0	0	0	0	0	52	627
5:25 PM	0	14	0	0	0	20	7	0	11	0	4	0	0	0	0	0	56	628
5:30 PM	0	14	0	0	0	15	3	0	7	0	1	0	0	0	0	0	40	612
5:35 PM	2	20	0	0	0	22	9	0	7	0	2	0	0	0	0	0	62	627
5:40 PM	1	15	0	0	0	19	8	0	4	0	3	0	0	0	0	0	50	623
5:45 PM	1	16	0	0	0	10	9	0	11	0	2	0	0	0	0	0	49	621
5:50 PM	0	13	0	0	0	29	5	0	8	0	0	0	0	0	0	0	55	630
5:55 PM	0	18	0	0	0	20	6	0	10	0	2	0	0	0	0	0	56	638

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	224	0	0	0	192	56	0	156	0	32	0	0	0	0	0	680
Heavy Trucks	0	0	0		0	0	4		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 4/6/2022 2:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

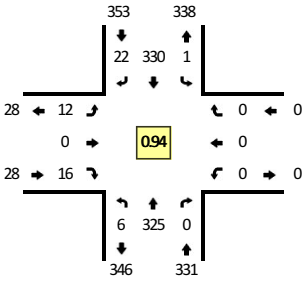
Type of peak hour being reported: Intersection Peak

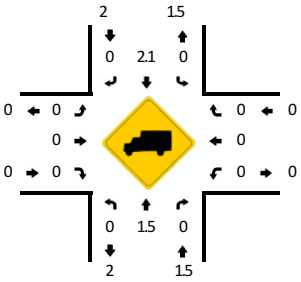
Method for determining peak hour: Total Entering Volume

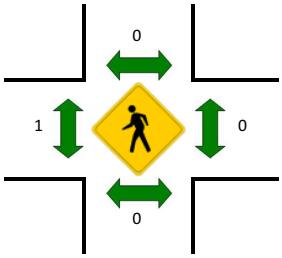
LOCATION: S Main St -- City Center Dr
CITY/STATE: Boardman, OR

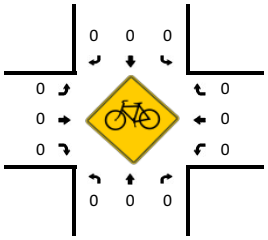
QC JOB #: 15762811
DATE: Thu, Mar 31 2022

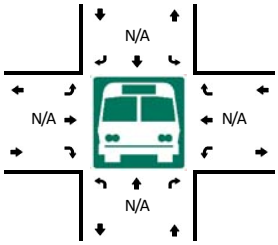
Peak-Hour: 4:20 PM -- 5:20 PM
Peak 15-Min: 4:20 PM -- 4:35 PM

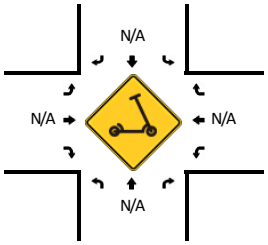












5-Min Count Period Beginning At	S Main St (Northbound)				S Main St (Southbound)				City Center Dr (Eastbound)				City Center Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	2	11	0	0	0	30	0	0	2	0	0	0	0	0	0	0	45	
3:05 PM	0	20	0	0	0	37	1	0	1	0	0	0	0	0	0	0	59	
3:10 PM	1	13	0	0	0	52	2	0	1	0	0	0	0	0	0	0	69	
3:15 PM	2	20	0	0	0	34	3	0	3	0	0	0	0	0	0	0	62	
3:20 PM	0	38	0	0	0	27	1	0	0	0	0	0	0	0	0	0	66	
3:25 PM	0	26	0	0	0	18	1	0	2	0	1	0	0	0	0	0	48	
3:30 PM	0	31	0	0	0	27	3	0	2	0	0	0	0	0	0	0	63	
3:35 PM	0	29	0	0	0	28	2	0	2	0	0	0	0	0	0	0	61	
3:40 PM	1	20	0	0	0	28	4	0	3	0	0	0	0	0	0	0	56	
3:45 PM	2	18	0	0	0	33	1	0	2	0	0	0	0	0	0	0	56	
3:50 PM	0	30	0	0	0	25	3	0	1	0	0	0	0	0	0	0	59	
3:55 PM	1	19	0	0	0	21	1	0	2	0	1	0	0	0	0	0	45	689
4:00 PM	0	19	0	0	0	17	4	0	1	0	2	0	0	0	0	0	43	687
4:05 PM	1	15	0	0	0	26	8	0	1	0	0	0	0	0	0	0	51	679
4:10 PM	2	21	0	0	0	34	2	0	3	0	0	0	0	0	0	0	62	672
4:15 PM	1	23	0	0	0	31	0	0	4	0	1	0	0	0	0	0	60	670
4:20 PM	1	30	0	0	0	25	2	0	1	0	5	0	0	0	0	0	64	668
4:25 PM	0	32	0	0	0	28	2	0	3	0	2	0	0	0	0	0	67	687
4:30 PM	1	22	0	0	0	32	0	0	2	0	1	0	0	0	0	0	58	682
4:35 PM	0	31	0	0	0	25	0	0	0	0	0	0	0	0	0	0	56	677
4:40 PM	0	23	0	0	0	34	1	0	1	0	1	0	0	0	0	0	60	681
4:45 PM	0	31	0	0	0	26	1	1	1	0	0	0	0	0	0	0	60	685
4:50 PM	0	27	0	0	0	20	1	0	0	0	1	0	0	0	0	0	49	675
4:55 PM	2	26	0	0	0	26	5	0	0	0	0	0	0	0	0	0	59	689
5:00 PM	2	21	0	0	0	25	4	0	2	0	3	0	0	0	0	0	57	703
5:05 PM	0	18	0	0	0	31	1	0	0	0	2	0	0	0	0	0	52	704
5:10 PM	0	34	0	0	0	29	2	0	1	0	1	0	0	0	0	0	67	709
5:15 PM	0	30	0	0	0	29	3	0	1	0	0	0	0	0	0	0	63	712
5:20 PM	1	27	0	0	0	30	2	0	3	0	0	0	0	0	0	0	63	711
5:25 PM	0	30	0	0	0	27	0	0	3	0	0	0	0	0	0	0	60	704
5:30 PM	1	24	0	0	0	21	0	0	1	0	0	0	0	0	0	0	47	693
5:35 PM	1	26	0	0	0	32	1	0	3	0	0	0	0	0	0	0	63	700
5:40 PM	0	19	0	0	0	31	1	0	1	0	1	0	0	0	0	0	53	693
5:45 PM	0	26	0	0	0	22	2	0	0	0	0	0	0	0	0	0	50	683
5:50 PM	1	22	0	0	0	39	3	0	2	0	1	0	0	0	0	0	68	702
5:55 PM	1	28	0	0	0	27	1	0	3	0	1	0	0	0	0	0	61	704

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	336	0	0	0	340	16	0	24	0	32	0	0	0	0	0	756
Heavy Trucks	0	8	0		0	0	0		0	0	0		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 4/6/2022 2:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix B Existing Traffic Conditions

HCM 6th

Vistro File: H:\...\27246 - Vistro.vistro
Report File: H:\...\Exist Conditions - PM.pdf
Scenario 1 Exist_PM
9/23/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Main St/Columbia Ave	Two-way stop	HCM 7th Edition	WB Left	0.199	12.3	B
2	Main St/Boardman Ave	Two-way stop	HCM 7th Edition	WB Left	0.116	20.0	C
3	Main St/Front St NE	Two-way stop	HCM 7th Edition	WB Left	0.264	25.9	D
4	Main St/I-84 WB Ramp Terminal	Two-way stop	HCM 7th Edition	WB Left	0.430	22.0	C
5	Main St/I-84 EB Ramp Terminal	Two-way stop	HCM 7th Edition	EB Thru	0.008	60.8	F
6	Main St/Front St SE	Two-way stop	HCM 7th Edition	EB Left	0.038	25.1	D
7	Main St/Oregon Trail Blvd	Two-way stop	HCM 7th Edition	WB Left	0.012	15.7	C
8	Main St/City Center Dr	Two-way stop	HCM 7th Edition	EB Left	0.049	14.7	B
9	Main St/Kinkade Rd	Two-way stop	HCM 7th Edition	EB Left	0.196	13.9	B
10	Main St/Willow Fork Dr	Two-way stop	HCM 7th Edition	EB Left	0.050	11.7	B
11	Main St/Wilson Ln	All-way stop	HCM 7th Edition	EB Left	0.267	8.8	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Main St/Columbia Ave

Control Type:	Two-way stop	Delay (sec / veh):	12.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.199

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	300.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	19	44	112	7	22	4	3	22	17	116	31	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	4.00	0.00	0.00	0.00	0.00	0.00	6.00	3.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	44	112	7	22	4	3	22	17	116	31	14
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	13	32	2	6	1	1	6	5	33	9	4
Total Analysis Volume [veh/h]	22	50	127	8	25	5	3	25	19	132	35	16
Pedestrian Volume [ped/h]	7			0			2			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.04	0.02	0.20	0.05	0.02
d_M, Delay for Movement [s/veh]	7.30	0.00	0.00	7.57	0.00	0.00	10.72	11.05	8.87	12.33	12.20	10.72
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	B
95th-Percentile Queue Length [veh/ln]	0.04	0.00	0.00	0.02	0.00	0.00	0.20	0.20	0.20	1.08	1.08	1.08
95th-Percentile Queue Length [ft/ln]	1.05	0.00	0.00	0.43	0.00	0.00	5.03	5.03	5.03	26.89	26.89	26.89
d_A, Approach Delay [s/veh]	0.81			1.59			10.14			12.16		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	6.26											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 2: Main St/Boardman Ave

Control Type:	Two-way stop	Delay (sec / veh):	20.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.116

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	92	168	45	10	151	17	14	6	78	28	5	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	9.00	10.00	4.00	6.00	0.00	0.00	0.00	11.00	0.00	12.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	168	45	10	151	17	14	6	78	28	5	8
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	48	13	3	43	5	4	2	22	8	1	2
Total Analysis Volume [veh/h]	106	193	52	11	174	20	16	7	90	32	6	9
Pedestrian Volume [ped/h]	2			8			2			7		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.00	0.01	0.00	0.00	0.05	0.02	0.11	0.12	0.02	0.01
d_M, Delay for Movement [s/veh]	7.81	0.00	0.00	7.88	0.00	0.00	16.82	16.60	10.35	19.96	17.10	11.55
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.25	0.00	0.00	0.03	0.00	0.00	0.62	0.62	0.62	0.50	0.50	0.50
95th-Percentile Queue Length [ft/ln]	6.20	0.00	0.00	0.66	0.00	0.00	15.54	15.54	15.54	12.54	12.54	12.54
d_A, Approach Delay [s/veh]	2.36			0.42			11.66			17.98		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	4.30											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 3: Main St/Front St NE

Control Type:	Two-way stop	Delay (sec / veh):	25.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.264

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	61	221	81	11	278	4	7	3	77	56	3	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.00	3.00	8.00	0.00	3.00	0.00	0.00	0.00	5.00	11.00	33.00	17.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	221	81	11	278	4	7	3	77	56	3	6
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	61	23	3	77	1	2	1	21	16	1	2
Total Analysis Volume [veh/h]	68	246	90	12	309	4	8	3	86	62	3	7
Pedestrian Volume [ped/h]	0			1			2			2		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.01	0.00	0.00	0.03	0.01	0.12	0.26	0.01	0.01
d_M, Delay for Movement [s/veh]	8.12	0.00	0.00	7.96	0.00	0.00	17.79	17.72	10.69	25.87	23.53	15.63
Movement LOS	A	A	A	A	A	A	C	C	B	D	C	C
95th-Percentile Queue Length [veh/ln]	0.18	0.00	0.00	0.03	0.00	0.00	0.12	0.12	0.41	1.14	1.14	1.14
95th-Percentile Queue Length [ft/ln]	4.42	0.00	0.00	0.74	0.00	0.00	2.92	2.92	10.14	28.39	28.39	28.39
d_A, Approach Delay [s/veh]	1.37			0.29			11.49			24.78		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	3.95											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 4: Main St/I-84 WB Ramp Terminal

Control Type:	Two-way stop	Delay (sec / veh):	22.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.430

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	252	0	0	363	48	0	0	0	122	0	111
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	3.00	2.00	2.00	3.00	17.00	2.00	2.00	2.00	4.00	0.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	252	0	0	363	48	0	0	0	122	0	111
Peak Hour Factor	0.9100	0.9100	1.0000	1.0000	0.9100	0.9100	1.0000	1.0000	1.0000	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	69	0	0	100	13	0	0	0	34	0	30
Total Analysis Volume [veh/h]	26	277	0	0	399	53	0	0	0	134	0	122
Pedestrian Volume [ped/h]	0			0			3			3		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				Yes
Storage Area [veh]	0	0	0	1
Two-Stage Gap Acceptance				No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.17
d_M, Delay for Movement [s/veh]	8.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.99	21.85	15.30
Movement LOS	A	A			A	A				C	C	C
95th-Percentile Queue Length [veh/ln]	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	2.41	2.41
95th-Percentile Queue Length [ft/ln]	1.10	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.27	60.27	60.27
d_A, Approach Delay [s/veh]	0.71			0.00			0.00			18.80		
Approach LOS	A			A			A			C		
d_I, Intersection Delay [s/veh]	4.97											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Main St/I-84 EB Ramp Terminal

Control Type:	Two-way stop	Delay (sec / veh):	60.8
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	188	183	75	383	0	88	1	49	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	9.00	3.00	2.00	3.00	100.00	13.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	188	183	75	383	0	88	1	49	0	0	0
Peak Hour Factor	1.0000	0.8100	0.8100	0.8100	0.8100	1.0000	0.8100	0.8100	0.8100	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	58	56	23	118	0	27	0	15	0	0	0
Total Analysis Volume [veh/h]	0	232	226	93	473	0	109	1	60	0	0	0
Pedestrian Volume [ped/h]	0			0			2			5		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.00	0.57	0.01	0.11	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	8.51	0.00	0.00	49.74	60.85	37.38	0.00	0.00	0.00
Movement LOS		A	A	A	A		E	F	E			
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.16	0.16	0.00	4.43	4.43	4.43	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	4.08	4.08	0.00	110.72	110.72	110.72	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			1.40			45.44			0.00		
Approach LOS	A			A			E			A		
d_I, Intersection Delay [s/veh]	7.13											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Main St/Front St SE

