CITY COUNCIL MEETING W/PUBLIC HEARING

November 05, 2024 at 7:10 PM

Boardman City Hall Council Chambers

AGENDA

1. **CALL TO ORDER**
2. **FLAG SALUTE**
3. **ROLL CALL/EXCUSED ABSENCES**
4. **APPROVAL OF MINUTES**
   - **A.** City Council Workshop Minutes, October 1, 2024
   - **B.** City Council Meeting Minutes, October 1, 2024
5. **FINANCIAL REPORT**
   - **A.** Financial Report - September 2024
6. **PUBLIC COMMENT**
   - **A.** Prearranged Presentation - Morrow County Schools, Boardman
7. **FORMAL PROCEEDINGS**
   - **A.** Public Hearing - Supplemental Budget 2024-25
   - **B.** Public Hearing - Appeal of CUP24-000001 (Continued)
8. **INTRODUCTIONS**
   - **A.** Arely Cambero, Planner 1
9. **ACTION ITEMS - ORDINANCES**
   - **A.** Ordinance 6-2024 Adopt Chapter 2.16 of the Boardman Municipal Code
10. **ACTION ITEMS - RESOLUTIONS**
    - **A.** Resolution 26-2024 Supplemental Budget 2024-25
11. **ACTION ITEMS - OTHER BUSINESS**
    - **A.** FEMA - PICM
    - **B.** IGA - Parks Master Plan w/Boardman Parks & Rec District
    - **C.** Agreement for Consulting Services - Comprehensive Plan & Development Code
12. **OTHER PUBLIC COMMENT**

    INVITATION FOR PUBLIC COMMENT – The mayor will announce that any interested audience members are invited to provide comments. Anyone may speak on any topic other than: a matter in litigation, a quasi-judicial land use matter; or a matter scheduled for public hearing at some future date. The mayor may limit comments to 3 minutes per person for a total of 30 minutes. Please complete a request to speak card prior to the meeting. Speakers may not yield their time to others.

A. Report Only - September 2024 Chamber/BCDA Report

13. REPORTS, CORRESPONDENCE, AND DISCUSSION

A. Police Report

B. Building Department Report

C. Public Works Department Report

D. Planning Department Report

E. Committee Reports

F. City Manager

G. Councilors

H. Mayor

14. DOCUMENT SIGNATURES

15. EXECUTIVE SESSION

A. ORS 192.660 (2)(e) To conduct deliberations with persons designated by the governing body to negotiate real property transactions

16. ACTION ITEMS - OTHER BUSINESS

A. Decision from Executive Session

17. ADJOURNMENT

Zoom Meeting Link: https://us02web.zoom.us/j/2860039400?omn=89202237716

This meeting is being conducted with public access in-person and virtually in accordance with Oregon Public Meeting Law. If remote access to this meeting experiences technical difficulties or is disconnected and there continues to be a quorum of the council present, the meeting will continue.

The meeting location is accessible to persons with disabilities. Individuals needing special accommodations such as sign language, foreign language interpreters or equipment for the hearing impaired must request such services at least 48 hours prior to the meeting. To make your request, please contact a city clerk at 541-481-9252 (voice), or by e-mail at city.clerk@cityofboardman.com.

CITY COUNCIL WORKSHOP

October 01, 2024 at 6:00 PM

Boardman City Hall Council Chambers

MINUTES

1. CALL TO ORDER

Mayor Keefer called the workshop to order at 6:02 PM.

2. FLAG SALUTE

3. ROLL CALL/EXCUSED ABSENCES

Councilors Present: Mayor Paul Keefer, Councilor Brenda Profitt, Councilor Ethan Salata, Councilor Cristina Cuevas, Councilor Richard Rockwell, Councilor Karen Pettigrew

Councilors Absent: Councilor Heather Baumgartner (excused)

4. REPORTS, CORRESPONDENCE, AND DISCUSSION

A. Franchise Licensing – Timestamp 2:09

City Manager Hammond introduced Nancy Werner, attorney, to present the franchise licensing process.

B. Strategic Plan – Timestamp 15:14

City Manager Hammond introduced Matt Hastie to present Strategic Plan updates.

5. ADJOURNMENT

Mayor Keefer adjourned the workshop at 6:51 PM.

_____ _____

Paul Keefer, Mayor Amanda Mickles, City Clerk

CITY COUNCIL MEETING W/ EXECUTIVE SESSION

October 01, 2024 at 7:00 PM

Boardman City Hall Council Chambers

MINUTES

1. CALL TO ORDER

Mayor Keefer called the meeting to order 7:00 PM.

2. FLAG SALUTE

3. ROLL CALL/EXCUSED ABSENCES

Councilors Present: Mayor Paul Keefer, Councilor Brenda Profitt, Councilor Ethan Salata, Councilor Cristina Cuevas, Councilor Richard Rockwell, Councilor Karen Pettigrew

Councilors Absent: Councilor Heather Baumgartner (excused)

4. APPROVAL OF MINUTES

A. City Council Workshop Minutes, September 3, 2024 – Timestamp 1:00

Motion to approve the minutes of September 3, 2024, City Council Workshop as presented.

Motion made by Councilor Cuevas, Seconded by Councilor Rockwell.
Voting Yea: Mayor Keefer, Councilor Profitt, Councilor Salata, Councilor Cuevas, Councilor Rockwell, Councilor Pettigrew

B. City Council Meeting Minutes September 3, 2024 – Timestamp 1:29

Motion to approve the minutes of September 3, 2024, City Council Regular Meeting as presented.

Motion made by Councilor Cuevas, Seconded by Councilor Profitt.
Voting Yea: Mayor Keefer, Councilor Profitt, Councilor Salata, Councilor Cuevas, Councilor Rockwell, Councilor Pettigrew

C. City Council Work Session w/ Boardman Parks and Rec District Board Minutes, September 17, 2024 – Timestamp 1:51

Motion to approve the minutes of September 17, 2024, Joint City Council work session with Boardman Parks and Recreation District as presented.

Motion made by Councilor Profitt, Seconded by Councilor Salata.
Voting Yea: Mayor Keefer, Councilor Profitt, Councilor Salata, Councilor Cuevas, Councilor Rockwell, Councilor Pettigrew

5. FINANCIAL REPORT

A. Financial Report - August 2024 – Timestamp 2:41

Finance Director Barajas gave the finance report.

6. PUBLIC COMMENT

A. Prearranged Presentation - Morrow County Schools, Boardman – Timestamp 7:19

Sam Boardman Elementary students Ava and Julian gave their report of events happening in their school.

Windy River Elementary students Harper and Fernanda gave their report of events happening in their school.

7. ACTION ITEMS - ORDINANCES

A. Ordinance 6-2024 Adopt Chapter 2.16 of the Boardman Municipal Code – Timestamp 12:38

Motion to approve the first ready by title only of Ordinance 6-2024, an Ordinance to approve an amendment to the Boardman Municipal Code Chapter 2.16 Planning Commission.

Motion made by Councilor Profitt, Seconded by Councilor Rockwell.
Voting Yea: Mayor Keefer, Councilor Profitt, Councilor Salata, Councilor Cuevas, Councilor Rockwell, Councilor Pettigrew

City Manager Hammond read the title of Ordinance 6-2024.

8. ACTION ITEMS - RESOLUTIONS

A. Resolution 25-2024 - Contingency Transfer 2024-25 – Timestamp15:19

Motion to approve Resolution 25-2024, a resolution to decrease contingency and to increase 2024-25 expenditures for materials and services.

Motion made by Councilor Profitt, Seconded by Councilor Cuevas.
Voting Yea: Mayor Keefer, Councilor Profitt, Councilor Salata, Councilor Cuevas, Councilor Rockwell, Councilor Pettigrew

9. ACTION ITEMS - OTHER BUSINESS

A. Appoint Parks Master Plan Public Advisory Committee – Timestamp 26:34

Motion to appoint the listed individuals as presented to the Parks Master Plan Public Advisory Committee with student representation appointed by Mr. Christy.

Motion made by Councilor Salata, Seconded by Councilor Rockwell.
Voting Yea: Mayor Keefer, Councilor Profitt, Councilor Salata, Councilor Cuevas, Councilor Rockwell, Councilor Pettigrew

B. Missing Middle Housing Fund – Timestamp 32:02

City Manager Hammond asked the council for consensus to continue with the effort of developing a revolving fund for the Missing Middle Housing Fund effort. Council gave consensus.

C. Keep Boardman Clean – Timestamp 46:20

City Manager Hammond asked the Council to discuss options for the garbage voucher as part of Keep Boardman Clean. Council offered consensus for 1 month to begin as soon as possible. Further discussion will be held with staff to find economical ways to offer assistance.

10. OTHER PUBLIC COMMENT

George Shimer, CEO Boardman Parks and Recreation District gave comment on current business. – Timestamp1:04:20

A. Report Only - Chamber/BCDA August 2024

11. DOCUMENT SIGNATURES

12. REPORTS, CORRESPONDENCE, AND DISCUSSION

A. Police Report – Timestamp 1:17:40

Police Chief Stokoe gave his report.

B. Building Department Report – Timestamp 1:23:24

City Manager Hammond asked if there were any questions.

C. Public Works Department Report – Timestamp 1:26:49

City Manager Hammond asked if there were any questions.

D. Planning Department Report – Timestamp 1:29:12

Planning Official McLane gave her report.

E. Committee Reports

F. City Manager – Timestamp 1:30:34

City Manager Hammond gave his report.

G. Councilors – Timestamp 1:47:17

H. Mayor – Timestamp 1:51:21

13. EXECUTIVE SESSION

Councilor Profitt left the meeting. Mayor Keefer paused the regular meeting at 8:58 PM for Executive Session. – Timestamp 1:57:55

A. ORS 192.660 (2)(e) To conduct deliberations with persons designated by the governing body to negotiate real property transactions

14. Decisions from Executive Session

A. Decision from Executive Session

Mayor Keefer resumed the regular meeting at 9:26 PM.

Motion to sell surplus property located at 206 N Main for $50,000.

Motion made by Councilor Rockwell, Seconded by Councilor Cuevas.
Voting Yea: Mayor Keefer, Councilor Cuevas, Councilor Rockwell, Councilor Pettigrew
Voting Nay: Councilor Salata

15. ADJOURNMENT

Mayor Keefer adjourned the meeting at 9:27 PM.

_____ _____

Paul Keefer, Mayor Amanda Mickles, City Clerk

CITY OF BOARDMAN
Monthly Council Financial Statement
Period Ending September 30, 2024
Fiscal Year Elapsed 25.00%

FISCAL YEAR 2024-2025

REVENUE | **EXPENDITURES**

FUND #	Fund Description	A 2024-2025 BUDGET	B Beginning Cash C/Over	Revenue Received This Month	C Year to Date Revenue	D (B+C) Total Revenue	E (A-D) Remaining Expectations (over budget)	F (D/A) % of Budget Received	Expenditures This Month	G Year to Date Expenditures	H (A-G) Unexpended Budget	I (G/A) % of Expended Budget	J (D-G) Fund Balance	Fund #
100	**General Government**	**976,980**							**54,199**	**194,467**	782,513	19.90%		**100**
110	**Public Safety - Police**	**3,490,500**							**210,697**	**687,939**	2,802,561	19.71%		**110**
125	**Code Compliance**	**124,325**							**19,704**	**71,060**	53,265	57.16%		**125**
180	**Facilities**	**280,250**							**24,562**	**35,753**	244,497	12.76%		**180**
195	**Non-Departmental**	**11,583,950**							**0**	**1,518**	11,582,432	0.01%		**195**
100	**GENERAL FUND**	**16,986,950**	1,987,901	58,831	2,340,207	**4,328,108**	12,658,842	25.48%	**309,406**	**990,945**	15,465,267	5.83%	**3,337,163**	**100**
220	**WATER FUND**	**2,023,700**	675,445	141,215	383,281	**1,058,726**	964,974	52.32%	**113,658**	**334,816**	1,688,884	16.54%	**723,910**	**220**
230	**SEWER FUND**	**2,905,450**	310,937	69,285	309,682	**620,619**	2,284,831	21.36%	**58,760**	**229,561**	2,675,889	7.90%	**391,059**	**230**
240	**GARBAGE FUND**	**1,046,500**	408,434	105,264	307,179	**715,613**	330,887	68.38%	**104,240**	**284,998**	761,502	27.23%	**430,615**	**240**
250	**STREET FUND**	**727,900**	206,047	25,989	85,594	**291,641**	436,259	40.07%	**27,952**	**115,104**	612,796	15.81%	**176,536**	**250**
260	**BUILDING FUND**	**25,446,600**	14,346,611	278,063	702,062	**15,048,672**	10,397,928	59.14%	**62,261**	**861,948**	24,584,652	3.39%	**14,186,725**	**260**
300	**GENERAL RESERVE FUND**	**10,340,000**	8,225,176	34,393	104,535	**8,329,712**	2,010,288	80.56%	**0**	**0**	10,340,000	0.00%	**8,329,712**	**300**
320	**WATER RESERVE FUND**	**2,665,800**	2,632,974	26,589	83,564	**2,716,538**	(50,738)	101.90%	**0**	**443,753**	2,222,047	16.65%	**2,272,785**	**320**
330	**SEWER RESERVE FUND**	**5,123,500**	3,701,630	29,379	90,886	**3,792,516**	1,330,984	74.02%	**526,499**	**701,562**	4,421,938	13.69%	**3,090,955**	**330**
350	**STREET RESERVE FUND**	**16,221,400**	9,711,959	39,497	121,185	**9,833,144**	6,388,256	60.62%	**0**	**677,162**	15,544,238	4.17%	**9,155,981**	**350**
410	**CAPITAL PROJECT FUND**	**2,400,000**	2,524,233	4,740	20,370	**2,544,604**	(144,604)	106.03%	**365,783**	**1,791,836**	608,164	74.66%	**752,767.95**	**410**
510	**GO BOND FUND**	**1,659,300**	254,958	2,443	4,016	**258,974**	1,400,326	15.61%	**0**	**0**	1,659,300	0.00%	**258,974**	**510**
	CITY TOTAL	**87,547,100**	**44,986,305**	**815,688**	**4,552,561**	**49,538,866**	**38,008,234**	56.59%	**1,568,559**	**6,431,685**	**80,584,677**	7.35%	**43,107,181**	
815	CENTRAL URA DISTRICT	**2,472,000**	334,209	1,486	2,657	**336,866**	2,135,134	13.63%	**0**	**0**	2,472,000	0.00%	**336,866**	**815**
819	WEST URA DISTRICT	**169,590**	87,382	757	1,668	**89,050**	80,540	52.51%	**0**	**0**	169,590	0.00%	**89,050**	**819**
	URA TOTAL	**2,641,590**	**421,591**	**2,243**	**4,325**	**425,916**	**2,215,674**	16.12%	**0**	**0**	**2,641,590**	0.00%	**425,916**	
CITY OF BOARDMAN GRAND TOTALS		**90,188,690**	**45,407,896**	**817,932**	**4,556,886**	**49,964,782**	**40,223,908**		**1,568,559.22**	**6,431,685.06**	**83,226,267.43**	**7.35%**	**43,533,097**	

CASH REPORT:

	Amount	as of 9/30/24 Interest Rate
Bank of Eastern Oregon Police	$7,016	5.30%
Banner Bank Checking	$53,807	-
Banner Bank Savings	$151,103	5.62%
Bank of Eastern Oregon	$109,962	5.30%
OR Government Pool	$41,661,694	5.30%
CURA Government Pool	$336,741	5.30%
WURA Government Pool	$89,050	5.30%
Xpress Online Clearing	$483,998	-
Bank of Eastern Oregon - R&G	$0	0.10%
Bank of Eastern Oregon - 2KG	$131,964	0.10%
Bank of Eastern Oregon - Rotschy	$477,876	0.10%
Bank of Eastern Oregon - Granite	$250	0.10%
Bank of Eastern Oregon - Silver Creek	$29,636	0.10%
TOTAL CASH	**$43,533,097**	
Cash Clearing - Utilities	$0.00	
Total	**$43,533,097**	

Current Month Net Cash Change (No URA) **(752,871)**

2024-2025 Year to Date Net Cash Change **(1,874,799)**

City of Boardman
Finance Report
As of September 30, 2024

Unexpectedly, some of the interest rates saw a slight increase. We are still getting good interest rates from 5.3% to 5.62% on our accounts.

We did not receive any property taxes in the month of August. Both the July and August property taxes were received in September. They were a couple hundred dollars in the Urban Renewal Agencies, each, and approximately $5,700 for July and $3,500 for August, for the city's levy of property taxes.

Overall, there were no extraordinary receipts in the month of September. It is the end of the calendar quarter, so next month should reflect the Transient Room Tax receipts and the Franchise Fee receipts.

General Fund: The Congressional Community Project funds, in the amount of $1.5M still remain in our General Fund, until we establish a new fund to account for it there. This will be through a Supplemental Budget Hearing process.

Sewer Reserve Fund: We had a large purchase out of the Sewer Fund. The City had budgeted to purchase a new Vac Truck and this transaction was completed this month. The 2024 Freightliner has been delivered to the City. We anticipate sending an employee to get certified as a technician to provide the maintenance and repairs necessary to this piece of equipment.

Capital Project Fund: The Water System Improvements-Phase II (GO Bond funded) is still expected to be completed by late fall.

City of Boardman OR

SUPPLEMENTAL BUDGET – JUSTIFICATION
NOVEMBER 5, 2024

The City of Boardman applied for a grant for Congressionally Discreet Dollars with the application stating that the Boardman Community Development Association (BCDA) would be the sub-recipient of the entirety of the funds. The City received the fully executed Notice of Award on August 14, 2024 and was immediately funded the entire grant amount of $1,500,000. This grant was issued out of the U.S. Small Business Administration office and is also referred to as the FY24-Community Project Fund.

This grant was accepted by the Boardman City Council along with the terms and conditions that accompany it. In order to be in compliance with the accounting of said funds and project, the City will create a new fund, Congressional Community Project Fund. The fund was not created during the budget process; therefore, it requires a supplemental budget process to create it. It was believed that the grant would be on a reimbursement basis or a draw down request basis as the construction costs were incurred. It was not expected to be deposited in one lump sum to our bank account. This supplemental budget is to request for this new Fund be created.

Below is a summary of the project and award, as sent by the U.S. Small Business Administration.

Award Number: SBAHQ24I0115

Project Title: Boardman Business Opportunity Incubator

Project Purpose: The Boardman Community Development Association, which is a local nonprofit and the subrecipient of the entirety of this award, aims to provide a dedicated space for small and medium-sized businesses, with a particular emphasis on supporting women and minority owned business enterprises (MBE) and low-income populations. This project addresses a significant community need by fostering economic development in Boardman, which currently lacks sufficient commercial activity and startup locations for small businesses. This initiative will enhance the health and vitality of Boardman, especially for disadvantaged populations.

The development will create a space through a public/private partnership. Initial conceptual design has begun, although construction has not yet started. A National

Environmental Policy Act (NEPA) review may be required, and if so, a categorical exclusion is expected.

The overall facility construction is estimated to cost $1,500,000.00 and will be situated on property owned by the Boardman Community Development Association (BCDA). The facility is anticipated to cover approximately 5,000 to 7,000 square feet and will house multiple business opportunities within.

This development will benefit the City of Boardman, residents, and the surrounding communities in Morrow County and the region. No matching funds, personnel, or equipment (other than those required per code as part of the structure installation) are anticipated as the project proceeds to final design and construction.

Award Amount: $1,500,000

Period of Performance: 9/1/2024 – 8/31/2028

The Fund accounts for the interfund transfer from the General Fund, which currently houses the money and with possible interest earnings of $45,000 for the year. The appropriations are the full $1,500,000, if BCDA were to start construction immediately and the $45,000 is allocated to the Contingency. All appropriations will be for construction, as stated in the grant agreement.

NOTICE OF SUPPLEMENTAL BUDGET HEARING

A public hearing on a proposed supplemental budget for Boardman, Oregon for the current fiscal year will be held at City Hall. The hearing will take place on 11/5/2024 at 7:05 PM. The purpose of the hearing is to discuss the supplemental budget with interested persons. A copy of the supplemental budget document may be inspected or obtained on or after 10/30/24 at City Hall, 200 City Center Circle, Boardman, OR., between the hours of 9 AM and 4 PM.

SUMMARY OF PROPOSED BUDGET CHANGES

AMOUNTS SHOWN ARE REVISED TOTALS IN THOSE FUNDS BEING MODIFIED

FUND: GENERAL

Resource	Amount	Expenditure	Amount
Other Revenue	(45,000)	Materials & Services	(1,500,000)
		Contingency	(45,000)
		Transfers	1,500,000
Revised Total Fund Resources	(45,000)	**Revised Total Fund Requirements**	(45,000)

Explanation of change(s):

The City received a $1.5 million grant from the FY 2024 Congressional Community Project Award from the U.S. Small Business Administration. The grant, interest income, and allocations were in the original city budget but to meet federal guidelines, they need to be in a fund of their own.This is to remove these amounts from the General Fund and transfer to the new Congressional Community Project Fund.

FUND: CONGRESSIONAL COMMUNITY PROJECT FUND

Resource	Amount	Expenditure	Amount
Other Revenue	45,000	Materials & Services	1,500,000
Transfers	1,500,000	Contingency	45,000
Revised Total Fund Resources	1,545,000	**Revised Total Fund Requirements**	1,545,000

Explanation of change(s):

The City received a $1.5 million grant from the FY 2024 Congressional Community Project Award from the U.S. Small Business Administration. This project is in support of the Boardman Community Development Association, and the sub-recipient of this grant, for construction of a dedicated space for small and medium-sized businesses, with a particular emphasis on supporting women and minority owned business enterprises (MBE) and low-income populations. The funds will be a pass-through to the sub-recipient, as they are expensed. The grant and allocations were in the original city budget but to meet federal guidelines, they need to be in a fund of their own. This is to establish the new fund.

MEMORANDUM

To: Mayor Keefer and Councilors
From: Carla McLane, Planning Official
Date: August 27, 2024
RE: Appeal APP24-000002 of Conditional Use Permit CUP24-000001

City staff including the City Engineer and Contractor for the Main Street Assessment have concluded additional information would best inform the decision that the City Council is being asked to make. To that end, we are requesting that you reopen the public hearing and continue this matter to Tuesday, November 5th at 7:00 p.m. in the Boardman City Council Chambers.

In response to public testimony, the City will be collecting video of traffic conditions in early September (after local schools are back in session) to better quantify and summarize the various safety issues that exist along the North Main Street corridor. The requested continuance will allow this additional assessment to be completed and documented in the public record.

At this point no changes have been made to the Findings of Fact but the packet does include all the additional evidence and testimony that has been submitted by the appellant as well as a letter from an interested party. We anticipate additional comments to be submitted once the record has been reopened.

Thanks for your patience as we work to make both the request and the final decision the best one for the City of Boardman with a focus on the safety of pedestrians, bicyclists, and motorists traveling along North Main Street, Boardman Avenue, and the North Front Streets.

CITY COUNCIL
FINDINGS OF FACT ON APPEAL
APPEAL APP24-000002
CONDITIONAL USE PERMIT
CUP24-000001

APPEAL: Appeal of Conditional Use Permit CUP24-000001.

REQUEST: To approve the installation of a ~~HAWK (High-Intensity Activated CrossWalK)~~ *traffic* signal *and median between Boardman Avenue and North Front Streets* with related street improvements at the corner of North Main and Boardman Avenue to include conversion of the North Main Street intersection with the NE and NW Front Streets to a right-in/right-out configuration. To determine that the installation is in conformance with the Main Street Interchange Area Management Plan and meets necessary warrants.

APPELLANT:	Hattenhauer Distributing Company Post Office Box 1397 The Dalles, Oregon 97058
APPLICANT/OWNER:	City of Boardman Post Office Box 229 Boardman, Oregon 97818
ZONING OF THE AREA:	Commercial (Tourist Commercial Sub District) and Residential
PROPERTY LOCATION:	The subject property includes the rights-of-way for both Main Street and Boardman Avenue north of the Main Street Interchange. Adjacent businesses include C&D, Chevron, Sinclair, the Boardman Office Center, and Riverside High School.

I. **APPEAL BACKGROUND:** Hattenhauer Distributing, represented by Jennifer Bragar of TBD, is appealing the Planning Commission decision approving the proposed HAWK signal at the intersection of Boardman Avenue and North Main Street. Their appeal letter is attached, and the issues identified are discussed later in this Findings of Fact.

II. **CONDITIONAL USE PERMIT BACKGROUND:** A number of years ago the City of Boardman experienced a loss of life at the subject intersection after which the currently installed Rectangular Rapid Flashing Beacon (RRFB) was installed. During peak pedestrian crossings, predominantly at school departure times, use of the RRFB can create traffic backups along Main Street that can impact queuing on the west bound Interstate 84 off ramp creating potential impediments into the west bound *Interstate 84* travel lane.

This area is subject to the Boardman Main Street Interchange Area Management Plan (MS IAMP) and any development or street projects within the Management Area must conform to the requirements of the IAMP. In the MS IAMP there are streetlights envisioned at the ramp intersections but not other intersections. About two years ago the City engaged Kittelson & Associates (Kittleson) to do an evaluation of the Main Street corridor to accomplish an update to

the planning level analysis documented in the 2009 MS IAMP. The purpose was to provide an updated list of improvement projects to support multi-modal circulation improvements along the corridor and at the interchange.

After lengthy discussion with the Oregon Department of Transportation (ODOT) concerning the necessary planning process to authorize the installation of a streetlight it was determined that an amendment to the MS IAMP would not be necessary but signal warrants needed to be identified and no impacts to the interchange could occur. Kittleson conducted a corridor assessment and determined that signal warrants were justified and the streetlight was shown not to impact the interchange. Installation of the center median is also justified to convert NW and NE Front Street to right-in/right-out and for traffic queueing/staging at the signalized intersection.

It should be noted that the MS IAMP says the following about access to Main Street in the vicinity of the Interchange: "A key element of the IAMP is the long-range preservation of operational efficiency and safety of the interchange is the management of access to Main Street. Because access points introduce a number of potential vehicular conflicts on a roadway and are frequently the causes of slowing or stopping vehicles, they can significantly degrade the flow of traffic and reduce the efficiency of the transportation system. However, reducing the overall number of access points and providing greater separation between them can minimize the impacts of these conflicts." The proposed center median and limiting left hand turns on North Main Street between Front Street and Boardman Avenue affectively achieves the intent of this statement without closing those accesses.

In limiting NE and NW Front Streets to a right-in/right-out configuration the Boardman Avenue and North Main Street intersection allows full turning movements. For comparison the same configuration on South Main Street would mean that Oregon Trail Boulevard will also allow full turning movements.

The street light installation, including street, sidewalk, and parking improvements, has been designed. It was anticipated that the project would go to bid in July 2024 with construction starting in March or April of 2025 and ending in July or August of that same year. The duration of time between the construction bidding process and the start of construction is for the procurement of long-lead time equipment and materials. *Based on this appeal the timeline has been affected and has been paused. Once a decision has been made, work will be reengaged accordingly and a revised schedule will be drafted.*

This project is identified in the Capital Improvement Plan adopted by the Boardman City Council on April 2 of this year. The City Manager and Planning Official have met with several of the immediately impacted landowners to discuss the project, the safety concerns it is addressing, mitigation of construction impacts, and to express our understanding of how this can create negative impacts to business operations.

~~*After the initial Planning Commission public hearing on April 17 staff did follow up with ODOT to further discuss the impacts of the proposal and their participation in accomplishing the requirements as laid out in the MS IAMP. Based on that conversation and further review of the Kittelson & Associates Main Street Assessment the city is modifying their project in two ways. First the street light infrastructure will be installed but the signal will initially be a High-Intensity*~~

~~*Activiated CrossWalk, or HAWK and second the median will only affect the Front Street intersection allowing, for now, left turns across Main Street between Front Street and Boardman Avenue. The modification of Front Streets to a right-in/right-out configuration is maintained.*~~

~~***What is a HAWK signal?** It is a device used to assist people with safely crossing busy streets. They work the same as other button-activated signals, either by pushing a button or an automatic sensor, which directs the person walking or biking to wait for the signal to change and traffic to stop allowing them to cross safely. For a driver, the HAWK signal appears differently than other traffic lights. At rest, HAWKs remain dark. Once triggered, it will then go through a series of yellow and red sequences requiring motorists to slow down and stop. After the people walking and biking cross, the HAWK will go dark again, allowing motorists to continue through the intersection.*~~

~~***Why are they helpful?** HAWK signals provide safer crossing alternatives for people walking and biking than traditional crosswalks especially in mid-block locations with heavy demand. Because the devices are only activated when walkers or bikers are present, people driving experience minimal delays. HAWK signals can also be installed at the intersection of an arterial road with a smaller side street, which would not otherwise warrant a traffic light signalized crossing. This amounts to easier crossing on busy streets for people walking and biking. Data also suggests that HAWK signals crate safer crossings, reduce crashes, and increase driver compliance with crosswalk laws.*~~

City staff have concluded that to implement the MS IAMP while maintaining public safety, a traffic signal is the best alternative for the intersection of Boardman Avenue and North Main Street. Additionally, the staff recommends converting the Front Street intersection to a right-in/right-out configuration for several reasons outlined here:

1. *The City's Level of Service, or LOS, standard is C which is higher than ODOTs and allows for less congestion.*
2. *Access points introduce a number of potential vehicular conflicts on a roadway and are frequently the causes of slowing or stopping vehicles, they can significantly degrade the flow of traffic, and reduce the efficiency of the transportation types. Reducing the overall number of access points and providing greater separation between them can minimize the impacts of these conflicts. Reducing Front Street to a right-in/right-out configuration reduces a significant vehicular conflict adjacent to the west bound off-ramp.*
3. *At the time the MS IAMP was adopted the LOS for Main Street and North Front Street was C. Today it is D which, under the MS IAMP, does require action on the part of the city. It should be noted that the LOS for South Front Street is also at a LOS of D. Without action both of those intersections are identified to achieve a LOS of F by 2042.*
4. *The MS IAMP does provide that the City is to work towards two items, the first being development of the local street network both east and west of Main Street, and second to limit access at Main Street at both north and south Front Street. The first step of this is to limit those intersections to right turn only.*

For these reasons, staff recommend approving the application as presented.

II. APPROVAL CRITERIA: The Boardman Development Code Residential and Commercial use zones both identify in their respective Tables of allowed uses that "transportation projects that are not designated improvements in the Transportation System Plan" are subject to a Conditional Use

Permit. [Chapter 2.1 Residential District Table 2.1.110.A Land Uses and Building Types Permitted in the Residential District Item 6. Public and Institutional h. Transportation Facilities and improvements item 7. and Chapter 2.2 Commercial District Table 2.2.110.A Land Uses and Building Types Permitted in the Commercial District 4. Public and Institutional i. Transportation Facilities and Improvements item 7.] While traffic lights are envisioned in the MS IAMP they are planned for the on- and off-ramps, not other intersections. The applicable criteria are found in Chapter 4.4 Conditional Use Permits at 4.4.400 Criteria, Standards and Conditions of Approval which is in **bold** text with responses in regular text.

4.4.400 Criteria, Standards and Conditions of Approval

The City shall approve, approve with conditions, or deny an application for a conditional use or to enlarge or alter a conditional use based on findings of fact with respect to each of the following standards and criteria:

D. Transportation System Facilities and Improvements

1. City or County facilities and improvements. Construction, reconstruction, or widening of highways, roads, bridges or other transportation facilities that are (1) not designated in the City's adopted Transportation System Plan ("TSP"), or (2) not designed and constructed as part of an approved subdivision or partition, are allowed in all Districts subject to a Conditional Use Permit and satisfaction of all of the following criteria:

a. The project and its design are consistent with the City's adopted TSP, or, if the city has not adopted a TSP, consistent with the State Transportation Planning Rule, OAR 660-012 ("the TPR").

b. The project design is compatible with abutting land uses in regard to noise generation and public safety and is consistent with the applicable zoning and development standards and criteria for the abutting properties.

c. The project design minimizes environmental impacts to identified wetlands, wildlife habitat, air and water quality, cultural resources, and scenic qualities; and a site with fewer environmental impacts is not reasonably available. The applicant shall document all efforts to obtain a site with fewer environmental impacts, and the reasons alternative sites were not chosen.

d. The project preserves or improves the safety and function of the facility through access management, traffic calming, or other design features.

e. The project includes provisions for bicycle and pedestrian access and circulation consistent with the comprehensive plan, the requirements of this ordinance, and the TSP or TPR.

The proposed ~~HAWK~~ *traffic* signal and related improvements are on a city facility and involves the construction of the area in and around the Main Street and Boardman Avenue intersection. The construction will involve the installation of the ~~HAWK~~ *traffic* signal and its components, improved street base and new pavement in the intersection and along Boardman Avenue to both the east and west, new sidewalk and improved access points, a median along North Main to convert the Front Street intersection into a right-in/right-out only configuration *and limit left turn movements between North Front Streets and Boardman Avenue*, and new striping throughout the area.

Staff have determined that the ~~HAWK~~ *traffic* signal is consistent with the MS IAMP because it conforms to the Access Management Plan by:

- Continuing to restrict access to the interchange and interchange ramps and is, in fact, working to eliminate impacts to the interchange ramps from traffic that currently backs up when continual use of the RRFB causes delays of northbound travelers on Main Street.

- Improve safety factors not only within the interchange but also along Main Street and at this intersection in particular.
- Eliminating or reducing turning conflicts along the Main Street corridor at the Front Street intersection.
- Assuring that all current accesses are maintained to allow some level of ingress or egress and improving several accesses with improvements that also support pedestrian utilization.

Staff have also determined that the ~~HAWK~~ *traffic* signal is warranted based on the following:

- While not within the standard time frame for consideration there has been a pedestrian loss of life at this intersection.
- This intersection is a primary school crossing area for Riverside High School during the arrival, lunch, and departure times. Use of the current RRFB creates backups along Main Street impacting the west bound off ramp queuing and can result in traffic backing up into the west bound *Interstate 84* travel lane. This is further discussed on page 7 of the Kittelson & Associates analysis that is attached.
- Pedestrian volume outside of school pedestrian usage continues to increase along Main Street.
- Crash data from 2016 through 2020 identified in the Kittelson & Associates report shows that there are a variety of different types of crashes throughout the study corridor.
- The near miss video compilation confirms staffs concerns that current traffic volumes create limited spacing for turning maneuvers causing drivers to drive more aggressively creating opportunities for accidents with other vehicles and pedestrians.

Abutting land uses are commercial in nature with the exception of the school. The school building is located 1,000 feet or more from the intersection with school green space and recreational space in between. The C&D Drive-In is most affected by the installation of the ~~HAWK~~ *traffic* signal and the design of the project took into consideration their setback distance from the road with a desire to maintain their outdoor seating on the west side of their development. On-street parking has been the most effected element through the design process with a number of angle and parallel parking spaces being removed. At least as many, if not more, parking spaces are being constructed resulting in a positive number of parking spaces. The new parking opportunity is being developed along the frontage of the Riverside High School with discussion ongoing to extend the parking further to the east from the current terminus shown on the Schematic Layout.

This project is locationally dependent. It is not specifically being designed to move more traffic, but to move current traffic more efficiently and safely.

Safety is one of the primary reasons for pursuing the street light project based on the loss of life from some years ago along with the reporting of a significant number of near misses with both cars and pedestrians. *Based on commentary within the community and staff concerns about near misses a near miss analysis has been completed with a surprising number of potential incidents called out in the video that has been delivered. A spreadsheet identified as a 'conflict report' is included and through imbedded links video is available for review. A summary of that video will be available at the City Council Public Hearing.*

Pedestrian, and by extension bicycle, movement and safety will be improved with the ~~HAWK~~ *traffic* signal allowing for protected crossing times and spacing those crossing times to reduce if not eliminate

backups along Main Street that can currently affect the queuing of west bound travelers on the west bound *Interstate 84* off ramp.

2. **State facilities and improvements. The State Department of Transportation ("ODOT") shall provide a narrative statement with the application demonstrating compliance with all of the criteria and standards in Section 4.4.400.D. 1.b. – e. above. Where applicable, an Environmental Impact Statement or Environmental Assessment may be used to address one or more of these criteria.**

The intersection of Main Street and Boardman Avenue is not a state facility. It is within the Management Area of the MS IAMP which was addressed through significant conversation with ODOT staff about the light, the mechanism to approve the installation of the streetlight, and will also include conversation with ODOT about management of the light once installed. The above criteria for a state facility have been deemed to not be applicable.

3. **Proposal inconsistent with TSP/TPR. If the City determines that the proposed use or activity or its design is inconsistent with the TSP or TPR, then the applicant shall apply for and obtain a plan and/or zoning amendment prior to or in conjunction with conditional use permit approval. The applicant shall choose one of the following options: a. If the city determination of inconsistency is made prior to a final decision on the conditional use permit application, the applicant shall withdraw the conditional use permit application; or b If the city determination of inconsistency is made prior to a final decision on the conditional use permit application, the applicant shall withdraw the conditional permit application, apply for a plan/zone amendment, and re-apply for a conditional use permit if and when the amendment is approved; or**
    a. **If the city determination of inconsistency is made prior to a final decision on the conditional use permit application, the applicant shall submit a plan/zoning amendment application for joint review and decision with the conditional use permit application, along with a written waiver of the ORS 227.178 120-day period within which to complete all local reviews and appeals once the application is deemed complete; or**
    b. **If the city determination of inconsistency is part of a final decision on the conditional use permit application, the applicant shall submit a new conditional use permit application, along with a plan/zoning amendment application for joint review and decision.**

The city has determined that the installation of the ~~HAWK~~ *traffic* signal is consistent with the MS IAMP, which was adopted as a refinement to the Boardman TSP, and is therefore consistent with the Transportation Planning Rule. See the discussion under 1. above and the attached Boardman Main Street Circulation Assessment dated March 2024 and prepared by Kittelson & Associates.