Control Type:	Two-way stop	Delay (sec / veh):	25.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.038

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	85.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	4	332	18	41	378	12	6	0	6	16	3	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	5.00	12.00	3.00	8.00	0.00	0.00	0.00	0.00	0.00	4.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	332	18	41	378	12	6	0	6	16	3	33
Peak Hour Factor	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	102	6	13	117	4	2	0	2	5	1	10
Total Analysis Volume [veh/h]	5	410	22	51	467	15	7	0	7	20	4	41
Pedestrian Volume [ped/h]	3			0			2			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.05	0.00	0.00	0.04	0.00	0.01	0.10	0.02	0.07
d_M, Delay for Movement [s/veh]	8.33	0.00	0.00	8.51	0.00	0.00	25.11	21.63	11.80	24.85	23.13	11.13
Movement LOS	A	A	A	A	A	A	D	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.15	0.00	0.00	0.16	0.16	0.16	0.39	0.39	0.21
95th-Percentile Queue Length [ft/ln]	0.35	0.00	0.00	3.73	0.00	0.00	3.91	3.91	3.91	9.63	9.63	5.22
d_A, Approach Delay [s/veh]	0.10			0.81			18.45			16.09		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	1.70											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 7: Main St/Oregon Trail Blvd

Control Type:	Two-way stop	Delay (sec / veh):	15.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	315	6	26	351	4	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	17.00	4.00	1.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	315	6	26	351	4	26
Peak Hour Factor	0.9100	0.9100	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	87	2	7	96	1	7
Total Analysis Volume [veh/h]	346	7	29	386	4	29
Pedestrian Volume [ped/h]	2		2		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.01	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.05	0.00	15.69	10.50
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.05	0.17	0.17
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.23	1.23	4.21	4.21
d_A, Approach Delay [s/veh]	0.00		0.56		11.13	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.75					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 8: Main St/City Center Dr

Control Type:	Two-way stop	Delay (sec / veh):	14.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.049

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	8	300	324	26	17	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.00	1.00	4.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	300	324	26	17	13
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	83	90	7	5	4
Total Analysis Volume [veh/h]	9	333	360	29	19	14
Pedestrian Volume [ped/h]	0		0		3	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.05	0.02
d_M, Delay for Movement [s/veh]	8.08	0.00	0.00	0.00	14.75	10.47
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.15	0.06
95th-Percentile Queue Length [ft/ln]	0.38	0.38	0.00	0.00	3.85	1.60
d_A, Approach Delay [s/veh]	0.21		0.00		12.93	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.65					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 9: Main St/Kinkade Rd

Control Type:	Two-way stop	Delay (sec / veh):	13.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.196

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	7	200	209	78	88	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	14.00	3.00	1.00	0.00	1.00	8.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	200	209	78	88	13
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	57	59	22	25	4
Total Analysis Volume [veh/h]	8	227	238	89	100	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.20	0.02
d_M, Delay for Movement [s/veh]	8.09	0.00	0.00	0.00	13.91	11.71
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.81	0.81
95th-Percentile Queue Length [ft/ln]	0.33	0.33	0.00	0.00	20.37	20.37
d_A, Approach Delay [s/veh]	0.28		0.00		13.62	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.41					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 10: Main St/Willow Fork Dr

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.050

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2	177	196	24	24	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	5.00	3.00	0.00	4.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	177	196	24	24	0
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	51	56	7	7	0
Total Analysis Volume [veh/h]	2	203	225	28	28	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	7.72	0.00	0.00	0.00	11.70	9.80
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.16	0.16
95th-Percentile Queue Length [ft/ln]	0.08	0.08	0.00	0.00	3.90	3.90
d_A, Approach Delay [s/veh]	0.08		0.00		11.70	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.71					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 11: Main St/Wilson Ln

Control Type:	All-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.267

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	2	51	3	21	63	112	105	31	3	7	29	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	6.00	0.00	0.00	6.00	1.00	2.00	3.00	0.00	14.00	3.00	17.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	51	3	21	63	112	105	31	3	7	29	23
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	15	1	6	18	32	30	9	1	2	8	7
Total Analysis Volume [veh/h]	2	59	3	24	72	129	121	36	3	8	33	26
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	750	843	746	760
Degree of Utilization, x	0.09	0.27	0.21	0.09

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.28	1.08	0.81	0.29
95th-Percentile Queue Length [ft]	6.98	26.93	20.27	7.22
Approach Delay [s/veh]	8.25	8.82	9.14	8.19
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.77			
Intersection LOS	A			

Appendix C Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Intersectional Crashes N. Main St & Boardman Ave in Boardman, OR.
January 1, 2016 through December 31, 2020

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2016														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2016 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Intersectional Crashes N. Main St & Front St in Boardman, OR.
January 1, 2016 through December 31, 2020

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2020														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2020 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Intersectional Crashes N. Main St & Interstate 84, Columbia River Hwy (#002), WB Ramps in Boardman, OR.
January 1, 2016 through December 31, 2020

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2020														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2020 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2019														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	1	0	0
2019 TOTAL	0	0	3	3	0	0	0	2	1	2	1	3	0	0
YEAR: 2018														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2018 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
YEAR: 2017														
TURNING MOVEMENTS	0	3	0	3	0	4	0	2	1	2	1	3	0	0
2017 TOTAL	0	3	0	3	0	4	0	2	1	2	1	3	0	0
YEAR: 2016														
REAR-END	0	1	0	1	0	2	0	1	0	0	1	1	0	0
2016 TOTAL	0	1	0	1	0	2	0	1	0	0	1	1	0	0
FINAL TOTAL	0	5	4	9	0	7	0	7	2	6	3	9	0	0

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Intersectional Crashes S. Main St & Interstate 84, Columbia River Hwy (#002), EB Ramps in Boardman, OR.
January 1, 2016 through December 31, 2020

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2020														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2020 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2017														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2017 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2016														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2016 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	0	3	3	0	0	0	3	0	3	0	3	0	0

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OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Intersectional Crashes S. Main St & Wilson Rd (Ln) in Boardman, OR.
January 1, 2016 through December 31, 2020

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2019														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	0	1	1	0	0
2019 TOTAL	0	1	1	2	0	1	0	1	1	1	1	2	0	0
YEAR: 2018														
ANGLE	0	0	1	1	0	0	0	1	0	0	1	1	0	0
2018 TOTAL	0	0	1	1	0	0	0	1	0	0	1	1	0	0
FINAL TOTAL	0	1	2	3	0	1	0	2	1	1	2	3	0	0

Disclaimers: *Effective 2016,* ***collection of "Property Damage Only" (PDO) crash data elements was reduced for vehicles and participants.*** *Age, Gender, License, Error and other elements are no longer available for PDO crash reporting. Please keep this in mind when comparing 2016 PDO crash data to prior years.*

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Crashes Main St Between Columbia Ave to Wilson Rd (Ln) in Boardman, OR. Excluding Intersectional Crashes on Road Segment.
January 1, 2016 through December 31, 2020

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2018														
SIDESWIPE - MEETING	0	1	0	1	0	1	0	1	0	0	1	0	0	0
2018 TOTAL	0	1	0	1	0	1	0	1	0	0	1	0	0	0
YEAR: 2017														
REAR-END	0	1	0	1	0	1	0	1	0	0	1	0	1	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	1	0	0	0	0
2017 TOTAL	0	1	1	2	0	1	0	1	1	1	1	0	1	0
YEAR: 2016														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	0	1	0	1	0	0	1
2016 TOTAL	0	0	1	1	0	0	0	0	1	0	1	0	0	1
FINAL TOTAL	0	2	2	4	0	2	0	2	2	1	3	0	1	1

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A higher number of crashes may be reported as of 2011 compared to prior years. This does not necessarily reflect an increase in annual crashes. The higher numbers may result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics. For all disclaimers, see https://www.oregon.gov/ODOT/Data/documents/Crash_Data_Disclaimers.pdf.

Crashes Main St Between Columbia Ave to Wilson Rd (Ln) in Boardman, OR. Excluding Intersectional Crashes on Road Segment.
January 1, 2016 through December 31, 2020

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	COMPNT	MLG TYP	CRASH LOCATION	COLL TYPE	EVENT	CAUSE	ERROR	SUR F	TOT VEH	VEHICLE TYP/OWN #1	VEHICLE TYP/OWN #2	--PEOPLE-- KILL	INJ 1	INJ 2	INJ C	SPEED
00071	09/09/2018	9P	SU	Boardman	CN	R	HY 002, COLUMBIA RIVER AT MP 164.16	SS-M		05	080	DRY	2	011	011	0	1	N	N	

Crashes Main St Between Columbia Ave to Wilson Rd (Ln) in Boardman, OR. Excluding Intersectional Crashes on Road Segment.
January 1, 2016 through December 31, 2020

MORROW COUNTY

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	CRASH LOCATION	COLL TYPE	EVENT	CAUSE	ERROR	SURF	TOT VEH	VEHICLE TYP #1	VEHICLE OWN #1	VEHICLE TYP #2	VEHICLE OWN #2	PEOPLE KILL	PEOPLE INJ	PEOPLE ALC	PEOPLE SPED
00080	10/30/2016	7P	SU	Boardman	N MAIN ST 236 FT N OF BOARDMAN AVE	FIX	054	08		WET	1	010				0	0	N	N
00014	01/09/2017	12P	MO	Boardman	S MAIN ST 230 FT S OF CITY CENTER DR	TURN		01,27		ICE	2	010	030			0	0	N	Y
00013	01/09/2017	5P	MO	Boardman	S MAIN ST 40 FT N OF OREGON TRAIL BLVD	REAR		27,29	016,026	DRY	2	011	011			0	1	N	N

VEHICLE OWNERSHIP CODES

Code	Short Description	Long Description
0	N/A	Not collected for PDO Crashes
1	PRVTE	Private
2	GOVMT	Government
3	PUBLC	Public
4	RENTL	Rental vehicle
5	STOLN	Stolen vehicle
9	UNKN	Unknown ownership

VEHICLE TYPE CODES

Code	Short Description	Long Description
00	PDO	Not collected for PDO Crashes
01	PSNGR CAR	Passenger car, pickup, light delivery, etc.
02	BOBTAIL	Truck tractor with no trailers (bobtail)
03	FARM TRCTR	Farm tractor or self-propelled farm equipment
04	SEMI TOW	Truck Tractor with trailer/mobile home in tow
05	TRUCK	Truck with non-detachable bed, panel, etc.
06	MOPED	Moped, minibike, seated motor scooter, motor bike
07	SCHL BUS	School bus (includes van)
08	OTH BUS	Other bus
09	MTRCYCLE	Motorcycle, dirt bike
10	OTHER	Other: forklift, backhoe, etc.
11	MOTRHOME	Motorhome
12	TROLLEY	Motorized Street Car/Trolley (no rails/wires)
13	ATV	ATV
14	MTRSCTR	Motorized scooter (standing)
15	SNOWMOBILE	Snowmobile
99	UNKNOWN	Unknown vehicle type

CAUSE CODES

Code	Short Description	Medium Description	Long Description	Code Termination Date
00	NO CODE	NO CODE APPLICABLE	No cause associated at this level	
01	TOO-FAST	TOO FAST FOR COND	Too fast for conditions (not exceed posted speed)	
02	NO-YIELD	FAILED YIELD ROW	Did not yield right-of-way	
03	PAS-STOP	PASSED STOP SIGN	Passed stop sign or red flasher	
04	DIS SIG	DISREGRD TRAF SIGNAL	Disregarded traffic signal	
05	LEFT-CTR	LEFT OF CTR/STRADDLE	Drove left of center on two-way road; straddling	
06	IMP-OVER	IMPROPER PASSING	Improper overtaking	
07	TOO-CLOS	FOLLOW TOO CLOSE	Followed too closely	
08	IMP-TURN	IMPROPER TURN	Made improper turn	
09	DRINKING	ALC OR DRUGS	Alcohol or Drug Involved	12/31/2002
10	OTHR-IMP	OTHER DRIVE ERR	Other improper driving	
11	MECH-DEF	MECH DEFECT	Mechanical defect	
12	OTHER	OTHER	Other (not improper driving)	
13	IMP LN C	IMP LANE CHANGE	Improper change of traffic lanes	
14	DIS TCD	DISRG OTHR TCD	Disregarded other traffic control device	
15	WRNG WAY	WRONG WAY / 1-WAY RD	Wrong way on one-way road; wrong side divided road	
16	FATIGUE	DRIVER FATIGUED	Driver drowsy/fatigued/sleepy	
17	ILLNESS	PHYSICAL ILLNESS	Physical illness	
18	IN RDWY	ILLEGALLY IN RDWY	Non-motorist illegally in roadway	
19	NT VISBL	NOT VISIBLE	Non-motorist not visible; non-reflective clothing	
20	IMP PKNG	IMPROPER PARKING	Vehicle improperly parked	
21	DEF STER	DEFECTIVE STEERING	Defective steering mechanism	
22	DEF BRKE	DEFECTIVE BRAKES	Inadequate or no brakes	
24	LOADSHFT	LOAD SHIFTED	Vehicle lost load or load shifted	
25	TIREFAIL	TIRE FAILURE	Tire Failure	
26	PHANTOM	PHANTOM VEHICLE	Phantom / Non-contact Vehicle	
27	INATTENT	INATTENTION	Inattention	
28	NM INATT	NON-MTRST INATTENT	Non-Motorist Inattention	
29	F AVOID	FAIL AVOID VEH AHEAD	Failed to avoid vehicle ahead	
30	SPEED	EXCED POSTED SPEED	Driving in excess of posted speed	
31	RACING	SPEED RACING	Speed Racing (per PAR)	
32	CARELESS	CARELESS DRIVING	Careless Driving (per PAR)	
33	RECKLESS	RECKLESS DRIVING	Reckless Driving (per PAR)	
34	AGGRESV	AGGRESSIVE DRIVING	Aggressive Driving (per PAR)	
35	RD RAGE	ROAD RAGE	Road Rage (per PAR)	
40	VIEW OBS	VIEW OBSCURED	View obscured	
50	USED MDN	IMP USE MEDIAN/SHLDR	Improper use of median or shoulder	
51	FAIL LN	F MAINT LANE	Failed to maintain lane	12/31/2015
52	OFF RD	RAN OFF RD	Ran off road	12/31/2015