4. **Expiration. A Conditional Use Permit for Transportation System Facilities and Improvements shall be void after three (3) years.**

It was the intent of the City to have this project go to bid in July 2024 with construction to start in March or April 2025 and concluding in July or August 2025. *While this timeline has been impacted and the project paused, once approved staff will reengage the project, as appropriate, identifying a new construction and installation schedule.*

III. ISSUES RAISED ON APPEAL: The following were outlined in the appeal letter submitted on behalf of Hattenhauer Distributing:

Appellant Issue: While right-in/right-out at North Front Street may have been identified as part of the solution for traffic control along North Main Street under the 2009 IAMP, the timing for such decision should not occur as part of a piecemeal approach. Rather the traffic signal at N.E. Boardman should be installed and then the level of service at North Front Street should be revisited, prior to installing a median to accomplish right-in/right-out access. Further, ODOT's work on the overpass should occur before the right-in/right-out decision is made.

Staff Response: The City of Boardman secured the Kittelson Boardman Main Street Circulation Assessment to evaluate the various needs along Main Street and the current Level of Service (LOS) identified for the Front Streets is at D which based on the Main Street Interchange Area Management Plan (IAMP) requires action by the city once a LOS of C is reached. This is not being done as a piecemeal approach with city planning and engineering staff evaluating the portion of Main Street north of the Interchange through Boardman Avenue. One of the primary reasons for evaluating these intersections is the conflict between pedestrians and vehicles at the Front Street intersection as well as the Boardman Avenue intersection. Use of the currently installed RRFB causes backup and delay issues along both Main Street to the south and Boardman Avenue to the east. Replacing the RRFB with a traffic signal will allow for smoother interaction between vehicle travel and pedestrian crossing, particularly at the Boardman Avenue intersection. The ODOT has been involved with these discussions and has indicated that they do not plan to make any changes to the interchange ramps or intersections.

Appellant Issue: The City is exceeding its authority to propose the median as part of the contemplated scope of improvements.

Staff Response: The median is defined in the MS IAMP as a solution to be implemented when certain conditions have been met, which is the case.

Appellant Issue: Full analysis should be done to ensure the City is not creating a stacking issue on Main Street that does not currently exist.

Staff Response: As discussed previously in these Findings of Fact there is already a stacking issue on Main Street that the upgrade from the RRFB to the traffic signal should mitigate reducing the stacking that currently occurs. This will be achieved as the traffic signal uses more advanced logic to balance the needs of the pedestrian crossing with motor vehicle needs.

Appellant Issue: A consistency finding is required for existing uses and there is no analysis that removal of parking from the C & D Drive-in will be consistent with current parking requirements for that use.

Staff Response: The on-street parking that has been utilized by the C&D Drive-in along Boardman Avenue encroached into the Boardman Avenue right-of-way. Development of that use predates current development standards, and no permit has been located as to what may have been permitted. That parking, under today’s standards, would not be allowed. It should also be noted that when the drive-in and neighboring gas station where originally built it was under a single ownership and parking was shared. This action is not designed to review the parking for either C&D or the Chevron; those businesses are considered preexisting. It should be noted that the parking that is proposed on the north side of Boardman Avenue, which will be within city right-of-way, will be available to both of those businesses.

Appellant Issue: The proposal is too premature because the Applicant has no authority over the school property for which it proposes to convert to parking, no basis to turn public school property into parking, and there is no finding of consistency with the school use and whether the proposed parking is allowed on school property.

Staff Response: The proposed parking will be in the public right-of-way, not on school property as the City has been working with the Morrow County School District Superintendent for many months on this project and has secured a letter of support that outlines the right-of-way access process that will occur prior to the project's construction. The parking that is proposed will be shared by local businesses, including the C&D Drive-in, as well as the school district for sporting events and activities occurring on school property.

Appellant Issue: The Planning Commission decision is tainted by allowing Planning Commissioner Jennifer Leighton to vote and participate in deliberations when she has a financial benefit from the proposed parking on the school property, and a direct interest as her business will be impacted by the proposal.

Staff Response: Any perceived conflict is resolved by this appeal with the final decision before the City Council.

Appellant Issue: Even if a median at North Main Street and North Front Street is approved, the application should not be approved without significant design constraints imposed through this review process to preserve full access to Appellant's property along North Main Street.

Staff Response: The installation of the median along North Main will limit left turn movements which are identified within the near miss video to be a significant safety concern. Main Street access will be maintained to the three businesses, which includes the appellant's property, to allow only right turns.

Appellant Issue: The project is not currently justified under the IAMP.

Staff Response: There has been a pedestrian fatality at this intersection and local complaints about the safety of this area have been ongoing for some time which resulted in staff designing and presenting the streetlight as a response. The near-miss video that will be provided to the City Council and community at the public hearing will further outline the concerns of staff. The MS IAMP contemplates improvements at this intersection in order to ensure the "operational efficiency and safety of the interchange." The traffic signal is consistent with this goal.

Appellant Issue: The construction of a Median at N. Main Street and Front Street is not included in the CIP.

Staff Response: The project descriptions within the CIP are developed as summaries of potential projects. Final project components are identified when the project undergoes final engineering. Also, the CIP is not an approval standard, and the development code does not require a project to be listed on the CIP.

Appellant Issue: The Planning Commission's decision is in error because it does not correctly, completely, or adequately address the conditional use criteria.

Staff Response: The appellant is apparently arguing that staff have not applied all the applicable Conditional Use Permit criteria. Notably, the appeal does not identify the criteria they believe are not correctly or adequately addressed. Staff evaluated the criteria and found that the section applied (4.4.400) is specifically for Transportation System Facilities and Improvements and is most applicable. Section A discusses the Use Criteria and evaluates the site, which is a road improvement, reviews negative impacts which was a part of the analysis that was accomplished, and addresses public facility capacity which gets to the primary reason that the streetlight is proposed – to address the capacity and safety issues at Boardman Avenue and North Main Street. Section B would apply Site Design Review standards which requires a complete application; that the application is consistent with the underlying use district (as a road improvement it would be except that a Conditional Use Permit is required as the project is not in the TSP or IAMP); that the applicant shall be required to upgrade any existing development that does not comply which is being done by the improvement to the road, addition of parking, and the streetlight; apply a variety of design standards found in Chapter 3 of the Development Code which are largely not applicable to a street project; address conditions from other approvals; or grant a Variance if deemed appropriate.

Appellant Issue: Review of the application should be sent back to the Planning Commission to ensure a fair public review process.

Staff Response: The City Council review of the appeal will result in an open and objective decision on the appeal and the underlying Conditional Use Permit. Any potential conflict of interest alleged by the appellant is cured by the appeal process and a final decision from the City Council.

Appellant Issue: The IAMP triggers should govern whether the median at North Main and Front streets should be constructed now.

Staff Response: The Kittelson Main Street Circulation study shows that when Boardman Avenue and Main Street is signalized installation of a raised median on Main Street should be included from the Boardman Avenue intersection along North Main Street to terminate near the I-84 West Bound Ramp Terminal intersection which would clearly include the North Front Streets. This would result in that section of Main Street and the North Front Streets all becoming configured to be right-in/right-out only. That same study shows that the existing conditions at Main Street and NE Front Street are operating at a LOC D which, according to the Main Street IAMP, does require action.

Appellant Issue: The Median should not be installed until it is fully analyzed and reviewed during the City's TSP Update.

Staff Response: See staff response immediately above.

IV. LEGAL NOTICE PUBLISHED:

City Council
July 17, 2024
East Oregonian

Planning Commission
March 26 and April 23, 2024
East Oregonian

V. **PROPERTY OWNERS NOTIFIED** (List on File)**:** City Council
July 17, 2024

Planning Commission
March 26, 2024

VI. **AGENCIES NOTIFIED:** Teresa Penninger, Rich Lani, David Boyd, and Cheryl Jarvis-Smith, Oregon Department of Transportation; Marty Broadbent and Michael Hughes, Boardman Fire Rescue District; Emily Roberts, Morrow County Health District; Mike Lees and Rolf Prag, City of Boardman.

VII. **HEARING DATES:** City Council
August 6, September 3, and November 5, 2024

Planning Commission
April 17 and May 15, 2024
Boardman City Hall

VIII. **COMMENTS RECEIVED:** The following summarize comments received:

- Letter dated April 10, 2024, from Alex Hattenhauer, Hattenhauer Distributing, in opposition.
- Site Team was held on April 11, 2024, with local utilities, the Fire Marshall, and ODOT staff in attendance. No changes to the proposal emerged from this discussion.
- Public comment was received at the Planning Commission public hearing held on April 17 from Alex Hattenhauer, Greg Miller, Karen Purcell, and Nora Reyna and is summarized in the meeting minutes.
- Additional comments received are identified below as Exhibits to the record.

IX. **PLANNING OFFICIAL RECOMMENDATION:** The Planning Official recommends that the City Council deny this appeal and affirm that the traffic signal is consistent with the MS IAMP and is warranted.

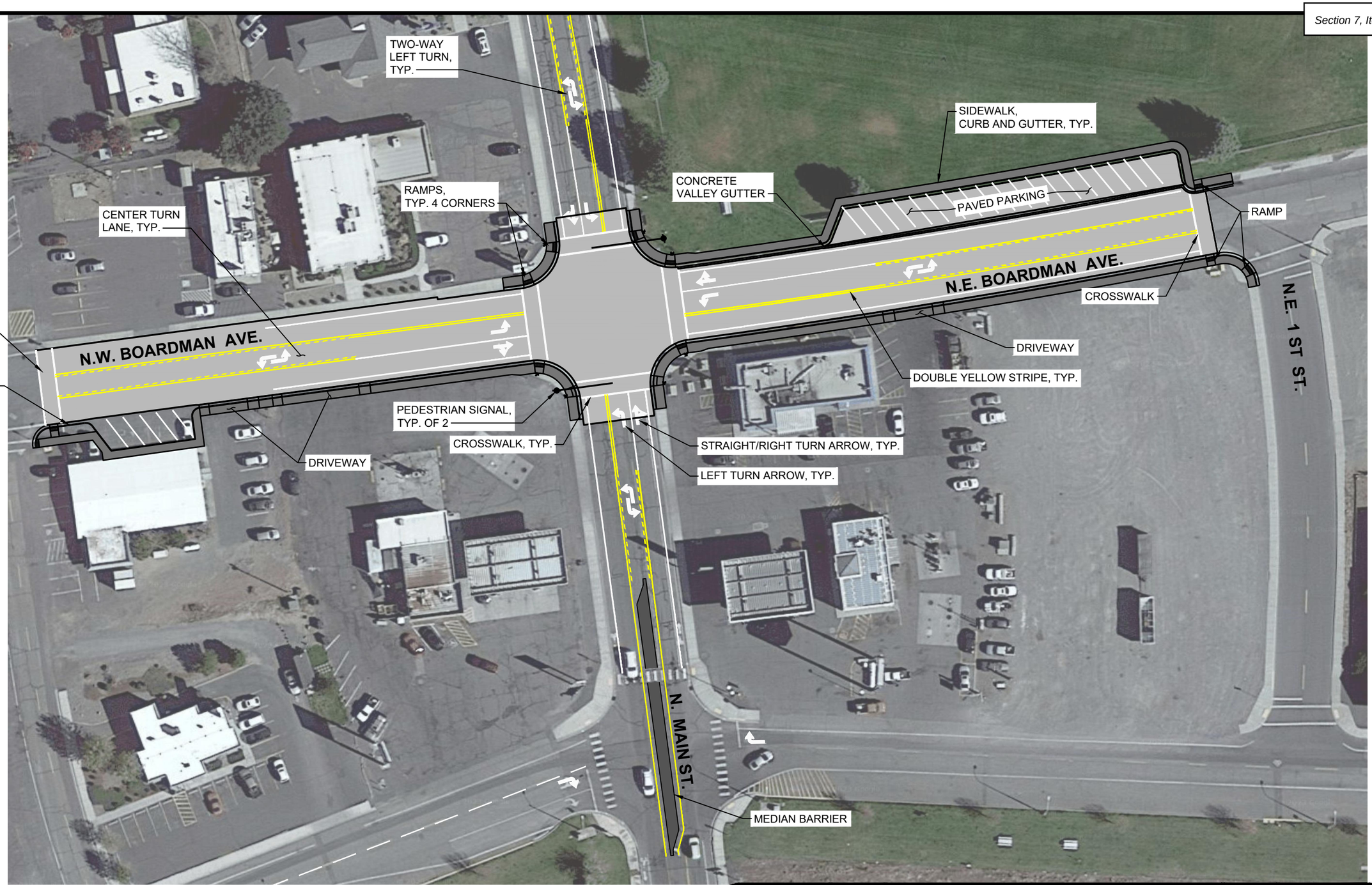
_____

Paul Keefer, Mayor Date

ATTACHMENTS:

- *Exhibit 1* Schematic Layout *HAWK signal*
- *Exhibit 2* Boardman Main Street Circulation Assessment (March 2024)
- *Exhibit 3* Boardman Main Street Interchange Area Management Plan (2009)
- *Exhibit 4* April 10, 2024, letter in opposition – Alex Hattenhauer, Hattenhauer Distributing
- *Exhibit 5* Planning Commission Findings of Fact dated May 16, 2024
- *Exhibit 6* June 6, 2024, letter of appeal – Jeniffer Bragar, TBD, representing Alex Hattenhauer, Hattenhauer Distributing
- *Exhibit 7* July 1, 2024, letter of support from the Morrow County School District
- *Exhibit 8 August 6, 2024, letter of appeal – Jennifer Bragar, TBD, representing Alex Hattenhauer, Hattenhauer Distributing*

- *Exhibit 9 August 5, 2024, Appellant PowerPoint*
- *Exhibit 10 August 6, 2024, appellant letter attachment 1*
- *Exhibit 11 August 6, 2024, appellant letter attachment 2*
- *Exhibit 12 August 6, 2024, appellant letter attachment 3*
- *Exhibit 13 August 6, 2024, appellant letter attachment 4*
- *Exhibit 14 August 9, 2024, email from Leslie Pierson*
- *Exhibit 15, August 15, 2024, letter of appeal – Jennifer Bragar, TBD, representing Alex Hattenhauer, Hattenhauer Distributing plus attachments*
- *Exhibit 16, September 3, 2024, letter from Kathy Street*
- *Exhibit 17, October 22, 2024, letter from Chief Stokoe*
- *Exhibit 18 Schematic Layout Traffic Signal*
- *Exhibit 19 Conflict Report*



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SCALE IN FEET

anderson perry

CITY OF
BOARDMAN, OREGON
N. MAIN STREET IMPROVEMENTS

SCHEMATIC LAYOUT

FIGURE
1

X:\Clients\Boardman OR\439-77 N Main St\CAD\439-77-Fig1.dwg, Layout1, 5/6/2024 2:25 PM, lmurphy

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

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

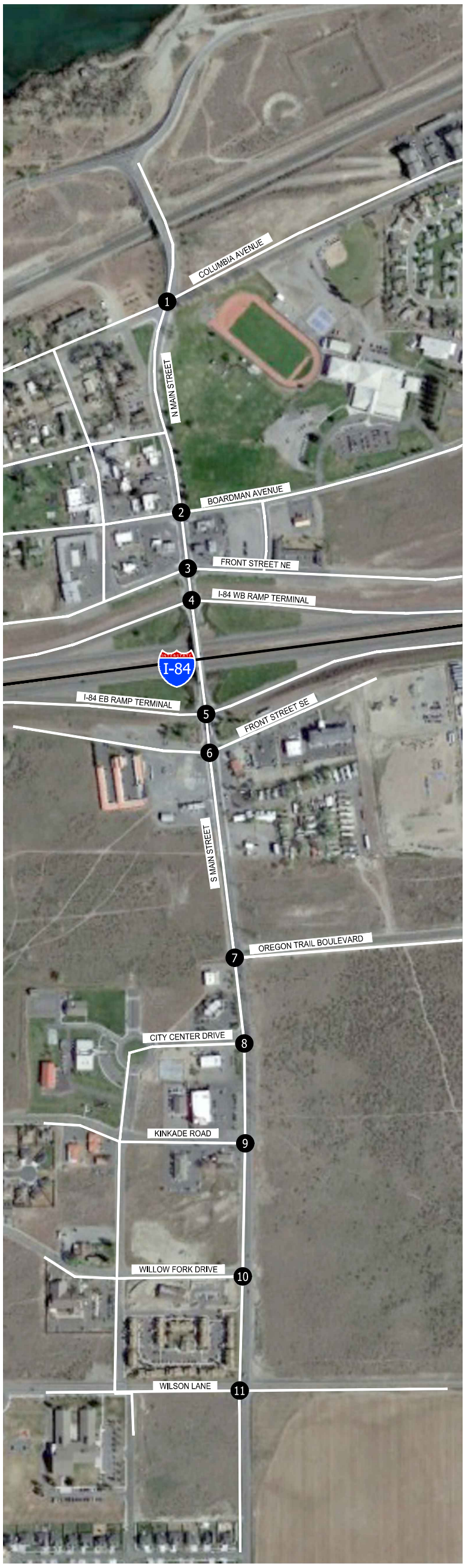
The operational standard for intersections involving only City roadways is based on level-of-service (LOS). The City maintains a LOS standard of "C" or better for all intersections.

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

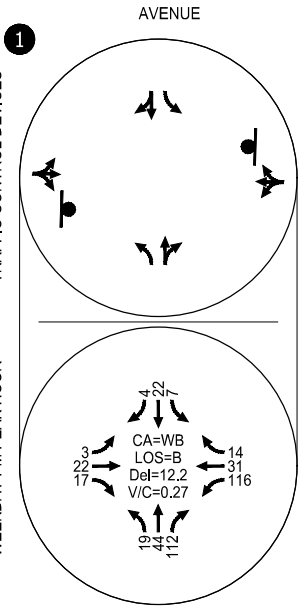
Study intersection crash histories were obtained and reviewed in an effort to identify potential safety issues. ODOT provided crash records for the study intersections for the five-year period from January 1, 2016 through December 31, 2020. *Appendix C provides the ODOT crash report which provides more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



MAIN STREET/ COLUMBIA AVENUE

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES

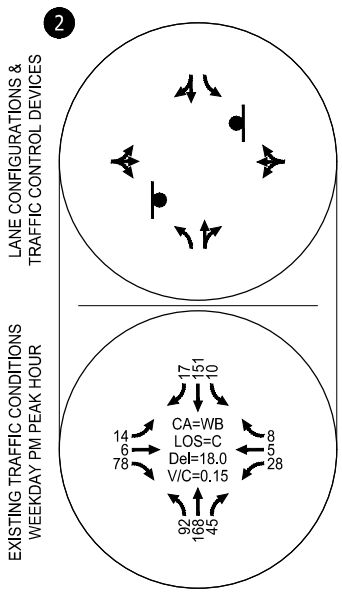
EXISTING TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



MAIN STREET/ BOARDMAN AVENUE

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES

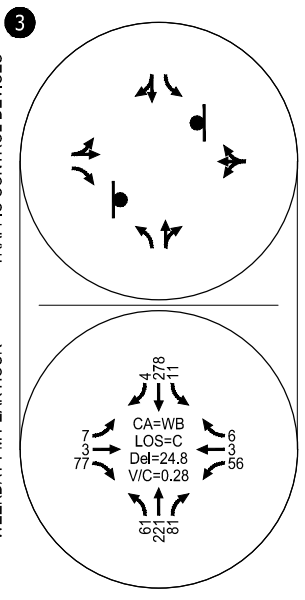
EXISTING TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



MAIN STREET/ FRONT STREET NE

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES

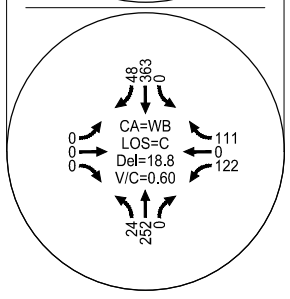
EXISTING TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



MAIN STREET/ I-84 WB RAMP TERMINAL

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES

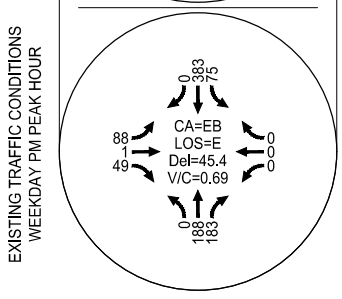
EXISTING TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



MAIN STREET/ I-84 EB RAMP TERMINAL

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES

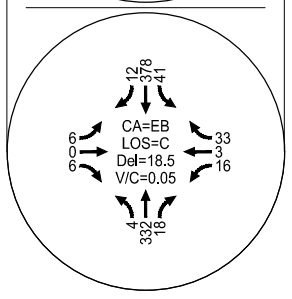
EXISTING TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



MAIN STREET/ FRONT STREET SE

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES

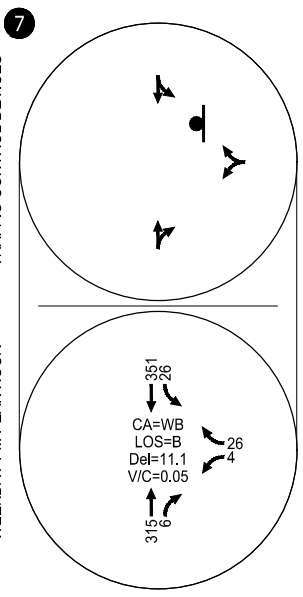
EXISTING TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



MAIN STREET/ OREGON TRAIL BOULEVARD

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES

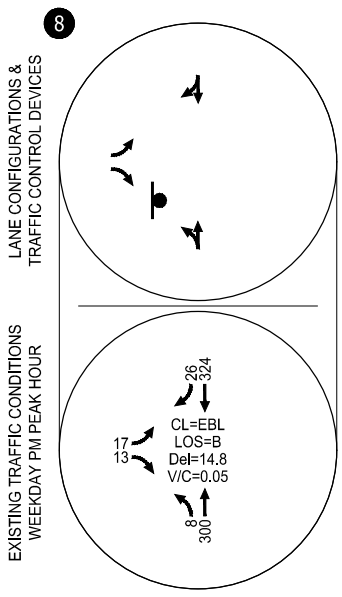
EXISTING TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



MAIN STREET/ CITY CENTER DRIVE

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES

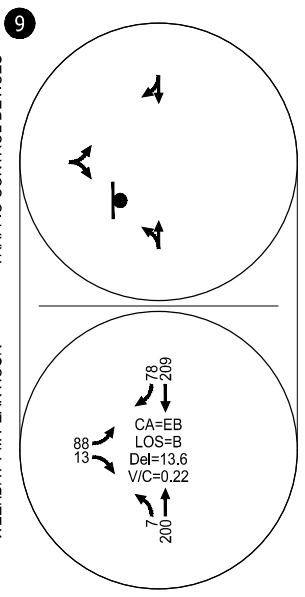
EXISTING TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



MAIN STREET/ KINKADE ROAD

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES

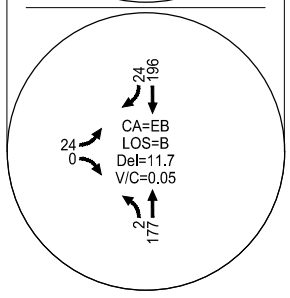
EXISTING TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



MAIN STREET/ WILLOW FORK DRIVE

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES

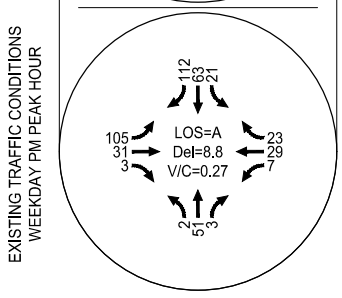
EXISTING TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



MAIN STREET/ WILLOW LANE

LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES

EXISTING TRAFFIC CONDITIONS WEEKDAY PM PEAK HOUR



##- Study Intersections

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

Figure 1

KITTELSON & ASSOCIATES

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

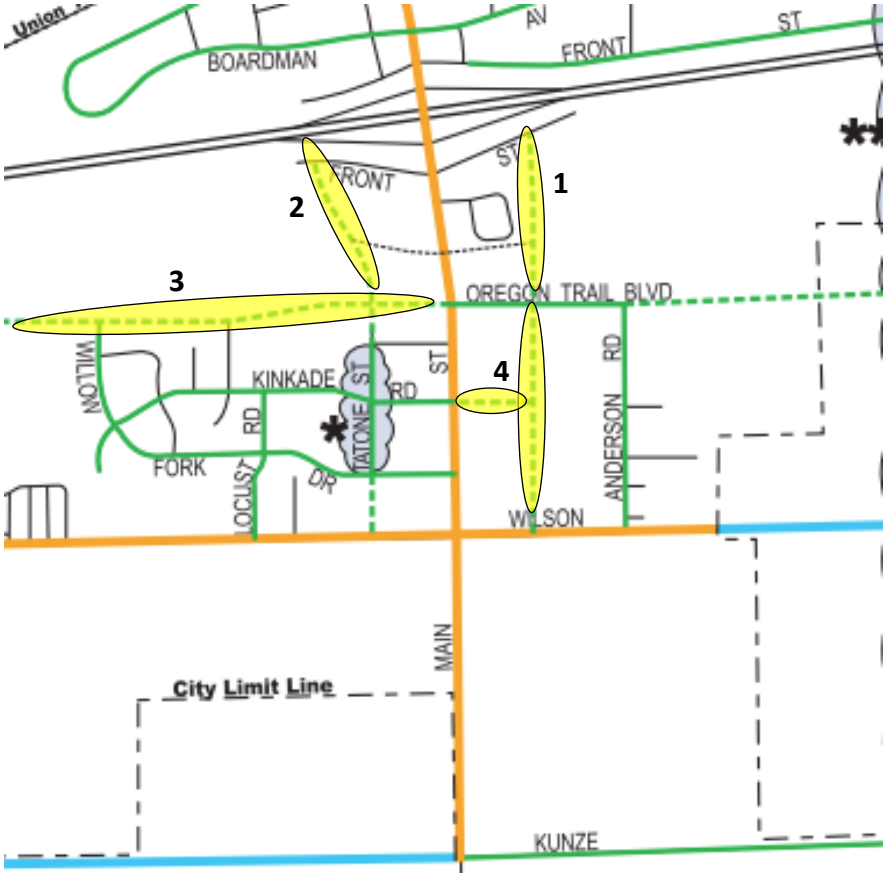
This section documents the future travel demand and forecast traffic operations along the Main Street study corridor. The future traffic projections are based on anticipated land use and development through the year 2042 using the same cumulative traffic forecast methodology from the 2009 IAMP.

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.

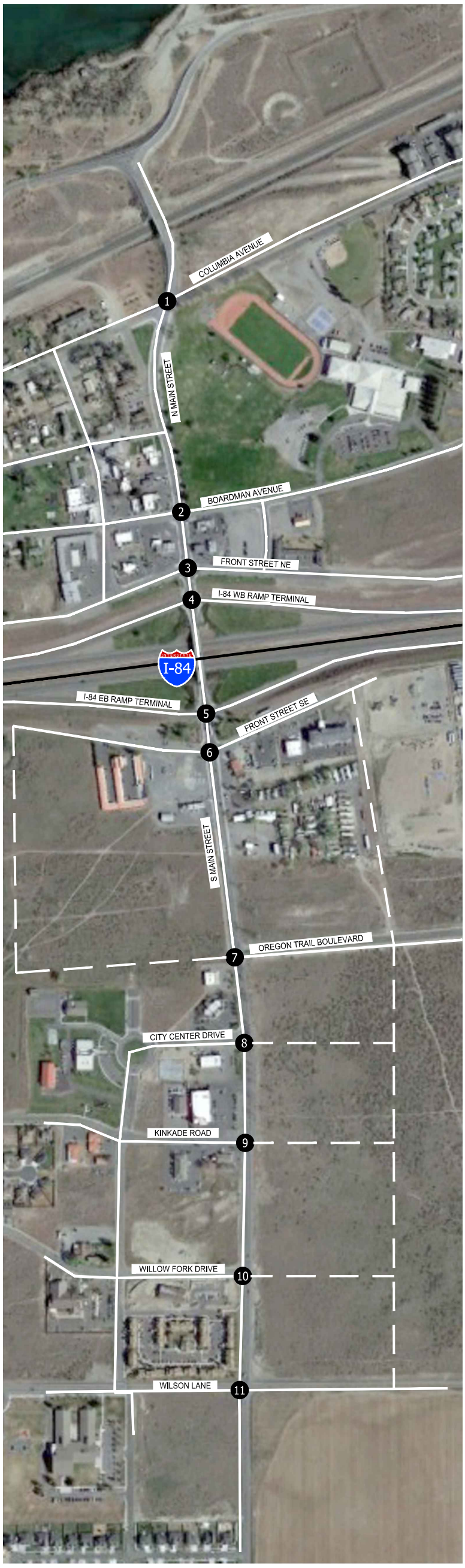
Future 2042 Traffic Conditions

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:

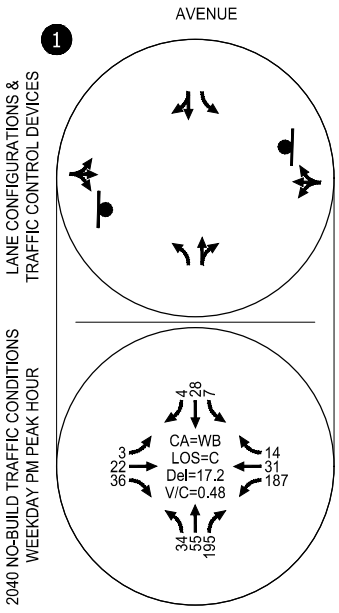
- N Main Street/Boardman Avenue – the critical westbound approach is forecast to operate at LOS E conditions during the weekday PM peak hour. This is primarily due to the limited capacity of the single-lane stop-controlled Boardman Avenue approach and forecast traffic growth along the Boardman Avenue 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.

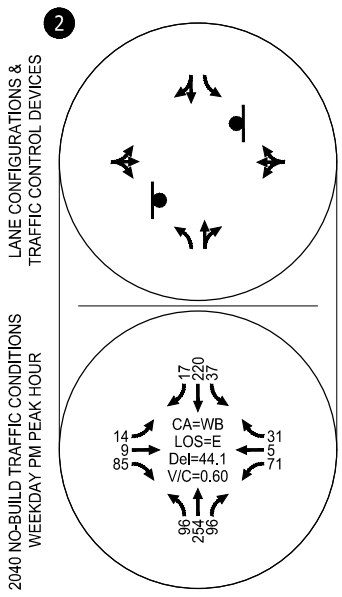
While relatively consistent with the forecast operations from the 2009 IAMP, the forecast operations at the N Main Street/Boardman Avenue and S Main Street/I-84 EB Ramp Terminal intersections necessitated the reinvestigated of several improvement alternatives.



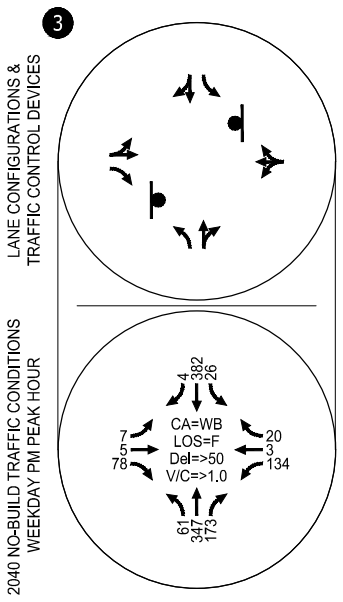
MAIN STREET/ COLUMBIA AVENUE



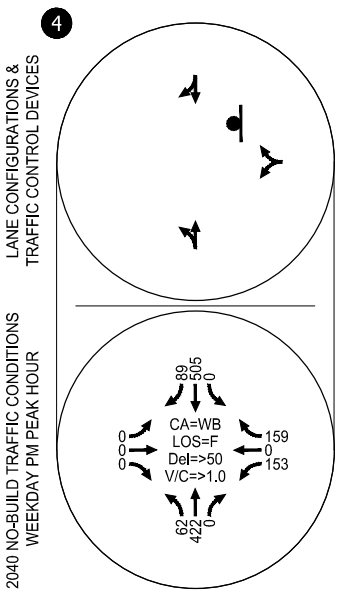
MAIN STREET/ BOARDMAN AVENUE



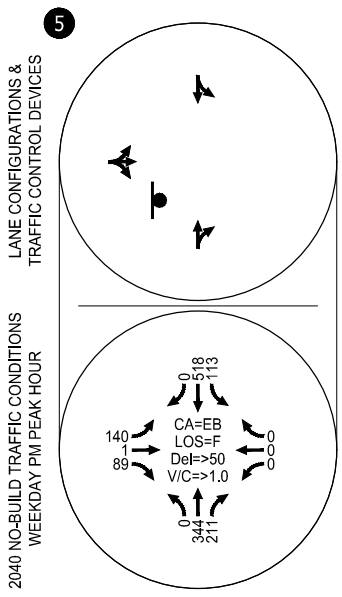
MAIN STREET/ FRONT STREET NE



MAIN STREET/ I-84 WB RAMP TERMINAL



MAIN STREET/ I-84 EB RAMP TERMINAL



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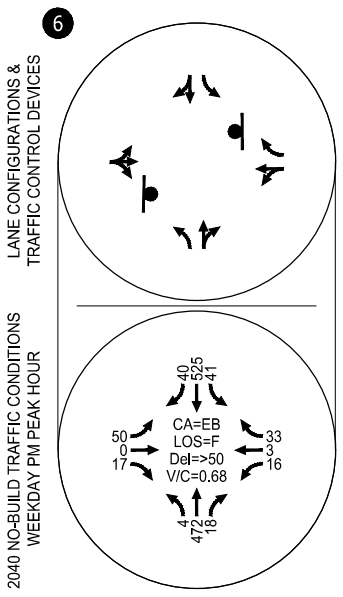
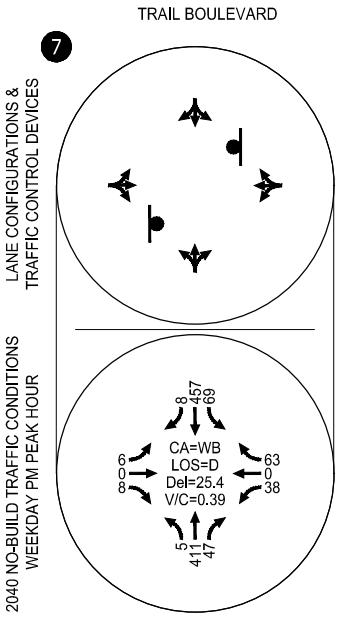
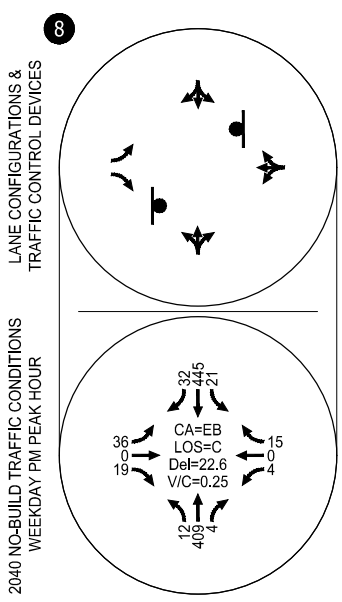


MAIN STREET/ OREGON TRAIL BOULEVARD



MAIN STREET/ CITY CENTER DRIVE



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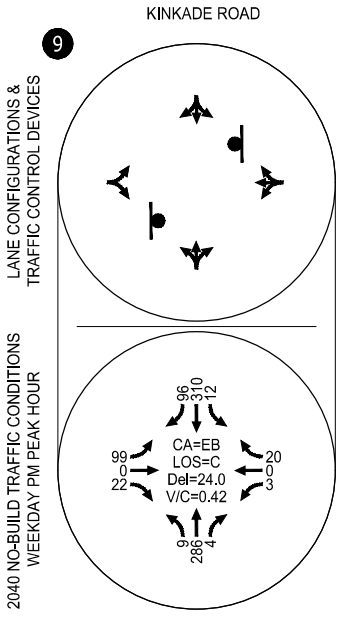
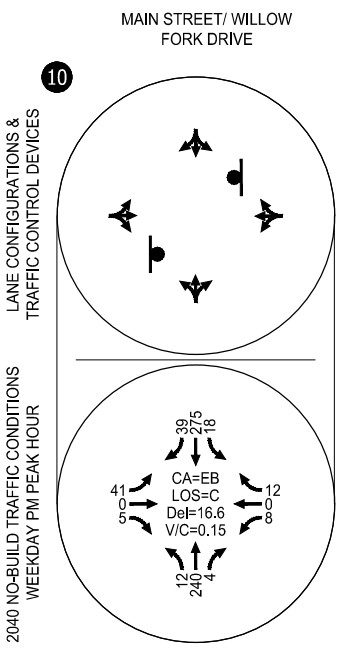
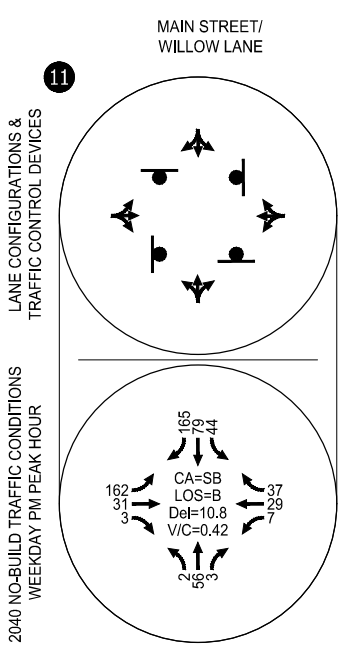