ERR CODES

Code	Short Description	Medium Description	Long Description
000	NONE	NO ERROR	No error
001	WIDE TRN	WIDE TURN	Wide turn
002	CUT CORN	CUT CORNER	Cut corner on turn
003	FAIL TRN	F OBEY TRN	Failed to obey mandatory traffic turn signal, sign or lane markings
004	L IN TRF	LTRN FNT TRAF	Left turn in front of oncoming traffic
005	L PROHIB	LTRN PROHIB	Left turn where prohibited
006	FRM WRNG	T FRM WRNG LN	Turned from wrong lane
007	TO WRONG	T TO WRONG LN	Turned into wrong lane
008	ILLEG U	ILLEG U-TURN	U-turned illegally
009	IMP STOP	IMP STOP	Improperly stopped in traffic lane
010	IMP SIG	IMP/FAIL SIG	Improper signal or failure to signal
011	IMP BACK	IMP BACKING	Backing improperly (not parking)
012	IMP PARK	IMP PARKED	Improperly parked
013	UNPARK	IMP STRT PARK	Improper start leaving parked position
014	IMP STRT	IMP STRT STOP	Improper start from stopped position
015	IMP LGHT	IMP/NO LIGHTS	Improper or no lights (vehicle in traffic)
016	INATTENT	INATTENTION	Inattention (Failure to Dim Lights prior to 4/1/97)
017	UNSF VEH	DR UNSAFE VEH	Driving unsafe vehicle (no other error apparent)
018	OTH PARK	PRK MAN N/CLR	Entering/exiting parked position w/ insufficient clearance; other improper parking maneuver
019	DIS DRIV	DISRG DR SIG	Disregarded other driver's signal
020	DIS SGNL	DISRG TRF SIG	Disregarded traffic signal
021	RAN STOP	DISRG STP SGN	Disregarded stop sign or flashing red
022	DIS SIGN	DISRG WRN SGN	Disregarded warning sign, flares or flashing amber
023	DIS OFCR	DISRG POL/FLG	Disregarded police officer or flagman
024	DIS EMER	DISRG SIR/EMR	Disregarded siren or warning of emergency vehicle
025	DIS RR	DISRG RR SIG	Disregarded RR signal, RR sign, or RR flagman
026	REAR-END	F AVOID STP V	Failed to avoid stopped or parked vehicle ahead other than school bus
027	BIKE ROW	F/YLD ROW BIK	Did not have right-of-way over pedalcyclist
028	NO ROW	NO R-O-W	Did not have right-of-way
029	PED ROW	F/YLD ROW PED	Failed to yield right-of-way to pedestrian
030	PAS CURV	PASS ON CURVE	Passing on a curve
031	PAS WRNG	PASS WRNG SID	Passing on the wrong side
032	PAS TANG	PASS TANGENT	Passing on straight road under unsafe conditions
033	PAS X-WK	PASS STP4PED	Passed vehicle stopped at crosswalk for pedestrian
034	PAS INTR	PASS AT INTER	Passing at intersection
035	PAS HILL	PASS ON HILL	Passing on crest of hill
036	N/PAS ZN	PASS N/PASSNG	Passing in "No Passing" zone
037	PAS TRAF	PASS ONC TRAF	Passing in front of oncoming traffic
038	CUT-IN	CUTTING IN	Cutting in (two lanes - two way only)
039	WRNGSIDE	DR WRONG SIDE	Driving on wrong side of the road (2-way undivided roadways)
040	THRU MED	DR THRU MEDN	Driving through safety zone or over island
041	F/ST BUS	F/STP SCHLBUS	Failed to stop for school bus
042	F/SLO MV	F/SLO SLO VEH	Failed to decrease speed for slower moving vehicle
043	TOO CLOSE	FOLLW TO CLOS	Following too closely (must be on officer's report)
044	STRDL LN	STRD/DR WRNG	Straddling or driving on wrong lanes
045	IMP CHG	IMP LANE CHG	Improper change of traffic lanes

ERR CODES

Code	Short Description	Medium Description	Long Description
046	WRNG WAY	WRNG WY/1 WAY	Wrong way on one-way roadway; wrong side divided road
047	BASCRULE	V BASIC RULE	Driving too fast for conditions (not exceeding posted speed)
048	OPN DOOR	OPN DOOR TRAF	Opened door into adjacent traffic lane
049	IMPEDING	IMPEDING TRAF	Impeding Traffic
050	SPEED	SPEED	Driving in excess of posted speed
051	RECKLESS	RECKLSS DRVNG	Reckless driving (per PAR)
052	CARELESS	CARELSS DRVNG	Careless driving (per PAR)
053	RACING	RACING	Speed Racing (per PAR)
054	X N/SGNL	X-INT NO SGNL	Crossing at intersection, no traffic signal present
055	X W/SGNL	X-INT W/ SGNL	Crossing at intersection, traffic signal present
056	DIAGONAL	X-INT DIAGNL	Crossing at intersection - diagonally
057	BTWN INT	X-BTWN INTER	Crossing between intersections
059	W/TRAF-S	W SHLD W/TRAF	Walking, running, riding, etc., on shoulder WITH traffic
060	A/TRAF-S	W SHLD A/TRAF	Walking, running, riding, etc., on shoulder FACING traffic
061	W/TRAF-P	W PAVE W/TRAF	Walking, running, riding, etc., on pavement WITH traffic
062	A/TRAF-P	W PAVE A/TRAF	Walking, running, riding, etc., on pavement FACING traffic
063	PLAYINRD	PLAY IN RDWY	Playing in street or road
064	PUSH MV	PUSH MV IN RD	Pushing or working on vehicle in road or on shoulder
065	WORK IN RD	WORK IN RD	Working in roadway or along shoulder
070	LAY ON RD	LYING IN RD	Standing or lying in roadway
071	NM IMP USE	N-M IMP USE	Improper use of traffic lane by non-motorist
073	ELUDING	ELUDING	Eluding / Attempt to elude
079	F NEG CURV	FAIL NEG CURV	Failed to negotiate a curve
080	FAIL LN	F MAINT LANE	Failed to maintain lane
081	OFF RD	RAN OFF RD	Ran off road
082	NO CLEAR	MISJUDGE CLR	Driver misjudged clearance
083	OVRSTEER	OVERSTEER	Over-correcting
084	NOT USED	NOT USED	Code not in use
085	OVRLOAD	OVERLOAD	Overloading or improper loading of vehicle with cargo or passengers
097	UNA DIS TC	UNA DISRG TCD	Unable to determine which driver disregarded traffic control device

EVENT CODES

Code	Short Description	Medium Description	Long Description
001	FEL/JUMP	FELL/JUMPED MV	Occupant fell, jumped or was ejected from moving vehicle
002	INTERFER	PSNGR INTERFERED	Passenger interfered with driver
003	BUG INTF	ANML INTERFERED	Animal or insect in vehicle interfered with driver
004	INDRCT PED	PED INDRCTLY INVLV	Pedestrian indirectly involved (not struck)
005	SUB-PED	SUBSEQUENT PED	"Sub-Ped": pedestrian injured subsequent to collision, etc.
006	INDRCT BIK	BIKE INDRCTLY INVLV	Pedalcyclist indirectly involved (not struck)
007	HITCHIKR	HITCHHIKER	Hitchhiker (soliciting a ride)
008	PSNGR TOW	PSNGR TOWED	Passenger or non-motorist being towed or pushed on conveyance
009	ON/OFF V	ON/OFF STOP VEH	Getting on/off stopped/parked vehicle (occupants only; must have physical contact w/ vehicle)
010	SUB OTRN	SUBSEQ OVERTURN	Overturned after first harmful event
011	MV PUSHD	VEH BEING PUSHED	Vehicle being pushed
012	MV TOWED	VEH TOWED/TOWING	Vehicle towed or had been towing another vehicle
013	FORCED	FORCED BY IMPACT	Vehicle forced by impact into another vehicle, pedalcyclist or pedestrian
014	SET MOTN	MV SET IN MOTION	Vehicle set in motion by non-driver (child released brakes, etc.)
015	RR ROW	RAILROAD ROW	At or on railroad right-of-way (not Light Rail)
016	LT RL ROW	LIGHT RAIL ROW	At or on Light-Rail right-of-way
017	RR HIT V	TRAIN HIT VEH	Train struck vehicle
018	V HIT RR	VEH HIT TRAIN	Vehicle struck train
019	HIT RR CAR	VEH HIT RR CAR	Vehicle struck railroad car on roadway
020	JACKNIFE	JACKKNIFE	Jackknife; trailer or towed vehicle struck towing vehicle
021	TRL OTRN	TRAILER O'TURN	Trailer or towed vehicle overturned
022	CN BROKE	TRLR CONN BROKE	Trailer connection broke
023	DETACH TRL	DETCHD TRLR STRKNG	Detached trailing object struck other vehicle, non-motorist, or object
024	V DOOR OPN	V DOOR OPN IN TRAF	Vehicle door opened into adjacent traffic lane
025	WHEELOFF	WHEEL CAME OFF	Wheel came off
026	HOOD UP	HOOD FLEW UP	Hood flew up
028	LOAD SHIFT	LOAD SHIFTED	Lost load, load moved or shifted
029	TIREFAIL	TIRE FAILURE	Tire failure
030	PET	PET	Pet: cat, dog and similar
031	LVSTOCK	LIVESTOCK	Stock: cow, calf, bull, steer, sheep, etc.
032	HORSE	HORSE	Horse, mule, or donkey
033	HRSE&RID	HORSE & RIDER	Horse and rider
034	GAME	GAME NO DEER/ELK	Wild animal, game (includes birds; not deer or elk)
035	DEER ELK	DEER OR ELK	Deer or elk, wapiti
036	ANML VEH	ANIMAL-DRAWN VEH	Animal-drawn vehicle
037	CULVERT	CULVERT/MANHOLE	Culvert, open low or high manhole
038	ATENUATN	IMPACT CUSHION	Impact attenuator
039	PK METER	PARKING METER	Parking meter
040	CURB	CURB	Curb (also narrow sidewalks on bridges)
041	JIGGLE	JIGGLE BAR N/MED	Jiggle bar or traffic snake for channelization

EVENT CODES

Code	Short Description	Medium Description	Long Description
042	GDRL END	GUARDRAIL END	Leading edge of guardrail
043	GARDRAIL	GUARDRAIL	Guard rail (not metal median barrier)
044	BARRIER	MEDIAN BARRIER	Median barrier (raised or metal)
045	WALL	WALL	Retaining wall or tunnel wall
046	BR RAIL	BRIDGE RAIL	Bridge railing or parapet (on bridge or approach)
047	BR ABUTMNT	BRIDGE ABUTMENT	Bridge abutment (included "approach end" thru 2013)
048	BR COLMN	BRIDGE COLUMN	Bridge pillar or column
049	BR GIRDR	BRIDGE GIRDER	Bridge girder (horizontal bridge structure overhead)
050	ISLAND	TRAFFIC ISLAND	Traffic raised island
051	GORE	GORE	Gore
052	POLE UNK	POLE-UNKNOWN	Pole – type unknown
053	POLE UTL	POLE-UTILITY	Pole – power or telephone
054	ST LIGHT	POLE-ST LIGHT	Pole – street light only
055	TRF SGNL	POLE-TRAF SIGNAL	Pole – traffic signal and ped signal only
056	SGN BRDG	POLE-SIGN BRIDGE	Pole – sign bridge
057	STOPSIGN	STOP/YIELD SIGN	Stop or yield sign
058	OTH SIGN	OTHER SIGN	Other sign, including street signs
059	HYDRANT	HYDRANT	Hydrant
060	MARKER	DELINEATOR	Delineator or marker (reflector posts)
061	MAILBOX	MAILBOX	Mailbox
062	TREE	TREE/STUMP	Tree, stump or shrubs
063	VEG OHED	VEGTN OVER RDWY	Tree branch or other vegetation overhead, etc.
064	WIRE/CBL	CABLE ACROSS RD	Wire or cable across or over the road
065	TEMP SGN	TEMP SIGN/BARR	Temporary sign or barricade in road, etc.
066	PERM SGN	PERM SIGN/BARR	Permanent sign or barricade in/off road
067	SLIDE	SLIDE/ROCKS	Slides, fallen or falling rocks
068	FRGN OBJ	FOREIGN OBJECT	Foreign obstruction/debris in road (not gravel)
069	EQP WORK	EQUIP WORKING	Equipment working in/off road
070	OTH EQP	OTHER EQUIPMENT	Other equipment in or off road (includes parked trailer, boat)
071	MAIN EQP	MAINTNCE EQUIP	Wrecker, street sweeper, snow plow or sanding equipment
072	OTHER WALL	OTHER WALL	Rock, brick or other solid wall
073	IRRGL PVMT	IRREGULAR PAVEMENT	Other bump (not speed bump), pothole or pavement irregularity (per PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJ	Other overhead object (highway sign, signal head, etc.); not bridge
075	CAVE IN	CAVE IN	Bridge or road cave in
076	HI WATER	HIGH WATER	High Water
077	SNO BANK	SNOW BANK	Snow Bank
078	LO-HI EDGE	LOW-HIGH PVMNT EDGE	Low or high shoulder at pavement edge
079	DITCH	CUT SLOPE/DITCH	Cut slope or ditch embankment
080	OBJ FRM MV	OBJ FRM OTHR VEH	Struck by rock or other object set in motion by other vehicle (incl. lost loads)
081	FLY-OBJ	OTHER MOVING OBJ	Struck by rock or other moving or flying object (not set in motion by vehicle)
082	VEH HID	VEH OBSCURE VIEW	Vehicle obscured view
083	VEG HID	VEG OBSCURE VIEW	Vegetation obscured view
084	BLDG HID	BLD OBSCURE VIEW	View obscured by fence, sign, phone booth, etc.