MAIN STREET/ WILLOW FORK DRIVE



MAIN STREET/ WILLOW LANE



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

Figure 2

##- Study Intersections

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

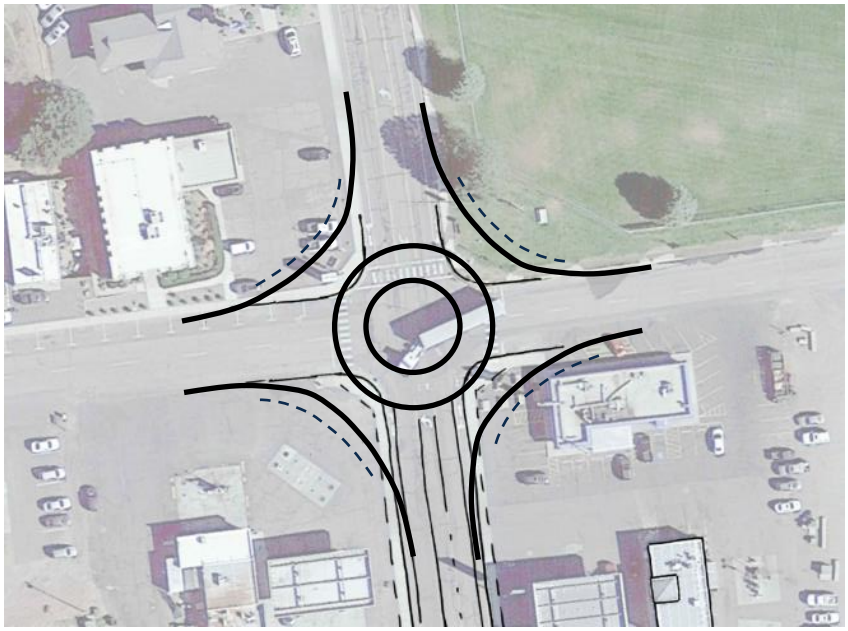
Given the forecast operations and the likely increased volume impacts that could be generated in the near-term by other projects currently in the 2009 IAMP (restrictions of N Front Street to right-in/right-out movements and a raised median along the N Main Street corridor), the need for traffic control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

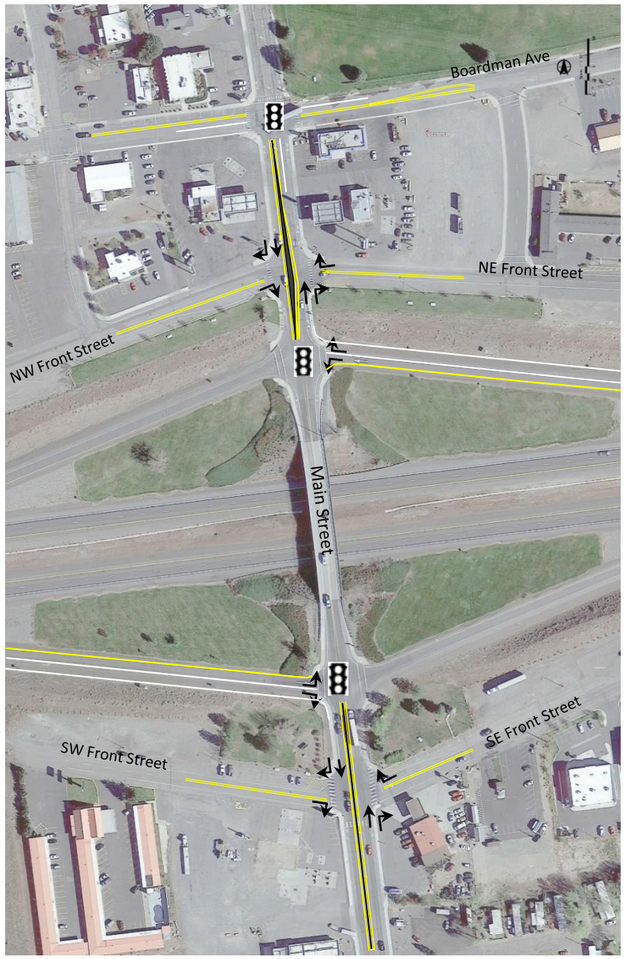
In response to these issues, two interchange improvement concepts were developed as documented in the following tables. Each table contains the following planning-level evaluation:

- 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

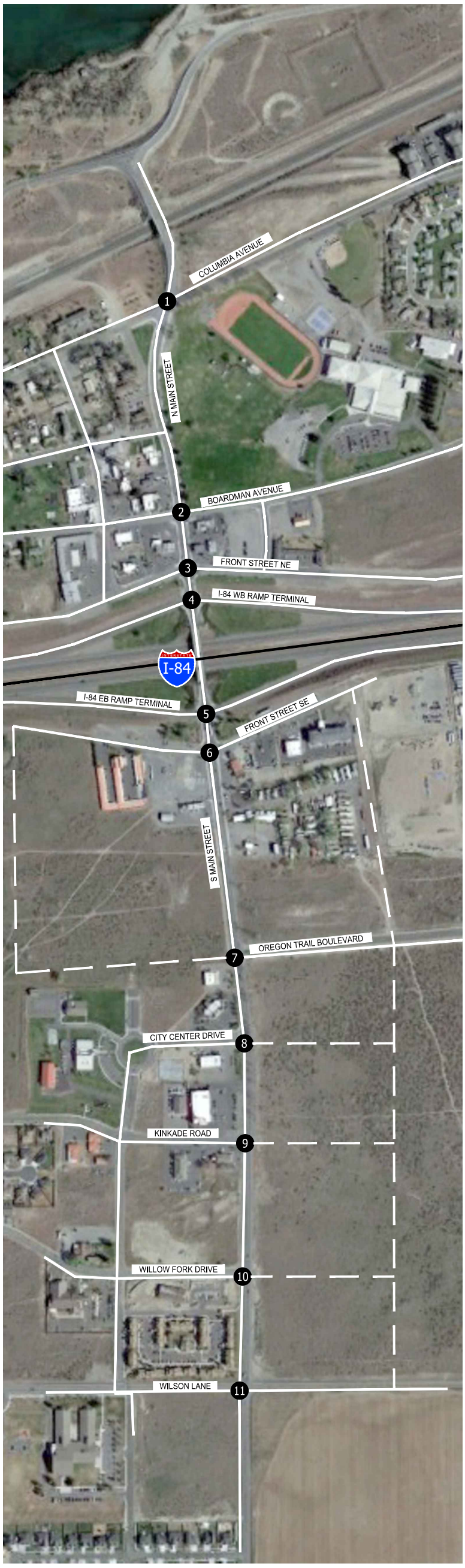
Circulation Alternative #1	Evaluation Information				Evaluation Results	
Concept Description and Illustration	**Category**	**Evaluation Criteria**	**Scoring Key**		**Score**	**Comments**
Circulation Alternative #1 signalizes the two I-84 EB and WB ramp terminals (when warranted) and converts the N Main 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.	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**



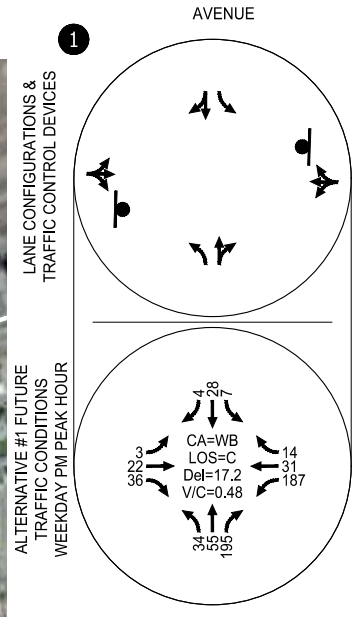
Note: Graphic is for illustrative purposes only.

Miscellaneous Evaluation Comments

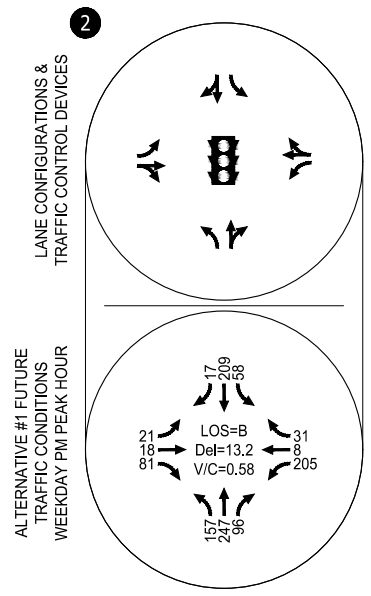
- While signalization of the I-84 WB and EB ramp terminals is possible, it is unlikely that such a mitigation measure would be considered without an affiliated widening of the Main Street overpass structure that would accommodate separate northbound and southbound left-turn lanes.
- Signalization of 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.



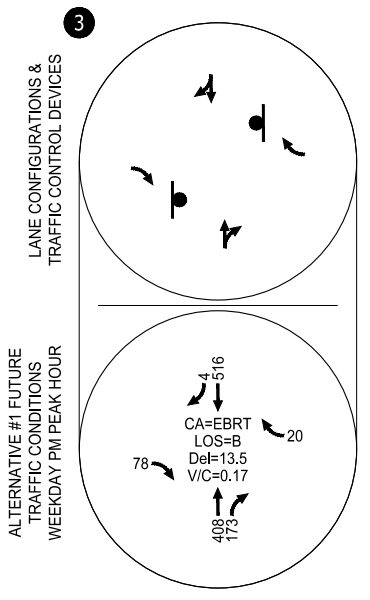
MAIN STREET/ COLUMBIA AVENUE



MAIN STREET/ BOARDMAN AVENUE



MAIN STREET/ FRONT STREET NE



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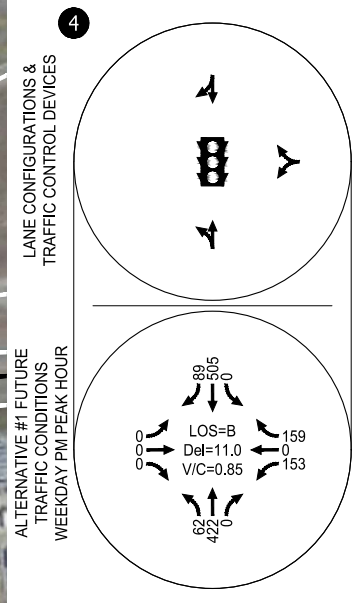

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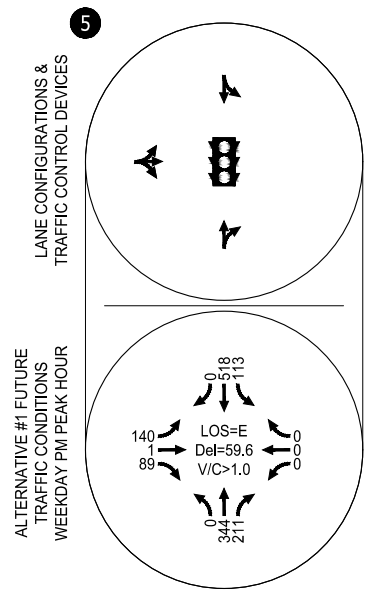

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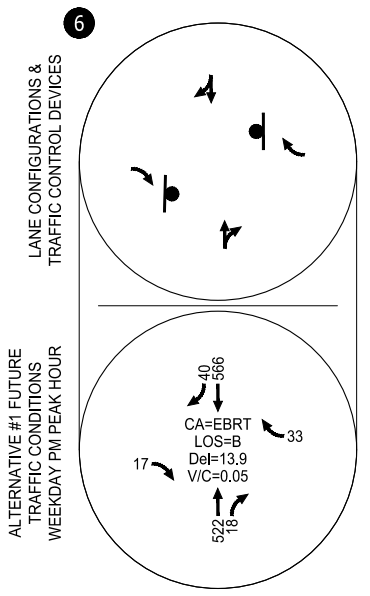
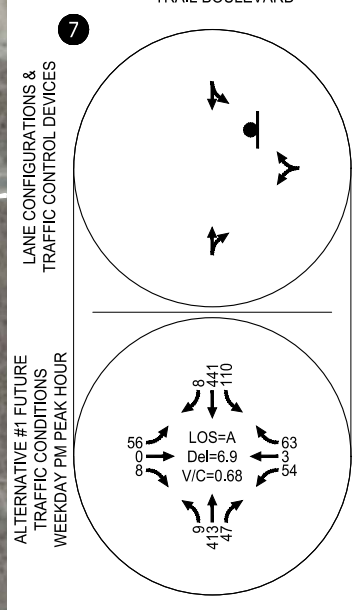


MAIN STREET/ OREGON TRAIL BOULEVARD



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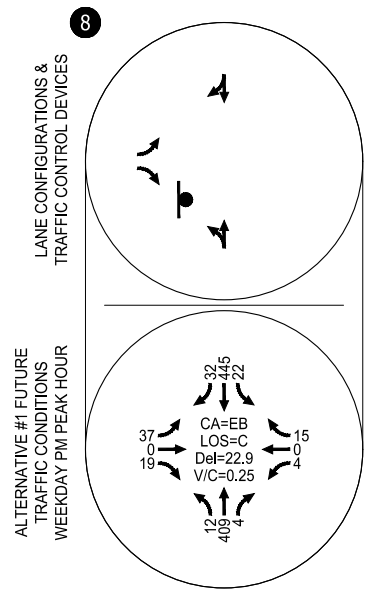

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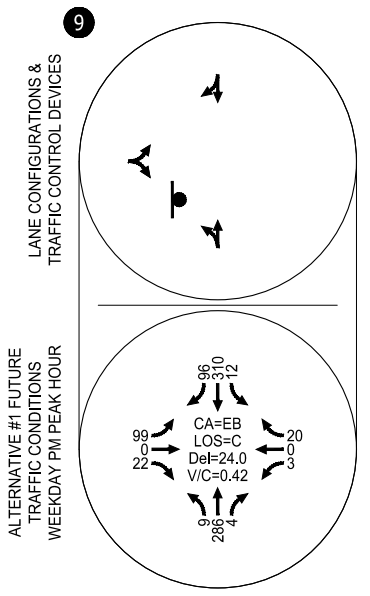

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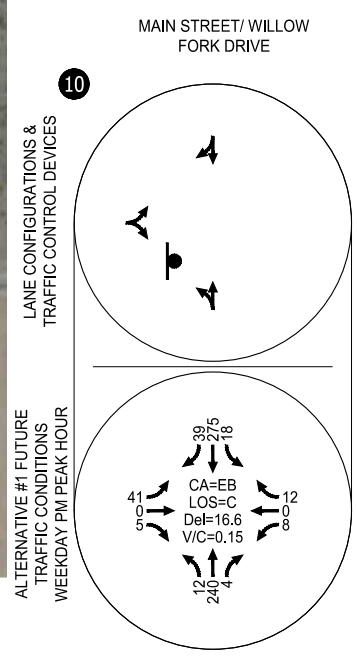
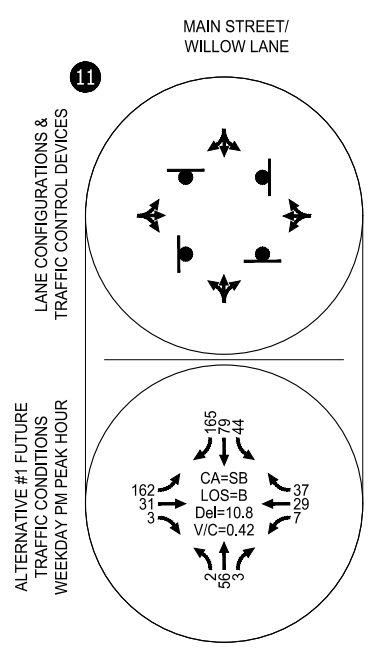


MAIN STREET/ WILLOW LANE



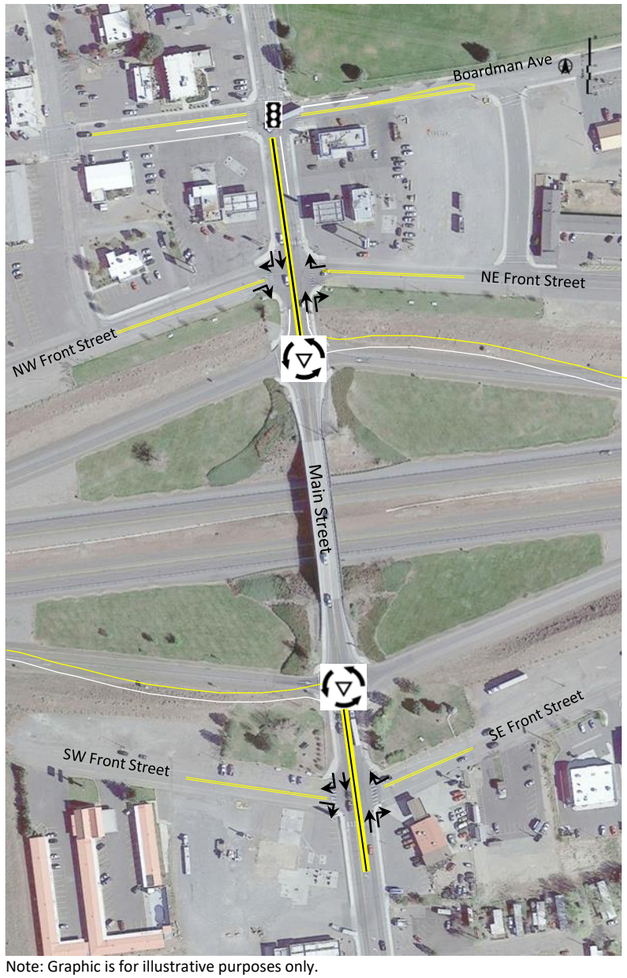
##- Study Intersections

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

Figure
3

Table 6 – Circulation Alternative #2 Summary and Evaluation

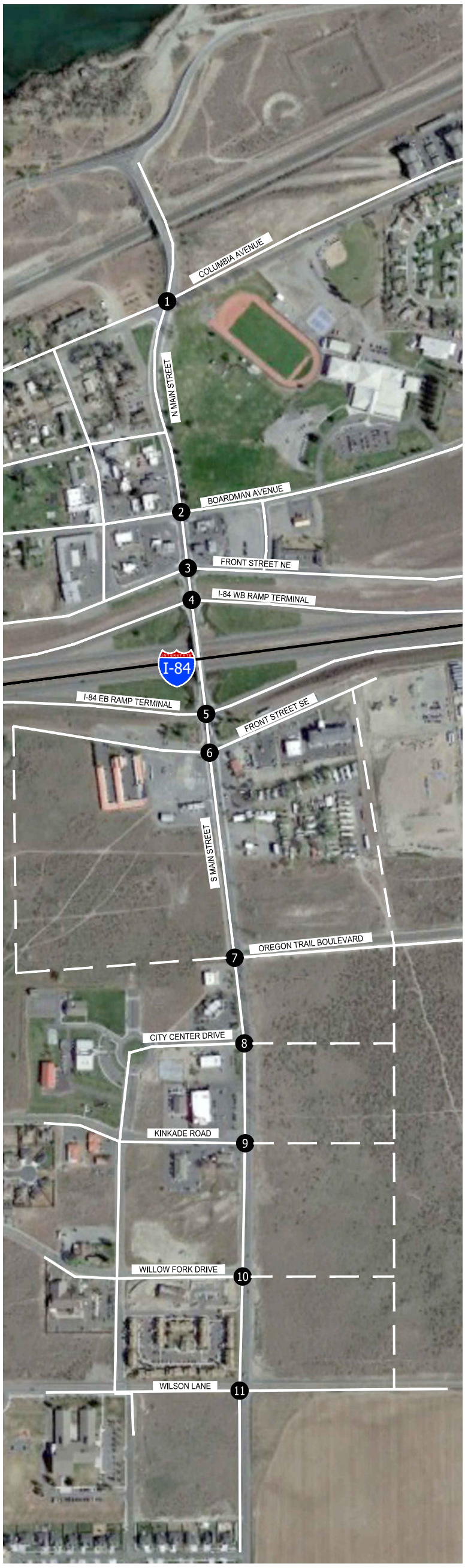
Circulation Alternative #2	Evaluation Information				Evaluation Results	
Concept Description and Illustration	**Category**	**Evaluation Criteria**	**Scoring Key**		**Score**	**Comments**
Circulation Alternative #2 includes single lane roundabouts at the two I-84 EB and WB ramp terminals and converts 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**



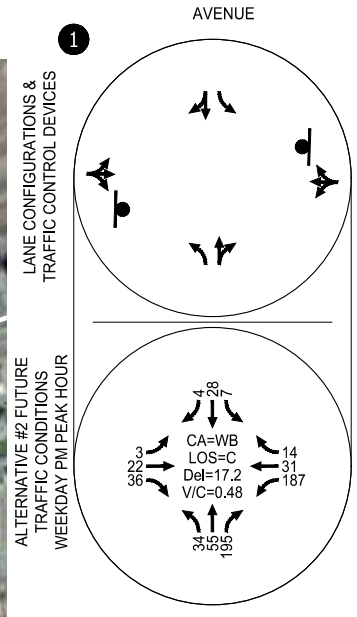
Note: Graphic is for illustrative purposes only.

Miscellaneous Evaluation Comments

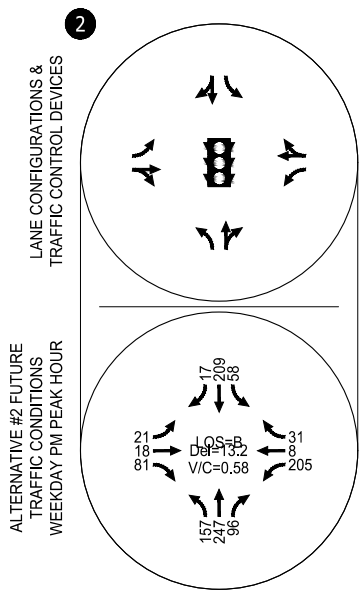
- The accommodation of roundabouts at the I-84 EB and WB ramp terminals will require realignment of the respective offramps. Additional design efforts would need to explore the ramifications of accommodating the offramp realignments considering the sloped embankments at the interchange.
- Additional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



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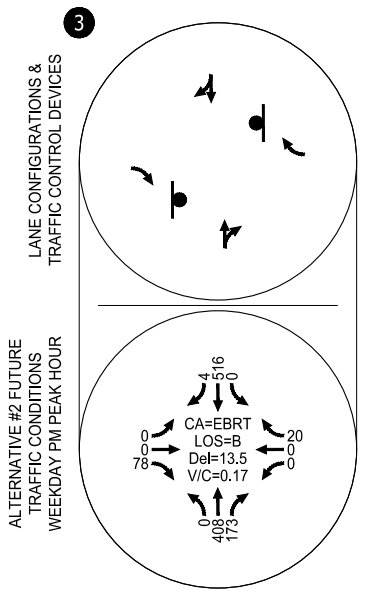

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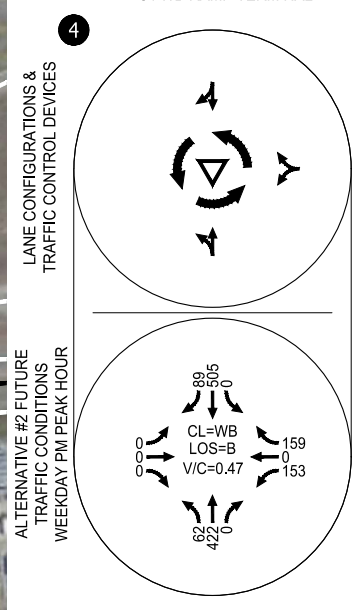

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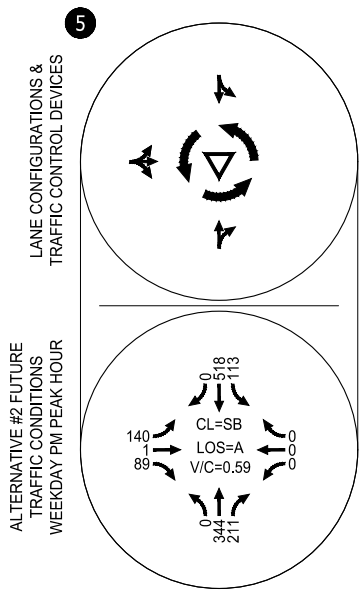

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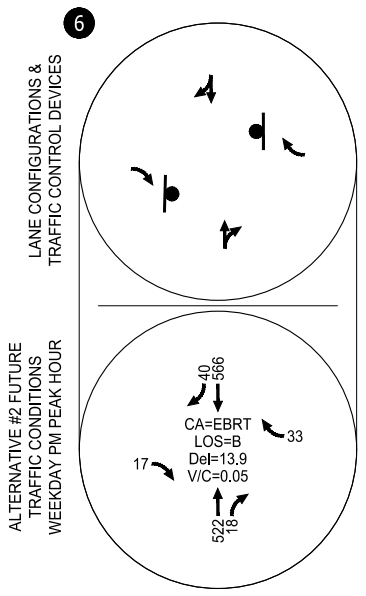
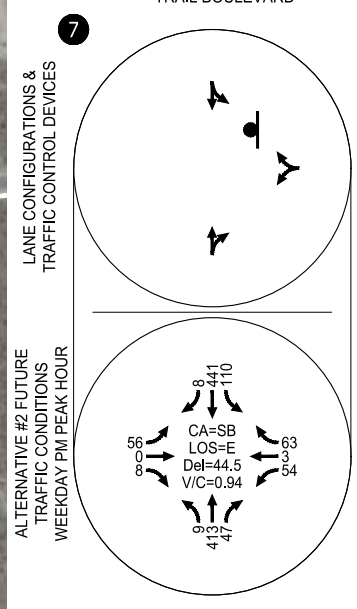
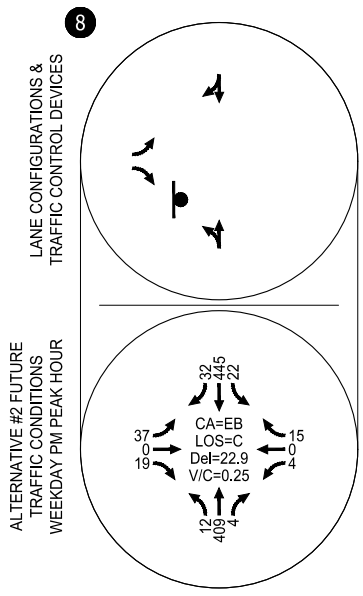


MAIN STREET/ OREGON TRAIL BOULEVARD



MAIN STREET/ CITY CENTER DRIVE



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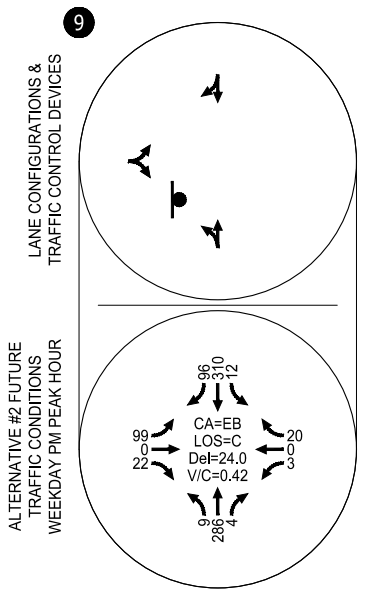
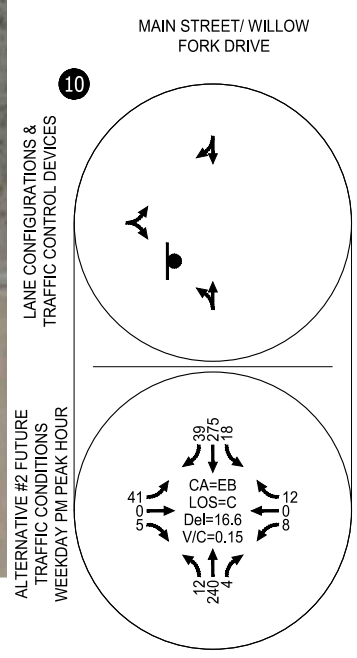
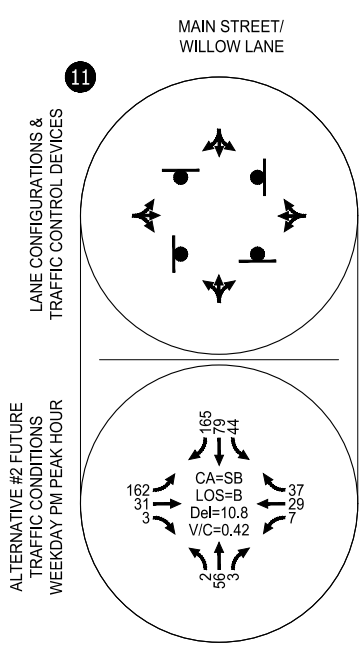


MAIN STREET/ WILLOW FORK DRIVE



MAIN STREET/ WILLOW LANE



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

Figure 4

##- Study Intersections

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

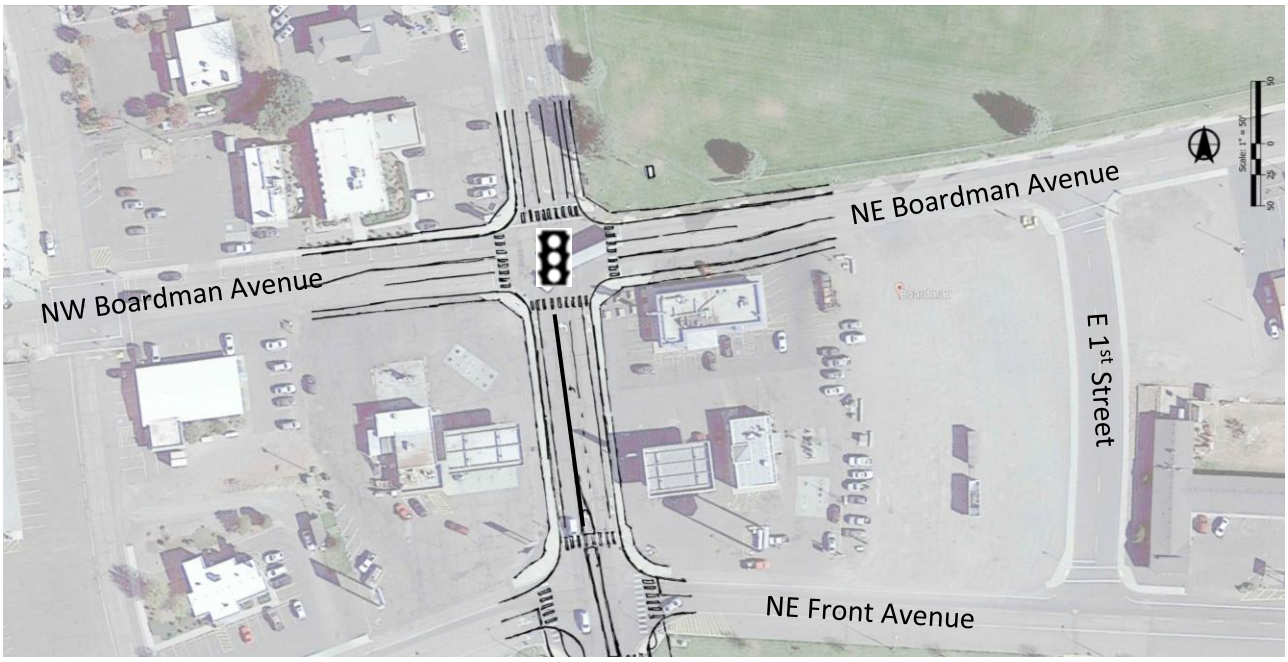
Refined geometric layouts of various components of Circulation Alternative #2 were prepared taking into consideration known right-of-way constraints, forecast traffic demands, the vehicle/truck types associated with the I-84 Main Street interchange, and multimodal considerations. The refined components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

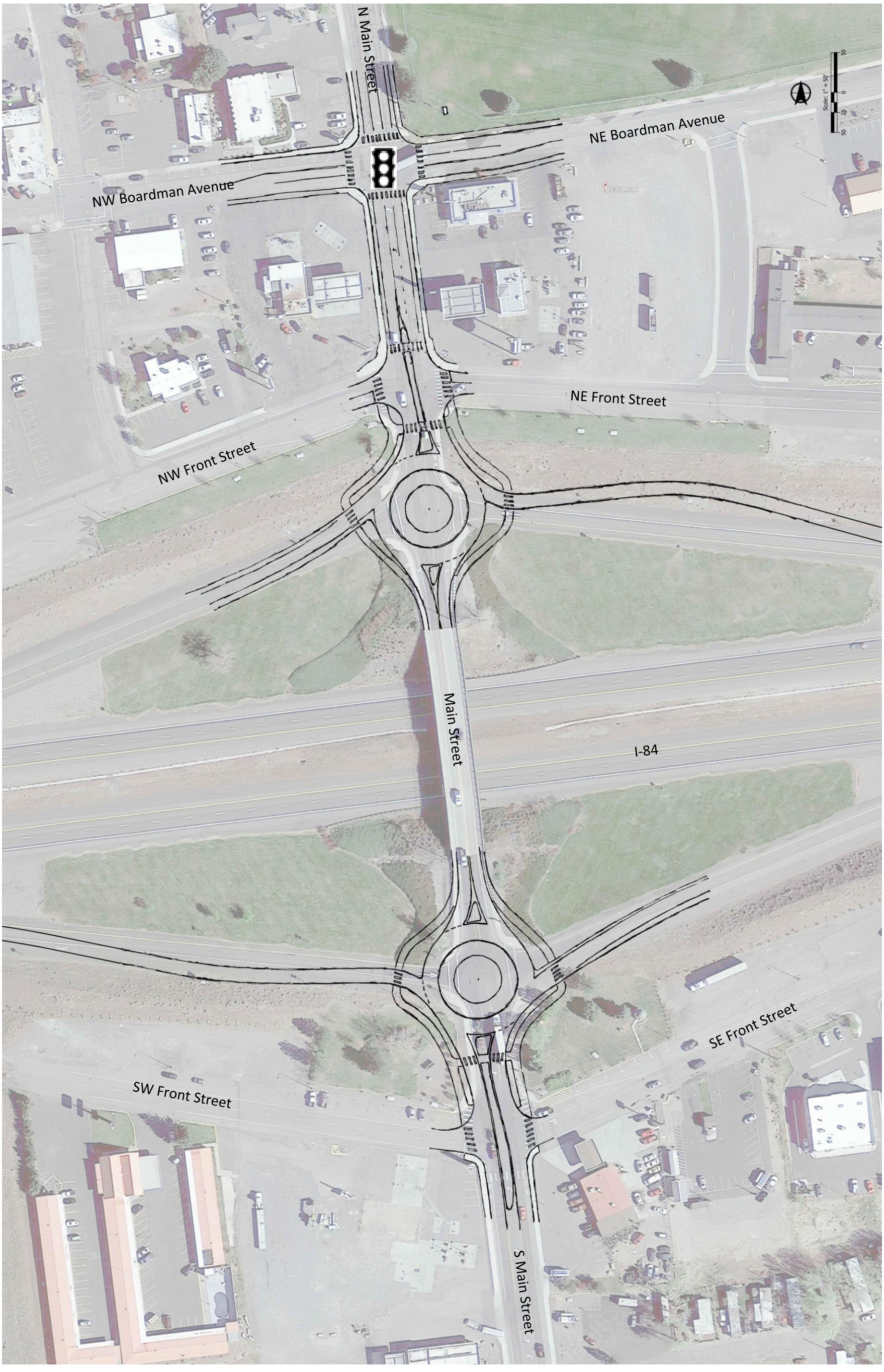
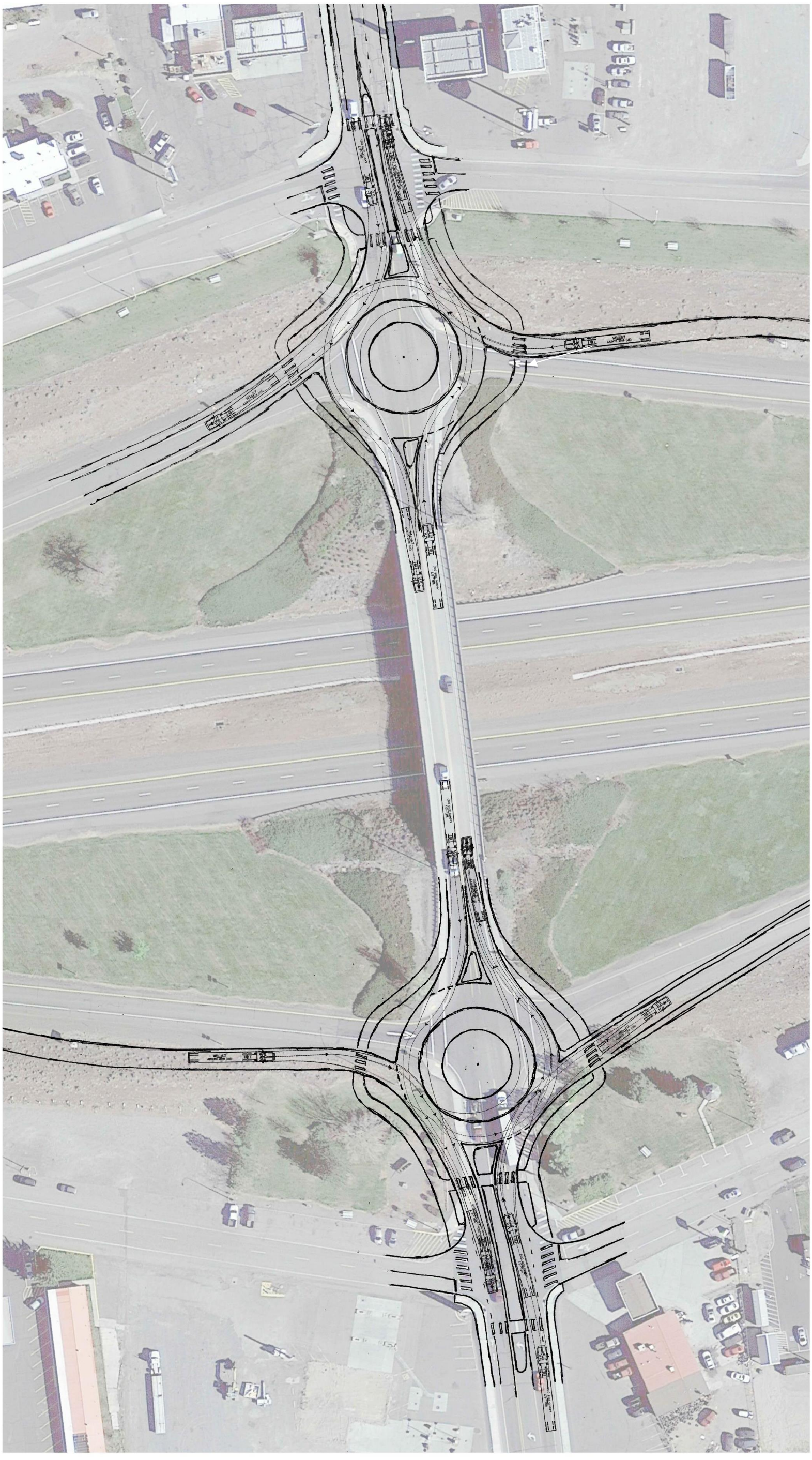