EVENT CODES

Code	Short Description	Medium Description	Long Description
085	WIND GUST	WIND GUST	Wind Gust
086	IMMERSED	IMMERSION	Vehicle immersed in body of water
087	FIRE/EXP	FIRE/EXPLOSION	Fire or explosion
088	FENC/BLD	FENCE/BUILDING	Fence or building, etc.
089	OTHR CRASH	REFER OTHR CRASH	Crash related to another separate crash
090	TO 1 SIDE	TWO WAY ONE SIDE	Two-way traffic on divided roadway all routed to one side
091	BUILDING	BUILDING	Building or other structure
092	PHANTOM	PHANTOM VEH	Other (phantom) non-contact vehicle
093	CELL PHONE	CELL PHONE PER PAR	Cell phone (on PAR or driver in use)
094	VIOL GDL	VIOL GRAD DR LIC	Teenage driver in violation of graduated license pgm
095	GUY WIRE	GUY WIRE	Guy wire
096	BERM	BERM	Berm (earthen or gravel mound)
097	GRAVEL	GRAVEL IN RDWY	Gravel in roadway
098	ABR EDGE	ABRUPT EDGE	Abrupt edge
099	CELL WTNSD	CELL PHONE WITNESSED	Cell phone use witnessed by other participant
100	UNK FIXD	UNK FIX OBJ	Fixed object, unknown type.
101	OTHER OBJ	OTHER OBJ NOT FIXED	Non-fixed object, other or unknown type
102	TEXTING	TEXTING	Texting
103	WZ WORKER	WZ WORKER	Work Zone Worker
104	ON VEHICLE	RIDE ON VEH EXTERIOR	Passenger riding on vehicle exterior
105	PEDAL PSGR	PSNGR ON PEDALCYCLE	Passenger riding on pedalcycle
106	MAN WHLCHR	NONMOTOR WHEELCHAIR	Pedestrian in non-motorized wheelchair
107	MTR WHLCHR	MOTORIZED WHEELCHAIR	Pedestrian in motorized wheelchair
108	OFFICER	POLICE OFFICER	Law Enforcement / Police Officer
109	SUB-BIKE	SUBSEQUENT BICYCLIST	"Sub-Bike": pedalcyclist injured subsequent to collision, etc.
110	N-MTR	NM STR VEH	Non-motorist struck vehicle
111	S CAR VS V	ST CAR STRUCK VEH	Street Car/Trolley (on rails or overhead wire system) struck vehicle
112	V VS S CAR	VEH STRUCK ST CAR	Vehicle struck Street Car/Trolley (on rails or overhead wire system)
113	S CAR ROW	STREET CAR ROW	At or on street car or trolley right-of-way
114	RR EQUIP	VEH STRUCK RR EQUIP	Vehicle struck railroad equipment (not train) on tracks
115	DSTRCT GPS	DISTRACT GPS DEVICE	Distracted by navigation system or GPS device
116	DSTRCT OTH	DISTRACT OTHR DEVICE	Distracted by other electronic device
117	RR GATE	RR DROP-ARM GATE	Rail crossing drop-arm gate
118	EXPNSN JNT	EXPANSION JOINT	Expansion joint
119	JERSEY BAR	JERSEY BARRIER	Jersey barrier
120	WIRE BAR	WIRE BARRIER	Wire or cable median barrier
121	FENCE	FENCE	Fence
123	OBJ IN VEH	LOOSE OBJ IN VEHICLE	Loose object in vehicle struck occupant
124	SLIPPERY	SLIPPERY SURFACE	Sliding or swerving due to wet, icy, slippery or loose surface (not gravel)
125	SHLDR	SHLDR GAVE	Shoulder gave way
126	BOULDER	ROCKS / BOULDER	Rock(s), boulder (not gravel; not rock slide)
127	LAND SLIDE	ROCK OR LAND SLIDE	Rock slide or land slide
128	CURVE INV	CURVE PRESENT	Curve present at crash location

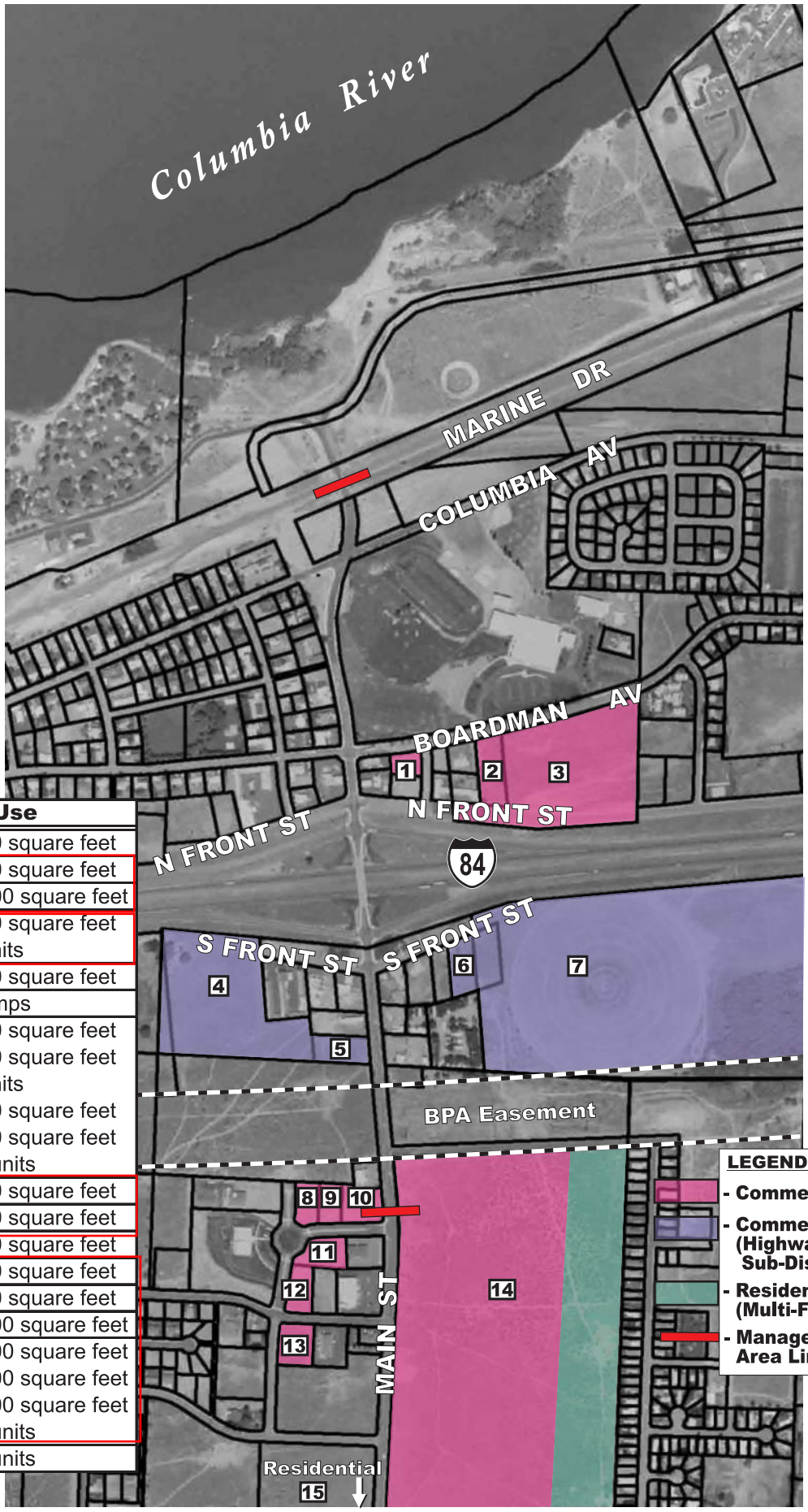
EVENT CODES

Code	Short Description	Medium Description	Long Description
129	HILL INV	HILL PRESENT	Vertical grade / hill present at crash location
130	CURVE HID	CURVE OBSCURED VIEW	View obscured by curve
131	HILL HID	HILL OBSCURED VIEW	View obscured by vertical grade / hill
132	WINDOW HID	WINDOW VIEW OBSCURED	View obscured by vehicle window conditions
133	SPRAY HID	SPRAY OBSCURED VIEW	View obscured by water spray
134	TORRENTIAL	TORRENTIAL RAIN	Torrential Rain (exceptionally heavy rain)
135	RAIL OCC	RAIL/CABLE CAR OCC	Injured occupant of railway train, light rail, street car or cable car

Appendix D Land Use Projections

Main Street

Parcel#	Assumed Land Use	
1	Convenience Store	2,000 square feet
2	Fast Food Restaurant	3,000 square feet
3	Specialty Retail	20,000 square feet
4	Restaurant Motel	6,000 square feet 65 units
5	Fast Food Restaurant	4,000 square feet
6	Gas Station with Mart	8 pumps
7	Fast Food Restaurant Restaurant Motel Car Wash Car Service Shop Housing	4,000 square feet 6,000 square feet 65 units 1,000 square feet 2,000 square feet 120 units
8	Office	5,000 square feet
9	Office	5,000 square feet
10	Bank	4,000 square feet
11	Office	5,000 square feet
12	Office	5,000 square feet
13	Medical/Dental	10,000 square feet
14	Specialty Retail Drug Store Hardware/Paint Store Housing	10,000 square feet 20,000 square feet 10,000 square feet 120 units
15	Housing	100 units



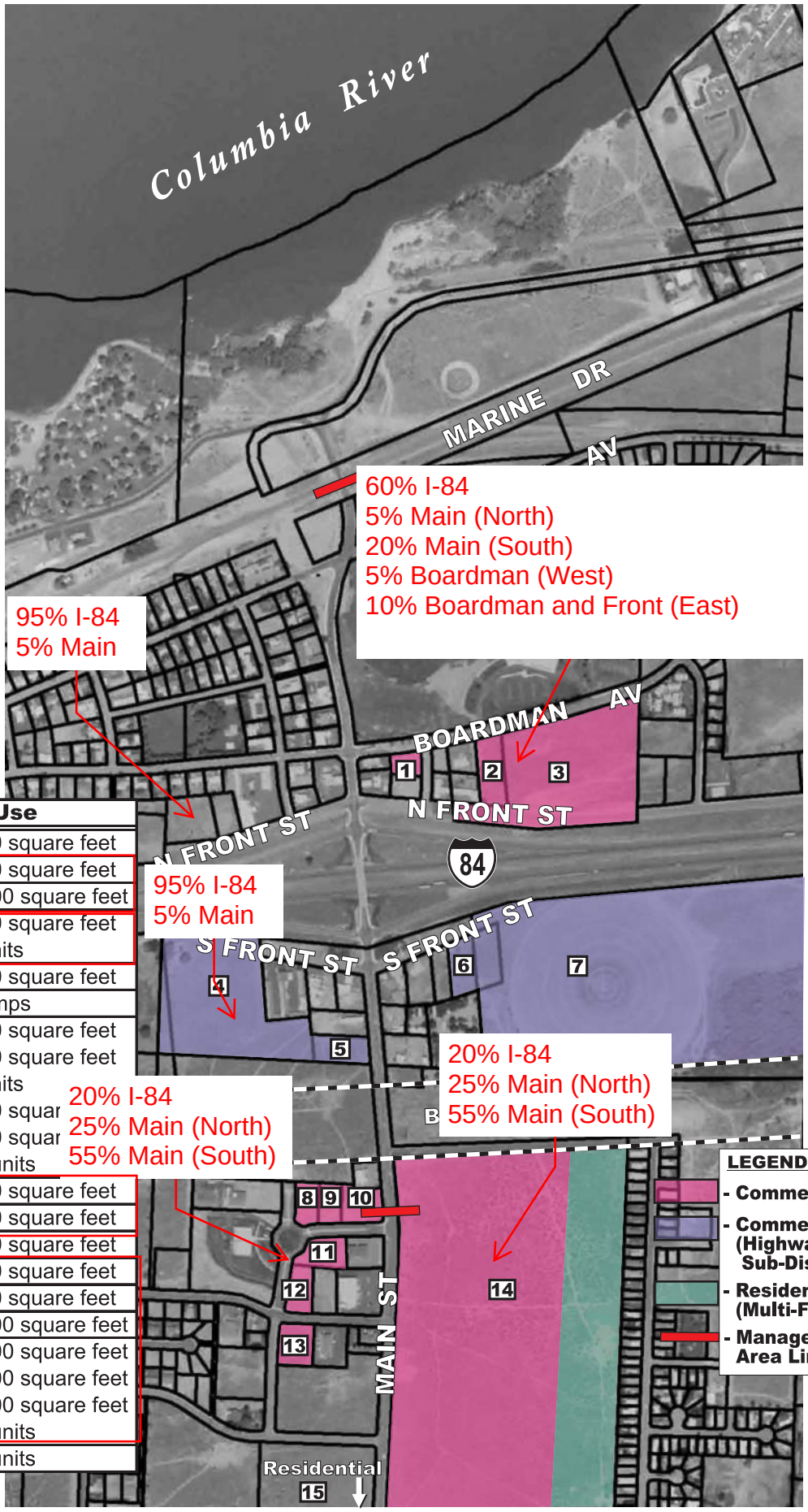
NO SCALE

DKS Associates
TRANSPORTATION SOLUTIONS

City of Boardman Main Street IAMP
April 2009

Figure 4.1

MAIN STREET 20-YEAR FORECASTED DEVELOPMENT



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15	Housing	100 units

NO SCALE

DKS Associates
TRANSPORTATION SOLUTIONS

City of Boardman Main Street IAMP
April 2009

Figure 4.1

MAIN STREET 20-YEAR FORECASTED DEVELOPMENT

City Zoning: Commercial - Hwy Sub District
2009 IAMP assumption: None
Proposed Land Use: Motel
Trip Generation: Motel

CODE: 320	Daily	AM	PM
Avg. N. Rooms	109	108	98
in	182	14	21
out	183	24	18
Total	365	38	39

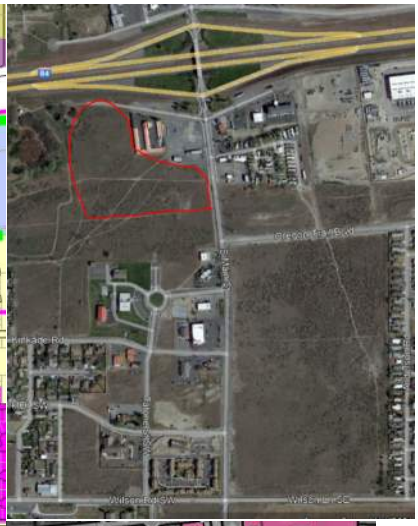
City Zoning: Commercial - Hwy Sub District
2009 IAMP assumption: Fast Food Resturant & Specialty Retail
Proposed Land Use: Fast Food Resturant & High Turn-Over Resturant

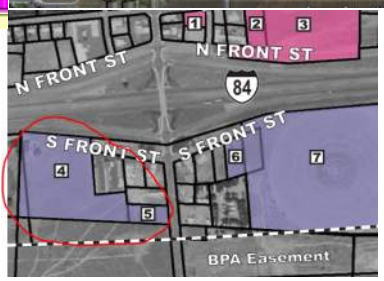
Trip Generation: High-Turnover Resturant

CODE: 932	Daily	AM	PM
Avg. S.F.	5000	5000	6000
in	268	26	33
out	268	22	21
Total	536	48	54

Trip Generation: Fast-Food Resturant with Drive-Through Window

CODE: 934	Daily	AM	PM
Avg. S.F.	3	4	3
in	701	91	51
out	701	87	48
Total	1402	178	99

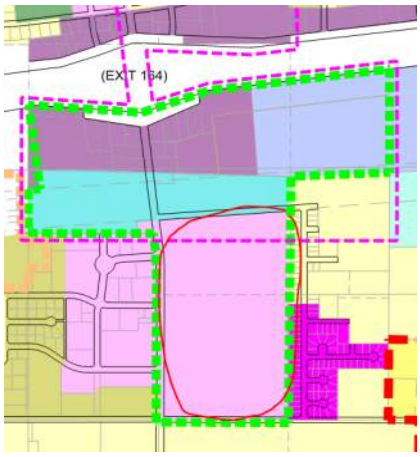


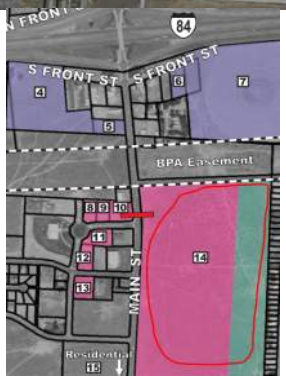


City Zoning: Commercial - Hwy Sub District
2009 IAMP assumption: Resturant & Motel
Proposed Land Use: Truck Stop

Trip Generation: Truck Stop

CODE: 950	Daily	AM	PM
Avg. N. Veh. Fuel. Pos.	9	9	8
in	1008	62	65
out	1008	64	58
Total	2016	126	123





City Zoning: Commercial
2009 IAMP assumption: Specialty Retail, Drug Stor, Hardware Store, Housing
Proposed Land Use: Multi-Family Housing (Low Rise)

Trip Generation: Multi-Family Housing (Low Rise)

CODE: 220	Daily	AM	PM
Dwelling Units	229	249	241
in	771	24	77
out	772	76	46
Total	1543	100	123

Appendix E 2042 No-Build Operations Worksheets

HCM 6th

Vistro File: H:\...\27246 - Vistro.vistro
Report File: H:\...\Future Conditions - No Build.pdf
Scenario 2 Future
9/23/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Main St/Columbia Ave	Two-way stop	HCM 7th Edition	WB Left	0.397	17.4	C
2	Main St/Boardman Ave	Two-way stop	HCM 7th Edition	WB Left	0.508	49.3	E
3	Main St/Front St NE	Two-way stop	HCM 7th Edition	WB Left	1.173	214.8	F
4	Main St/I-84 WB Ramp Terminal	Two-way stop	HCM 7th Edition	WB Left	1.180	176.3	F
5	Main St/I-84 EB Ramp Terminal	Two-way stop	HCM 7th Edition	EB Thru	0.021	803.1	F
6	Main St/Front St SE	Two-way stop	HCM 7th Edition	EB Left	0.626	86.9	F
7	Main St/Oregon Trail Blvd	Two-way stop	HCM 7th Edition	WB Left	0.271	36.0	E
8	Main St/City Center Dr	Two-way stop	HCM 7th Edition	EB Left	0.207	28.4	D
9	Main St/Kinkade Rd	Two-way stop	HCM 7th Edition	EB Left	0.384	25.1	D
10	Main St/Willow Fork Dr	Two-way stop	HCM 7th Edition	EB Left	0.137	17.2	C
11	Main St/Wilson Ln	All-way stop	HCM 7th Edition	SB Right	0.420	10.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Main St/Columbia Ave

Control Type:	Two-way stop	Delay (sec / veh):	17.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.397

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	300.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	19	44	112	7	22	4	3	22	17	116	31	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	4.00	0.00	0.00	0.00	0.00	0.00	6.00	3.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	11	83	0	6	0	0	0	19	71	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	55	195	7	28	4	3	22	36	187	31	14
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	16	55	2	8	1	1	6	10	53	9	4
Total Analysis Volume [veh/h]	39	63	222	8	32	5	3	25	41	213	35	16
Pedestrian Volume [ped/h]	7			0			2			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.01	0.00	0.00	0.01	0.05	0.04	0.40	0.06	0.02
d_M, Delay for Movement [s/veh]	7.33	0.00	0.00	7.81	0.00	0.00	11.93	12.53	9.09	17.42	16.81	14.82
Movement LOS	A	A	A	A	A	A	B	B	A	C	C	B
95th-Percentile Queue Length [veh/ln]	0.08	0.00	0.00	0.02	0.00	0.00	0.31	0.31	0.31	2.53	2.53	2.53
95th-Percentile Queue Length [ft/ln]	1.90	0.00	0.00	0.47	0.00	0.00	7.82	7.82	7.82	63.35	63.35	63.35
d_A, Approach Delay [s/veh]	0.88			1.39			10.46			17.18		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	7.99											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: Main St/Boardman Ave

Control Type:	Two-way stop	Delay (sec / veh):	49.3
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.508

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	92	168	45	10	151	17	14	6	78	28	5	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	9.00	10.00	4.00	6.00	0.00	0.00	0.00	11.00	0.00	12.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	86	51	27	69	0	0	3	7	43	0	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	254	96	37	220	17	14	9	85	71	5	31
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	73	28	11	63	5	4	3	24	20	1	9
Total Analysis Volume [veh/h]	110	292	110	43	253	20	16	10	98	82	6	36
Pedestrian Volume [ped/h]	2			8			2			7		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.00	0.04	0.00	0.00	0.08	0.05	0.13	0.51	0.03	0.06
d_M, Delay for Movement [s/veh]	8.03	0.00	0.00	8.40	0.00	0.00	25.91	23.89	12.15	49.26	42.38	32.47
Movement LOS	A	A	A	A	A	A	D	C	B	E	E	D
95th-Percentile Queue Length [veh/ln]	0.28	0.00	0.00	0.12	0.00	0.00	1.00	1.00	1.00	3.30	3.30	3.30
95th-Percentile Queue Length [ft/ln]	6.94	0.00	0.00	3.05	0.00	0.00	25.00	25.00	25.00	82.44	82.44	82.44
d_A, Approach Delay [s/veh]	1.73			1.14			14.87			44.05		
Approach LOS	A			A			B			E		
d_I, Intersection Delay [s/veh]	7.95											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 3: Main St/Front St NE

Control Type:	Two-way stop	Delay (sec / veh):	214.8
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.173

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	50.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	61	221	81	11	278	4	7	3	77	56	3	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	6.00	3.00	8.00	0.00	3.00	0.00	0.00	0.00	5.00	11.00	33.00	17.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	126	92	15	104	0	0	2	1	78	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	347	173	26	382	4	7	5	78	134	3	20
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	96	48	7	106	1	2	1	22	37	1	6
Total Analysis Volume [veh/h]	68	386	192	29	424	4	8	6	87	149	3	22
Pedestrian Volume [ped/h]	0			1			2			2		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.03	0.00	0.00	0.05	0.04	0.14	1.17	0.02	0.04
d_M, Delay for Movement [s/veh]	8.47	0.00	0.00	8.70	0.00	0.00	29.60	28.36	11.76	214.75	207.92	192.95
Movement LOS	A	A	A	A	A	A	D	D	B	F	F	F
95th-Percentile Queue Length [veh/ln]	0.20	0.00	0.00	0.09	0.00	0.00	0.28	0.28	0.49	10.37	10.37	10.37
95th-Percentile Queue Length [ft/ln]	4.90	0.00	0.00	2.23	0.00	0.00	6.92	6.92	12.17	259.19	259.19	259.19
d_A, Approach Delay [s/veh]	0.89			0.55			14.16			211.88		
Approach LOS	A			A			B			F		
d_I, Intersection Delay [s/veh]	28.39											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 4: Main St/I-84 WB Ramp Terminal

Control Type:	Two-way stop	Delay (sec / veh):	176.3
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.180

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	252	0	0	363	48	0	0	0	122	0	111
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	3.00	2.00	2.00	3.00	17.00	2.00	2.00	2.00	4.00	0.00	10.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	38	170	0	0	142	41	0	0	0	31	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	62	422	0	0	505	89	0	0	0	153	0	159
Peak Hour Factor	0.9100	0.9100	1.0000	1.0000	0.9100	0.9100	1.0000	1.0000	1.0000	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	116	0	0	139	24	0	0	0	42	0	44
Total Analysis Volume [veh/h]	68	464	0	0	555	98	0	0	0	168	0	175
Pedestrian Volume [ped/h]	0			0			3			3		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				Yes
Storage Area [veh]	0	0	0	1
Two-Stage Gap Acceptance				No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	1.18	0.00	0.30
d_M, Delay for Movement [s/veh]	8.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	176.26	174.34	157.21
Movement LOS	A	A			A	A				F	F	F
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.81	15.81	15.81
95th-Percentile Queue Length [ft/ln]	2.94	2.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	395.14	395.14	395.14
d_A, Approach Delay [s/veh]	1.15			0.00			0.00			166.54		
Approach LOS	A			A			A			F		
d_I, Intersection Delay [s/veh]	37.78											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 5: Main St/I-84 EB Ramp Terminal

Control Type:	Two-way stop	Delay (sec / veh):	803.1
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	188	183	75	383	0	88	1	49	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	9.00	3.00	2.00	3.00	100.00	13.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	156	28	38	135	0	52	0	40	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	344	211	113	518	0	140	1	89	0	0	0
Peak Hour Factor	1.0000	0.8100	0.8100	0.8100	0.8100	1.0000	0.8100	0.8100	0.8100	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	106	65	35	160	0	43	0	27	0	0	0
Total Analysis Volume [veh/h]	0	425	260	140	640	0	173	1	110	0	0	0
Pedestrian Volume [ped/h]	0			0			2			5		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.16	0.01	0.00	2.23	0.02	0.24	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	9.31	0.00	0.00	772.98	803.12	734.49	0.00	0.00	0.00
Movement LOS		A	A	A	A		F	F	F			
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.25	0.25	0.00	25.45	25.45	25.45	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	6.32	6.32	0.00	636.28	636.28	636.28	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			1.67			758.18			0.00		
Approach LOS	A			A			F			A		
d_I, Intersection Delay [s/veh]	123.86											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Main St/Front St SE

Control Type:	Two-way stop	Delay (sec / veh):	86.9
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.626

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	85.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	4	332	18	41	378	12	6	0	6	16	3	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	5.00	12.00	3.00	8.00	0.00	0.00	0.00	0.00	0.00	4.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	140	0	0	147	28	44	0	11	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	472	18	41	525	40	50	0	17	16	3	33
Peak Hour Factor	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	146	6	13	162	12	15	0	5	5	1	10
Total Analysis Volume [veh/h]	5	583	22	51	648	49	62	0	21	20	4	41
Pedestrian Volume [ped/h]	3			0			2			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.06	0.01	0.00	0.63	0.00	0.05	0.19	0.03	0.08
d_M, Delay for Movement [s/veh]	9.00	0.00	0.00	9.11	0.00	0.00	86.94	77.38	58.54	47.13	40.99	12.82
Movement LOS	A	A	A	A	A	A	F	F	F	E	E	B
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	0.17	0.00	0.00	3.59	3.59	3.59	0.77	0.77	0.27
95th-Percentile Queue Length [ft/ln]	0.42	0.00	0.00	4.36	0.00	0.00	89.86	89.86	89.86	19.29	19.29	6.65
d_A, Approach Delay [s/veh]	0.07			0.62			79.75			25.11		
Approach LOS	A			A			F			D		
d_I, Intersection Delay [s/veh]	5.82											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: Main St/Oregon Trail Blvd

Control Type:	Two-way stop	Delay (sec / veh):	36.0
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.271

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	315	6	26	351	0	0	0	0	4	0	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	17.00	4.00	1.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	96	41	43	106	8	6	0	8	34	0	37
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	411	47	69	457	8	6	0	8	38	0	63
Peak Hour Factor	1.0000	0.9100	0.9100	0.9100	0.9100	1.0000	1.0000	1.0000	1.0000	0.9100	1.0000	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	113	13	19	126	2	2	0	2	10	0	17
Total Analysis Volume [veh/h]	5	452	52	76	502	8	6	0	8	42	0	69
Pedestrian Volume [ped/h]	2			2			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.07	0.01	0.00	0.05	0.00	0.01	0.27	0.00	0.12
d_M, Delay for Movement [s/veh]	8.42	0.00	0.00	8.52	0.00	0.00	33.47	26.95	12.37	36.02	33.12	18.89
Movement LOS	A	A	A	A	A	A	D	D	B	E	D	C
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.13	0.13	0.13	0.19	0.19	0.19	1.76	1.76	1.76
95th-Percentile Queue Length [ft/ln]	0.21	0.21	0.21	3.32	3.32	3.32	4.75	4.75	4.75	44.06	44.06	44.06
d_A, Approach Delay [s/veh]	0.08			1.10			21.41			25.37		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	3.12											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 8: Main St/City Center Dr

Control Type:	Two-way stop	Delay (sec / veh):	28.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.207

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	300	0	0	324	26	17	0	13	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.00	2.00	2.00	1.00	4.00	0.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	109	4	21	121	6	19	0	6	4	0	15
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	409	4	21	445	32	36	0	19	4	0	15
Peak Hour Factor	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000	0.9000	1.0000	0.9000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	114	1	5	124	9	10	0	5	1	0	4
Total Analysis Volume [veh/h]	13	454	4	21	494	36	40	0	21	4	0	15
Pedestrian Volume [ped/h]	0			0			3			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.00	0.00	0.21	0.00	0.04	0.02	0.00	0.02
d_M, Delay for Movement [s/veh]	8.47	0.00	0.00	8.29	0.00	0.00	28.38	26.19	11.65	24.37	22.19	11.37
Movement LOS	A	A	A	A	A	A	D	D	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.04	0.04	0.04	0.75	0.75	0.12	0.14	0.14	0.14
95th-Percentile Queue Length [ft/ln]	0.55	0.55	0.55	0.90	0.90	0.90	18.80	18.80	2.91	3.60	3.60	3.60
d_A, Approach Delay [s/veh]	0.23			0.32			22.62			14.11		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	1.75											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 9: Main St/Kinkade Rd