Figure 8 – Refined Circulation Alternative #2 Sketch-Level Layout (with WB-67 Truck Turning Template)



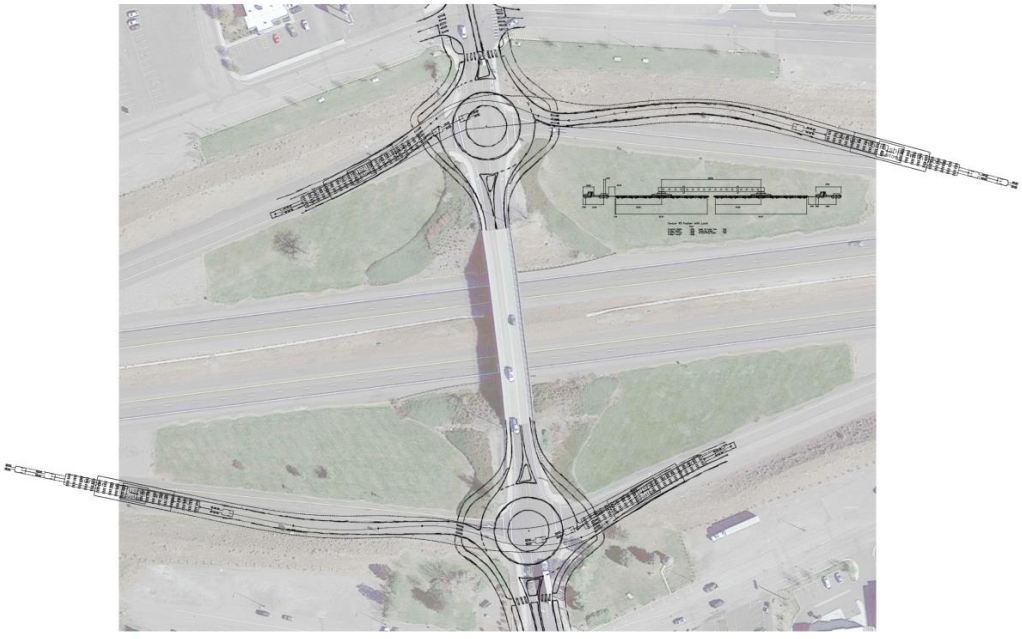
Truck Turning Evaluation

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

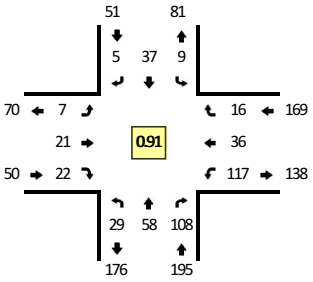
Type of peak hour being reported: Intersection Peak

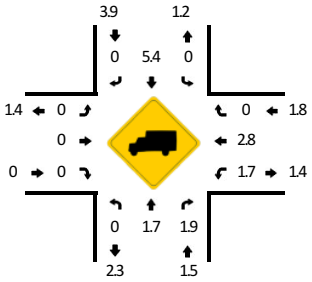
Method for determining peak hour: Tot

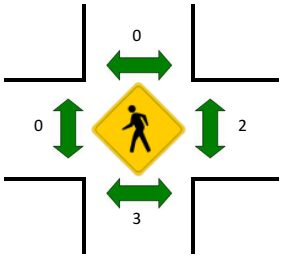
LOCATION: N Main St -- Columbia Ave NE
CITY/STATE: Boardman, OR

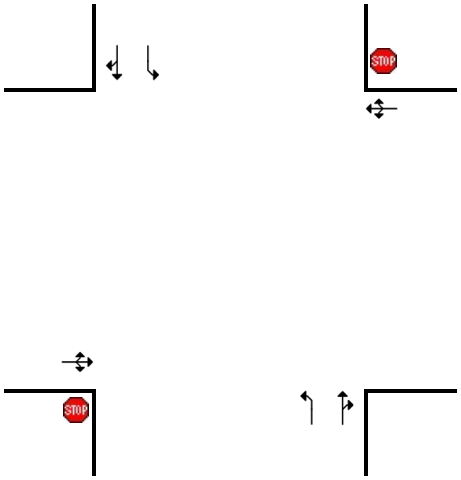
QC JOB #: 15762801
DATE: Thu, Mar 31 2022

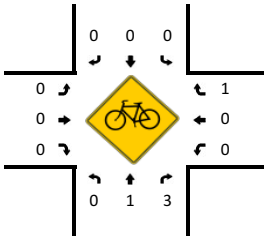
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

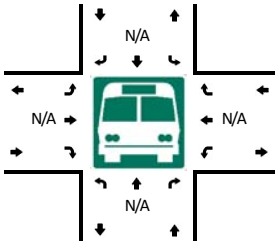


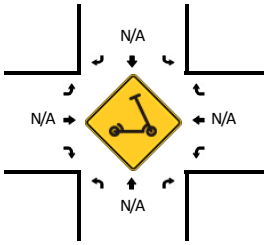












5-Min Count Period Beginning At	N Main St (Northbound)				N Main St (Southbound)				Columbia Ave NE (Eastbound)				Columbia Ave NE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	5	2	0	0	3	2	0	1	0	1	0	5	4	2	0	25	
3:05 PM	1	1	4	0	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	
3:30 PM	3	2	13	0	1	5	1	0	0	0	1	0	10	2	1	0	39	
3:35 PM	5	4	8	0	1	3	0	0	0	4	1	0	17	3	0	0	46	
3:40 PM	1	2	13	0	1	6	0	0	0	3	1	0	6	3	3	0	39	
3:45 PM	0	1	7	0	0	3	0	0	0	4	2	0	9	2	0	0	28	
3:50 PM	0	1	10	0	0	4	0	0	1	2	1	0	11	2	1	0	33	
3:55 PM	0	1	9	0	0	6	0	0	0	1	0	0	11	5	0	0	33	401
4:00 PM	0	3	7	0	1	2	2	0	0	1	1	0	7	1	1	0	26	402
4:05 PM	0	2	8	0	0	3	0	0	0	1	5	0	17	1	1	0	38	413
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
4:50 PM	0	8	13	0	1	0	0	0	0	2	1	0	5	3	1	0	34	416
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
5:15 PM	2	6	14	0	1	6	0	0	0	3	1	0	7	1	2	0	43	429
5:20 PM	2	7	10	0	2	3	0	0	0	0	3	0	12	1	2	0	42	442
5:25 PM	0	8	9	0	2	2	0	0	0	3	1	0	7	3	0	0	35	440
5:30 PM	3	4	10	0	1	2	1	0	0	3	3	0	6	1	0	0	34	432
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				
	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

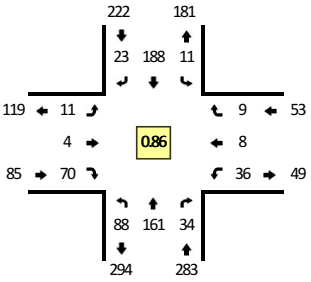
Type of peak hour being reported: Intersection Peak

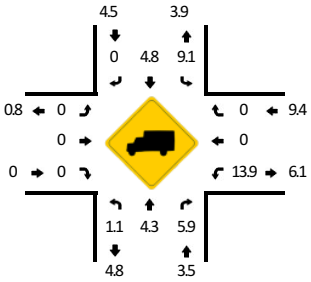
Method for determining peak hour: Tot

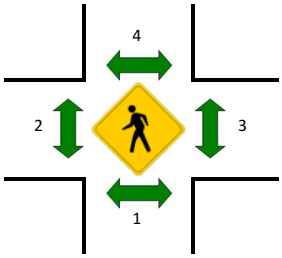
LOCATION: N Main St -- Boardman Ave NW
CITY/STATE: Boardman, OR

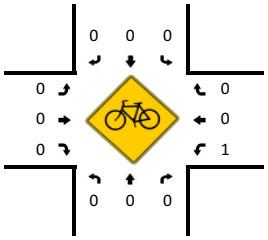
QC JOB #: 15762802
DATE: Thu, Mar 31 2022

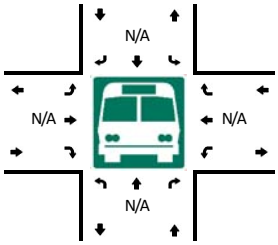
Peak-Hour: 3:30 PM -- 4:30 PM
Peak 15-Min: 3:30 PM -- 3:45 PM

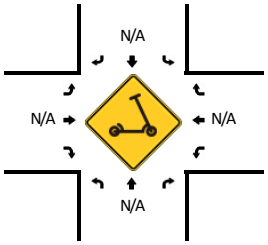












5-Min Count Period Beginning At	N Main St (Northbound)				N Main St (Southbound)				Boardman Ave NW (Eastbound)				Boardman Ave NW (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	2	8	2	0	1	9	2	0	0	1	2	0	16	1	2	0	46	
3:05 PM	6	11	5	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	
3:15 PM	3	6	2	0	0	18	1	0	1	0	8	0	12	0	2	0	53	
3:20 PM	4	9	5	0	2	10	3	0	3	0	6	0	2	1	0	0	45	
3:25 PM	3	15	4	0	1	7	1	0	1	0	6	0	2	1	3	0	44	
3:30 PM	6	16	4	0	3	16	1	0	1	0	5	0	3	1	2	0	58	
3:35 PM	6	18	2	0	0	19	4	0	1	0	5	0	6	2	0	0	63	
3:40 PM	8	18	7	0	0	19	4	0	0	2	6	0	2	0	1	0	67	
3:45 PM	5	9	0	0	0	16	2	0	2	0	6	0	7	0	0	0	47	
3:50 PM	6	11	2	0	1	11	2	0	1	0	2	0	2	0	1	0	39	
3:55 PM	9	10	1	0	3	16	2	0	1	0	2	0	2	2	1	0	49	637
4:00 PM	10	9	0	0	0	11	1	0	1	0	7	0	0	2	0	0	41	632
4:05 PM	8	13	3	0	2	20	0	0	1	0	10	0	1	1	1	0	60	628
4:10 PM	10	13	1	0	1	23	5	0	0	0	4	0	4	0	0	0	61	627
4:15 PM	9	11	6	0	1	15	0	0	2	1	8	0	3	0	2	0	58	632
4:20 PM	3	13	1	0	0	12	0	0	1	1	9	0	3	0	1	0	44	631
4:25 PM	8	20	7	0	0	10	2	0	0	0	6	0	3	0	0	0	56	643
4:30 PM	10	16	6	0	1	13	2	0	0	1	4	0	3	0	0	0	56	641
4:35 PM	9	21	4	0	2	5	1	0	3	1	7	0	2	0	1	0	56	634
4:40 PM	6	11	5	0	0	17	1	0	3	0	6	0	4	0	1	0	54	621
4:45 PM	8	12	7	0	1	9	2	0	1	1	5	0	3	0	0	0	49	623
4:50 PM	6	17	2	0	1	7	1	0	1	1	6	0	2	0	2	0	46	630
4:55 PM	5	12	3	0	1	9	2	0	1	0	6	0	0	2	0	0	41	622
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
5:35 PM	9	21	5	0	2	16	1	0	2	0	5	0	4	0	2	0	67	614
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				
	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

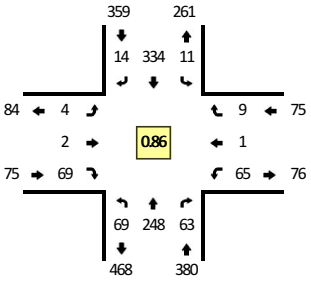
Type of peak hour being reported: Intersection Peak

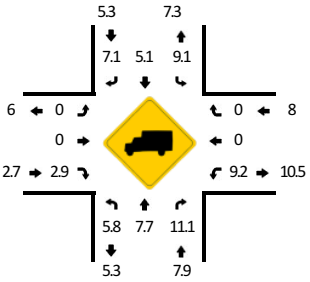
Method for determining peak hour: Tot

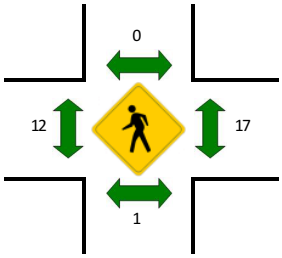
LOCATION: N Main St -- Front St NE
CITY/STATE: Boardman, OR

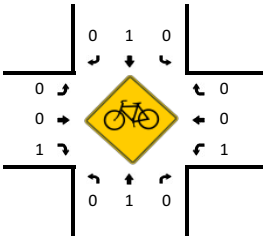
QC JOB #: 15762803
DATE: Thu, Mar 31 2022

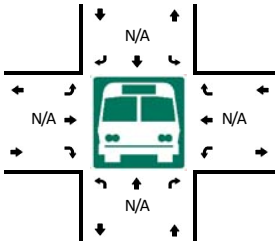
Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:00 PM -- 3:15 PM

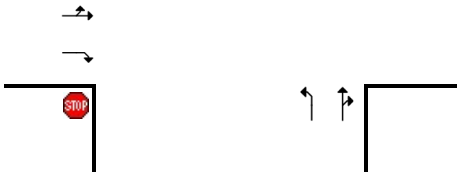


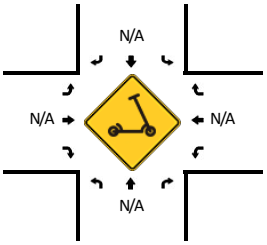












5-Min Count Period Beginning At	N Main St (Northbound)				N Main St (Southbound)				Front St NE (Eastbound)				Front St NE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	7	14	4	0	1	34	2	0	0	0	9	0	9	0	2	0	82	
3:05 PM	6	23	4	0	1	41	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
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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				
	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

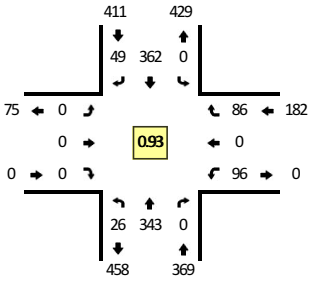
Type of peak hour being reported: Intersection Peak

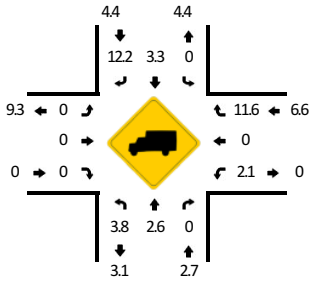
Method for determining peak hour: Tot

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

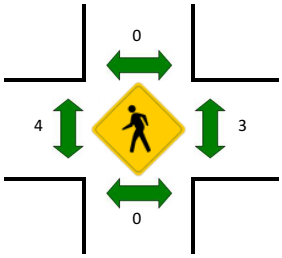
QC JOB #: 15762804
DATE: Thu, Mar 31 2022

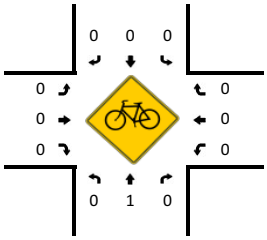
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

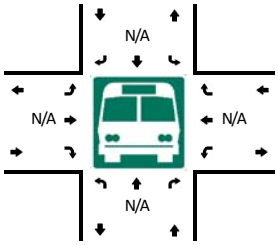


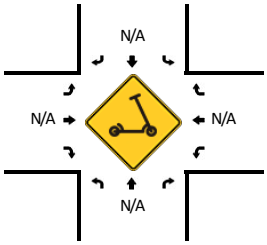


Quality Counts
DATA THAT DRIVES COMMUNITIES









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				
	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

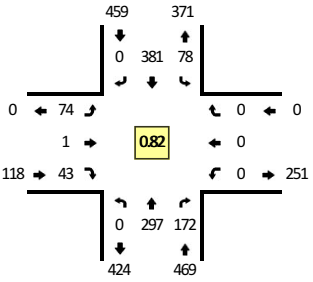
Type of peak hour being reported: Intersection Peak

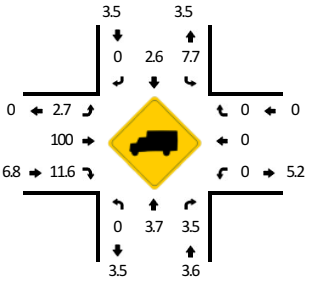
Method for determining peak hour: Tot

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

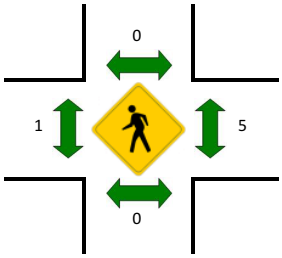
QC JOB #: 15762805
DATE: Thu, Mar 31 2022

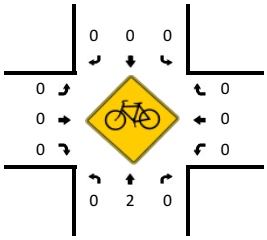
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

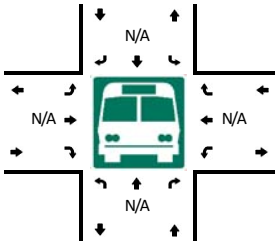


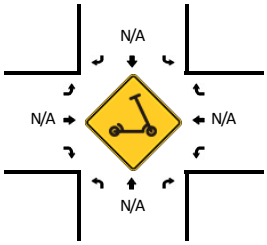


Quality Counts
DATA THAT DRIVES COMMUNITIES









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				
	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

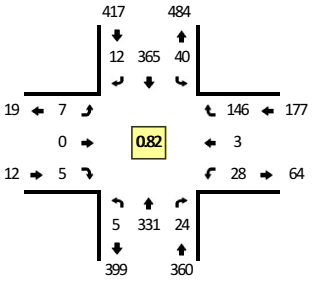
Type of peak hour being reported: Intersection Peak

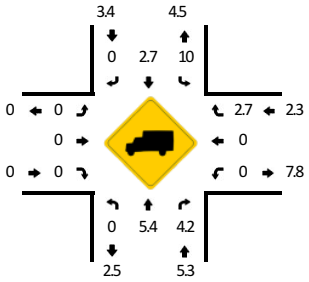
Method for determining peak hour: Tot

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

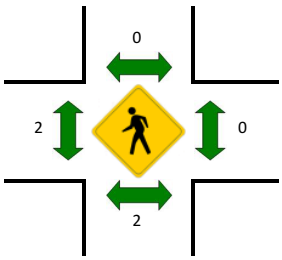
QC JOB #: 15762806
DATE: Thu, Mar 31 2022

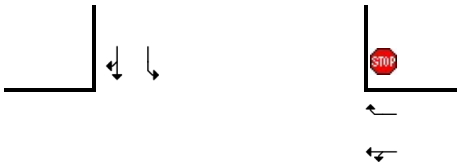
Peak-Hour: 3:55 PM -- 4:55 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

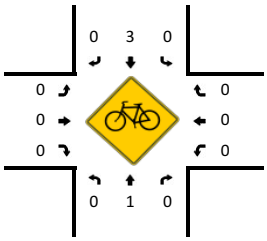


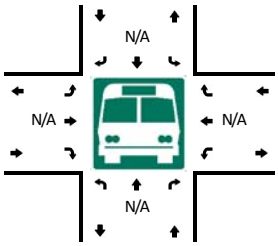


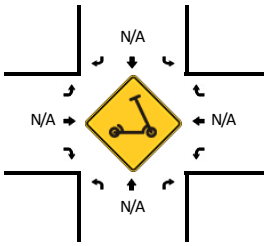
Quality Counts
DATA THAT DRIVES COMMUNITIES











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
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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				
	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

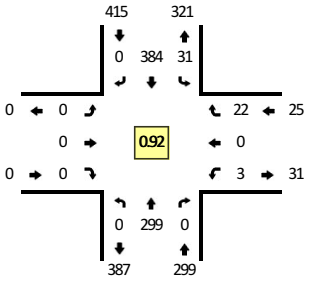
Type of peak hour being reported: Intersection Peak

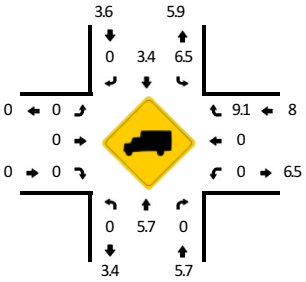
Method for determining peak hour: Tot

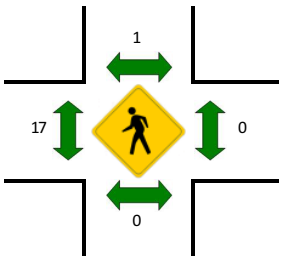
LOCATION: S Main St -- Oregon Trail Blvd
CITY/STATE: Boardman, OR

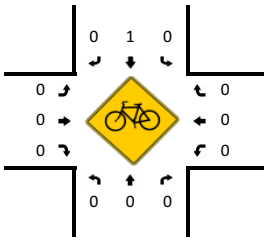
QC JOB #: 15762807
DATE: Thu, Mar 31 2022

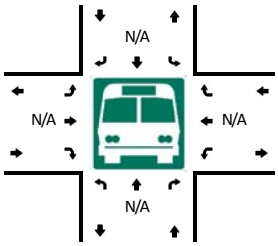
Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:05 PM -- 3:20 PM

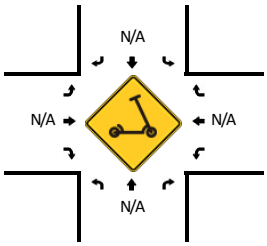












5-Min Count Period Beginning At	S Main St (Northbound)				S Main St (Southbound)				Oregon Trail Blvd (Eastbound)				Oregon Trail Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	14	0	0	5	31	0	0	0	0	0	0	0	0	1	0	51	
3:05 PM	0	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				
	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

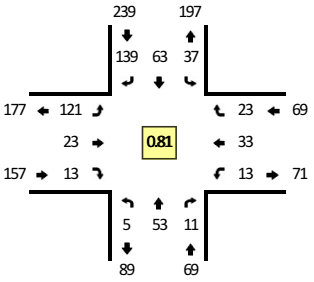
Type of peak hour being reported: Intersection Peak

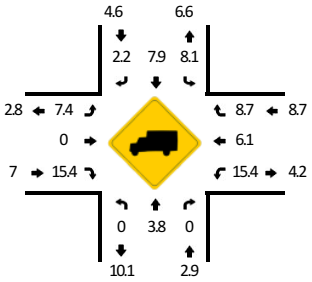
Method for determining peak hour: Tot

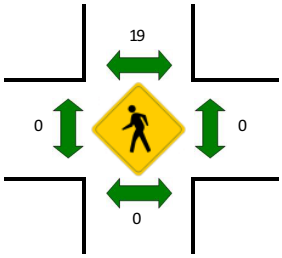
LOCATION: S Main St -- Wilson Ln SE
CITY/STATE: Boardman, OR

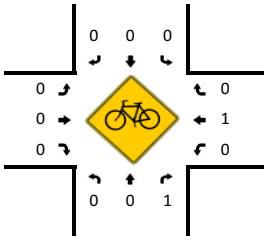
QC JOB #: 15762808
DATE: Thu, Mar 31 2022

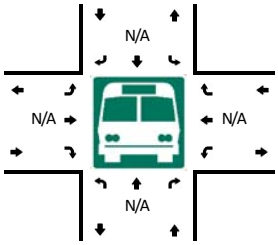
Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:10 PM -- 3:25 PM

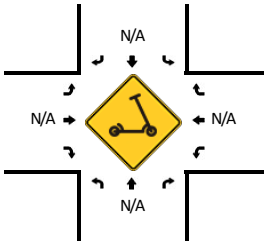












5-Min Count Period Beginning At	S Main St (Northbound)				S Main St (Southbound)				Wilson Ln SE (Eastbound)				Wilson Ln SE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	4	0	0	0	7	9	0	5	0	0	0	2	0	3	0	30	
3:05 PM	0	3	0	0	3	5	20	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				
	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

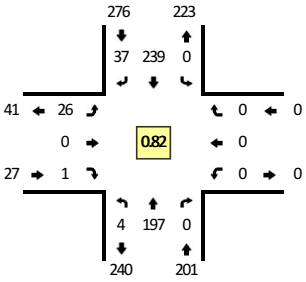
Type of peak hour being reported: Intersection Peak

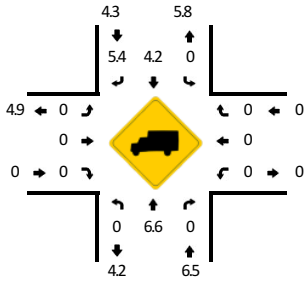
Method for determining peak hour: Tot

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

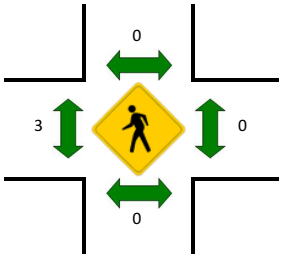
QC JOB #: 15762809
DATE: Thu, Mar 31 2022

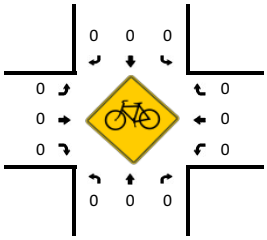
Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:10 PM -- 3:25 PM

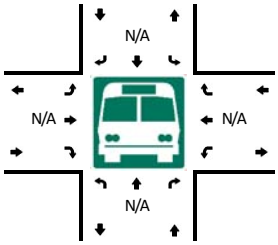


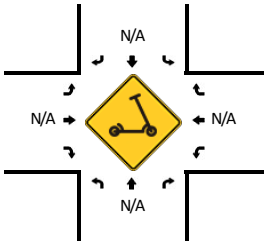


Quality Counts
DATA THAT DRIVES COMMUNITIES









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				
	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

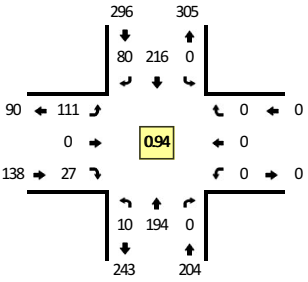
Type of peak hour being reported: Intersection Peak

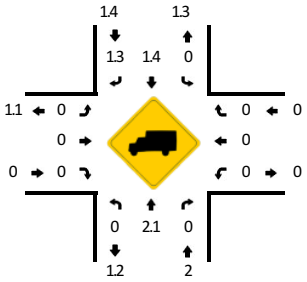
Method for determining peak hour: Tot

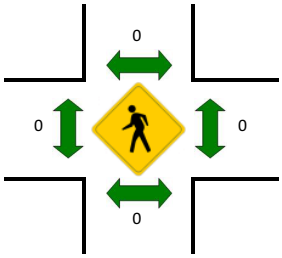
LOCATION: S Main St -- Kinkade Rd
CITY/STATE: Boardman, OR

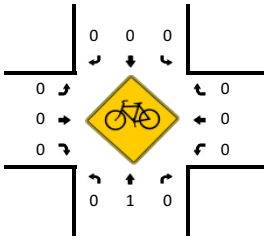
QC JOB #: 15762810
DATE: Thu, Mar 31 2022

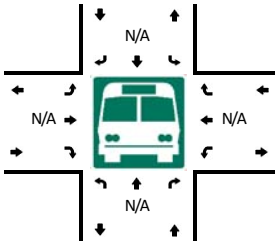
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

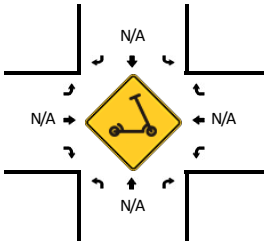












5-Min Count Period Beginning At	S Main St (Northbound)				S Main St (Southbound)				Kinkade Rd (Eastbound)				Kinkade Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	11	0	0	0	19	6	0	4	0	0	0	0	0	0	0	40	
3:05 PM	1	11	0	0	0	30	2	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				
	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

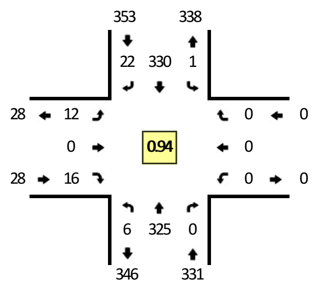
Type of peak hour being reported: Intersection Peak

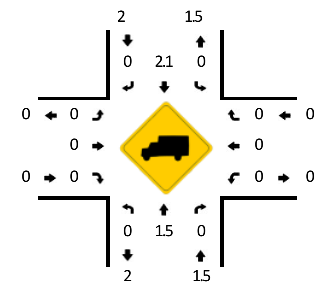
Method for determining peak hour: Tot

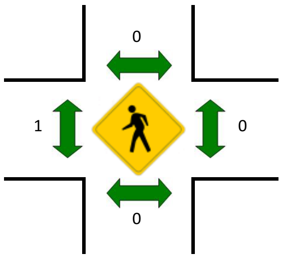
LOCATION: S Main St -- City Center Dr
CITY/STATE: Boardman, OR

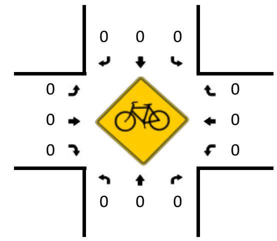
QC JOB #: 15762811
DATE: Thu, Mar 31 2022

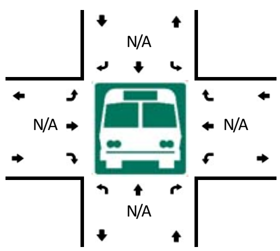
Peak-Hour: 4:20 PM -- 5:20 PM
Peak 15-Min: 4:20 PM -- 4:35 PM

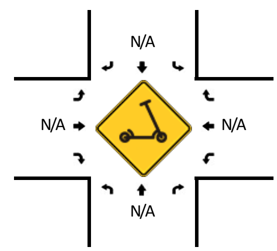












5-Min Count Period Beginning At	S Main St (Northbound)				S Main St (Southbound)				City Center Dr (Eastbound)				City Center Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	2	11	0	0	0	30	0	0	2	0	0	0	0	0	0	0	45	
3:05 PM	0	20	0	0	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				
	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

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.*

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.

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 & 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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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 & 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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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 & 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.*

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.

OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
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.

OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
STATE HIGHWAY SYSTEM CRASH LOCATIONS - DRIVER BEHAVIOR FORMAT

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	

OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CITY STREET LOCATIONS BY COUNTY - DRIVER BEHAVIOR FORMAT

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/OWN #1	VEHICLE TYP/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

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

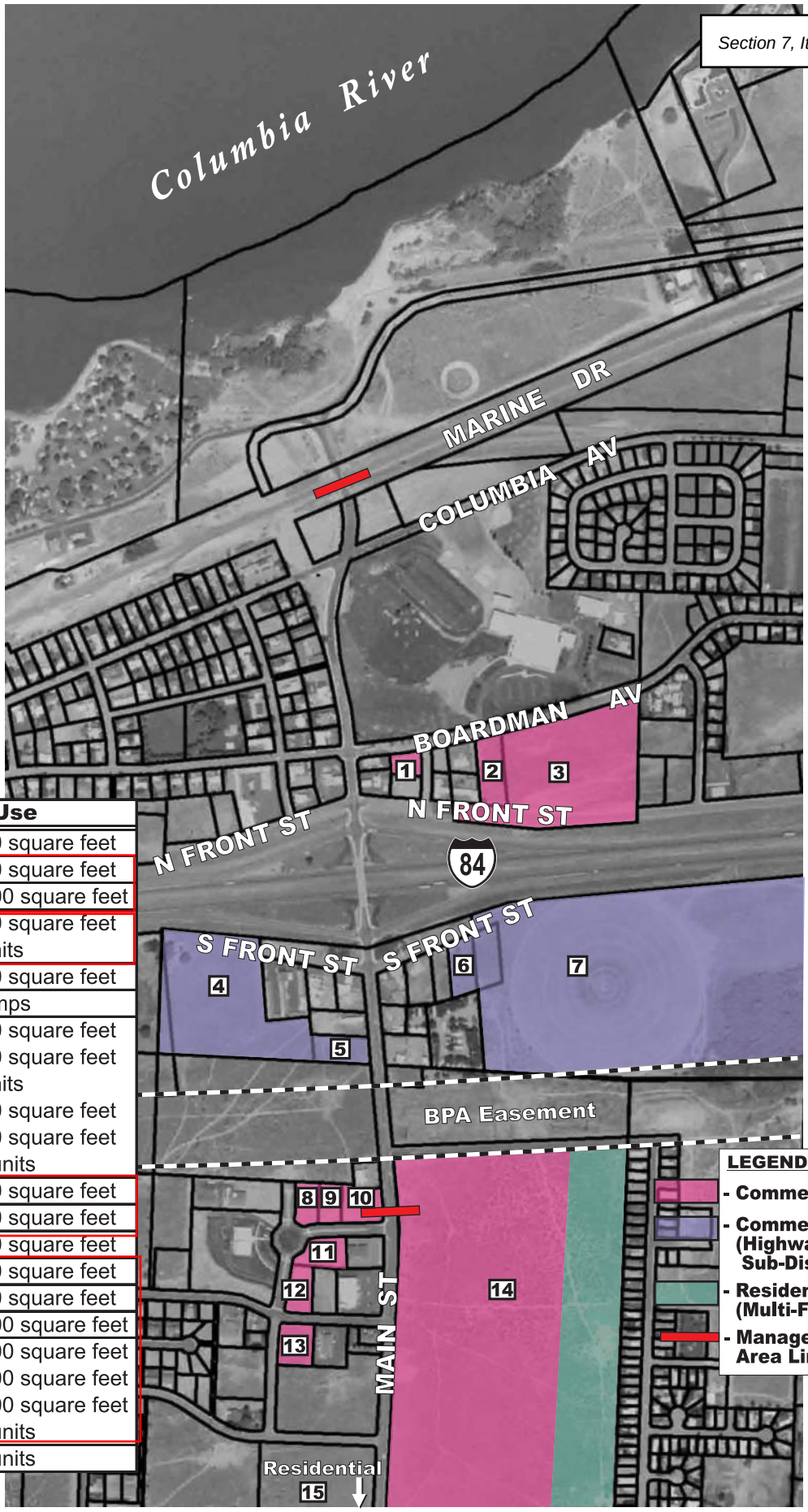
Code	Short Description	Medium Description	Long Description
001	FEL/JUMP	FELL/JUMPED MV	Occupant fell, jumped or was ejected from moving vehicle
002	INTERFER	PSNGR INTERFERED	Passenger interfered with driver
003	BUG INTF	ANML INTERFERED	Animal or insect in vehicle interfered with driver
004	INDRCT PED	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

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.