Control Type:	Two-way stop	Delay (sec / veh):	25.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.384

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	7	200	0	0	209	78	88	0	13	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	14.00	3.00	2.00	2.00	1.00	0.00	1.00	2.00	8.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	86	4	12	101	18	11	0	9	3	0	20
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	286	4	12	310	96	99	0	22	3	0	20
Peak Hour Factor	0.8800	0.8800	1.0000	1.0000	0.8800	0.8800	0.8800	1.0000	0.8800	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	81	1	3	88	27	28	0	6	1	0	5
Total Analysis Volume [veh/h]	10	325	4	12	352	109	113	0	25	3	0	20
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.38	0.00	0.04	0.01	0.00	0.03
d_M, Delay for Movement [s/veh]	8.47	0.00	0.00	7.94	0.00	0.00	25.14	24.19	18.59	17.73	17.35	10.28
Movement LOS	A	A	A	A	A	A	D	C	C	C	C	B
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.02	0.02	0.02	2.03	2.03	2.03	0.12	0.12	0.12
95th-Percentile Queue Length [ft/ln]	0.42	0.42	0.42	0.53	0.53	0.53	50.78	50.78	50.78	2.99	2.99	2.99
d_A, Approach Delay [s/veh]	0.25			0.20			23.95			11.25		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	3.85											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 10: Main St/Willow Fork Dr

Control Type:	Two-way stop	Delay (sec / veh):	17.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.137

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	2	177	0	0	196	24	24	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	5.00	2.00	2.00	3.00	0.00	4.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	63	4	18	79	15	17	0	5	8	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	240	4	18	275	39	41	0	5	8	0	12
Peak Hour Factor	0.8700	0.8700	1.0000	1.0000	0.8700	0.8700	0.8700	1.0000	0.8700	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	69	1	5	79	11	12	0	1	2	0	3
Total Analysis Volume [veh/h]	14	276	4	18	316	45	47	0	6	8	0	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.14	0.00	0.01	0.02	0.00	0.02
d_M, Delay for Movement [s/veh]	7.99	0.00	0.00	7.83	0.00	0.00	17.21	16.68	11.77	15.60	15.55	10.01
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.03	0.03	0.03	0.51	0.51	0.51	0.12	0.12	0.12
95th-Percentile Queue Length [ft/ln]	0.59	0.59	0.59	0.78	0.78	0.78	12.65	12.65	12.65	3.01	3.01	3.01
d_A, Approach Delay [s/veh]	0.38			0.37			16.59			12.25		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	1.85											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 11: Main St/Wilson Ln

Control Type:	All-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.420

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	2	51	3	21	63	112	105	31	3	7	29	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	6.00	0.00	0.00	6.00	1.00	2.00	3.00	0.00	14.00	3.00	17.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	23	16	53	57	0	0	0	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	56	3	44	79	165	162	31	3	7	29	37
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	16	1	13	23	47	47	9	1	2	8	11
Total Analysis Volume [veh/h]	2	64	3	51	91	190	186	36	3	8	33	43
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	687	792	694	703
Degree of Utilization, x	0.10	0.42	0.32	0.12

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.33	2.09	1.41	0.40
95th-Percentile Queue Length [ft]	8.33	52.32	35.18	10.12
Approach Delay [s/veh]	8.82	10.80	10.66	8.81
Approach LOS	A	B	B	A
Intersection Delay [s/veh]	10.33			
Intersection LOS	B			

Oregon Department of Transportation

Transportation Development Branch

Transportation Planning Analysis Unit

Preliminary Traffic Signal Warrant Analysis[1]

Major Street:	Main Street	**Minor Street:**	Boardman Ave
Project:	Boardman Main Street	**City/County:**	Boardman, Oregon
Year:	2042	**Alternative:**	Signal

Preliminary Signal Warrant Volumes

Number of Approach lanes		ADT on major street approaching from both directions		ADT on minor street, highest approaching volume	
Major Street	Minor Street	Percent of standard warrants 100	70	Percent of standard warrants 100	70
Case A: Minimum Vehicular Traffic					
1	1	8850	6200	2650	1850
2 or more	1	10600	7400	2650	1850
2 or more	2 or more	10600	7400	3550	2500
1	2 or more	8850	6200	3550	2500
Case B: Interruption of Continuous Traffic					
1	1	13300	9300	1350	950
2 or more	1	15900	11100	1350	950
2 or more	2 or more	15900	11100	1750	1250
1	2 or more	13300	9300	1750	1250
	100 percent of standard warrants				
X	70 percent of standard warrants[2]				

Preliminary Signal Warrant Calculation

	Street	Number of Lanes	Warrant Volumes	Approach Volumes	Warrant Met
Case A	Major	1	6200	7200	Y
	Minor	2 or more	2500	2520	
Case B	Major	1	9300	7200	N
	Minor	2 or more	1250	2520	

Analyst and Date:	Reviewer and Date:

[1] Meeting preliminary signal warrants does **not** guarantee that a signal will be installed. When preliminary signal warrants are met, project analysts need to coordinate with Region Traffic to initiate the traffic signal engineering investigation as outlined in the Traffic Manual. Before a signal can be installed, the engineering investigation must be conducted or reviewed by the Region Traffic Manager who will forward signal recommendations to headquarters. Traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal can be installed on a state

[2] Used due to 85th percentile speed in excess of 40 mph or isolated community with population of less than 10,000.

Analysis Procedures

Appendix F Circulation Alternative #1 Traffic Conditions

Intersection Level Of Service Report
Intersection 1: Main St/Columbia Ave

Control Type:	Two-way stop	Delay (sec / veh):	17.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.397

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	300.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	19	44	112	7	22	4	3	22	17	116	31	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	4.00	0.00	0.00	0.00	0.00	0.00	6.00	3.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	11	83	0	6	0	0	0	19	71	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	55	195	7	28	4	3	22	36	187	31	14
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	16	55	2	8	1	1	6	10	53	9	4
Total Analysis Volume [veh/h]	39	63	222	8	32	5	3	25	41	213	35	16
Pedestrian Volume [ped/h]	7			0			2			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.01	0.00	0.00	0.01	0.05	0.04	0.40	0.06	0.02
d_M, Delay for Movement [s/veh]	7.33	0.00	0.00	7.81	0.00	0.00	11.93	12.53	9.09	17.42	16.81	14.82
Movement LOS	A	A	A	A	A	A	B	B	A	C	C	B
95th-Percentile Queue Length [veh/ln]	0.08	0.00	0.00	0.02	0.00	0.00	0.31	0.31	0.31	2.53	2.53	2.53
95th-Percentile Queue Length [ft/ln]	1.90	0.00	0.00	0.47	0.00	0.00	7.82	7.82	7.82	63.35	63.35	63.35
d_A, Approach Delay [s/veh]	0.88			1.39			10.46			17.18		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	7.99											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: Main St/Boardman Ave

Control Type:	Signalized	Delay (sec / veh):	13.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.581

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	153	161	45	21	151	17	21	9	78	84	8	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	9.00	10.00	4.00	6.00	0.00	0.00	0.00	11.00	0.00	12.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	86	51	37	58	0	0	9	3	121	0	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	247	96	58	209	17	21	18	81	205	8	31
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	71	28	17	60	5	6	5	23	59	2	9
Total Analysis Volume [veh/h]	180	284	110	67	240	20	24	21	93	236	9	36
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	60
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	5	10	0	0	10	0	0	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	15	29	0	9	23	0	0	22	0	0	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
l2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	41	41	41	41	41	41	41	41
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	12	19	11	14	14	14	14
g / C, Green / Cycle	0.46	0.30	0.46	0.26	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.14	0.24	0.06	0.16	0.02	0.07	0.20	0.03
s, saturation flow rate [veh/h]	1316	1641	1077	1672	1383	1530	1186	1534
c, Capacity [veh/h]	720	496	553	435	551	517	457	519
d1, Uniform Delay [s]	6.96	13.11	7.13	13.27	11.05	9.68	14.86	9.23
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	2.93	0.10	1.32	0.03	0.21	0.90	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.79	0.12	0.60	0.04	0.22	0.52	0.09
d, Delay for Lane Group [s/veh]	7.14	16.04	7.22	14.59	11.08	9.89	15.76	9.30
Lane Group LOS	A	B	A	B	B	A	B	A
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.68	3.03	0.24	1.87	0.14	0.60	1.81	0.22
50th-Percentile Queue Length [ft/ln]	17.09	75.78	5.99	46.67	3.40	14.97	45.30	5.60
95th-Percentile Queue Length [veh/ln]	1.23	5.46	0.43	3.36	0.25	1.08	3.26	0.40
95th-Percentile Queue Length [ft/ln]	30.76	136.40	10.79	84.00	6.13	26.94	81.54	10.08

Movement, Approach, & Intersection Results

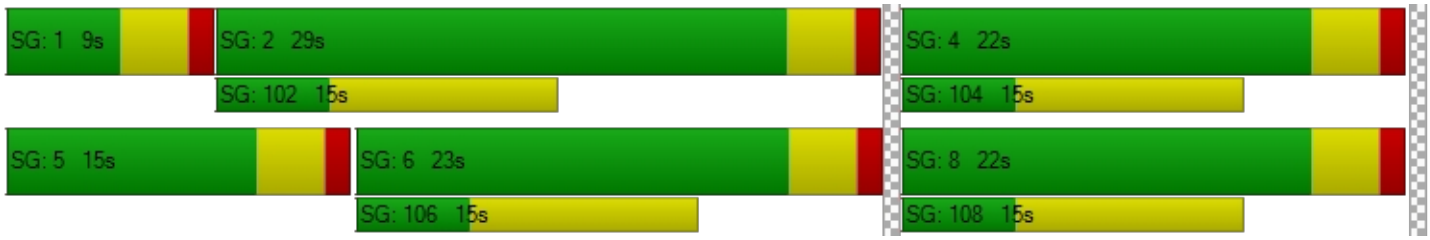
d_M, Delay for Movement [s/veh]	7.14	16.04	16.04	7.22	14.59	14.59	11.08	9.89	9.89	15.76	9.30	9.30
Movement LOS	A	B	B	A	B	B	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	13.25			13.08			10.10			14.73		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	13.19											
Intersection LOS	B											
Intersection V/C	0.581											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	12.45	12.45	12.45	12.45
l_p,int, Pedestrian LOS Score for Intersectio	2.606	2.151	2.090	2.088
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1222	929	880	880
d_b, Bicycle Delay [s]	3.10	5.87	6.42	6.42
l_b,int, Bicycle LOS Score for Intersection	2.507	2.099	1.787	2.023
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Main St/Front St NE

Control Type:	Two-way stop	Delay (sec / veh):	13.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.171

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	282	81	0	334	4	0	0	77	0	0	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.00	8.00	0.00	3.00	0.00	0.00	0.00	5.00	0.00	33.00	17.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	126	92	0	182	0	0	0	1	0	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	408	173	0	516	4	0	0	78	0	0	20
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	113	48	0	143	1	0	0	22	0	0	6
Total Analysis Volume [veh/h]	0	453	192	0	573	4	0	0	87	0	0	22
Pedestrian Volume [ped/h]	0			1			2			2		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.17	0.00	0.00	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.51	0.00	0.00	12.47
Movement LOS		A	A		A	A			B			B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.00	0.00	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.26	0.00	0.00	3.41
d_A, Approach Delay [s/veh]	0.00			0.00			13.51			12.47		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	1.09											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 4: Main St/I-84 WB Ramp Terminal

Control Type:	Signalized	Delay (sec / veh):	11.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.850

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	252	0	0	363	48	0	0	0	122	0	111
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	3.00	2.00	2.00	3.00	17.00	2.00	2.00	2.00	4.00	0.00	10.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	38	170	0	0	142	41	0	0	0	31	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	62	422	0	0	505	89	0	0	0	153	0	159
Peak Hour Factor	0.9100	0.9100	1.0000	1.0000	0.9100	0.9100	1.0000	1.0000	1.0000	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	116	0	0	139	24	0	0	0	42	0	44
Total Analysis Volume [veh/h]	68	464	0	0	555	98	0	0	0	168	0	175
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	60
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	29.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	0	10	0	0	0	0	0	10	0
Maximum Green [s]	10	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	9	41	0	0	41	0	0	0	0	0	19	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No						No	
Maximum Recall		No			No						No	
Pedestrian Recall		No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C		C
C, Cycle Length [s]	40	40		40
L, Total Lost Time per Cycle [s]	4.00	4.00		4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00		0.00
l2, Clearance Lost Time [s]	2.00	2.00		2.00
g_i, Effective Green Time [s]	21	21		11
g / C, Green / Cycle	0.53	0.53		0.27
(v / s)_i Volume / Saturation Flow Rate	0.46	0.39		0.22
s, saturation flow rate [veh/h]	1151	1658		1570
c, Capacity [veh/h]	709	876		429
d1, Uniform Delay [s]	7.35	7.39		13.60
k, delay calibration	0.17	0.11		0.11
I, Upstream Filtering Factor	1.00	1.00		1.00
d2, Incremental Delay [s]	2.56	1.29		3.49
d3, Initial Queue Delay [s]	0.00	0.00		0.00
Rp, platoon ratio	1.00	1.00		1.00
PF, progression factor	1.00	1.00		1.00

Lane Group Results

X, volume / capacity	0.75	0.75		0.80
d, Delay for Lane Group [s/veh]	9.91	8.68		17.09
Lane Group LOS	A	A		B
Critical Lane Group	Yes	No		Yes
50th-Percentile Queue Length [veh/ln]	2.33	2.86		2.70
50th-Percentile Queue Length [ft/ln]	58.26	71.47		67.59
95th-Percentile Queue Length [veh/ln]	4.19	5.15		4.87
95th-Percentile Queue Length [ft/ln]	104.86	128.64		121.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.91	9.91	0.00	0.00	8.68	8.68	0.00	0.00	0.00	17.09	17.09	17.09
Movement LOS	A	A			A	A				B	B	B
d_A, Approach Delay [s/veh]	9.91			8.68			0.00			17.09		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	11.00											
Intersection LOS	B											
Intersection V/C	0.850											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	12.03	12.03	12.03	12.03
l_p,int, Pedestrian LOS Score for Intersectio	2.284	2.302	1.639	1.839
Crosswalk LOS	B	B	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1848	1848	0	749
d_b, Bicycle Delay [s]	0.12	0.12	20.02	7.83
l_b,int, Bicycle LOS Score for Intersection	2.437	2.637	4.132	2.126
Bicycle LOS	B	B	D	B