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

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

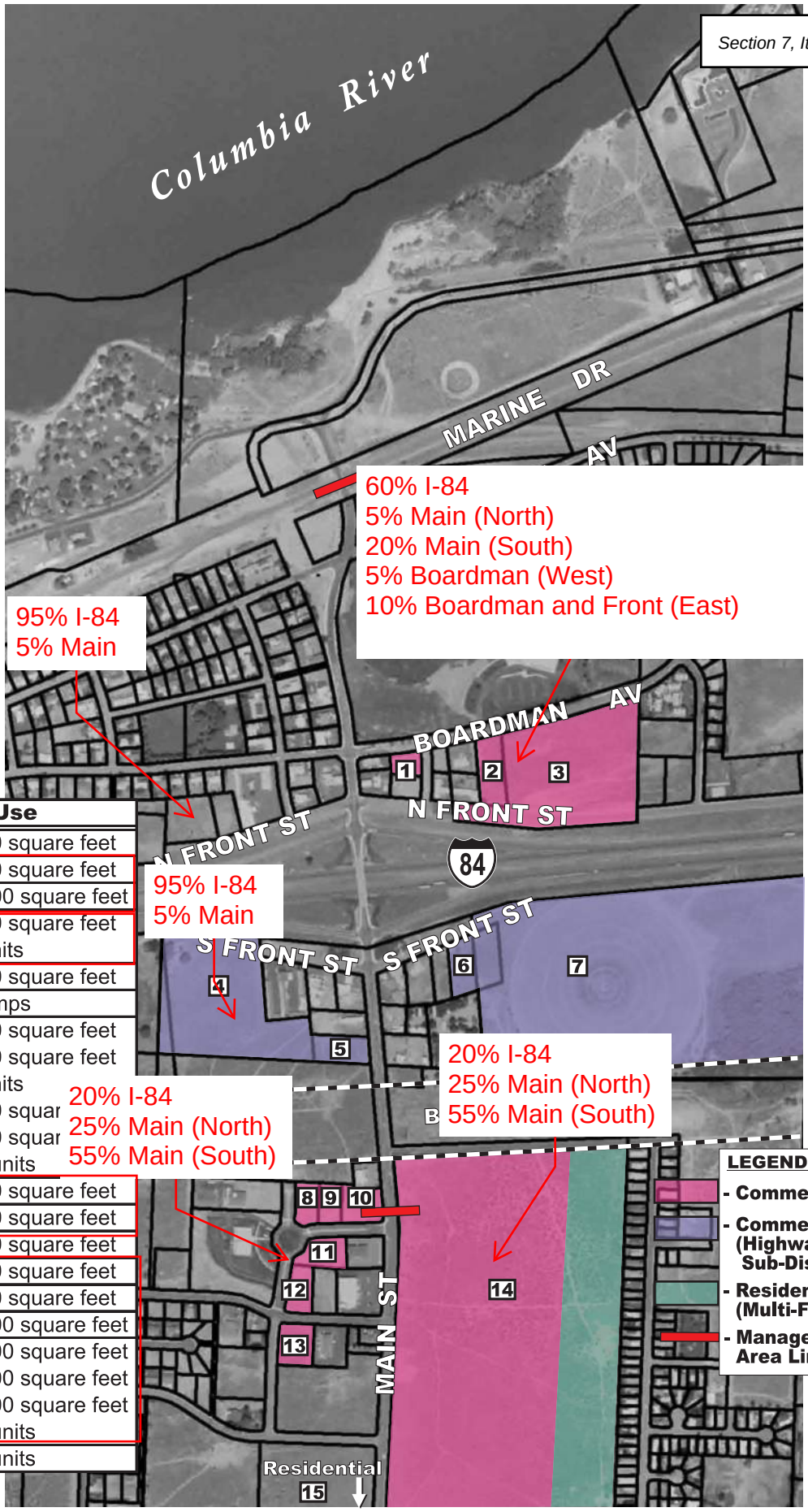
DKS Associates
TRANSPORTATION SOLUTIONS

City of Boardman Main Street IAMP
April 2009

Figure 4.1

MAIN STREET 20-Y FORECASTED DEVELOPM

120



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 squar 2,000 squar 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-Y FORECASTED DEVELOPM

121

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

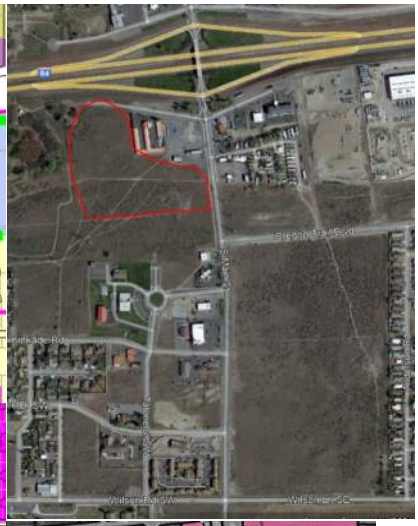
City Zoning: Commercial - Hwy Sub District
2009 IAMP assumption: Fast Food Resturant & Specialty Retail
Proposed Land Use: Fast Food Resturant & High Turn-Over Resturant

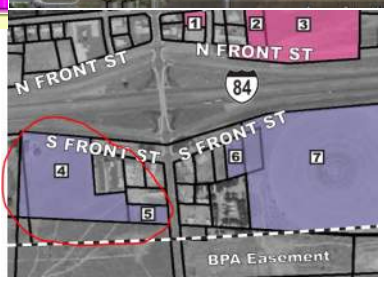
Trip Generation: High-Turnover Resturant

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

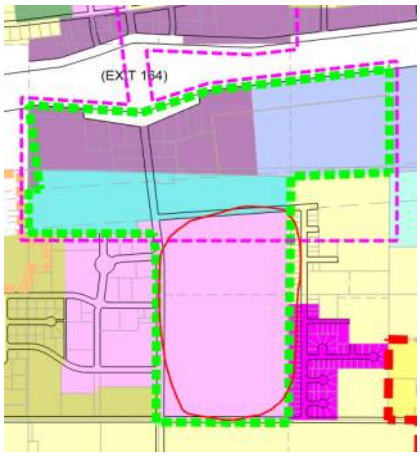


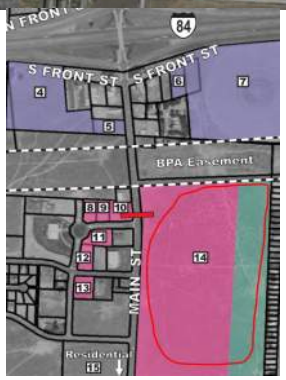


City Zoning: Commercial - Hwy Sub District
2009 IAMP assumption: Resturant & Motel
Proposed Land Use: Truck Stop

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

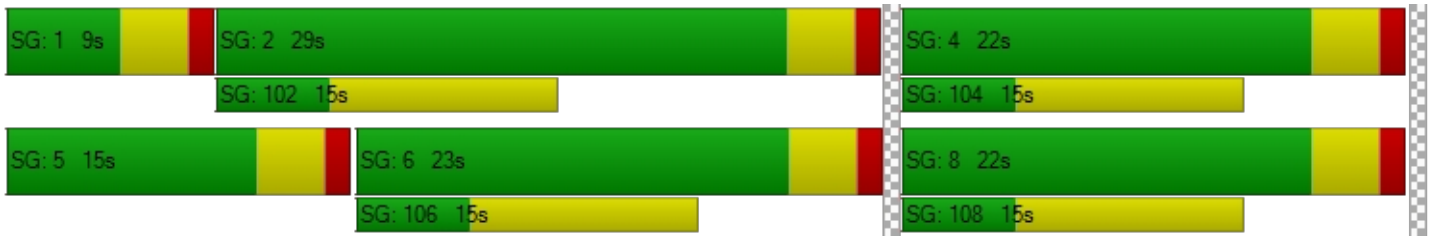
d_M, Delay for Movement [s/veh]	7.14	16.04	16.04	7.22	14.59	14.59	11.08	9.89	9.89	15.76	9.30	9.30
Movement LOS	A	B	B	A	B	B	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	13.25			13.08			10.10			14.73		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	13.19											
Intersection LOS	B											
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	
I1, 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
I2, 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	
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

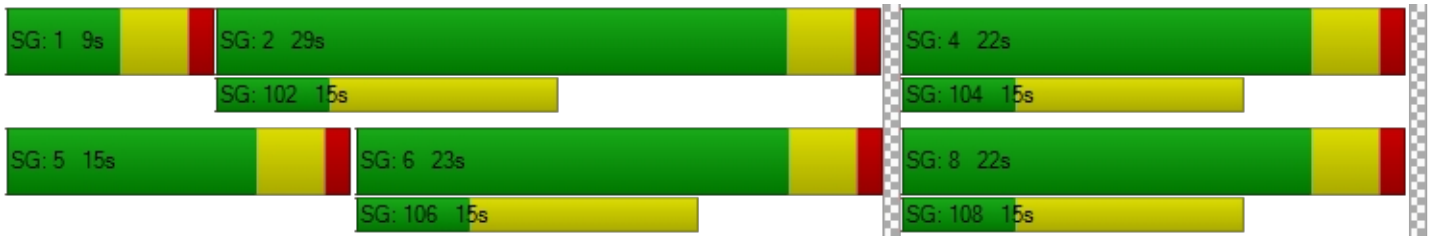
d_M, Delay for Movement [s/veh]	7.14	16.04	16.04	7.22	14.59	14.59	11.08	9.89	9.89	15.76	9.30	9.30
Movement LOS	A	B	B	A	B	B	B	A	A	B	A	A
d_A, Approach Delay [s/veh]	13.25			13.08			10.10			14.73		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	13.19											
Intersection LOS	B									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

Final Report for

Boardman Main Street Interchange Area Management Plan

Prepared by

DKS Associates
TRANSPORTATION SOLUTIONS

Winterbrook Planning

April 2009

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Chapter 1. Executive Summary

The Main Street interchange with Interstate 84 in the City of Boardman is a vital link for regional travel and it provides a connection between the two sides of the community. The Interchange Area Management Plan (IAMP) was initiated to develop a shared plan between the City and the State to make sure that all travelers can use the interchange safely and efficiently as the city continues to grow. The elements of the IAMP lay out the tools needed to make this happen. The City portion of the plan includes specific circulation plans and roadway standards to guide development review and approval and the ODOT portion of the plan includes a list of improvement projects to be done at the interchange. No changes to the current circulation patterns or street conditions will be done until traffic growth reaches specific thresholds identified in the plan.

Goals and Objectives

The main goal of the IAMP is to provide for safe and efficient travel around the interchange. The IAMP report describes the overall study process, identifies expected safety and traffic congestion issues associated with growth, and lays out the responsibilities for the City and ODOT to maintain good traffic operations, while providing for the needs of the property owners who rely on the interchange for local access.

The IAMP objectives include:

- A thorough analysis of the issues for the interchange.
- Identification of the opportunities to improve access and circulation for all modes of transportation.
- Utilization of public involvement and technical methods to develop and refine improvement options.
- Prioritization of improvement projects.

The IAMP was developed in partnership with affected property owners in the interchange area, the City of Boardman, the Oregon Department of Transportation (ODOT), and other stakeholders, including interchange users. The public-at-large and any interested local business operations within the study area were notified of public meetings related to this project, and they were provided opportunities to participate outside of the formal project committee process.

Relevant Plans and Standards

Any roadway improvements on or near state facilities must comply with statewide standards and plans to be funded for construction. Projects that fall short of these standards typically are not advanced to the Statewide Transportation Improvement Program, because they represent higher safety risks and provide less carrying capacity than other standard designs.

One of the fundamental standards measures how congested traffic is during the busiest hours of the day, within the design life of the project. For most cases, new improvements are planned for at least 20 years of useful operation to maximize the investment in the facility. More congestion creates more delays, which can impact freight mobility and general traffic safety. For ODOT facilities, the standard is 85

percent of capacity at the Main Street / I-84 interchange. The city has its own standard, which allows slightly less congestion (80 percent), and it is referred to as Level of Service "C".

Access spacing is the other important standard to be considered, in terms of how it affects traffic safety and mobility. Greater distance between successive cross-streets or driveways allows more reaction time for drivers, reduces conflicts between trucks, cars, pedestrians and bicycles, and gives more vehicle stacking space for turns off of the main roadway. In general, a good access management plan provides a safer and more efficient circulation system. ODOT has specific access standards near interchanges. These standards cannot always be met in communities, and they are balanced against the existing access patterns to identify available options for local access that are closer to preferred standards.

A summary of the background plan review is included in the Appendix.

Existing Land Use and Transportation Issues

Geographic Boundaries

The IAMP study area is divided into two parts: the first is the influence area, which is the land area that generally will affect travel patterns related to the interchange, and the second is the management area, which are the land uses and circulation systems immediately adjacent to interchange. Figure 1.1 shows the study area boundaries.

For the Main Street IAMP, the influence area includes the entire city of Boardman as future development within the city will be considered in assessing the long-range needs and solutions within the interchange. The management area is more narrowly focused on the land uses that have more immediate impacts on roadway access, operations and safety of the interchange.

The management area limits generally extend one-quarter mile north and one-quarter mile south of I-84 along Main Street. North of I-84, most of the property is fully developed along the Main Street frontage area. In this developed portion of the city, the management area was limited to just one block either side of Main Street. This roadway was recently reconstructed (2005) through a Transportation Enhancement Grant, and it is not expected that any changes to existing access patterns would be made along North Main Street. There are several large parcels south of Boardman Avenue and east of Main Street that have commercial zoning and are vacant today. The management area includes those vacant lands.

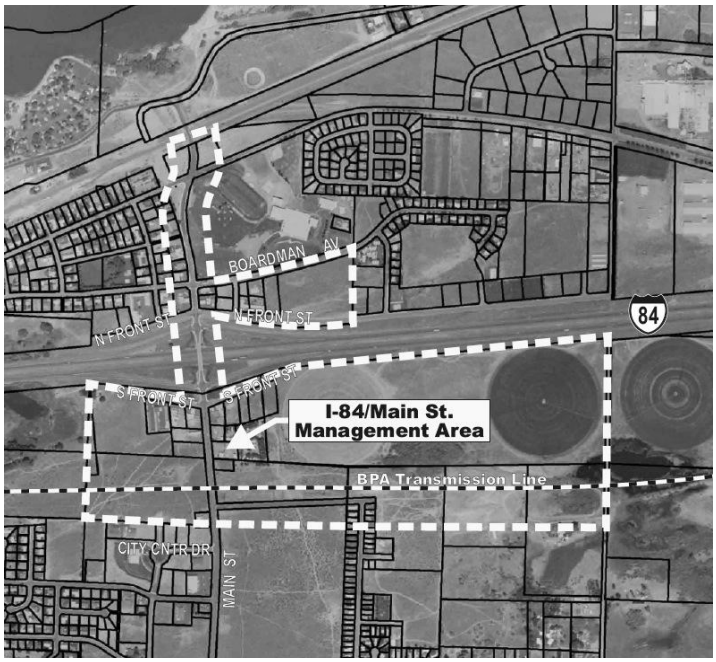

Figure 1.1: Management Area

South of I-84 there is much more opportunity for development of vacant lands or re-development of underutilized commercial land. The boundary of the management area includes all the developable area, extending just south of Oregon Trail Boulevard.

Local Access and Circulation

A total of 28 approaches to Main Street were identified within the management area (see Figure 3.4). Eleven of those are on South Main Street, from Front Street to just past Oregon Trail Boulevard. According to a strict interpretation of the standard, 4 would be allowed on South Main Street within the management area. It is not expected that full compliance can be achieved, given the built environment and prevailing development pattern, which limits alternative circulation options for these properties. Changes to access will only be initiated if the property develops (or re-develops) and there is a reasonable alternate access available. Refer to Figure 3.4 for more details.

A key element of the IAMP is to the long-range preservation of operational efficiency and safety of the interchange is the management of access to Main Street. Because access points introduce a number of potential vehicular conflicts on a roadway and are frequently the causes of slowing or stopping vehicles, they can significantly degrade the flow of traffic and reduce the efficiency of the transportation system. However, reducing the overall number of access points and providing greater separation between them can minimize the impacts of these conflicts.

An access management plan should be implemented to help work towards better compliance for accesses onto Main Street and to provide a basis for decision-making during the development review. Implementation of the access management plan is intended to occur over a long period of time because some affected properties maintain infrastructure (e.g. buildings and internal roadways) that was established based on prior approvals of access locations to the subject roadways and some elements of the plan depend on the presence of new public streets that can not be constructed until funds are made available. Therefore, the improvements in this plan have been prioritized and categorized into short-range, medium-range, and long-range actions, and a set of performance measures have been identified as 'triggers' for implementing changes to existing circulation and access patterns.

Refer to Chapter 4, for more details about the constraints, issues and challenges in addressing each of these areas. Other issues identified through the IAMP included proper roadway design guidelines for truck traffic, enhancement of non-motorized vehicle connections, and notations about existing right-of-way constraints.

Existing Safety and Operations

Reported vehicle crashes over the last five years showed no locations with significant trends relating to accident location or type. The two most prevalent types of reported crashes were angle crashes and rear end crashes. The crash rate at all of the intersections examined did not exceed 0.26 crashes per million entering vehicles. It does not appear that the roadways within the study area are experiencing an above average rate of crashes, and no countermeasures for crash reduction are needed.

Traffic data for 2006 were evaluated to determine how well the existing road intersections and segments perform compared to state and local standards. All of the state and city intersections within the study area operate within the acceptable performance range. The highest traffic volumes and longest delays were observed at the Main Street interchange. Refer to Table 3.2 for more details.

Future Forecasts and Needs Analysis

City growth projections for 2026 were based on the current land use zoning (from the existing Comprehensive Plan), expected residential construction rates, and input from the city staff and short-term developments. By 2026, the city population is estimated to grow by at least 1,800 persons, to just over 5,000 population. Non-residential growth in the retail and industrial sectors was assumed to be significantly higher than recent construction trends, to develop a conservatively high estimate for planning purposes. The change in auto and truck traffic associated with the forecasted growth was

determined to be nearly 11,700 additional daily trips throughout the city. The future traffic volumes on all study area roadways were identified.

Traffic volumes at the Main Street interchange are expected to more than double the level observed today. The peak hour traffic volumes will grow from about 600 vehicles per hour to about 1,300 vehicles per hour by 2026. This is a very substantial change. North of I-84, where the city is largely developed, the growth is much lower, about 50% above today's volumes. The expected volumes and percent change over current conditions is summarized in Table 1.1 below.

Table 1.1: Traffic Volume Growth at Main Street Interchanges (PM Peak Hour Two-Way Total)

Location	2006	2026	Percent Growth
Main Street north of I-84	635	975	54%
Main Street south of I-84	640	1395	118%

By 2026, one intersection is expected to exceed the performance standards during peak hours:

- Main Street at I-84 Westbound Ramp

Side street approaches at four other Main Street intersections showed heavy delays during peak hours at:

- Main Street at Boardman Avenue;
- Main Street at Front Street (North);
- Main Street at I-84 Eastbound Ramps;
- Main Street at Front Street (South).

A series of different solutions were evaluated, and discussed by staff and stakeholders. The final solution was incorporated into the IAMP, and other alternatives that were set aside for various reasons are summarized in the appendix to this report.

Development that is not consistent with the current zoning (and generates over 10% more PM peak hour traffic than the current zoning) will need to complete a traffic study and amend this IAMP.

Interchange Area Management Plan

The full IAMP plan is presented in Chapter 5 of this report. A summary follows.

Local Connectivity Plan

Incremental improvements can be made to the local street connections near the freeway, as additional land is developed, with the long-term goal of improved street connectivity, improved bicycle/pedestrian network and limited direct access to Main Street.

The future deficiencies analysis in Chapter 4 highlighted several areas where local connectivity was in need of improvement, including:

- Improving east-west connectivity;
- Improving north-south connectivity;
- Filling gaps in pedestrian and bicycle system;
- Providing access to lands surrounding the Main Street interchanges; and
- Reducing access points to Main Street to the north and south of the interchange.

In response to these needs, a local connectivity plan and access management plan were developed that builds on existing and planned streets in IAMP area. These plans not only improve overall connectivity throughout the City, but also provide the ability to consolidate approaches to Main Street, while maintaining accessibility to individual properties in the corridors. Refer to Figure 1.2 and Figure 5.1 for details.

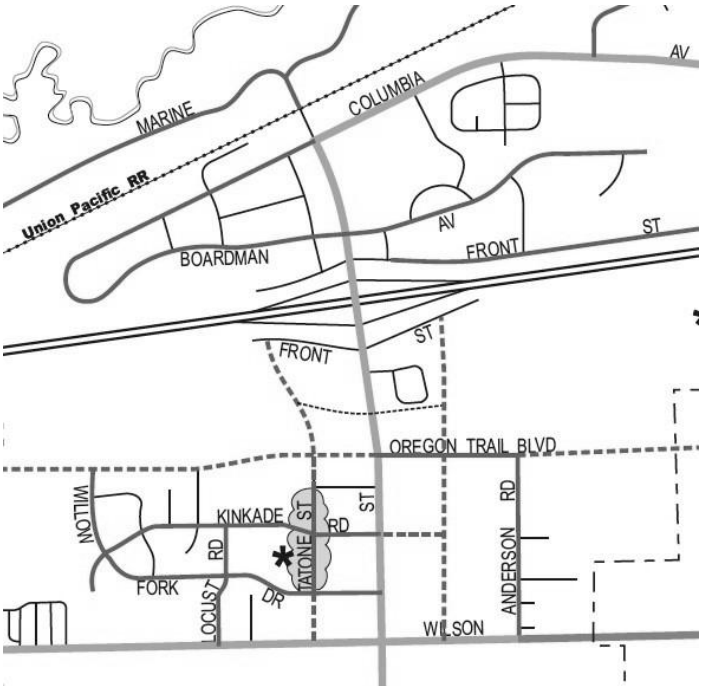

Figure 1.2: Main Street Area Plan

Access Management Plan

A key element of the IAMP related to the long-range preservation of operational efficiency and safety of the interchange is the management of access to the interchange crossroads. Because access points introduce a number of potential vehicular conflicts on a roadway and are frequently the causes of slowing or stopping vehicles, they can significantly degrade the flow of traffic and reduce the efficiency of the transportation system. However, reducing the overall number of access points and providing greater separation between them can minimize the impacts of these conflicts.

Implementation of the access management plan is intended to occur over a long period of time because some affected properties maintain infrastructure (e.g. buildings and internal roadways) that was established based on prior approvals of access locations to the subject roadways and some elements of the plan depend on the presence of new public streets that cannot be constructed until funds are made available. Therefore, the improvements in this plan have been prioritized and categorized into short-range, medium-range, and long-range actions, where the short-range actions are to be executed at this time and the medium and long-range actions are to be executed as needed funds become available or as opportunities arise during property redevelopment.

The goals of this access management plan are listed below:

1. Restrict all access from abutting properties to the interchange and interchange ramps.
2. Improve access spacing and safety factors within the interchange
3. In attempting to meet access management spacing standards, exceptions may be allowed to take advantage of existing property boundaries and existing or planned public streets, and to accommodate environmental constraints (i.e. BPA Easement).
4. Replace private approaches with public streets, where feasible, to provide consolidated access to multiple properties.
5. Ensure all properties impacted by the project are provided reasonable access to the transportation system.
6. Develop cross access easement agreements as properties (re)develop.
7. Align approaches on opposite sides of roadways where feasible to reduce turning conflicts.

8. Short-range actions shall accommodate existing development needs.

Using the goals, an action plan for each approach to Main Street was developed, as shown in Table 5.1 and Figure 5.2 in Chapter 5.

Interchange Improvements

The preferred Main Street Interchange improvements expand the existing diamond interchange. The project phasing would follow these steps:

- The freeway off-ramps would be widened to provide for separate turning lanes on the approaches to Main Street,
- Traffic signals would be installed at the off-ramp intersections with Main Street once traffic volumes grew enough to meet ODOT standards for traffic signal controls,
- The Main Street overpass would be expanded to accommodate a center left turn lane, bike lanes and wider sidewalks.

Improvement Cost Estimates

The improvement alternatives have been prioritized into short, medium, and long-range actions, as shown in Table 1.2, to provide guidance for future implementation and funding. The timing for implementing these actions assumes average growth over the next 20 years.

It should be recognized that the prioritization of projects is not intended to imply that short range projects must be implemented before the long range projects. Should opportunities arise, through private land development or other means, to construct specific projects earlier than the estimated time frame provided by this list, those resources should be utilized.

Planning-level cost estimates for all improvement alternatives were calculated to aid in the identification of needed funding. Cost estimates, shown in Table 1.2, included the fundamental elements of roadway construction projects, such as the roadway structure, bridge structures, curb and sidewalk, earthwork, retaining walls, pavement removal, and traffic signals. Right of Way costs are not included in the cost estimates. All costs are in 2007 dollars and do not reflect the added cost of inflation.

One way to provide funding for future projects (i.e. local street network and South Main Street), is for the City to establish a System Development Charge (SDC) or Local Improvement District (LID) program. These types of programs are set up to collect funds from developments and/or land owners and are based on the amount of traffic generated.

Table 1.2: IAMP Improvements

Short-Range Improvements (0 to 5 years)	Triggers	Estimated Cost	Potential Funding Source
• No specific short-range actions identified. Mid-range actions triggered earlier than 5 years.	- Increase in crashes - Property (re)development	NA	• City • Property owners
Medium-Range Improvements (5 to 10 years)			
• Reconstruct South Main Street.	- Money becomes available - Property (re)development	$3 Million	• ODOT • City
• Medium-range actions from access management plan.	- Increase in crashes	NA	• City

Short-Range Improvements (0 to 5 years)	Triggers	Estimated Cost	Potential Funding Source
	- Recurring public complaint - Property (re)development		• Property owners
• Construct additional approach lane on I-84 ramp terminals	- Increase in crashes - LOS drops below standards - Turn lanes warranted	$150,000	• FHWA • ODOT • City
Long-Range Improvements (10 to 20 years)			
• Construct new public streets according to adopted Local Connectivity Plan.	- Property (re)development	$10 to 12 million	• City • Property owners
• Install traffic signal at Main Street & I-84 Westbound Ramp	- Traffic signal warrants met	$300,000	• ODOT • City
• Reconstruct Main Street Bridge over I-84 – including wider sidewalk, bike lanes and turn lanes.	- Turn lanes warranted - Money becomes available - ODOT Bridge program – structural deficiency - Increase in bike/ped crashes	$10 to 15 million	• FHWA • ODOT • City
• Long-range actions from access management plan.	- Increase in crashes - Recurring public complaints - Property (re)development	NA	• City • Property Owners

Note: Medium and long-range improvements could be constructed sooner than anticipated as opportunities arise through private property development or other means.

Table 1.3 shows the general size of development that is projected to happen in the next 20 years, assuming a constant growth rate. The magnitude of development (and associated trips) shown in the table is meant to serve as a guide as to when the short, medium and long range improvements may be needed. If growth rates are substantially faster or slower than anticipated, the implementation of the actions should be reevaluated, as appropriate.

Table 1.3: Basis for Project Priorities

Description of Land Development within South Main Street Corridor	Short Range 0 to 5 Years	Medium Range 5 to 10 Years	Long Range 10 to 20 Years	Total
Residential Units	85	85	170	340 residential units
Non-Residential Gross Building Area in Square Feet	65,000	65,000	130,000	260,000 square feet gross building area
Peak Hour trips net new peak hour trips above 2006 traffic counts	250	250	500	1000 new peak hour trip ends

Chapter 2. Plan Goals, Objectives, and Evaluation Criteria

This chapter describes and presents the goals and objectives for the plan, as well as evaluation criteria to measure the effectiveness of strategies. A policy framework was identified based on reviews and summary of the applicable state and local plans, policies, regulations, and design standards (see Appendix for details). This policy framework was used to develop the project goals, objectives and evaluation criteria that are presented in the following sections.

Goals & Objectives

Project Goal

The primary goal of this project is to develop an IAMP for the interchange of I-84 at Main Street (Exit 164), to keep it operating safely and efficiently as the community grows. The IAMP describes the overall study process, identifies potential safety and traffic congestion issues and alternative solutions, and lays out the implementation steps.

The IAMP will be developed in partnership with affected property owners in the interchange area, the City of Boardman and the Oregon Department of Transportation (ODOT), and other stakeholders, including interchange users.

Objectives and Evaluation Criteria

The Project Goals have been met if the following objectives are achieved. A bulleted list of evaluation criteria follows each objective.

1. The IAMP shall include a thorough analysis of the issues for the interchange.
    - Identify and address existing and foreseeable issues related to land use, mobility, accessibility, and safety within the analysis area of the planned interchange.
    - Meet the minimum level of service / mobility standards and other requirements identified in state transportation plans, such as the Oregon Transportation Plan, 1999 Oregon Highway Plan (OHP), and Oregon Freight Plan.
    - Include an inventory map summarizing the existing conditions within the Interchange Study Area.
2. The IAMP shall identify and assess the needs and opportunities to improve access and circulation for all modes of transportation.
    - Describe the roadway network, right-of-way, access control and land parcels in the Interchange Study Area. It also evaluates local street access, circulation, connectivity, and the potential effect of local land use designations on the interchange.
    - Identify development patterns which reduce the reliance on the interchanges while increasing efficiency of the use of land within the urban growth boundary.

- Implement the OHP's Policy 3C criteria, which requires the planning and management of grade-separated interchange areas to ensure safe and efficient operation between connecting roadways.
- Include policies and implementing measures that preserve the functionality of the interchange areas.

3. The preparation of the IAMP shall utilize public involvement and technical methods to develop and refine improvement options.
    - Involve affect property owners in the interchange area, the City of Boardman, the Oregon Department of Transportation (ODOT), and other stakeholders, including interchange users.
    - Incorporate input and guidance from the Project Management Team (PMT).
    - Reflect, to the extent possible, the input of local property owners, interchange users, and other stakeholders, as gathered through public comments.
4. The IAMP shall prioritize improvement projects.
    - Identify and prioritize the transportation improvements, land use, and access management plans needed to maintain acceptable traffic operations in the Interchange Study Area.
    - Include short, medium and long-range actions to improve and maintain roadway operations and safety in the Interchange Study Area. These actions may include local street network improvements, driveways consolidations, shared roadways, access management, traffic control devices, and / or local land use actions.
    - Include a Transportation Improvements Map showing the opportunities to improve operations and safety within the City of Boardman and specifically in the Interchange Study Area.
5. The IAMP shall be forwarded through the adoption process.
    - A draft version shall be reviewed by the Boardman planning Commission, as well as the Boardman City Council. A final draft of the IAMP shall be adopted by the City Council.
    - Identify likely funding sources and requirements for the construction of the infrastructure and facility improvements as new development is approved.
    - Identify partnerships for the cooperative management of future projects and establishes a process for coordinated review of land use decisions affecting transportation facilities.

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Chapter 3. Existing Land Use and Transportation Conditions

This chapter provides an inventory and evaluation of transportation facilities within the IAMP study area, which can be used to identify areas needing improvement and can act as a baseline for assessment of future conditions. This includes identification and description of existing land uses, area streets, traffic controls, pedestrian facilities, freight routes and property access, as well as an analysis of the crash history, access management deficiencies, and intersection capacity.

Study Area Land Uses

Interstate 84 runs east and west through the City of Boardman and divides the town into roughly one third to the north and two-thirds to the south. The two roadways that cross Interstate 84 (I-84) and connect the north and south parts of town are Main Street and Laurel Avenue. The main east-west roads in Boardman are Marine Drive, Columbia Avenue and Wilson Road. Currently, the predominant employment centers are located north of I-84 and the residential is generally south of I-84, which creates the need for regular trips across the freeway.

The IAMP focuses on the land uses and circulation patterns that affect operations and safety at the Main Street interchange. The IAMP study area is divided into two parts: the first is the *influence area*, which considers the current and planned land development patterns that will affect travel patterns related to the interchange, and the second is the *management area*, which are the adjoining land uses and circulation systems within the immediate area of the interchange. The influence area includes the entire city of Boardman as future development within the City will be considered in assessing the long-range needs and solutions at the interchange. The management area is more focused on the land uses in close proximity, as defined by ODOT standards and guidelines. The selected geographic boundaries for the IAMP study area is discussed below and shown in Figure 3.1.

Management area limits generally extend one-quarter mile north and one-quarter mile south of I-84 along Main Street. North of I-84, most of the property is fully developed along the Main Street frontage area. In this developed portion of the city, the management area was limited to just one block either side of Main Street. This roadway was recently reconstructed (2005) through a Transportation Enhancement Grant, and it is not expected that any changes to existing access patterns would be made along North Main Street.

There are several large parcels south of Boardman Avenue and east of Main Street that have commercial zoning and are vacant today. The management area includes those vacant lands.

South of I-84 there is much more opportunity for development of vacant lands or re-development of underutilized commercial land. The boundary of the management area includes all the developable area, extending just south of Oregon Trail Boulevard.

Study Area Street Network

The roadways within the study area have designated functional classifications, which identify how they are to be used, and the appropriate standards for operations and design. These roadways are listed below in Tables 3.1. The I-84 mainline and freeway ramps are federally owned and operated by ODOT, while the rest of the roadways are owned and operated by the City of Boardman.

City of Boardman Main Street IAMP
April 2009

NO SCALE

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Figure 3.1

STUDY AREA

Table 3.1: Study Area Roadways for Main Street IAMP

ODOT Jurisdiction		
Roadway	**Limits**	**Functional Classification**
I-84	Main Street Interchange	Interstate highway on National Highway System and Freight Route
City of Boardman Jurisdiction		
Roadway	**Limits**	**Functional Classification**
Main Street	Wilson Road – Marine Drive	Arterial
Boardman Avenue	W 1st Street – E 1st Street	Minor collector
NW Front Street	W 1st Street – E 1st Street	Minor collector
SW Front Street	Entire length	Local street

With these roadways identified as the primary means of circulation through the area, key intersections along these routes were selected for capacity analysis. Through a field inventory, the existing lane configurations and traffic controls at each intersection were documented and are displayed in Figure 3.2. There are no signalized intersections within the study area. Main Street has a three lane cross-section, including a continuous left turn lane, from I-84 to Columbia Avenue. All other roadways are currently two lanes.

Operational Analysis

Traffic Volumes

Traffic data was collected at five intersections within the City on September 19, 2006.

16-hour intersection turn movement counts were collected at the two interstate ramp intersections:

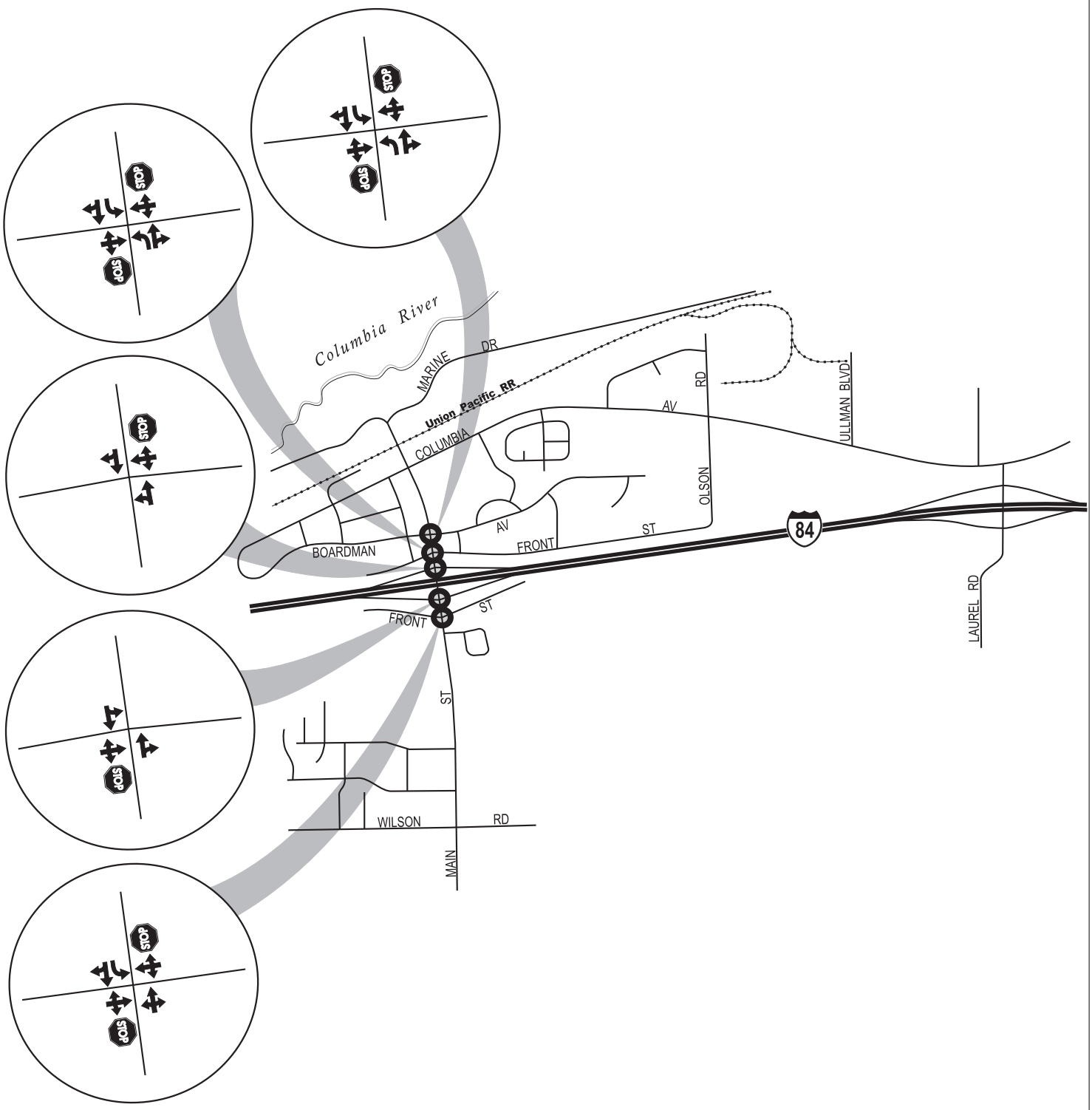
- I-84 EB Ramp at Main Street
- I-84 WB Ramp at Main Street

PM Peak Hour turning movement counts were collected at three additional intersections within the City:

- Main Street at Boardman Avenue
- Main Street at Front Street (north)
- Main Street at Front Street (south)

The PM Peak traffic counts were collected from 4:00 to 6:00 PM. Based on an evaluation of the count data, the evening peak hour for the operational analysis was determined to be from 4:05 to 5:05 PM for study intersections along Main Street.