Sequence

Ring 1	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 5: Main St/I-84 EB Ramp Terminal

Control Type:	Signalized	Delay (sec / veh):	59.6
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.228

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	188	183	75	383	0	88	1	49	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	9.00	3.00	2.00	3.00	7.00	13.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	156	28	38	135	0	52	0	40	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	344	211	113	518	0	140	1	89	0	0	0
Peak Hour Factor	1.0000	0.8100	0.8100	0.8100	0.8100	1.0000	0.8100	0.8100	0.8100	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	106	65	35	160	0	43	0	27	0	0	0
Total Analysis Volume [veh/h]	0	425	260	140	640	0	173	1	110	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	60
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	1.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	0	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	0	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	0	41	0	0	41	0	0	19	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
l2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Minimum Recall		No			No			No				
Maximum Recall		No			No			No				
Pedestrian Recall		No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	
C, Cycle Length [s]	49	49	49	
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	
l1_p, Permitted Start-Up Lost Time [s]	0.00	2.00	0.00	
l2, Clearance Lost Time [s]	2.00	2.00	2.00	
g_i, Effective Green Time [s]	30	30	11	
g / C, Green / Cycle	0.61	0.61	0.23	
(v / s)_i Volume / Saturation Flow Rate	0.44	0.84	0.19	
s, saturation flow rate [veh/h]	1574	929	1505	
c, Capacity [veh/h]	955	649	349	
d1, Uniform Delay [s]	6.78	12.52	18.00	
k, delay calibration	0.24	0.50	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	
d2, Incremental Delay [s]	2.29	105.01	4.65	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.72	1.20	0.81	
d, Delay for Lane Group [s/veh]	9.06	117.53	22.65	
Lane Group LOS	A	F	C	
Critical Lane Group	No	Yes	Yes	
50th-Percentile Queue Length [veh/ln]	3.63	22.78	3.14	
50th-Percentile Queue Length [ft/ln]	90.87	569.61	78.40	
95th-Percentile Queue Length [veh/ln]	6.54	34.95	5.64	
95th-Percentile Queue Length [ft/ln]	163.56	873.67	141.11	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	9.06	9.06	117.53	117.53	0.00	22.65	22.65	22.65	0.00	0.00	0.00
Movement LOS		A	A	F	F		C	C	C			
d_A, Approach Delay [s/veh]		9.06			117.53			22.65			0.00	
Approach LOS		A			F			C			A	
d_I, Intersection Delay [s/veh]	59.64											
Intersection LOS	E											
Intersection V/C	1.228											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	16.51	16.51	16.51	16.51
l_p,int, Pedestrian LOS Score for Intersectio	2.384	2.356	1.823	1.983
Crosswalk LOS	B	B	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1499	1499	608	0
d_b, Bicycle Delay [s]	1.55	1.55	11.96	24.69
l_b,int, Bicycle LOS Score for Intersection	2.690	2.847	2.028	4.132
Bicycle LOS	B	C	B	D

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 6: Main St/Front St SE

Control Type:	Two-way stop	Delay (sec / veh):	13.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.049

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	338	18	0	419	12	0	0	6	0	0	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	5.00	0.00	3.00	8.00	0.00	0.00	0.00	0.00	0.00	4.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	184	0	0	147	28	0	0	11	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	522	18	0	566	40	0	0	17	0	0	33
Peak Hour Factor	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	161	6	0	175	12	0	0	5	0	0	10
Total Analysis Volume [veh/h]	0	644	22	0	699	49	0	0	21	0	0	41
Pedestrian Volume [ped/h]	3			0			2			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.09
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.92	0.00	0.00	13.54
Movement LOS		A	A		A	A			B			B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.29
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.89	0.00	0.00	7.25
d_A, Approach Delay [s/veh]	0.00			0.00			13.92			13.54		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.57											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 7: Main St/Oregon Trail Blvd

Control Type:	Signalized	Delay (sec / veh):	6.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	4	315	6	67	335	0	6	0	0	20	3	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	17.00	4.00	1.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	98	41	43	106	8	50	0	8	34	0	37
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	413	47	110	441	8	56	0	8	54	3	63
Peak Hour Factor	1.0000	0.9100	0.9100	0.9100	0.9100	1.0000	1.0000	1.0000	1.0000	0.9100	1.0000	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	113	13	30	121	2	14	0	2	15	1	17
Total Analysis Volume [veh/h]	9	454	52	121	485	8	56	0	8	59	3	69
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	3			3			0			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	41	0	0	41	0	0	19	0	0	19	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
l2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	C	C
C, Cycle Length [s]	30	30	30	30	30	30
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	16	16	16	16	7	7
g / C, Green / Cycle	0.51	0.51	0.51	0.51	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.01	0.30	0.14	0.28	0.04	0.09
s, saturation flow rate [veh/h]	904	1674	879	1730	1531	1500
c, Capacity [veh/h]	471	862	449	892	562	504
d1, Uniform Delay [s]	8.43	5.13	10.13	5.00	9.58	10.06
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.02	0.64	0.32	0.54	0.09	0.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.02	0.59	0.27	0.55	0.11	0.26
d, Delay for Lane Group [s/veh]	8.45	5.76	10.45	5.54	9.67	10.33
Lane Group LOS	A	A	B	A	A	B
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.03	1.03	0.53	0.96	0.26	0.56
50th-Percentile Queue Length [ft/ln]	0.82	25.69	13.32	24.12	6.47	14.10
95th-Percentile Queue Length [veh/ln]	0.06	1.85	0.96	1.74	0.47	1.01
95th-Percentile Queue Length [ft/ln]	1.47	46.25	23.98	43.42	11.64	25.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.45	5.76	5.76	10.45	5.54	5.54	9.67	9.67	9.67	10.33	10.33	10.33
Movement LOS	A	A	A	B	A	A	A	A	A	B	B	B
d_A, Approach Delay [s/veh]	5.81			6.51			9.67			10.33		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	6.77											
Intersection LOS	A											
Intersection V/C	0.529											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	7.51	7.51	7.51	7.51
l_p,int, Pedestrian LOS Score for Intersectio	2.309	2.346	1.707	1.973
Crosswalk LOS	B	B	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2439	2439	989	989
d_b, Bicycle Delay [s]	0.73	0.73	3.88	3.88
l_b,int, Bicycle LOS Score for Intersection	2.409	2.573	1.665	1.776
Bicycle LOS	B	B	A	A

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 8: Main St/City Center Dr

Control Type:	Two-way stop	Delay (sec / veh):	28.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.210

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	300	0	1	324	26	17	0	13	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.00	2.00	2.00	1.00	4.00	0.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	109	4	21	121	6	20	0	6	4	0	15
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	409	4	22	445	32	37	0	19	4	0	15
Peak Hour Factor	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000	0.9000	1.0000	0.9000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	114	1	6	124	9	10	0	5	1	0	4
Total Analysis Volume [veh/h]	13	454	4	22	494	36	41	0	21	4	0	15
Pedestrian Volume [ped/h]	0			0			3			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.00	0.00	0.21	0.00	0.04	0.02	0.00	0.02
d_M, Delay for Movement [s/veh]	8.50	0.00	0.00	8.33	0.00	0.00	28.28	26.10	11.65	24.21	22.04	11.37
Movement LOS	A	A	A	A	A	A	D	D	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.04	0.00	0.00	0.06	0.00	0.00	0.77	0.77	0.12	0.14	0.14	0.14
95th-Percentile Queue Length [ft/ln]	0.95	0.00	0.00	1.53	0.00	0.00	19.18	19.18	2.91	3.58	3.58	3.58
d_A, Approach Delay [s/veh]	0.23			0.33			22.65			14.07		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	1.78											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 9: Main St/Kinkade Rd

Control Type:	Two-way stop	Delay (sec / veh):	25.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.382

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	7	200	0	0	209	78	88	0	13	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	14.00	3.00	2.00	2.00	1.00	0.00	1.00	2.00	8.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	86	4	12	101	18	11	0	9	3	0	20
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	286	4	12	310	96	99	0	22	3	0	20
Peak Hour Factor	0.8800	0.8800	1.0000	1.0000	0.8800	0.8800	0.8800	1.0000	0.8800	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	81	1	3	88	27	28	0	6	1	0	5
Total Analysis Volume [veh/h]	10	325	4	12	352	109	113	0	25	3	0	20
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.38	0.00	0.04	0.01	0.00	0.03
d_M, Delay for Movement [s/veh]	8.50	0.00	0.00	7.95	0.00	0.00	24.96	24.01	18.48	17.65	17.28	10.28
Movement LOS	A	A	A	A	A	A	C	C	C	C	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.03	0.00	0.00	2.02	2.02	2.02	0.12	0.12	0.12
95th-Percentile Queue Length [ft/ln]	0.73	0.00	0.00	0.74	0.00	0.00	50.39	50.39	50.39	2.99	2.99	2.99
d_A, Approach Delay [s/veh]	0.25			0.20			23.79			11.24		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	3.82											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 10: Main St/Willow Fork Dr

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.137

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	2	177	0	0	196	24	24	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	5.00	2.00	2.00	3.00	0.00	4.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	63	4	18	79	15	17	0	5	8	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	240	4	18	275	39	41	0	5	8	0	12
Peak Hour Factor	0.8700	0.8700	1.0000	1.0000	0.8700	0.8700	0.8700	1.0000	0.8700	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	69	1	5	79	11	12	0	1	2	0	3
Total Analysis Volume [veh/h]	14	276	4	18	316	45	47	0	6	8	0	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.14	0.00	0.01	0.02	0.00	0.02
d_M, Delay for Movement [s/veh]	8.01	0.00	0.00	7.85	0.00	0.00	17.13	16.60	11.75	15.54	15.48	10.01
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.04	0.00	0.00	0.04	0.00	0.00	0.50	0.50	0.50	0.12	0.12	0.12
95th-Percentile Queue Length [ft/ln]	0.88	0.00	0.00	1.07	0.00	0.00	12.57	12.57	12.57	3.00	3.00	3.00
d_A, Approach Delay [s/veh]	0.38			0.37			16.52			12.22		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	1.84											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 11: Main St/Wilson Ln

Control Type:	All-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.391

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	2	51	3	21	63	112	105	31	3	7	29	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	6.00	0.00	0.00	6.00	1.00	2.00	3.00	0.00	14.00	3.00	17.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	23	16	53	57	0	0	0	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	56	3	44	79	165	162	31	3	7	29	37
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	16	1	13	23	47	47	9	1	2	8	11
Total Analysis Volume [veh/h]	2	64	3	51	91	190	186	36	3	8	33	43
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	577	621	606	719	692	700
Degree of Utilization, x	0.00	0.11	0.08	0.39	0.33	0.12

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.01	0.36	0.27	1.86	1.41	0.41
95th-Percentile Queue Length [ft]	0.26	9.03	6.87	46.48	35.34	10.18
Approach Delay [s/veh]	9.20		10.61		10.70	8.85
Approach LOS	A		B		B	A
Intersection Delay [s/veh]	10.29					
Intersection LOS	B					

Appendix G Circulation Alternative #2 Traffic Conditions

Intersection Level Of Service Report
Intersection 1: Main St/Columbia Ave

Control Type:	Two-way stop	Delay (sec / veh):	17.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.397

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	300.00	100.00	100.00	150.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	19	44	112	7	22	4	3	22	17	116	31	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	4.00	0.00	0.00	0.00	0.00	0.00	6.00	3.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	15	11	83	0	6	0	0	0	19	71	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	55	195	7	28	4	3	22	36	187	31	14
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	16	55	2	8	1	1	6	10	53	9	4
Total Analysis Volume [veh/h]	39	63	222	8	32	5	3	25	41	213	35	16
Pedestrian Volume [ped/h]	7			0			2			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.00	0.01	0.00	0.00	0.01	0.05	0.04	0.40	0.06	0.02
d_M, Delay for Movement [s/veh]	7.33	0.00	0.00	7.81	0.00	0.00	11.93	12.53	9.09	17.42	16.81	14.82
Movement LOS	A	A	A	A	A	A	B	B	A	C	C	B
95th-Percentile Queue Length [veh/ln]	0.08	0.00	0.00	0.02	0.00	0.00	0.31	0.31	0.31	2.53	2.53	2.53
95th-Percentile Queue Length [ft/ln]	1.90	0.00	0.00	0.47	0.00	0.00	7.82	7.82	7.82	63.35	63.35	63.35
d_A, Approach Delay [s/veh]	0.88			1.39			10.46			17.18		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	7.99											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: Main St/Boardman Ave

Control Type:	Signalized	Delay (sec / veh):	13.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.581

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	300.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	153	161	45	21	151	17	21	9	78	84	8	8
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	9.00	10.00	4.00	6.00	0.00	0.00	0.00	11.00	0.00	12.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	86	51	37	58	0	0	9	3	121	0	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	157	247	96	58	209	17	21	18	81	205	8	31
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	71	28	17	60	5	6	5	23	59	2	9
Total Analysis Volume [veh/h]	180	284	110	67	240	20	24	21	93	236	9	36
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	1 - Coordination Group
Cycle Length [s]	60
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	1	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	5	10	0	0	10	0	0	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	15	29	0	9	23	0	0	22	0	0	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	L	C
C, Cycle Length [s]	41	41	41	41	41	41	41	41
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	19	12	19	11	14	14	14	14
g / C, Green / Cycle	0.46	0.30	0.46	0.26	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.14	0.24	0.06	0.16	0.02	0.07	0.20	0.03
s, saturation flow rate [veh/h]	1316	1641	1077	1672	1383	1530	1186	1534
c, Capacity [veh/h]	720	496	553	435	551	517	457	519
d1, Uniform Delay [s]	6.96	13.11	7.13	13.27	11.05	9.68	14.86	9.23
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	2.93	0.10	1.32	0.03	0.21	0.90	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.79	0.12	0.60	0.04	0.22	0.52	0.09
d, Delay for Lane Group [s/veh]	7.14	16.04	7.22	14.59	11.08	9.89	15.76	9.30
Lane Group LOS	A	B	A	B	B	A	B	A
Critical Lane Group	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.68	3.03	0.24	1.87	0.14	0.60	1.81	0.22
50th-Percentile Queue Length [ft/ln]	17.09	75.78	5.99	46.67	3.40	14.97	45.30	5.60
95th-Percentile Queue Length [veh/ln]	1.23	5.46	0.43	3.36	0.25	1.08	3.26	0.40
95th-Percentile Queue Length [ft/ln]	30.76	136.40	10.79	84.00	6.13	26.94	81.54	10.08