The existing peak hour volumes were adjusted using the ODOT seasonal trend table. There are no automatic traffic recorders with similar characteristics nearby, therefore the seasonal trend method was used to develop design hour volumes. The Interstate trend was used to determine the seasonal factor. The adjusted PM Peak hour volume data is shown in Figure 3.3.



LEGEND

- Study Intersection
- Lane Configuration
- Stop Sign

City of Boardman Main Street IAMP
April 2009

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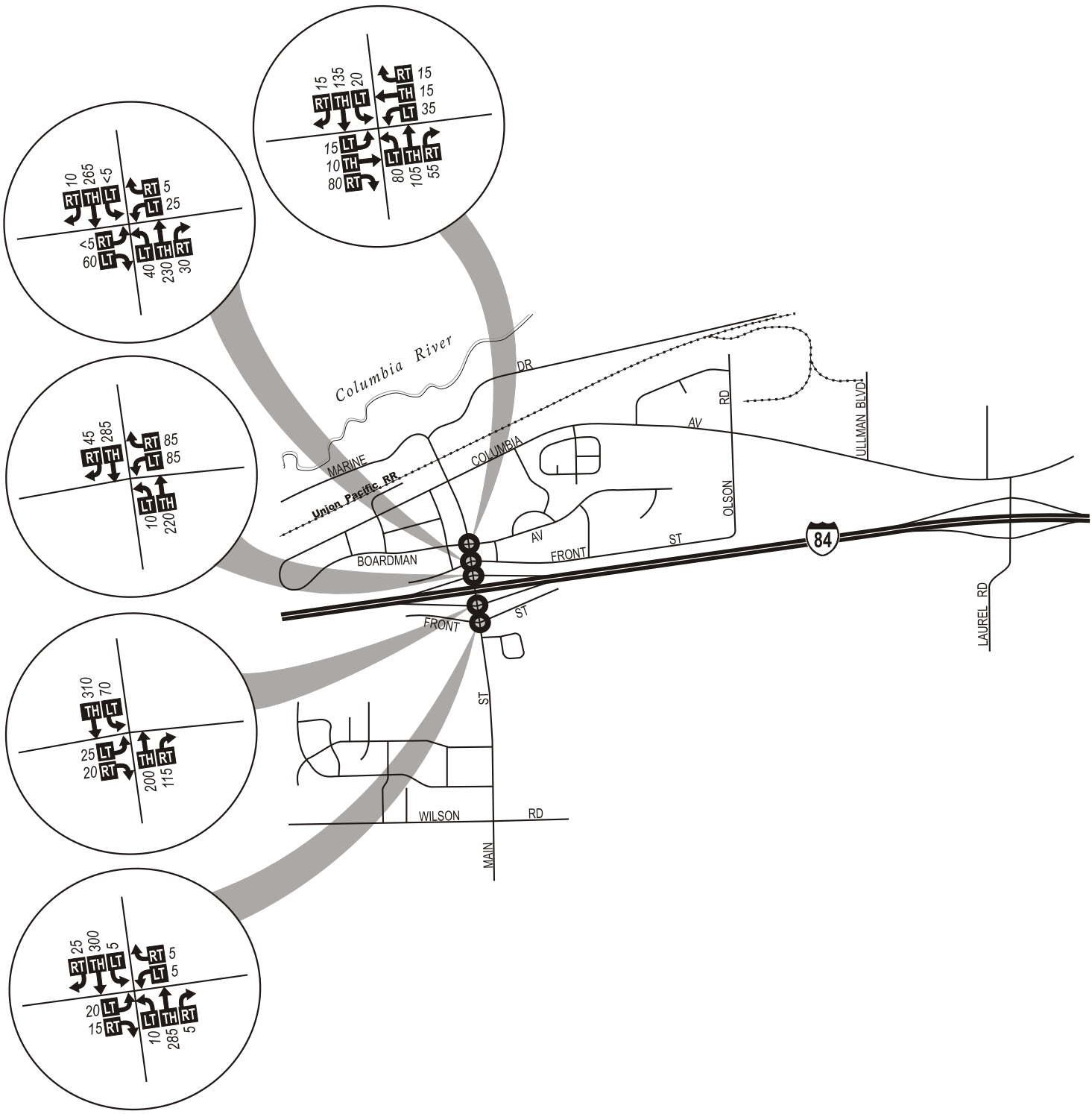
Figure 3.2

EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROL DEVIC



LEGEND

- Study Intersection
- *PM* - Peak Hour Traffic Volumes
  - *PM Peak* - 4:05-5:05 pm
- LT TH RT - Volume Turn Movement (Left•Thru•Right)

City of Boardman Main Street IAMP
January 2009

NO SCALE

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Figure 3.3

2006 EXISTING WEEKDAY PM PEAK HOURS TRAFFIC VOLUM

Study Area Roadway Performance

Study intersections within the IAMP area were analyzed using *Highway Capacity Manual*[1] methodologies for unsignalized intersections for comparison with the applicable jurisdiction's adopted performance standards. I-84 is designated as an Interstate highway, while Main Street is classified as an arterial and is under the jurisdiction of the city of Boardman. Performance standards for the freeway interchange ramp terminals have been adopted by ODOT in the *1999 Oregon Highway Plan*[2] (*OHP*). The maximum volume to capacity (V/C) ratio of ramp terminals of interchange ramps shall be 0.85.

All non-state roadways within the study area are under the jurisdiction of the City of Boardman. The City has adopted standards for performance of City streets requiring operation of LOS "C" or better during the peak hour of the average weekday.

Level of Service (LOS) categories are similar to report card ratings for traffic performance. Intersections are typically the controlling bottlenecks of traffic flow and the ability of a roadway system to carry traffic efficiently is generally diminished in their vicinities. LOS A, B and C indicate conditions where traffic moves without significant delays over periods of peak travel demand. LOS D and E are progressively worse peak hour operating conditions and F conditions represent where demand exceeds the capacity of an intersection. Most urban communities set LOS D as the minimum acceptable level of service for peak hour operation and plan for LOS C or better for all other times of the day. The *Highway Capacity Manual* provides LOS calculation methodology for both intersections and arterials.

The traffic volume data shown in Figure 3.3 was used in the analysis. The percentage of heavy vehicles at each intersection was obtained from the traffic counts and used in the analysis. From this analysis, intersection LOS and volume to capacity ratios were obtained.

Table 3.2 shows the existing operational analysis for the unsignalized intersections within the Main Street IAMP study area. The results shown represent the critical movement at each intersection (usually a stop-controlled movement, such as a side-street left turn or crossing movement), along with the average intersection delay and LOS. As can be seen from this table, none of the intersections fail to operate within acceptable standards.

Table 3.2: Weekday PM Peak Hour Intersection Level of Service Main Street IAMP Area

Intersection	Critical Movement			Average Intersection		Performance Standard	Met ?
	Direction	LOS	Volume / Capacity	Delay (sec)	LOS		
I-84 EB Ramp / Main Street	EB	B	0.07	1.7	A	V/C < 0.85	Yes
I-84 WB Ramp / Main Street	WB	B	0.18	3.3	A	V/C < 0.85	Yes
Main Street / Boardman Avenue	WB	B	0.10	5.0	A	LOS > C	Yes
Main Street / Front Street (North)	WB	C	0.09	2.4	A	LOS > C	Yes
Main Street / Front Street (South)	EB	B	0.06	1.1	A	LOS > C	Yes

Heavy Vehicles

The percentage of heavy truck vehicles observed at local intersections was a little higher than average. For the purposes of this analysis, a heavy truck is defined as having more than 3 axles. The heavy vehicle traffic is due to the proximity of the industrial land north of I-84 to the interchange, and access to commercial services along an interstate freight route. The actual number of heavy vehicles entering the

[1] *Highway Capacity Manual*, Transportation Research Board, Washington, D.C., 2000.
[2] *1999 Oregon Highway Plan*, Oregon Department of Transportation, 1999.

intersections was not above average, but since the total number of entering vehicles at these intersections is relatively low, it is understandable why the percentage of heavy vehicles is higher than average.

Table 3.3 shows the PM Peak hour heavy vehicle percentages at the Main Street IAMP study area intersections.

Table 3.3: Weekday PM Peak Hour Volumes Within Main Street IAMP Study Area

Intersection	Total Vehicles	Heavy Vehicle	Heavy Vehicle %
I-84 EB Ramp/Main Street			
Northbound	286	16	5.6%
Southbound	351	16	4.6%
Eastbound	45	13	28.9%
I-84 WB Ramp/Main Street			
Northbound	213	14	6.6%
Southbound	299	24	8.0%
Westbound	159	24	15.1%
Main Street/Boardman Ave			
North/Southbound	379	29	7.6%
East/Westbound	162	7	4.3%
Main Street/Front Street (north)			
North/Southbound	540	36	6.6%
East/Westbound	87	15	17.2%
Main Street/Front Street (south)			
North/Southbound	579	36	6.2%
East/Westbound	38	1	2.6%

It is noted that the heavy vehicle percentages were considered in the operational analysis for each of the study area intersections. Due to the length and weight of heavy vehicles, the start up time is much slower that passenger cars. This slow start up time, in addition to the length of the vehicle can create long queues. The heavy vehicles must also wait for a larger gap in the traffic before pulling out, which can add to the delay at the intersection.

The effect of large trucks was included in the foregoing capacity analysis. It was found that all of the study intersections currently operate within acceptable standards even taking into account the high percentage of heavy vehicles.

Heavy vehicles have much larger turning radii than passenger cars and the intersection geometrics along the freight routes must take this into account.

Crash Analysis

The last five years (2001 – 2005) of available crash data for the entire City of Boardman was obtained from the ODOT Crash Analysis and Reporting Unit. The crashes within the Main Street interchange study area were analyzed and are listed in Table 3.4.

Table 3.4: Study Intersection Collision Data by Type

Intersection	Backing	Pedestrian/ Bicycle	Angle	Rear-End	Turning Movement	Fixed Object	Total		Fatality	Injury	Property Damage	Accident Rate*
I-84 EB Ramp/Main Street	-	-	-	-	-	-	-		-	-	-	0.0
I-84 WB Ramp/Main Street	-	-	1	1	1	-	**3**		-	-	3	0.24
Main Street/Boardman Ave	-	-	1	-	-	1	**2**		-	2	-	0.20
Main Street/Front Street (north)	-	1	-	-	-	1	**2**		-	1	1	0.17
Main Street/Front Street (south)	1	-	2	-	-	-	**3**		-	1	2	0.26
Main Street/Columbia Avenue	-	-	1	2	-	-	**3**		-	-	3	0.53
Total Collisions	**1**	**1**	**5**	**3**	**1**	**2**	**13**		**0**	**4**	**9**	

Source: ODOT – Transportation Data Section – Crash Analysis and Reporting Unit, Continuous System Crash Listing, City of Boardman, 2000-2004.

*Accident Rate is measured in Accidents per Million Vehicles Entering intersection per year.

Through an examination of individual crashes over the last five years, it was noted that there were not any significant trends relating to accident location or type. The two most prevalent types of reported crashes were angle crashes and rear end crashes.

Normally, the crash analysis is supplemented by reviewing ODOT's Safety Priority Index System (SPIS) listing for locations in the study areas ranked among the state's top 10% of hazardous locations. The SPIS is a method developed by ODOT for identifying hazardous locations on state highways. None of the intersections within the study area are identified on the ODOT SPIS list

Based on this information, it does not appear that the roadways within the study areas are experiencing an above average rate of crashes. Therefore, no countermeasures for crash reduction are needed.

Local Access and Circulation

An inventory of the existing access points along Main Street was compiled for the management area. Access to Main Street is in the form of private driveways, public easements, and public roadways.

Oregon's Access Management Rule is used to control the issuing of permits for access to state highways, state highway rights of way and other properties under the State's jurisdiction. Access within the influence area of existing or proposed state highway interchanges is regulated by standards in OAR 734-051. These standards do not retroactively apply to interchanges existing prior to adoption of the 1999 Oregon Highway Plan, except or until any redevelopment, change of use, or highway construction, reconstruction or modernization project affecting these existing interchanges occurs.

Figure 3.4 shows the location of the access points in the Main Street IAMP management study area. Main Street north of I-84 was recently reconstructed, which consolidated some access, but there are still a number of driveways and three public roadways that are within the interchange management area. Main Street south of I-84 has very little access control. There are three properties that have no clear curb cuts, which allow vehicles to access the property all along the frontage. This leads to conflicts between entering and exiting vehicles and is dangerous for pedestrians. The close spacing of North Front Street and South Front Street to the I-84 Ramp intersections creates conflict points between vehicles on the ramps and vehicles wanting to access local businesses. The BPA power line crosses South Main Street

just north of Oregon Trail. Access to the power line must be maintained for operational and maintenance purposes.

Issues to be Addressed

- Reduce number of conflict points on Main Street. The close spacing of North Front Street and South Front Street create conflict points between turning vehicles and pedestrians. Alternate access should be investigated.
- The access to the properties directly south of I-84 along Main Street needs to be demarcated and evaluated.
- Ensure the adequacy of the roadway network in terms of function, capacity, level of service and safety.
- Serve the existing, proposed and future land uses with an efficient and safe transportation network.
- Design and construct the transportation system to enhance safety and mobility for all modes.

Some of these issues can be addressed through small incremental projects prior to major reconstruction.

Pedestrians/Bicycles

To assess the adequacy of pedestrian and bicycle facilities in Boardman, an inventory of sidewalks, designated bike lanes, shoulder bikeways, identified shared roadways and off- street trails along the city streets was conducted. The location of existing activity centers such as parks, schools, City Hall and the city library were identified to determine possible pedestrian/bicycle trip generators. The high school is located north of I-84 while the elementary school, library and City Hall are all located south of I-84. The existing pedestrian network includes sidewalks along many of the local roads and a multi-use path along Wilson Road. However, there are very limited locations to cross I-84.

The City has applied for Transportation Enhancement Funding in the past to provide pedestrian and bicycle facilities on South Main Street. This section of Main Street currently has a multi-use path for pedestrians and bicycles. The previously proposed project would have provided sidewalk and bike lanes to improve the north-south connectivity for pedestrians and cyclists. The City may continue to pursue state funding in the future to help rebuild this section of roadway.

Figure 3.5 shows existing pedestrian facility inventory within the study area as well as the location of major activity centers. Sidewalk connectivity is adequate in the residential areas and near most schools. It is desirable to provide at least one continuous sidewalk connection between activity centers and arterial and collector roadways to provide safe and attractive non-motorized travel options. There are locations where sidewalk coverage could be more complete and provide greater connectivity throughout the city.

There is a multi-use path for bicycles along the north side of Wilson Road and bike lanes along North Main Street. Along the other roadways, bicyclists must share the travel lane with motor vehicles or use the shoulder if available. In many cases, this is not a desirable option for bicyclists due to narrow widths or uneven pavement conditions. Adequate bicycle facility connections should be provided to allow for safe travel between neighborhoods and activity centers.

The identified pedestrian and bicycle issues are summarized below.

LEGEND

0 - Access Location & Number

- No Access Control

000 - Tax Lot ID#

SCALE: 1"=400' (Approx.)

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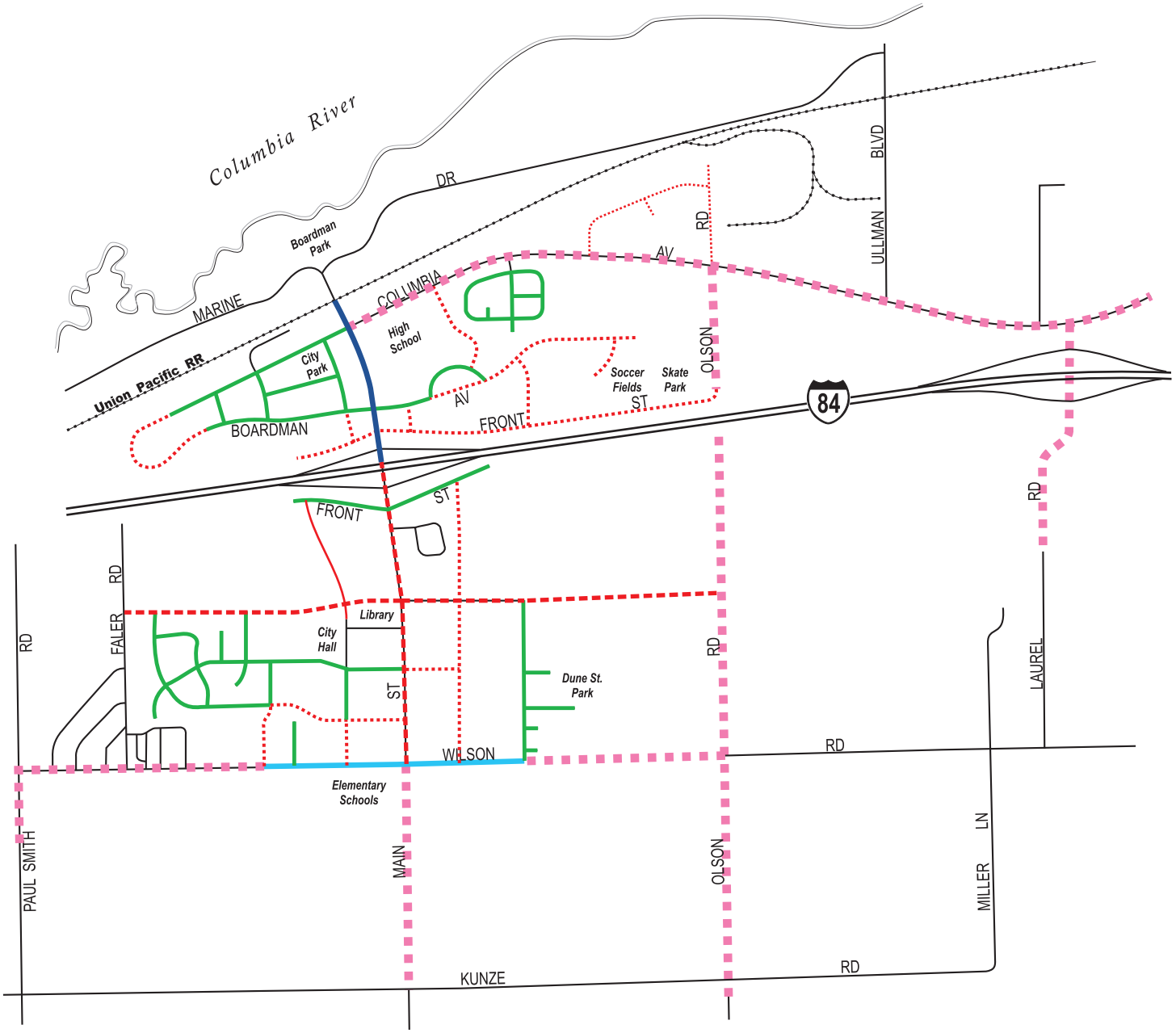
City of Boardman Main Street IAMP
April 2009

Figure 3.4

MAIN STREET IAMP
EXISTING ACCESS POINTS



LEGEND

- Existing Sidewalk
- Existing Sidewalks & Bike Lanes
- Existing Multi-Use Path
- Future Sidewalk
- Future Sidewalks & Bike Lanes
- Future Multi-Use Path

City of Boardman Main Street IAMP
April 2009

NO SCALE

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Figure 3.5

EXISTING PEDESTRIAN AND BICYCLE NETWORK

Issues to be Addressed

Deficiencies in the existing pedestrian facility network include:

- Sidewalks throughout the City should be ADA compliant and meet ODOT grant requirements.
- Continuity and quality of sidewalks on Main Street on the bridge over I-84. The narrow sidewalk width creates an uncomfortable pedestrian environment, particularly with the heavy vehicles that travel along the roadway.
- Several potential enhancements that should be considered are additional street lighting, curb extensions to reduce crossing distance and median treatments to provide pedestrians a "safe haven" at a mid-block crossing.
- There is no connection between Olson Road on the north and south sides of I-84. Pedestrians cannot cross I-84 at this location.

Deficiencies in the existing bicycle facility network include:

- There are no bike lanes on the Main Street overpass. This creates a potentially unsafe environment, particularly with the heavy vehicles within the interchange area.
- There is no connection between Olson Road on the north and south sides of I-84. Bicyclists cannot cross I-84 at this location.

Freight

A large portion of the land north of I-84 in Boardman is zoned for Industrial. The freight transport serving this area consists of truck, rail and barge. These modes all converge in the Port of Morrow which is located north of I-84 near the Laurel Lane Interchange. Local truck traffic uses the Main Street interchange.

The Port of Morrow has six terminals on the Columbia River and is a large generator of freight in the area in addition to being a large employer. Other freight generators in the area include the food processing facilities located in the industrial area. Freight routes in the area include: Laurel Lane (at I-84), Columbia Avenue (aka Boardman-Irrigon Road), and Ullman Boulevard. Main Street is not a state-designated as a freight route.

Based on the traffic volumes collected, the percentage of heavy vehicles are higher than average. The actual number of heavy vehicles entering the intersections was not above average, but since the total number of entering vehicles at these intersections is relatively low, it is understandable why the percentage of heavy vehicles is higher than average. The volume of heavy vehicles at each study intersection during the peak hours are shown in Table 3.3.

Issues to be Addressed

- Any road/intersection designs within the influence area shall take into account the heavy volume of trucks.

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Chapter 4. Future Travel Forecasts and Needs Analysis

This chapter provides an evaluation of how the City of Boardman may grow as vacant lands are developed, and assesses how transportation facilities will perform as that growth occurs. Future year traffic conditions were evaluated to determine where access, capacity and multi-modal improvements would be needed to best serve existing and future residents and businesses in the city. In some cases, a range of solutions is possible for a given problem.

Land Inventory and Analysis

Land use forecasting and the associated travel activity that occurs with growth is a key factor in developing a functional transportation system. The amount of land that is planned to be developed, the type of land uses and how the land uses are mixed together has a direct relationship to the expected demands on the transportation system. Understanding the amount and type of land use is critical to taking actions to maintain or enhance the operation of the transportation system. Projected land uses were developed within the City's Urban Growth Boundary for the forecast year (2026). The following sections summarize the forecasted growth that will influence travel within Boardman. A detailed description of the land use forecasting is included in the Appendix.

Population and Employment Forecasts

Based on the Morrow County Transportation System Plan[3], the population in the City of Boardman is projected to grow at a rate of 2.5% per year. The Office of Economic Analysis (OEA) determined the historical growth rate for the 2000-2025 period. The current population of the City of Boardman is 3,175. Based on the projected growth, the City of Boardman can expect a population of 5,031 in the year 2026.

Table 4.1: Boardman Population Projections

Year	City of Boardman Population
2006	3,175
2026	5,031

The 1997 Land Needs and Supply report[4] states that Boardman had ample land within the Urban Growth Boundary to meet the commercial and housing needs for the next 20 years and beyond, given the population projections for the study. Most of the future employment growth is expected to occur at the Port of Morrow, which is in the northeast corner of the city and extends beyond into unincorporated portions of the county. Additional employment growth will occur along the South Main corridor due to available lands for commercial and office development. Most of the future residential growth is expected to occur south of I-84.

[3] Morrow County 2005 Transportation System Plan, July 23, 2005
[4] Land Needs and Supply – Boardman Urban Growth Boundary, Draft Report, July 17, 1997

The following section summarizes the forecasted growth that will influence future travel within the Main Street IAMP study area. Future development was based on the current land use zoning, expected growth by the forecast year and is consistent with the City's current Comprehensive Plan. Input from the City of Boardman staff to include local expertise and knowledge of known developments was also taken into account. Future development that is not consistent with the current land use zoning (and creates more than 10% more PM peak hour traffic than the current zoning) will need to conduct a traffic study and amend this IAMP.

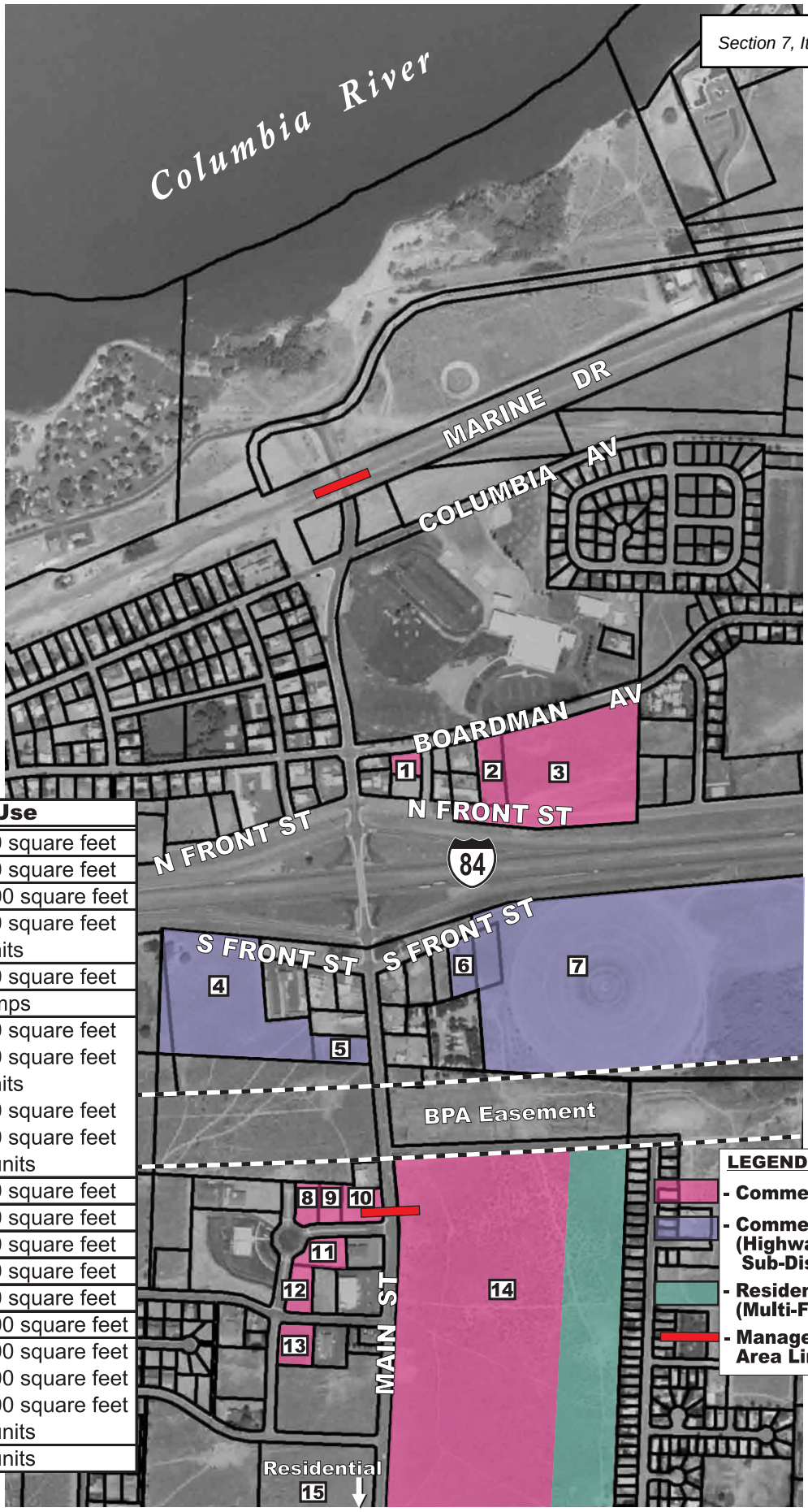
Future Year Forecasts

An analysis was performed of 2026 future travel demand, deficiencies and needs for the transportation system within the Main Street IAMP. The analysis is based upon the transportation system inventory, analysis of existing conditions and forecasts of future demand based on land use projections for 2026. The project scope specifies that a Level 2 Cumulative Analysis be used for traffic volume forecasting. The cumulative analysis was used to forecast the future volumes in the Main Street study area interchange. The cumulative traffic volumes were calculated by adding the trips generated by the assumed development to the existing traffic counts, which were collected in September, 2006 (and factored for seasonal fluctuation).

The trip generation process translates land use quantities (number of households, building square footage or employees) into vehicle trip ends (number of vehicles entering or leaving a particular development area) using established trip generation rates based on the Institute of Transportation Engineers (ITE) Trip Generation Manual[5]. Table 4.2 provides a listing of the weekday PM peak hour trip rates used in this analysis. The resulting traffic volume projections form the basis for identifying potential roadway deficiencies and for evaluating alternative circulation improvements.

The following section summarizes the forecasted growth that will influence future travel within the Main Street IAMP study area. Figures 4.1 shows the parcels that are expected to develop by the year 2026 in the Main Street IAMP study area. Future development was based on the current land use zoning, expected growth by the forecast year and is consistent with the City's current Comprehensive Plan.

[5] *Trip Generation Manual*, 7th Edition, Institute of Transportation Engineers, 2003.



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

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City of Boardman Main Street IAMP
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Figure 4.1

MAIN STREET 20-Y FORECASTED DEVELOPM

240

Table 4.2: PM Peak Hour Trip Generation Rates

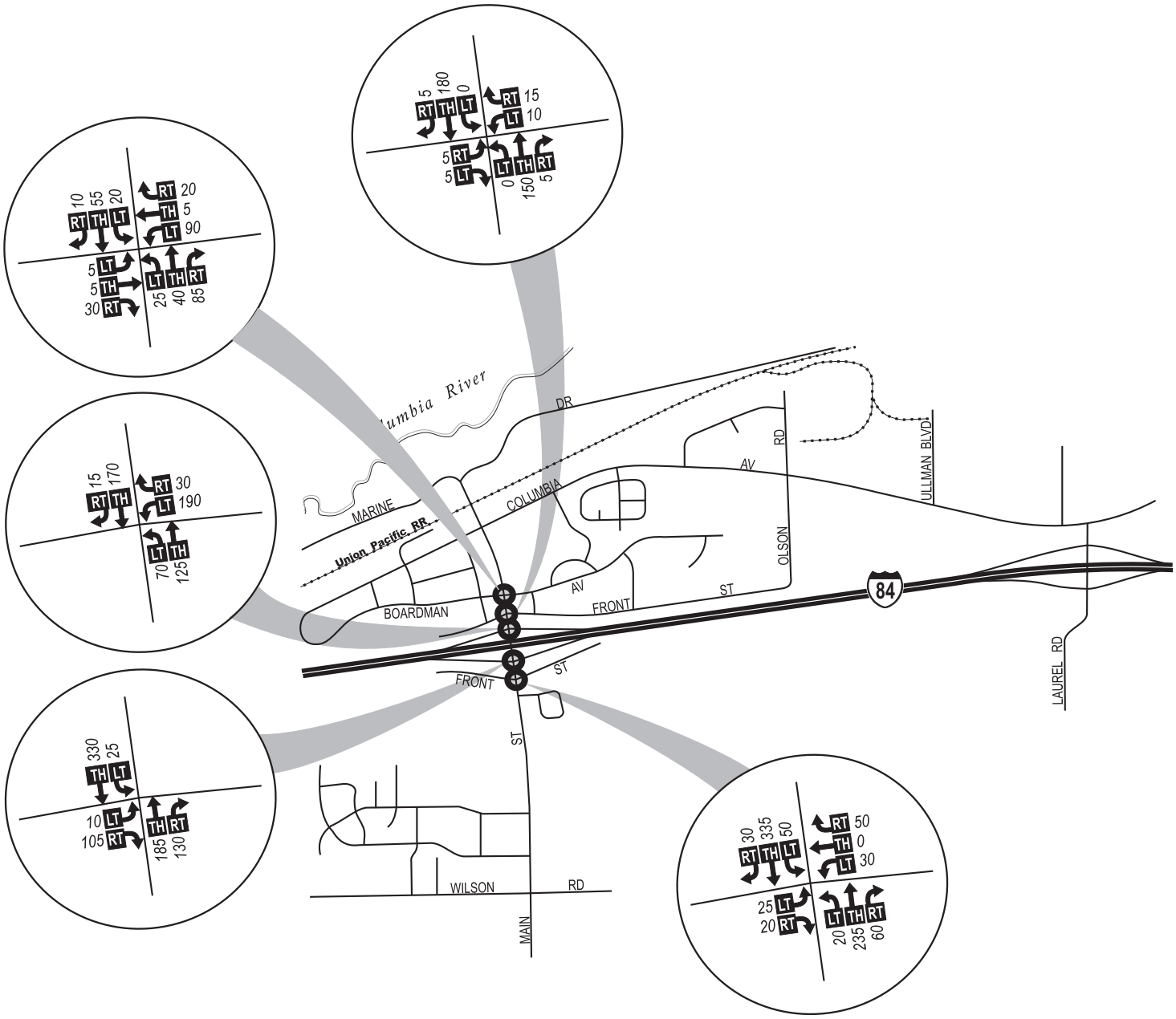
Land Use Description	ITE Code	Land Use Unit	Vehicle Trips Per Land Use Unit	Assumed Size of Land Use
Single Family Detached Housing	210	Dwelling Unit	1.01	220
Housing - Condos	230	Dwelling Unit	0.52	120
Motel	320	Room	0.58	130
Single Tenant Office	715	1,000 s.f. building area	1.73	20
Medical/Dental Office	720	1,000 s.f. building area	5.18	10
Specialty Retail (Lumber store)	812	1,000 s.f. building area	4.49	10
Free Standing Discount Store	815	1,000 s.f. building area	5.06	20
Hardware/Paint Store	816	1,000 s.f. building area	4.84	10
Convenience Mart	851	1,000 s.f. building area	52.41	2
Drug Store	881	1,000 s.f. building area	8.62	20
Bank Drive In	912	1,000 s.f. building area	45.74	4
Sit-Down High Turn Over Restaurant	932	1,000 s.f. building area	10.92	12
Fast Food with Drive In	934	1,000 s.f. building area	34.64	11
Auto Care Center	942	1,000 s.f. building area	3.38	2
Gas Station with Mart	945	Fuel Service Position	13.38	8
Self Service Car Wash	947	1,000 s.f. building area	5.54	3

Based on the assumed land uses for the 20-year forecasted development scenario, it is estimated that there will be an additional 11,700 new trips per day added to the system. During the PM peak hour, it is estimated that there will be an additional 1,100 trips generated by the future development, while an additional 1,000 new trips will be generated in the AM Peak hour. Tables A1 and A1a in the Appendix list each of the land uses and the estimated trips generated by them.

Many of the new trips generated by the future development will be shared by different land uses, so a reduction factor was applied to take this into account. Based on data in the ITE Trip Generation Manual, 5th Edition, a reduction rate of: 60% was applied to the Convenience Store land use, 43% was applied to the Fast Food land use, 35% was applied to the Retail land use and 27% was applied to the Gas Station land use.

Trips from the new development were assigned to specific travel routes in the network, and resulting trip volumes were accumulated on links of the network until all trips are assigned. The trips related to the commercial and industrial development near the interchanges were distributed toward the freeway ramps, using similar turning movement percentages as the current counts. The residential, office, and commercial development on South Main Street has more of the trips distributed locally. It is expected that as more retail and other services are built along South Main Street, that a larger share of shopping trips will be made locally, rather than traveling to nearby cities for services and goods. This dynamic will work towards reducing the use of the Main Street interchange. The projected PM peak hour traffic volumes due to the 20-year forecasted development scenario are shown in Figure 4.2. The cumulative PM Peak hour volume data for the Main Street IAMP study area is shown in Figure 4.3.

A detailed description of the land use forecasting, including key distribution assumptions is included in the Appendix.



LEGEND

- Study Intersection
- 00 - PM Peak Hour Traffic Volume
- LT TH RT - Volume Turn Movement (Left•Thru•Right)

City of Boardman Main Street IAMP
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Figure 4.2

PM PEAK TRIPS GENERATED BY 20-YEAR FORECASTED DEVELOPME

NO SCALE

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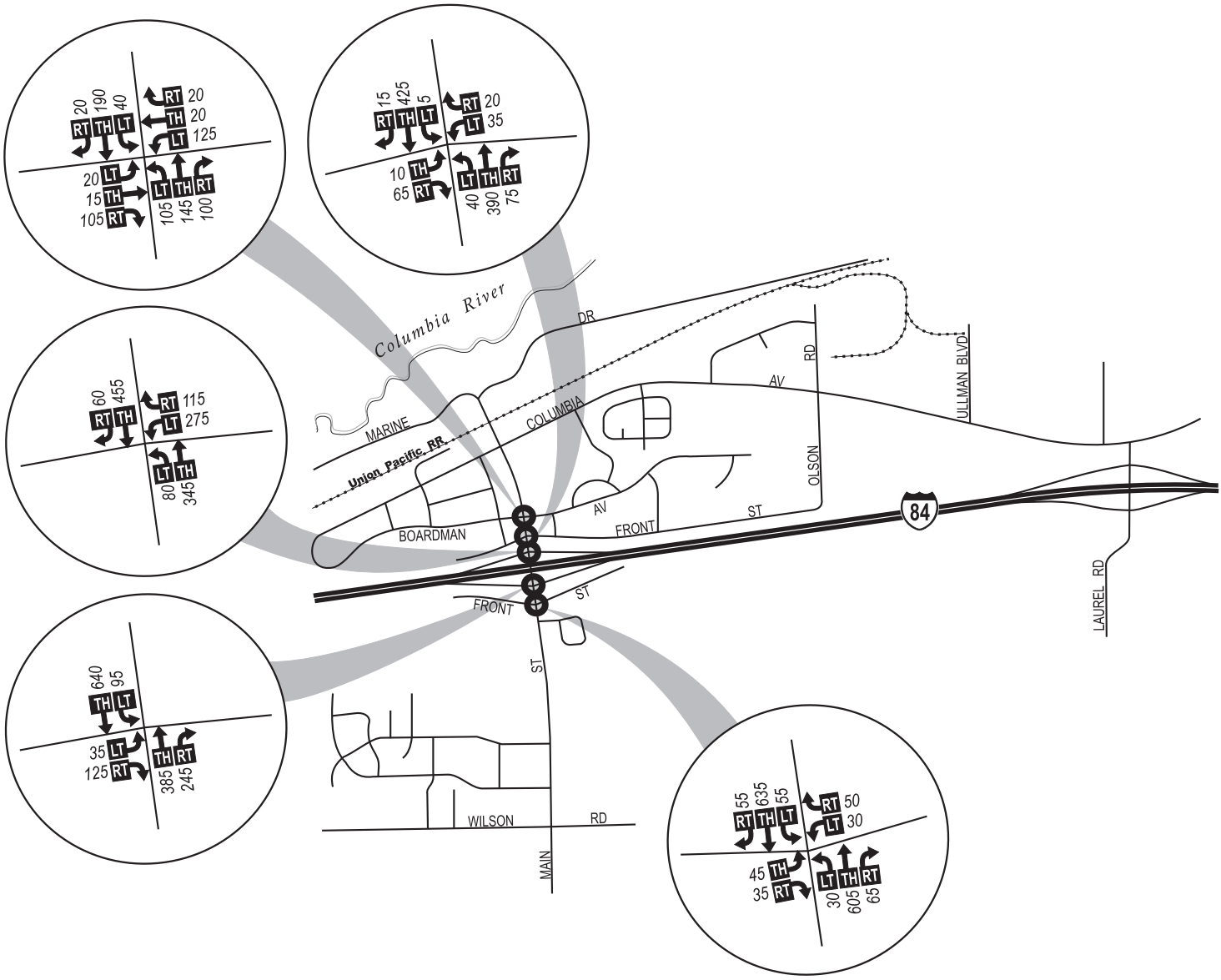

LEGEND

- Study Intersection
- *00* - PM Peak Hour Traffic Volume
- LT TH RT - Volume Turn Movement (Left•Thru•Right)

City of Boardman Main Street IAMP
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NO SCALE

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Figure 4.3

2026 PM PEAK HOUR TRAFFIC VOLUMES

Boardman Speedway

One future land use that was not included in the trip generation was the Boardman Speedway, since as of this writing; a decision has not been made regarding this development. The main access for the speedway is planned to be off of Tower Road, which is about five miles to the west of the Main Street interchange in Boardman. Construction of a speedway will have an impact on the way the City develops and the rate at which it does. If the speedway development were to be built, further studies would need to be prepared by others to quantify all the potential impacts (transportation, environmental, economic, etc.).

Volume Comparisons to Past Studies

The Transportation System Plan[6] documents the 20 year forecasted traffic volumes in Boardman. The TSP volumes were forecasted for the year 2020 and were developed by applying a 2.9 percent annual growth rate to existing volumes. The IAMP forecasts are based on trip generation and distribution from actual land use zoning. In order to compare plans, the 2020 TSP volumes were factored up to arrive at 2026 volumes. Table 4.3 shows the comparison between the volumes forecasted by the TSP[5] and this IAMP.

Table 4.3: PM Peak Hour Volume Comparison between TSP and IAMP (2026)

Location	Two-way PM Peak Hour Volume		Volume Difference
	TSP	IAMP	
Main Street North of I-84	1070	975	-95
Main Street on I-84 Overpass	1070	1100	30
Main Street South of I-84	1140	1400	260

The biggest difference is on Main Street south of I-84. This is reasonable, since most of the development is assumed to take place on Main Street between I-84 and Wilson Road. The TSP assumed a growth rate that is applied to all movements equally, whereas the IAMP used the actual land use type and location in the analysis.

The Main Street Development Plan[7] documents the year 2020 forecasted traffic volumes in the City of Boardman under two scenarios. The first scenario uses a 1.0 percent growth rate per year and also adds in volumes that are expected to be generated by three residential developments. The second scenario uses a 1.0 percent growth rate and adds in the residential development from Scenario 1 plus the new traffic that would be expected from the New Downtown Plan, which includes retail, office and more residential development. Table 4.4 shows the comparison between the volumes forecasted by the Downtown Plan[7] and this IAMP.

Table 4.4: PM Peak Hour Volume Comparison between Downtown Plan and IAMP

Location	Two-way PM Peak Hour Volume		Volume Difference
	Downtown Plan	IAMP	
Main Street North of I-84	1080	975	-105
Main Street on I-84 Overpass	1420	1100	-320
Main Street South of I-84	1830	1400	-430

[6] Transportation System Plan, City of Boardman, Oregon 1999
[7] City of Boardman Main Street "Downtown" Development Plan, 2000-2001

The forecasted volumes for the Downtown Plan were about 30% higher than the IAMP forecasted volumes. The Downtown Plan assumed a growth rate in addition to actual development when forecasting the volumes, whereas the IAMP used only the land use type and location in the analysis and assumed that the growth rate would be included in the trip generation rates.

South Main Street Development Alternative

One of the concurrent planning issues that affects the South Main portion of the study area is a pending rezone for approximately 30 acres at the east end of South Front Street. It is understood that the proposed rezone would change the background residential zoning to allow for more commercial uses. Based on input from the City, it was assumed that approximately half of the 30 acres would be developed as residential (120 residents) with the remaining land developed as commercial. It is estimated that the net change in traffic generation associated with the rezone would be minimal, approximately 400 trips per day or 20 trips in the peak hour. Therefore, we have included this rezone action in the assumptions for future growth, which will be conservatively high, compared to existing zoning provisions.

Future 2026 Operations

Study intersections were analyzed using *Highway Capacity Manual*[8] methodologies for unsignalized intersections for comparison with the applicable jurisdiction's adopted performance standards. Analysis of traffic volumes is useful in understanding the general nature of traffic in an area, but by itself indicates neither the ability of the street network to carry additional traffic nor the quality of service afforded by the street facilities. For this, the concept of *level of service* (LOS) has been developed to subjectively describe traffic performance. LOS can be measured at intersections and along key roadway segments.

Intersection Operations

The traffic volume data shown in Figure 4.3 was used in the analysis, using *Highway Capacity Manual*[8] methodologies for unsignalized intersections for comparison with the applicable jurisdiction's adopted performance standards.

I-84 is designated as an Interstate highway, while Main Street is classified as an arterial and is under the jurisdiction of the city of Boardman. Performance standards for the freeway interchange ramp terminals have been adopted by ODOT in the *1999 Oregon Highway Plan*[9] (*OHP*). The maximum volume to capacity (V/C) ratio of ramp terminals of interchange ramps shall be 0.85. All non-state roadways within the study area are under the jurisdiction of the City of Boardman. The City has adopted standards for performance of City streets requiring operation of LOS "C" or better during the peak hour of the average weekday.

Table 4.5 shows the cumulative (year 2026) operational analysis for the unsignalized intersections within the Main Street IAMP study area (with substandard in bold). The results shown represent the critical movement at each intersection (usually a stop-controlled movement, such as a side-street left turn or crossing movement), along with the average intersection delay and LOS.

[8] *Highway Capacity Manual*, Transportation Research Board, Washington, D.C., 2000.
[9] *1999 Oregon Highway Plan*, Oregon Department of Transportation, 1999.

Table 4.5: Cumulative (2026) Weekday PM Peak Hour Intersection Level of Service

Intersection	Critical Movement			Average Intersection		Performance Standard	Met?
	Direction	LOS	Volume / Capacity	Delay (sec)	LOS		
I-84 EB Ramp / Main Street	EB	E	0.32	4.6	A	V/C < 0.85	Yes
I-84 WB Ramp / Main Street	WB	F	**1.17**	**65.9**	**F**	**V/C < 0.85**	**No**
Main Street / Boardman Avenue	WB	F	0.66	14.0	B	LOS > C	Yes
Main Street / Front Street (North)	WB	D	0.27	3.1	A	LOS > C	Yes
Main Street / Front Street (South)	EB	F	0.77	10.5	B	LOS > C	Yes

Assuming 20 year forecasted development of the assumed land uses, the following intersection is expected to exceed the performance standard of V/C < 0.85 in the PM peak hour:

- Main Street & I-84 Westbound Ramp

There following three intersections have side street movements that will operate with LOS E or F:

- Main Street & Boardman Avenue
- Main Street & I-84 Eastbound Ramp
- Main Street & Front Street (South)

The intersections will continue to operate within the City of Boardman LOS performance standards for average intersection LOS, but may have increased delay for the side street approaches.

Future 2026 Deficiencies

System deficiencies and/or safety issues that were identified from the Future Conditions Analysis are listed below:

- Main Street & I-84 Westbound Ramp is expected to exceed the City standard LOS in the PM peak hour.

The following three intersections have side street movements that will operate with LOS E or F:

- Main Street & Boardman Avenue
- Main Street & I-84 Eastbound Ramp
- Main Street & Front Street (South)

Access/Intersection Spacing

The long term goal is to reduce or minimize the number of access points along South Main Street. As vacant land is developed and street connectivity is completed, the access points should be evaluated. Reasonable alternate access must be in place before any access is removed. North Main Street was recently reconstructed, and all of the land is developed that fronts this roadway. If any of the properties redevelops, the access points onto North Main Street should be re-evaluated.

The number of access points should be reduced and/or combined on South Main Street. By reducing and combining access points, the number of conflict points is reduced, which improves the safety and operation of the roadway. This should be done as property develops and will be based on mutually agreed upon access changes and/or the addition of alternate access.

Left turn lanes should be provided on Main Street at the major access points to provide safe left turning access.

Pedestrian/Bicycle Network

The pedestrian network should be addressed in parallel to the street network improvements. In general, curb and sidewalk similar to North Main Street will improve the safety of pedestrians along South Main Street. Pedestrian access across Main Street is also important. Pedestrian crossings should be accommodated at the major access points (I-84 ramps, Oregon Trail Boulevard, City Center Boulevard, Kinkade Road and Wilson Road). This would include sidewalk with ADA pedestrian ramps on the corners and possibly supplemental signing and/or painted crosswalks. A "mid-block" pedestrian crossing could be accommodated on the north side of the BPA easement. The mid-block crossing could incorporate a center pedestrian refuge island, once South Main Street is reconstructed to the arterial standard. A wider sidewalk and separate bike lanes on the Main Street bridge across I-84 will provide a safer facility for the pedestrians and bicyclists.

Sensitivity Analysis

The future distribution patterns have an impact on the forecasted turning movement volumes at study area intersections. If more traffic than forecasted uses the I-84 interchange ramps to go east or west on I-84 (instead of local trips), the intersection operations at the ramp intersections will degrade before the forecast year. If ten percent more of the forecasted traffic were to go through the I-84 ramp intersections, the intersection of Main Street & I-84 Eastbound ramp would not meet the City LOS standards.

In the forecast year, the minor street volumes at the intersection of Main Street & I-84 Eastbound Ramp are expected to be approximately 90% of the volumes needed to meet the Peak Hour traffic signal warrant. If more traffic than forecasted uses this intersection or if more traffic turns left from the Eastbound ramp onto Main Street, the Peak Hour warrant will be met at this intersection.

Major Constraints

The following section identifies transportation, environmental, socio-economic, multi-modal and right of way constraints and/or issues associated with the transportation deficiencies for the Main Street IAMP area.

- The Bonneville Power Administration (BPA) has a major electrical transmission line that cuts across the city. The BPA easement is 395 feet wide and is about one quarter mile south and parallel to I-84. Any new roadways within the BPA easement would need to comply with regulations set forth by BPA.
- Interstate 84 runs east and west through the City and divides the town into roughly one third to the north and two-thirds to the south. The two roadways that cross I-84 and connect the north and south parts of town are Main Street and Laurel Avenue. Additional roadways that would connect the north and south parts of town would need to cross (over or under) I-84.
- There are identified wetland areas within the City of Boardman. Most of the wetland areas are located where new roadways are not anticipated in the future. However, there are two areas in the vicinity of future roadways and will need to be mitigated if new roadway construction impacts them. One area is approximately 30 acres and located south of I-84 and about a quarter mile west of Main Street. A second area is approximately 10 acres and is south of I-84 and about a third mile east of Main Street.
- A mobile home park is currently located on the west side of South Main Street between South Front Street and the BPA easement. A new roadway that would provide east-west connectivity and access to businesses along Front Street would have an impact on the south part of this

property. The impact may result in the relocation of some of the mobile homes or a redesign of the layout of the mobile home park.

- New roadways that strengthen north-south and east-west connectivity would provide access to businesses and homes, thus having a positive socio-economic impact.
- New roadway connections or road widening projects will require the purchase of right of way.
- There are no identified sources of funding for any of the transportation improvements.

Chapter 5. Interchange Area Management Plan

Alternatives for providing adequate operation of the interchange and the surrounding transportation system were developed and evaluated. This chapter summarizes the alternatives considered, including cost estimates, and provides prioritization for the implementation of these alternatives through short, medium, and long-range actions.

Transportation Alternatives

In Chapter 4, a future deficiencies analysis identified one study area intersection that was projected to fail to meet adopted mobility standards, which for the interchange ramp intersections is a v/c ratio of 0.85. The mobility standard for the City of Boardman intersections is a Level of Service "C".

Assuming 20 year forecasted development of the assumed land uses, the following intersection is expected to exceed the performance standard of V/C < 0.85 in the PM peak hour:

- Main Street & I-84 Westbound Ramp

The following three intersections have side street movements that will operate with LOS E or F:

- Main Street & Boardman Avenue
- Main Street & I-84 Eastbound Ramp
- Main Street & Front Street (South)

The three intersections listed above will continue to operate within the City of Boardman LOS performance standards for average intersection delay and LOS, but may have increased delay for the side street approaches.

Transportation alternatives are aimed at improving capacity and safety through measures such as traffic controls, turn lanes, enhanced street connectivity, and system management techniques.

The planned Main Street improvements are shown in the two graphics below. Most of the improvements will be developed over time as the land develops. Incremental improvements can be made as land is developed with the long-term goal of improved street connectivity, improved bicycle/pedestrian network and limited direct access to Main Street. The project phasing would follow these steps:

1) Develop the local street network east and west of Main Street.
2) Limit access at Main Street/North Front Street and Main Street/South Front Street,
3) Widen the freeway off-ramps to provide for separate turning lanes on the approaches to Main Street,
4) Install a traffic signal at Main Street and I-84 WB Ramp once traffic volumes grew enough to meet ODOT standards for traffic signal controls,
5) Reconstruct and expand the Main Street overpass to accommodate a center left turn lane, bicycle lanes and wider sidewalks.

As traffic volumes on Main Street double over current levels (by year 2026), incremental steps will be required to ensure that the existing interchange configuration performs adequately for autos and trucks, and provides safe facilities for bicycles and pedestrians. The short/mid-term solution is to limit access at the intersections of Main Street with North Front Street and South Front Street to right turn only. The ultimate improvement alternative would expand the current freeway interchange by widening the two off-

ramps and the bridge, and constructing a traffic signal at the ramp westbound terminal. Figure 5.1a shows the short/mid range improvements at the interchange and Figure 5.1b shows the long range improvements at the intersection.

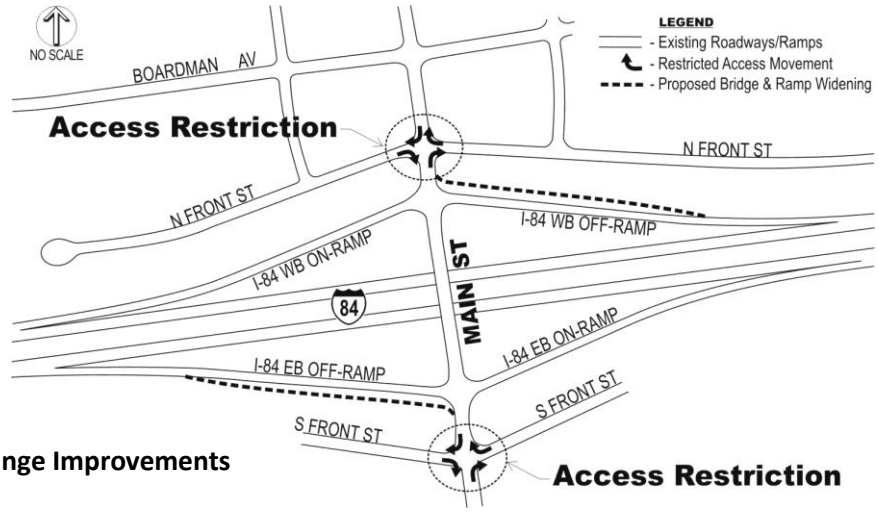


Figure 5.1a
Short/Mid-Range Improvements

The introduction of a traffic signal and the traffic growth on Main Street will substantially increase conflicts at the existing Main Street intersection with North Front Street, which is about 150 feet away from the ramp terminal. For example, it will be much more common during peak hours for queues of vehicles on Main Street to temporarily block the North Front Street intersection and nearby driveways from businesses. By 2026, the vehicle queues on Main Street approaching the off-ramp traffic signal will be 10 to 13 vehicles, and will frequently block the North Front Street intersections. Typically, one vehicle accounts for 25 feet of queue space, so the queues would extend up to 250 to 325 feet during the busy hours of the day. Queues will be longer if commercial trucks are included. Boardman Avenue is approximately 400 feet north of the freeway, and it would not typically be affected by these queues, except under unusual peak conditions.

The intersection at South Front Street will not be affected by queues created by the traffic signal at the westbound ramp, but the close proximity to the eastbound ramp will continue to create conflicts and confusion between all the turning vehicles.

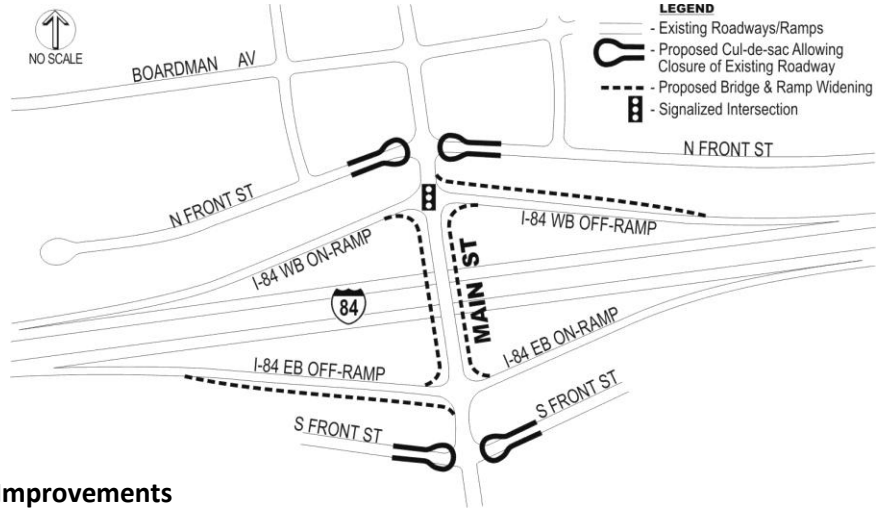


Figure 5.1b
Long-Range Improvements

To reduce the conflicts and potential safety concerns, the full-access intersections at North and South Front Street will gradually need to be more restricted, which may include limiting to right-turn movements only or full closure. North Front Street businesses currently have alternative access onto Boardman Avenue, however businesses along South Front Street do not have access to Main Street other than via South Front Street. The local street network must be in place to provide alternate access to businesses that rely on North and South Front Streets. As development occurs, portions of the network should be constructed or right of way should be set aside for future construction. It is expected that with the low turning volumes at Front Street on either side of the highway, that right-turn access could be retained for the foreseeable future.

The long term component of this alternative would be the widening of the existing bridge to match up to current standards for sidewalks and bike lanes, and provide a center left turn lane area for left-turning vehicles. The widening of the bridge would eliminate the existing sight distance issue for vehicles on the off-ramps looking across the bridge.

Timing of Improvements

It is important to establish thresholds for limiting the North and South Front Street access at Main Street so that decisions can be made through the land use review process, and as various traffic issues arise or the community reports significant conflicts. These thresholds can be tied to traffic volume levels, reported crashes, or recurring conflicts that are observed at these intersections. It is assumed that growth will happen at a constant rate over the next 20 years. If growth happens at a faster rate, then the improvements may need to be completed sooner than estimated. Conversely, if development happens at a slower rate than assumed, the improvements will be delayed until the need arises. Proposed development that is not consistent with the current land use zoning (and creates more than 10% more PM peak hour traffic) will need to amend the IAMP.

Below is a description of when the improvements would be expected to be needed.

Main Street & I-84 Westbound Ramp

Because projected minor street volumes are relatively low, the timing of the need for this signal is uncertain and will depend on the actual pattern of development in the area of the interchange. As development occurs, the City should monitor the traffic volumes at the I-84 Ramp intersection to determine if the volumes would warrant a traffic signal.

Assuming a constant rate of development over the next 20 years, the operation of the intersection, with stop control for the side street, is expected to fall below the performance standards in approximately 15 years. Reconstructing the intersection to include a separate left turn and right turn lane for the westbound approach will improve the operation of the intersection and reduce the westbound queuing. Preliminary traffic signal warrants for the PM peak hour may be met in approximately 10 years. This does not automatically mean a traffic signal should be installed, but the intersection operation should be monitored by the City.

Main Street & I-84 Eastbound Ramp

This intersection does not currently meet the preliminary traffic signal warrants in the forecast year, but a small amount of development beyond what was forecasted would likely increase the volume sufficiently to warrant a signal. In the forecast year, the minor street volumes at the intersection of Main Street & I-84 Eastbound Ramp are expected to be approximately 90% of the volumes needed to meet the Peak Hour traffic signal warrant.

Reconstructing the intersection to include a separate left turn and right turn lane for the eastbound approach will improve the operation of the intersection and reduce the eastbound queuing.

Main Street & Front Avenue (North and South)

The traffic volumes at the intersections of Main Street & Front Avenue North and Main Street & Front Avenue South should be monitored as development occurs to determine if certain turning movements should be prohibited. Access restrictions can include limiting the turning movements to right turns only or eliminating all turning movements. Access restrictions can only be implemented if alternate access is provides to properties along North and South Front Street. If access restrictions were implemented at North Front Street, Boardman Avenue can be used as alternate access to the properties along Front Street North. There is currently no alternate access for the properties along Front Street South, therefore additional access must be in place before restricting access to Front Street South from Main Street. As development occurs along Main Street south of I-84, portions of the local network should be constructed or right of way set aside for future construction.

Triggers for access changes at Front Street North and Front Street South include:

- Side street level of service drops below LOS E (15-20 years from now)
- Traffic signal installed at the I-84 westbound ramp (10-15 years from now)
- Increase in crashes
- Bridge improvement project constructed (15-20 years from now)
- Recurring public complaints about conflicts and safety at these locations

Main Street & Boardman Avenue

In the forecast year, the side-street LOS at the intersection of Main Street & Boardman Avenue is expected to exceed the City standard. The minor street volumes at this intersection are expected to be approximately 85% of the volumes needed to meet the Peak Hour traffic signal warrant. During the school dismissal, this intersection also experiences a brief period of high delay on the side street. One near term mitigation measure would be to direct some of the high school traffic onto Columbia Avenue, so as to spread out the dismissal traffic. This would reduce the number of vehicles turning left from Boardman Avenue onto Main Street.

Main Street Overpass Bridge

From a capacity standpoint, the bridge is able to accommodate the forecasted vehicular traffic. However, the overpass bridge is currently too narrow to incorporate northbound and southbound left turn lanes at the ramp intersections, the sidewalks are very narrow and there are no bike lanes on the bridge. In order to accommodate the turn lanes, bike lanes and wider sidewalks, the bridge should be widened (which would in turn improve the sight distance for drivers on the exit ramp approaches).

Local Connectivity Plan

The future deficiencies analysis in Chapter 4 highlighted several areas where local connectivity was in need of improvement, including:

- East-west connectivity;
- North-south connectivity;
- Access to lands surrounding the Main Street interchange; and
- Access points to Main Street to the north and south of the interchange.

In response to these needs, a local connectivity plan was developed that builds on existing and planned streets in the IAMP area. This plan not only improves overall connectivity throughout the City, but

provides the ability to consolidate approaches to Main Street, while maintaining accessibility to individual properties in the corridors. Figure 5.2 displays the planned local connectivity plan, with key elements described below. The lines shown in the figures represent planned connections and the general location for the placement of the connection. In each case, the specific alignments and design will be better determined as part of development review.

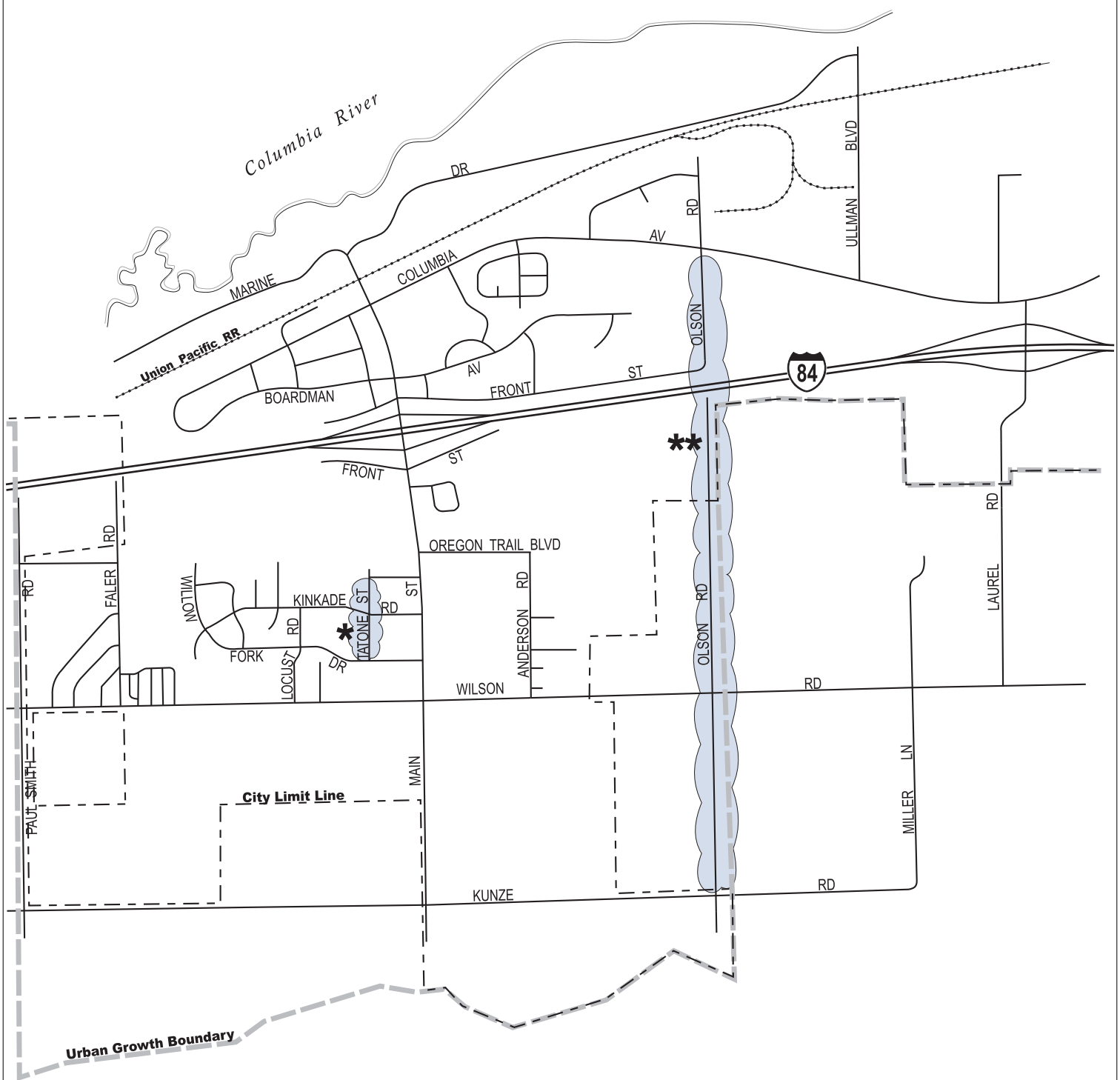
There are several potential opportunities to improve the north-south and east-west connectivity within the City, which will make drivers less dependent on Main Street for every trip around town. Currently, the north-south connectivity is limited to Main Street and Laurel Lane due mainly to the constraints of I-84, the Union Pacific Railroad right of way and the Bonneville Power Administration's right of way. The east-west connectivity is limited to Wilson Lane, I-84 and Columbia Avenue.

North-south connectivity can be strengthened by creating a network of streets that parallel Main Street which provide access to future development. These new roadways provide access for local trips and can be constructed as development occurs. Some examples of street extensions that would strengthen north-south connectivity are:

- Extend Tatone Street from City Center Boulevard to Front Street and from Willow Fork Road to Wilson Lane.
- Construct a new north-south roadway at a minimum of 600 feet east of Main Street, intersecting Oregon Trail Boulevard.

East-west connectivity can be strengthened by creating a network of streets that parallel I-84 and Wilson Lane that provide access to future development. These new roadways provide access for local trips and can be constructed as development occurs. Some examples of street extensions that would strengthen east-west connectivity are:

- Extend Kinkade Road east from Main Street when land east of Main Street develops.
- Extend Oregon Trail to the east to connect to Olson Road and west to connect to Smith Road, with intersections at Faler Road, Willow Fork Drive, Blalock Street and City Center Drive.
- Construct new connections parallel to Front Street near to or within the Bonneville Power Administration easement to better access properties in that area.
- The system improvements that enhance the north-south and east-west street connectivity will be required to be constructed by developers as vacant land is developed. The city can also choose to construct the transportation facilities prior to development as a way to encourage development in certain areas of the City. As the street connectivity is improved, drivers will be less dependent on using Main Street for local trips south of I-84.
- The city should require any future development of land east and west of South Main Street be done with the future local street network taken into account. This includes sighting of buildings on the property so that access to the future local street network will not require major reconstruction. If feasible, portions of the local street network should be constructed at time of land development. At minimum, right of way for the future local street network needs to be set aside as land is developed.
- Cross-easement access between properties should be developed in order to reduce the reliance of direct access onto Main Street. The easements will allow driveways to be consolidated or removed. They will also help to provide access to the future local street network. The cross easement access agreements should be developed as property east and west of Main Street (re)develops.



*- Tatone Street currently designated as Local. Re-designate Tatone Street as a Collector.

**- Olson Road currently designated as an Arterial. Re-designate Olson Road as a Collector inside City and as Major Collector or County segment if Olson Road overpass is not built.

LEGEND

- Existing Arterial
- Existing Collector
- Planned Collector
- Existing Local
- Planned Local
- Major Collector (County)

City of Boardman Main Street IAMP
April 2009

NO SCALE

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TRANSPORTATION SOLUTIONS

Figure 5.2

ROADWAY NETWORK AND CLASSIFICATION PLAN

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South Main Street

South Main Street between I-84 and Wilson Road is currently a two-lane roadway with a separated multi-use path on the west side. This section of roadway should be reconstructed to the current Arterial street standards, which would include turn lanes, bike lanes and sidewalks. Constructing turn lanes at appropriate locations along South Main Street will reduce the conflict between the left turning and through traffic. Bike lanes and sidewalks along South Main Street will increase the safety and mobility of pedestrians using Main Street. An illustration of South Main Street improvements is shown in Figure 5.3.

Olson Road

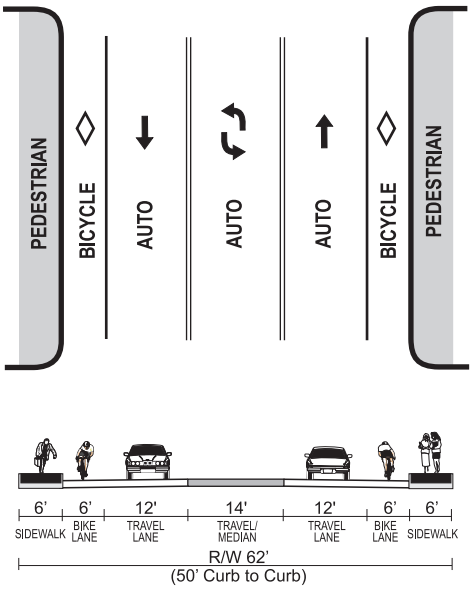
The City's 1999 Transportation System Plan envisions a new I-84 crossing at Olson Road. This new freeway overcrossing would not provide access to/from Interstate 84, but it would provide an alternate north-south circulation route between employment and school uses on the north side of the highway with residential neighborhoods on the south side. If this facility were constructed, the foregoing traffic volume estimates for Main Street would be reduced by the amount that uses the new facility. If one-third of the traffic forecasted on North Main Street chose this new route, the 2026 volumes on Main Street would be the same as they are today. Based on the length of this alternative route, and proximity of land uses nearby, it is roughly estimated that the volume that would use Olson Road to cross I-84 would range from 15% to 25% of the North Main Street forecasted volume, or about 150 to 250 vehicles during peak hours.

Ideally, both freeway overcrossings would be constructed, given adequate funding was available. However, with the limited state and local transportation resources available, it is more likely either Main Street would be widened or a new Olson Road overcrossing would be constructed. The estimated cost for these two improvements are similar, but the utility of the Main Street overpass appears to be significantly higher, since it is close to existing and planned future commercial development. The Olson Road overcrossing adjoins industrial and farmlands, and would require a very substantial upgrade of the roadway south of the highway, currently a gravel road, to be fully functional. Therefore, it appears that the preferred investment for I-84 overcrossings would be the Main Street Bridge.