Movement, Approach, & Intersection Results

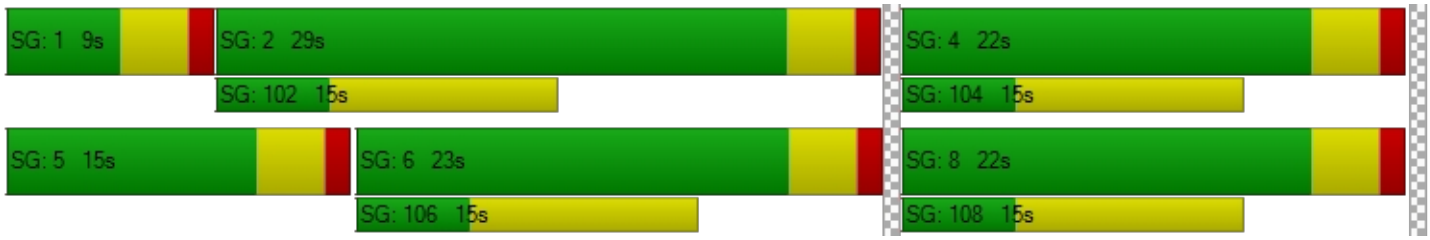
d_M, Delay for Movement [s/veh]	7.14	16.04	16.04	7.22	14.59	14.59	11.08	9.89	9.89	15.76	9.30	9.30
Movement LOS	A	B	B	A	B	B	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	13.25			13.08			10.10			14.73		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	13.19											
Intersection LOS	B											
Intersection V/C	0.581											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	12.45	12.45	12.45	12.45
l_p,int, Pedestrian LOS Score for Intersectio	2.606	2.151	2.090	2.088
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1222	929	880	880
d_b, Bicycle Delay [s]	3.10	5.87	6.42	6.42
l_b,int, Bicycle LOS Score for Intersection	2.507	2.099	1.787	2.023
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Main St/Front St NE

Control Type:	Two-way stop	Delay (sec / veh):	13.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.171

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	282	81	0	334	4	0	0	77	0	0	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.00	8.00	0.00	3.00	0.00	0.00	0.00	5.00	0.00	33.00	17.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	126	92	0	182	0	0	0	1	0	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	408	173	0	516	4	0	0	78	0	0	20
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	113	48	0	143	1	0	0	22	0	0	6
Total Analysis Volume [veh/h]	0	453	192	0	573	4	0	0	87	0	0	22
Pedestrian Volume [ped/h]	0			1			2			2		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.17	0.00	0.00	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.51	0.00	0.00	12.47
Movement LOS		A	A		A	A			B			B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.00	0.00	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.26	0.00	0.00	3.41
d_A, Approach Delay [s/veh]	0.00			0.00			13.51			12.47		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	1.09											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 4: Main St/I-84 WB Ramp Terminal

Control Type:	Roundabout	Delay (sec / veh):	10.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	24	252	0	0	363	48	0	0	0	122	0	111
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	3.00	2.00	2.00	3.00	17.00	2.00	2.00	2.00	4.00	0.00	10.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	38	170	0	0	142	41	0	0	0	31	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	62	422	0	0	505	89	0	0	0	153	0	159
Peak Hour Factor	0.9100	0.9100	1.0000	1.0000	0.9100	0.9100	1.0000	1.0000	1.0000	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	116	0	0	139	24	0	0	0	42	0	44
Total Analysis Volume [veh/h]	68	464	0	0	555	98	0	0	0	168	0	175
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	0			245			746			549		
Exiting Flow Rate [veh/h]	746			670			185			0		
Demand Flow Rate [veh/h]	62	422	0	0	505	89	0	0	0	153	0	159
Adjusted Demand Flow Rate [veh/h]	68	464	0	0	555	98	0	0	0	168	0	175

Lanes

Overwrite Calculated Critical Headway	No	No		No
User-Defined Critical Headway [s]	4.00	4.00		4.00
Overwrite Calculated Follow-Up Time	No	No		No
User-Defined Follow-Up Time [s]	3.00	3.00		3.00
A (intercept)	1380.00	1380.00		1380.00
B (coefficient)	0.00102	0.00102		0.00102
HV Adjustment Factor	0.97	0.95		0.93
Entry Flow Rate [veh/h]	549	685		367
Capacity of Entry and Bypass Lanes [veh/h]	1380	1075		789
Pedestrian Impedance	1.00	1.00		1.00
Capacity per Entry Lane [veh/h]	1339	1025		738
X, volume / capacity	0.40	0.64		0.47

Movement, Approach, & Intersection Results

Lane LOS	A	B		B
95th-Percentile Queue Length [veh]	1.94	4.78		2.49
95th-Percentile Queue Length [ft]	48.56	119.56		62.13
Approach Delay [s/veh]	6.44	12.66	0.00	11.39
Approach LOS	A	B	A	B
Intersection Delay [s/veh]	10.21			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 5: Main St/I-84 EB Ramp Terminal

Control Type:	Roundabout	Delay (sec / veh):	13.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	188	183	75	383	0	88	1	49	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	4.00	2.00	9.00	3.00	2.00	3.00	7.00	13.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	156	28	38	135	0	52	0	40	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	344	211	113	518	0	140	1	89	0	0	0
Peak Hour Factor	1.0000	0.8100	0.8100	0.8100	0.8100	1.0000	0.8100	0.8100	0.8100	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	106	65	35	160	0	43	0	27	0	0	0
Total Analysis Volume [veh/h]	0	425	260	140	640	0	173	1	110	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	332			0			812			620		
Exiting Flow Rate [veh/h]	784			620			0			419		
Demand Flow Rate [veh/h]	0	344	211	113	518	0	140	1	89	0	0	0
Adjusted Demand Flow Rate [veh/h]	0	425	260	140	640	0	173	1	110	0	0	0

Lanes

Overwrite Calculated Critical Headway	No	No	No	
User-Defined Critical Headway [s]	4.00	4.00	4.00	
Overwrite Calculated Follow-Up Time	No	No	No	
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	
A (intercept)	1380.00	1380.00	1380.00	
B (coefficient)	0.00102	0.00102	0.00102	
HV Adjustment Factor	0.97	0.96	0.94	
Entry Flow Rate [veh/h]	708	812	303	
Capacity of Entry and Bypass Lanes [veh/h]	984	1380	603	
Pedestrian Impedance	1.00	1.00	1.00	
Capacity per Entry Lane [veh/h]	953	1327	566	
X, volume / capacity	0.72	0.59	0.50	

Movement, Approach, & Intersection Results

Lane LOS	C	A	C	
95th-Percentile Queue Length [veh]	6.43	4.04	2.81	
95th-Percentile Queue Length [ft]	160.85	101.05	70.14	
Approach Delay [s/veh]	16.39	9.45	15.14	0.00
Approach LOS	C	A	C	A
Intersection Delay [s/veh]	13.09			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 6: Main St/Front St SE

Control Type:	Two-way stop	Delay (sec / veh):	13.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.049

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	338	18	0	419	12	0	0	6	0	0	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.00	5.00	0.00	3.00	8.00	0.00	0.00	0.00	0.00	0.00	4.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	184	0	0	147	28	0	0	11	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	522	18	0	566	40	0	0	17	0	0	33
Peak Hour Factor	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100	0.8100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	161	6	0	175	12	0	0	5	0	0	10
Total Analysis Volume [veh/h]	0	644	22	0	699	49	0	0	21	0	0	41
Pedestrian Volume [ped/h]	3			0			2			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.09
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.92	0.00	0.00	13.54
Movement LOS		A	A		A	A			B			B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.29
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.89	0.00	0.00	7.25
d_A, Approach Delay [s/veh]	0.00			0.00			13.92			13.54		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.57											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 7: Main St/Oregon Trail Blvd

Control Type:	All-way stop	Delay (sec / veh):	26.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.848

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	4	315	6	67	335	0	6	0	0	20	3	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	3.00	17.00	4.00	1.00	2.00	2.00	2.00	2.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	98	41	43	106	8	50	0	8	34	0	37
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	413	47	110	441	8	56	0	8	54	3	63
Peak Hour Factor	1.0000	0.9100	0.9100	0.9100	0.9100	1.0000	1.0000	1.0000	1.0000	0.9100	1.0000	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	113	13	30	121	2	14	0	2	15	1	17
Total Analysis Volume [veh/h]	9	454	52	121	485	8	56	0	8	59	3	69
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	548	596	557	610	492	538
Degree of Utilization, x	0.02	0.85	0.22	0.81	0.13	0.24

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.05	9.22	0.82	8.12	0.44	0.95
95th-Percentile Queue Length [ft]	1.25	230.62	20.53	203.10	11.12	23.72
Approach Delay [s/veh]	33.02		25.24		11.41	11.84
Approach LOS	D		D		B	B
Intersection Delay [s/veh]	26.28					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 8: Main St/City Center Dr

Control Type:	Two-way stop	Delay (sec / veh):	28.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.210

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	300	0	1	324	26	17	0	13	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.00	2.00	2.00	1.00	4.00	0.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	109	4	21	121	6	20	0	6	4	0	15
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	409	4	22	445	32	37	0	19	4	0	15
Peak Hour Factor	0.9000	0.9000	1.0000	1.0000	0.9000	0.9000	0.9000	1.0000	0.9000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	114	1	6	124	9	10	0	5	1	0	4
Total Analysis Volume [veh/h]	13	454	4	22	494	36	41	0	21	4	0	15
Pedestrian Volume [ped/h]	0			0			3			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.02	0.00	0.00	0.21	0.00	0.04	0.02	0.00	0.02
d_M, Delay for Movement [s/veh]	8.50	0.00	0.00	8.33	0.00	0.00	28.28	26.10	11.65	24.21	22.04	11.37
Movement LOS	A	A	A	A	A	A	D	D	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.04	0.00	0.00	0.06	0.00	0.00	0.77	0.77	0.12	0.14	0.14	0.14
95th-Percentile Queue Length [ft/ln]	0.95	0.00	0.00	1.53	0.00	0.00	19.18	19.18	2.91	3.58	3.58	3.58
d_A, Approach Delay [s/veh]	0.23			0.33			22.65			14.07		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	1.78											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 9: Main St/Kinkade Rd

Control Type:	Two-way stop	Delay (sec / veh):	25.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.382

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	7	200	0	0	209	78	88	0	13	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	14.00	3.00	2.00	2.00	1.00	0.00	1.00	2.00	8.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	86	4	12	101	18	11	0	9	3	0	20
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	286	4	12	310	96	99	0	22	3	0	20
Peak Hour Factor	0.8800	0.8800	1.0000	1.0000	0.8800	0.8800	0.8800	1.0000	0.8800	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	81	1	3	88	27	28	0	6	1	0	5
Total Analysis Volume [veh/h]	10	325	4	12	352	109	113	0	25	3	0	20
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.38	0.00	0.04	0.01	0.00	0.03
d_M, Delay for Movement [s/veh]	8.50	0.00	0.00	7.95	0.00	0.00	24.96	24.01	18.48	17.65	17.28	10.28
Movement LOS	A	A	A	A	A	A	C	C	C	C	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.03	0.00	0.00	2.02	2.02	2.02	0.12	0.12	0.12
95th-Percentile Queue Length [ft/ln]	0.73	0.00	0.00	0.74	0.00	0.00	50.39	50.39	50.39	2.99	2.99	2.99
d_A, Approach Delay [s/veh]	0.25			0.20			23.79			11.24		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	3.82											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 10: Main St/Willow Fork Dr

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.137

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	2	177	0	0	196	24	24	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	5.00	2.00	2.00	3.00	0.00	4.00	2.00	0.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	63	4	18	79	15	17	0	5	8	0	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	240	4	18	275	39	41	0	5	8	0	12
Peak Hour Factor	0.8700	0.8700	1.0000	1.0000	0.8700	0.8700	0.8700	1.0000	0.8700	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	69	1	5	79	11	12	0	1	2	0	3
Total Analysis Volume [veh/h]	14	276	4	18	316	45	47	0	6	8	0	12
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.14	0.00	0.01	0.02	0.00	0.02
d_M, Delay for Movement [s/veh]	8.01	0.00	0.00	7.85	0.00	0.00	17.13	16.60	11.75	15.54	15.48	10.01
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.04	0.00	0.00	0.04	0.00	0.00	0.50	0.50	0.50	0.12	0.12	0.12
95th-Percentile Queue Length [ft/ln]	0.88	0.00	0.00	1.07	0.00	0.00	12.57	12.57	12.57	3.00	3.00	3.00
d_A, Approach Delay [s/veh]	0.38			0.37			16.52			12.22		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	1.84											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 11: Main St/Wilson Ln

Control Type:	All-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.391

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	2	51	3	21	63	112	105	31	3	7	29	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	6.00	0.00	0.00	6.00	1.00	2.00	3.00	0.00	14.00	3.00	17.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	23	16	53	57	0	0	0	0	14
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	56	3	44	79	165	162	31	3	7	29	37
Peak Hour Factor	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700	0.8700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	16	1	13	23	47	47	9	1	2	8	11
Total Analysis Volume [veh/h]	2	64	3	51	91	190	186	36	3	8	33	43
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	577	621	606	719	692	700
Degree of Utilization, x	0.00	0.11	0.08	0.39	0.33	0.12

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.01	0.36	0.27	1.86	1.41	0.41
95th-Percentile Queue Length [ft]	0.26	9.03	6.87	46.48	35.34	10.18
Approach Delay [s/veh]	9.20		10.61		10.70	8.85
Approach LOS	A		B		B	A
Intersection Delay [s/veh]	10.29					
Intersection LOS	B					