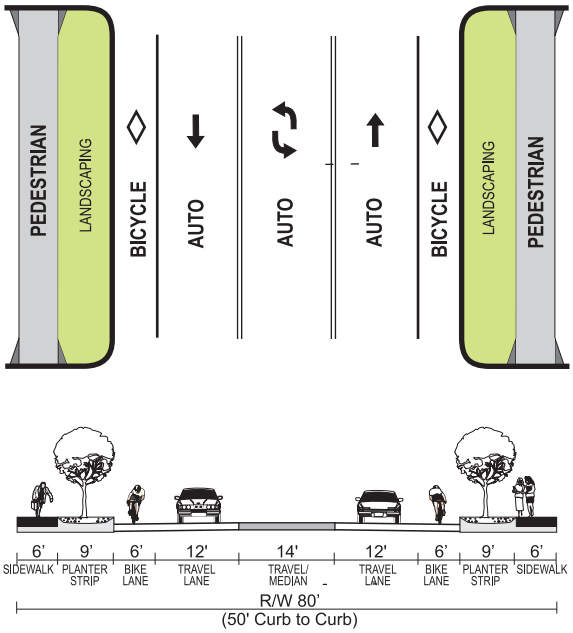
Pedestrian/Bicycle Network

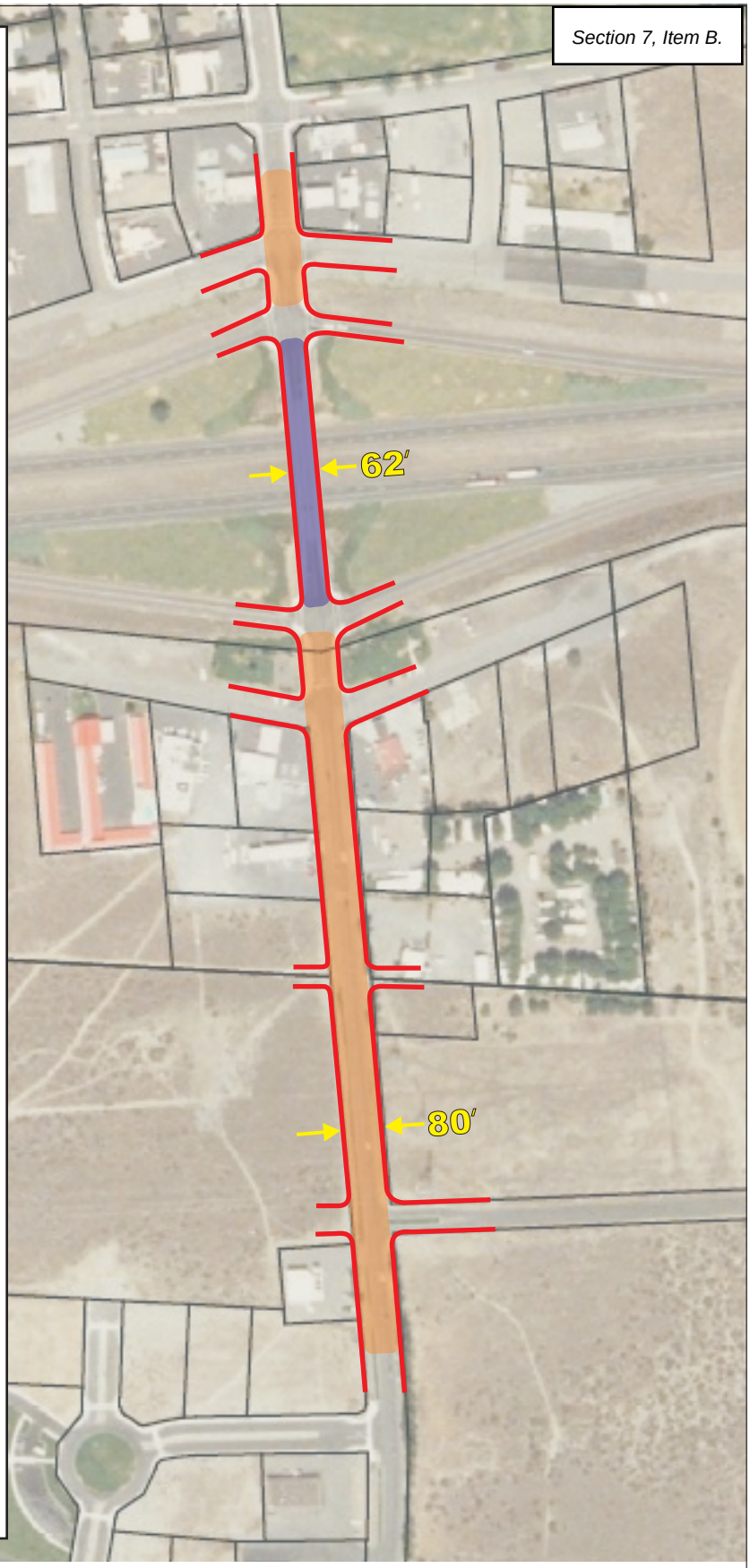
The pedestrian network should be addressed in parallel to the street network improvements. In general, curb and sidewalk similar to North Main Street will improve the safety of pedestrians along South Main Street. Pedestrian access across Main Street is also important. Pedestrian crossings shall be accommodated at the major access points (I-84 ramps, Oregon Trail Boulevard, City Center Boulevard, Kinkade Road and Wilson Road). This would include sidewalk with ADA pedestrian ramps on the corners and possibly supplemental signing and/or painted crosswalks. A "mid-block" pedestrian crossing could be accommodated on the north side of the BPA easement. The mid-block crossing could incorporate a center pedestrian refuge island, once South Main Street is reconstructed to the arterial standard.

Typical 62 foot cross-section



Typical 80 foot cross-section





LEGEND

- 80' Cross-section
- 62' Cross-section

City of Boardman IAMP
April 2009

NO SCALE

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TRANSPORTATION SOLUTIONS

Figure 5.3

SOUTH MAIN STREET IMPROVEMENTS

The Ped/Bike network improvements include:

- A wider sidewalk and separate bike lanes on the Main Street bridge across I-84. This would require the bridge to be widened.
- Extend the multi-use path along Wilson Road from Faler Road to Paul Smith Road.
- Provide pedestrian facilities from Wilson Road to Desert Spring Estates development.
- Provide pedestrian facilities from residential development near Faler Road to Willow Fork Drive.

Gaps in the bicycle network shall be addressed with any new roadway connectivity and new development or done as an interim measure prior to roadway connections. Bicycle lanes should be provided on all arterial roadways.

Access Management Plan

A key element of the IAMP related to the long-range preservation of operational efficiency and safety of the interchange is the management of access to the interchange crossroads (Main Street). Because access points introduce a number of potential vehicular conflicts on a roadway and are frequently the causes of slowing or stopping vehicles, they can significantly degrade the flow of traffic and reduce the efficiency of the transportation system. However, by reducing the overall number of access points and providing greater separation between them, the impacts of these conflicts can be minimized.

It should be noted that the actions were based on current property configurations and ownerships. Should property boundaries change in the future through consolidation or other land use action, the access management plan may be modified through agreement by the City of Boardman and ODOT, where such modifications would move in the direction of the adopted access management spacing standards in this plan. Modifications to the access management plan will need to be addressed in an amendment to this IAMP. Additional access points shall not be allowed where they would result from future land partitions or subdivisions. The actions listed in this plan shall not prevent the reconstruction of approaches as necessary to meet City or ODOT standard design.

Implementation of the access management plan will occur over a long time since some affected properties maintain infrastructure (e.g. buildings and internal roadways) that was established based on prior approvals of access locations to the subject roadways and some elements of the plan depend on the presence of new public streets that cannot be constructed until funds are made available. The improvements in this plan have been prioritized and categorized into short-range, medium-range, and long-range actions. The short-range actions are to be executed at this time and the medium and long-range actions are to be executed as needed funds become available or as opportunities arise during property redevelopment.

The goals of this access management plan are listed below.

1. Restrict all access from abutting properties to the interchange and interchange ramps.
2. Improve access spacing and safety factors within the interchange area.
3. In attempting to meet access management spacing standards, exceptions may be allowed to take advantage of existing property boundaries and existing or planned public streets, and to accommodate environmental constraints (i.e. BPA Easement).
4. Replace private approaches with public streets, where feasible, to provide consolidated access to multiple properties.

5. Ensure all properties impacted by the project are provided reasonable access to the transportation system.
6. Develop cross easement access agreements as properties (re)develop.
7. Align approaches on opposite sides of roadways where feasible to reduce turning conflicts.
8. Short-range actions shall accommodate existing development needs.

Using the goals, an action plan for each approach to Main Street was developed, as shown below in Table 5.1. Short-range actions shall accommodate existing development needs. There are no short-range actions identified since all of the actions are based on property (re)development to trigger changes to the access. The medium-range actions are intended to be completed within 5 to 10 years, while the long-range actions are to be implemented over the 20-year planning period as funding becomes available. Modifications to access can occur earlier if opportunities arise through property development or funding for the local street network becomes available. The medium-range action plan is illustrated in Figure 5.4, while, the long-range action plan has also been illustrated in Figures 5.4 and 5.5 to aid in the interpretation of the actions in Table 5.1. The city should require any future development of land east and west of South Main Street be done with the future local street network taken into account. This includes sighting of building on property so that access to the future local street network will not require major reconstruction. If feasible, portions of the local street network should be constructed at time of land development. At minimum, right of way for the future local street network needs to be set aside as land is developed.

Cross-easement access between properties should be developed that reduce the reliance of direct access onto Main Street. The easements will allow driveways to be consolidated or removed. They will also help to provide access to the future local street network. The cross easement access agreements should be developed as property east and west of Main Street (re)develops.

Table 5.1: Main Street Access Actions

Approach #	Medium-Range Action (5-10 years)	Long-Range Action (10-20 years)
1	(Columbia Ave) No action.	No action.
2	(Columbia Ave) No action.	No action.
3	No action.	Upon property redevelopment, approach to be combined with Approach 4 and 5, with shared access.
4	No action.	Upon property redevelopment, approach to be combined with Approach 5, with shared access.
5	No action.	Upon property redevelopment, approach to be combined with Approach 4, with shared access.
6	No action.	Upon property redevelopment, approach to be combined with Approach 7 or closed. Future access to be taken at Approach 5.
7	No action.	Upon property redevelopment, approach to be combined with Approach 6 or 8, with shared access.
8	No action.	Upon property redevelopment, approach to be combined with Approach 7, with shared access.
9	(Boardman Ave) No action.	No action.
10	(Boardman Ave) No action.	No action.
11	No action.	Upon property redevelopment, approach to be closed. Future access to be taken from Boardman Avenue and/or Front Street.
12	No action.	Upon property redevelopment, approach to be closed. Future access to be taken from Front Street or shared with Lot 4500 to access Boardman Avenue.
13	(North Front St) Restrict turning movements to only allow	Close approach and use Boardman Ave. (and 1st St. E.) as alternate

Approach #	Medium-Range Action (5-10 years)	Long-Range Action (10-20 years)
	right turn access	access.
14	(North Front St) Restrict turning movements to only allow right turn access.	Close approach and use Boardman Ave. (and 1st St. E.) as alternate access.
15	(I-84 Westbound Ramp) No action.	No action.
16	(I-84 Westbound Ramp) No action.	No action.
17	(I-84 Eastbound Ramp) No action.	No action.
18	(I-84 Eastbound Ramp) No action.	No action.
19	(South Front St) Restrict turning movements to only allow right turn access.	Close approach at such time as reasonable access becomes available (e.g. through construction of public roads and establishment of cross-access easements). This will affect Lots 1000, 1200, 1300 – approach will not be closed until reasonable access becomes available.
20	(South Front St) Restrict turning movements to only allow right turn access	Close approach at such time as reasonable access becomes available (e.g. through construction of public roads and establishment of cross-access easements). This will affect Lots 400, 500, 600, 700 – approach will not be closed until reasonable access becomes available.
21	Currently, there is no curb or gutter along the Main Street frontage of Lot 1300. Upon property redevelopment, the access along Lot 1300 shall be defined at a single point by constructing a driveway or using curb to define access.	Close approach at such time as reasonable access becomes available (e.g. through construction of public roads and establishment of cross-access easements).
22	Currently, there is no curb or gutter along the Main Street frontage of Lot 700. Upon property redevelopment, the access along Lot 700 shall be defined at a single point by constructing a driveway or using curb to define access.	Close approach at such time as reasonable access becomes available (e.g. through construction of public roads and establishment of cross-access easements). Approach will not be closed until reasonable access becomes available.
23	No action.	Close approach at such time as reasonable access becomes available (e.g. through construction of public roads and establishment of cross-access easements). Approach will not be closed until reasonable access becomes available.
24	No action.	Close approach at such time as reasonable access becomes available (e.g. through construction of public roads and establishment of cross-access easements). Approach will not be closed until reasonable access becomes available.
25	No action.	Close approach at such time as reasonable access becomes available (e.g. through construction of public roads and establishment of cross-access easements). Approach will not be closed until reasonable access becomes available.
26	(Oregon Trail Blvd) No action.	No action.
27	No action.	Close approach upon property redevelopment. Future access to be taken from Approach 28 or future Oregon Trail Boulevard.
28	No action.	Approach may remain upon property redevelopment. New approach may be relocated to future Oregon Trail Boulevard.

Notes: Refer to Figure 5.2 for location of state highway approaches cited in the above table.

Policies, Rules, & Ordinances

As land develops, redevelops or changes use within the interchange area, compliance will be required with the access management and circulation plans conceived through this study. As part of the adoption of the IAMP, the City of Boardman development codes are being amended to reflect the standards and plans. In brief, the code amendments implement:

- Access spacing requirements
- Local Street connectivity
- Access Management Plan
- Cross-easement accesses

In addition, the Transportation System Plan will be amended to adopt the Local Street Network and the Access Management Plan

Cost Estimates

Planning-level cost estimates for all improvement alternatives were calculated to aid in the identification of needed funding. Cost estimates included the fundamental elements of roadway construction projects, such as the roadway structure, bridge structures, curb and sidewalk, earthwork, retaining walls, pavement removal, and traffic signals. The estimated costs are shown below in Table 5.2 and Table 5.3. All costs are in 2007 dollars and do not reflect the added cost of inflation. The potential funding sources are indicated (State, City or Private), but they do not assure the availability or approval of such improvements.

In order to provide funding for future projects (i.e. local street network and South Main Street), the City should establish a System Development Charge (SDC) or Local Improvement District (LID) program. These types of programs are set up to collect funds from developments and/or land owners and are based on the amount of traffic generated.

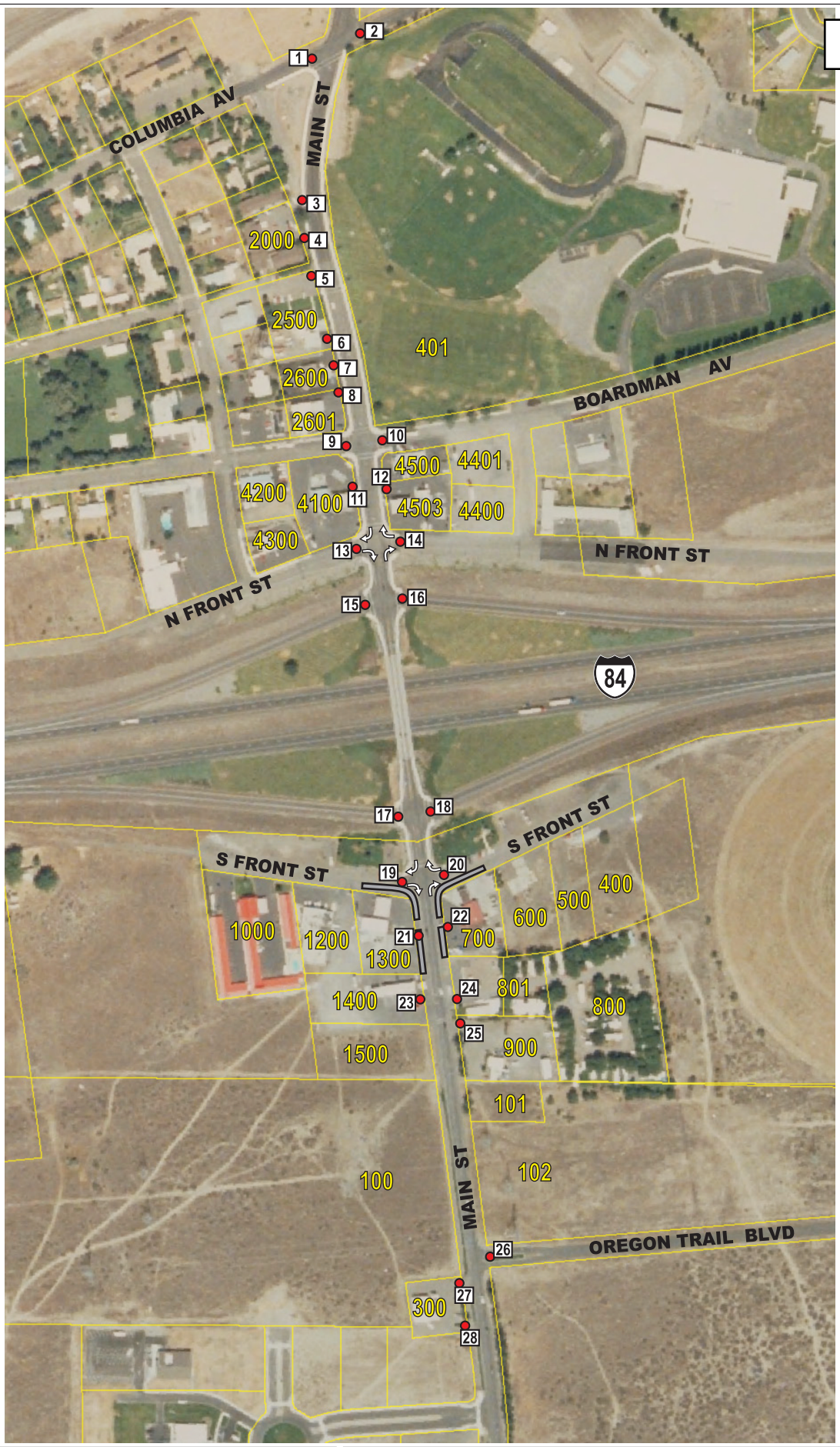
Table 5.2: Cost Estimates for Main Street IAMP Improvements

Alternative	Potential Funding Source	Estimated Cost
Main Street Bridge at I-84		
Additional approach lane on exit ramp	ODOT/ City	$150,000
Traffic Signal at I-84 Westbound Ramp	ODOT / City	$300,000
Reconstruct overpass	ODOT / City	$10-15 million
Reconstruct South Main Street*	City / ODOT	$3 million

* Does not include Right of Way acquisition.

Table 5.3: Cost Estimates for Local Street Network

Improvements (not including right-of-way)	Potential Funding Source	Estimated Cost
Oregon Trail (east)	City / Private	$2 Million
Oregon Trail (west)	City / Private	$3.3 Million
Tatone St (north)	City / Private	$1.3 Million
Tatone St (south)	City / Private	$500,000
North/South Collector (east of Main Street)	City / Private	$3 Million
Expanded Pedestrian & Bicycle Network*	City / Private	$750,000



LEGEND

0 - Access Location & Number

000 - Tax Lot ID#

- Medium Range Limited Access

- Medium Range Future Curb

City of Boardman Main Street IAMP
April 2009

NO SCALE

Figure 5.4

MAIN STREET IAMP MEDIUM RA ACCESS MANAGEM

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LEGEND

0 - Access Location & Number

000 - Tax Lot ID#

- Long Range Future Access

- Long Range Future Curb *

*Approach will not be closed until reasonable access becomes available

NO SCALE

City of Boardman Main Street IAMP
April 2009

Figure 5.5

MAIN STREET LONG RANGE ACCESS MANAGEMENT PLAN NOR

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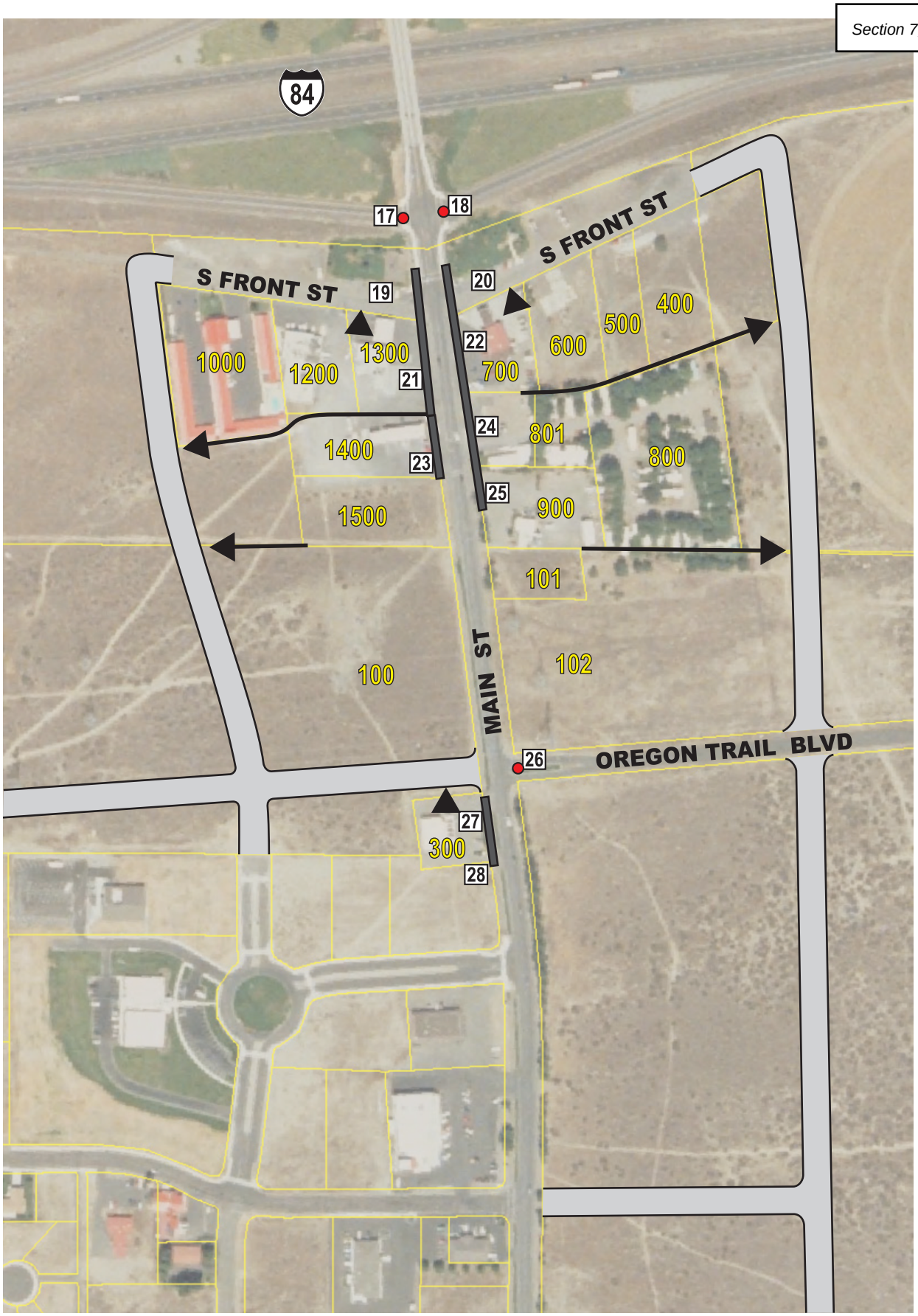

LEGEND

0 - Access Location & Number

000 - Tax Lot ID#

- Long Range Future Access

- Long Range Future Curb*

- Future Roadway Network

*Approach will not be closed until reasonable access becomes available

City of Boardman Main Street IAMP
April 2009

NO SCALE

Figure 5.6

MAIN STREET LONG RANGE ACCESS MANAGEMENT PLAN SOU

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Alternative Evaluation and Prioritization

Alternative Evaluation

Using the objectives for the Main Street IAMP outlined in Chapter 2, alternatives were evaluated to ensure the goals established at the outset of the project were met. The objectives used included criteria related to public involvement, addressing local issues, provision of transportation improvement alternatives, conformity with statewide plans and policies, and inclusion of policies and implementing measures to preserve the functionality of the interchange.

Prioritization of Improvements

The improvement alternatives have been prioritized into short, medium, and long-range actions, as shown in Table 5.3 to provide guidance for future implementation and funding. Short-range actions represent immediate needs and should be implemented within a 5 year period. There were no short-range actions identified. If medium-range actions are triggered within 5 years, they can be considered short-range improvements. Medium-range actions represent improvements that are not required immediately, but should be given priority over improvements identified as long-range actions. Assuming all improvements are planned for construction within a 20-year period, medium-range actions should be considered for implementation within 5 to 10 years. Long-range actions typically represent improvements of lower priority or requiring higher levels of funding. These improvements should be planned for construction within 10 to 20 years.

It should be recognized that this prioritization of projects is not intended to imply that projects of higher priority must be implemented before projects of lower priority. Should opportunities arise, through private land development or other means, to construct specific projects earlier than the estimated time frame provided by this list, those resources should be utilized.

Table 5.3: Transportation Improvement Prioritization

Short-Range Improvements (0 to 5 years)	Triggers	Estimated Cost	Potential Funding Source
• No Specific short-range actions identified. Medium-range improvements if triggered earlier than 5 years.	- Increase in crashes - Property (re)development	NA	• City • Property owners
Medium-Range Improvements (5 to 10 years)			
• Reconstruct South Main Street.	- Money becomes available - Property (re)development	$3,000,000	• ODOT • City
• Medium-range actions from access management plan.	- Increase in crashes - Recurring public complaint - Property (re)development	NA	• City • Property owners
• Construct additional approach lane on I-84 ramp terminals	- Increase in crashes - LOS drops below standards - Turn lanes warranted	$150,000	• FHWY • ODOT • City
Long-Range Improvements (10 to 20 years)			

• Construct new public streets according to adopted Local Connectivity Plan.	- Property (re)development	$10 to 12 million	• City • Property owners
• Install traffic signal at Main Street & I-84 Westbound Ramp	- Traffic signal warrants met	$300,000	• ODOT • City
• Reconstruct Main Street Bridge over I-84 – including wider sidewalk, bike lanes and turn lanes.	- Turn lanes warranted - Money becomes available - ODOT Bridge program – structural deficiency - Increase in bike/ped crashes	$10 to 15 million	• FHWA • ODOT • City
• Long-range actions from access management plan.	- Increase in crashes - Recurring public complaints - Property (re)development	NA	• City • Property Owners
Note: Medium and long-range improvements could be constructed sooner than anticipated as opportunities arise through private property development or other means.			

DKS Associates
TRANSPORTATION SOLUTIONS

Project Participants

Project Management Team

Cheryl Jarvis-Smith	ODOT Region 5
Teresa Penninger	ODOT Region 5
Barry Beyeler	City of Boardman
Dave Winters	City of Boardman
Carl Springer, PE	DKS Project Manager

Project Staff

Carl Springer, PE	DKS Project Manager
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Project Sponsor

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by federal Transportation Equity Act for the 21st Century (TEA-21), local government, and the State of Oregon funds. The contents of this document do not necessarily reflect views or policies of the State of Oregon.

Appendix 1
Background Plan Review

DKS Associates
TRANSPORTATION SOLUTIONS

Memorandum

TO:	Cheryl Jarvis-Smith (ODOT), Barry Beyeler (City of Boardman)		
FROM:	Carl Springer, Pam O'Brien		
DATE:	September 18, 2006		
SUBJECT:	Task 1a - Reconnaissance Technical Memorandum	P/A No.	06097-005

This memorandum includes a review of planning documents, policies and regulations applicable to the Interstate Area Management Plan (IAMP) and Transportation System Plan (TSP) Update in the City of Boardman. A review of past plans, maps and studies was conducted to determine key elements that would have an impact on the IAMP and TSP update process for the City of Boardman. The following section summarizes key findings, and provides highlights of the relevant issues from state, county and city planning documents. This background review is useful throughout the IAMP and TSP update projects because it identifies how local plans fit into the larger regional context.

Summary

The Boardman IAMP will address necessary changes to implement practical, workable solutions to protect the function of the interchanges and meet the Transportation Planning Rule (TPR).

As appropriate, key elements of the IAMP will be amended to the Boardman TSP to assure implementation. The IAMP will also attempt to anticipate emerging issues.

Key rules and policies found during the Plan and Document Review include the following:

- Use 1992 Oregon Transportation System Planning Guidelines for overall transportation system planning assistance.
- Strive to be consistent with State access management standards for city streets adjacent to freeway interchanges. Balance the safety and mobility of drivers with the access needs of property and business owners.
- The operating LOS standard for intersections operating on state highways is LOS "C".

Follow the guidance of OHP policies related to:

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- Coordination of land use and transportation planning between the City, County, and the State.
- Off-system improvements, where the State may financially assist local jurisdictions in local road projects that are cost-effective improving conditions on state facilities.
- Alternative modes, recognize city walkways and bikeways (paths, sidewalks, wider shoulders) for transportation alternatives within Boardman.
- Proposed development code language that specifies the kinds of transportation facilities and activities that are permitted in each of the City's land use districts, as well as corresponding, enabling policy language for the Comprehensive Plan.
- Account for the transportation impacts of proposed commercial and residential developments in the city.

The TSP Udate shall address the following:

- Updated street standards and functional classifications.
- Mobility standards for City streets and intersections.
- Document the steps of the TSP update in a matrix to demonstrate TPR compliance.
- Address new TPR requirements (OAR 660-12-0050 and -0055) that direct the amendment of local TSPs when land use plan amendments are proposed.

The following sections summarize the key documents, plans, and regulations that were reviewed to reach the above findings. These are summarized for the State of Oregon, Morrow County, and the City of Boardman.

State of Oregon Planning Documents and Regulations

Oregon Transportation Plan (OTP)

The Oregon Transportation Plan (OTP) sets the general direction for transportation development statewide for the next twenty years and provides overall direction for allocating resources and coordinating modes of transportation. It provides policies to increase livability in the State of Oregon by emphasizing alternative forms of transportation to the single occupant vehicle. The plan seeks to develop public transit, rail lines, bicycling and pedestrian facilities, airports and pipelines, while also emphasizing the maintenance and improvement of highways, roads and bridges. Thus, the plan calls for a transportation system that has a modal balance, is both efficient and accessible, provides connectivity among rural and urban places and between modes, and is environmentally and financially stable.

Oregon Highway Plan (OHP)

The Oregon Highway Plan (OHP) defines policies and investment strategies for Oregon's state highway system for the next 20 years by further refining the goals and policies of the OTP. One of the key goals of the OHP is to maintain and improve safe and efficient movement of people and goods, while supporting statewide, regional, and local economic growth and community livability. The implementation of this goal occurs through a number of policies and actions that guide management and investment decisions by defining a classification system for state highways, setting standards for mobility, employing access management techniques, supporting intermodal connections, encouraging public and private partnerships, addressing the relationship between the highway and land development patterns, and recognizing the responsibility to maintain and enhance environmental and scenic resources.

Specific OHP policies with bearing on transportation planning in Boardman include the following.

Goal 1 (System Definition) includes policies on mobility standards and major improvements, which further define state highway management goals and objectives.

- Policy 1A – State Highway Classification System

  The state highways in Boardman are Interstate 84, classified as an Interstate Highway.

- Policy 1B: Land Use and Transportation

  Land use and transportation planning and development need to be coordinated between state, regional, county, and city agencies.

- Policy 1C: State Highway Freight System

  Balance the need for movement of goods with other uses of the highway system, and to recognize the importance of maintaining efficient through movement on major truck routes.

- Policy 1F: Highway Mobility Standards

  Interstate highways should have a maximum v/c of 0.70 in non-MPO areas.

- Policy 1G: Major Improvements

  Improve system efficiency and management before adding capacity. The first priority is to preserve the existing system. The second priority is to improve the efficiency and capacity of the existing system. Adding capacity to the existing system and adding new facilities can be considered once the first two priorities have been met.

Goal 2 (System Management) jurisdictional coordination to create a seamless transportation system with respect to the development, operation and maintenance of the highway and road system.

- Policy 2A: Partnerships

  The limited resources available for transportation planning and development should be efficiently and effectively used by coordinating the efforts of ODOT and other agencies, in this case the City of Boardman, Morrow County and the Port of Morrow.

- Policy 2B: Off-System Improvements

  The State is to provide financial assistance for local road projects when the projects are cost-effective in improving state facility conditions.

- Policy 2D: Public Involvement

  Offer opportunities for effective public involvement in transportation planning and project development.

- Policy 2F: Traffic safety

  Continually improve the safety for all users of the state transportation system through engineering, education, enforcement, and emergency services.

Goal 3 (Access Management) is critical in transportation planning efforts that involve state transportation facilities. This goal is implemented through OAR 734-051.

Specific OHP policies with bearing on the IAMP in Boardman include the following.

- Policy 3C: Interchange Access Management Areas

  Plan for and manage grade separated interchange area to ensure safe and efficient operation between connecting roadways.

Goal 4 (Travel Alternatives) and Goal 5 (Environmental and Scenic Resources) also apply to the TSP update, if in limited ways. Goal 5, with an aim to go beyond what is required by other state and federal regulations, calls for natural resources to be maintained and even improved by transportation planning and projects involving state facilities.

The only highway of statewide importance that is specifically identified in The Highway Plan in the City of Boardman is:

- Interstate 84, which is classified as a Interstate Highway and Major Freight Route with the primary objective being to provide mobility between urban areas and a secondary objective being to provide mobility for regional trips *within* a metropolitan area. The operations of this facility should be safe and efficient high-speed continuous flow. The maximum volume to capacity ratios for peak hour operating conditions is 0.70.

Oregon Bicycle and Pedestrian Plan

The provision of safe and accessible bicycling and walking facilities in an effort to encourage increased levels of bicycling and walking is the goal of the Oregon Bicycle and Pedestrian Plan. The Plan provides actions that will assist local jurisdictions understand the principals and policies that ODOT follows in providing bikeways and walkways along state highways. In order to reach the plan's objectives, the strategies for system design are outlined, including:

- Providing bikeway and walkway systems that are integrated with other transportation systems.
- Providing a safe and accessible biking and walking environment.
- Development of education programs that improve bicycle and pedestrian safety.

The document includes two sections, including the Policy & Action Plan and the Bikeway & Walkway Planning Design, Maintenance & Safety. The first section contains background information, legal mandates and current conditions, goals, actions and implementation strategies ODOT proposes to improve bicycle and pedestrian transportation. The second section assists ODOT, cities and counties in designing, constructing and maintaining pedestrian and bicycle facilities. Design standards are recommended and information on safety is provided. According to the Plan, bicycle facilities should be considered where the speed of the road is over 25 mph or the Average Daily Traffic is over 3,000 vehicles per day.

The Boardman TSP update will address design standards for all bicycling and pedestrian facilities located in the City of Boardman in accordance with the Oregon Bicycle and Pedestrian Plan. Additionally, needs assessment and possible alignment alternatives will be based on the goals espoused in the Policy and Action section of the Oregon Bicycle and Pedestrian Plan.

Oregon Statewide Planning Goals (OAR 660-015)

The Oregon Statewide Planning Goals provide a foundation for expressing state policy on land use planning. The 19 goals for land use planning in the state are to be achieved through local comprehensive planning. Local comprehensive plans must be consistent with the Statewide Planning Goals.

The Transportation goal (Goal 12) is a safe, convenient, multimodal and economic transportation system. Consideration of local and regional economies, social consequences, environmental impacts, energy, the needs of transportation disadvantaged, and over reliance on a single mode should be included in local plans. Guidelines for planning and implementation are included to support the Statewide Planning Goals.

Oregon Transportation Planning Rule (TPR) (OAR 660-012)

The State of Oregon adopted 19 statewide planning goals that must be implemented in a comprehensive plan for each city (with a population over 10,000 individuals) and county in the state. In addition to identifying how land, air and water resources of each specific jurisdiction will be utilized, a review and needs analysis must be completed for improving public facilities.

One of the 19 goals is the Transportation Planning Rule (Goal 12). To comply with this rule, Boardman must adopt a Transportation System Plan (TSP) that complies with the State TSP. The overarching goals to be accomplished by the TPR are to:

- Reduce dependence on the automobile and the number of people driving alone.
- Establish a stronger connection between land use and transportation planning.

Local TSPs are expected to examine possible land use solutions to transportation problems and identify multi-modal, system management and demand management strategies to address transportation needs. This entails the development of modal plans, including pedestrian, bicycle, motor vehicle and transit. These plans must strive to provide a integrated transportation network and include an inventory of current infrastructure, provide a gap analysis and identify how these gaps are going to be filled. The areas of analysis addressed in the TPR for a transportation system plan include:

- Roadway capacity and level of service
- Transit capacity and capacity utilization
- Bicycle and pedestrian system capacity
- Adjustment of turning movement volumes produced by travel demand forecasting models
- Estimation of future transportation needs (person travel), reflecting:
    - Population and employment forecasts consistent with comprehensive plans
    - Measures to reduce reliance on the automobile
    - Increased residential, commercial and retail development densities
    - Location of neighborhood shopping centers near residential areas
    - Better balance between jobs and housing
    - Maximum parking limits for office and institutional developments
    - Appropriate levels of transportation facilities to serve land uses identified in transportation plans

  - Increases in average automobile occupancy
  - Increases in modal shares of non-automobile modes
  - TDM programs
  - Land use and subdivision regulation
- Estimation of future goods movement
- Access management

These strategies were incorporated into the adopted TSP and will be carried forward in the update.

The Oregon Land Conservation and Development Commission adopted amendments to sections of the TPR – OAR 660-12-0050 and -0055 – in 2005. The amendments clarify planning requirements for amending local TSPs when land use plan amendments are proposed. The TSP update should reflect this new rule requirement.

Oregon Access Management Rule (OAR 734-051)

The purpose of Oregon's Access Management Rule is to control the issuing of permits for access to state highways, state highway rights of way and other properties under the State's jurisdiction. In addition, the ability to close existing approaches, set spacing standards and establish a formal appeals process in relation to access issues is also identified.

These rules enable the State to set policy and direct location and spacing of intersections and approaches on state highways, ensuring the relevance of the functional classification system and preserving the efficient operation of state routes.

Access within the influence area of existing or proposed state highway interchanges is regulated by standards in OAR 734-051. These standards do not retroactively apply to interchanges existing prior to adoption of the 1999 Oregon Highway Plan, except or until any redevelopment, change of use, or highway construction, reconstruction or modernization project affecting these existing interchanges occurs. It is the goal at that time to meet the appropriate spacing standards, if possible, but, at the very least, to improve the current conditions by moving in the direction of the spacing standard.

The access management standards adopted by ODOT state that the distance between an interchange ramp intersection and the first right in/right out access shall be no less than 750 feet. The distance between an interchange ramp intersection and the first full access intersection shall be no less than 1,320 feet. These standards apply to a "fully developed urban interchange" which occurs when 85% or more of the parcels along the frontage are developed at urban densities and have driveways accessing the crossroad.

State Transportation Improvement Program (STIP)

The current adopted (2006-2009) Statewide Transportation Improvement Program (STIP) serves as ODOT's short term capital improvement program and provides funding and scheduling information for transportation projects for both ODOT and the metropolitan planning organizations in the state. Projects funded in the STIP reflect and advance the Oregon Transportation Plan for highways, public transportation, freight and passenger rail and bicycle and pedestrian facilities. Additionally, monies obtained from the sale of state bonds authorized in the 2003 Oregon Transportation Investment Act (OTIA III) and placed in the STIP coffers have been dedicated to modernization, bridge and pavement preservation projects. Therefore, many of the projects in the 2006-2009 STIP are preservation oriented.

The following projects will have an impact on the Boardman transportation system:

- Reconstruct Kunze Road between Main Street and Tower Road. Estimated cost $2.7 Million.
- Widen Columbia Avenue from UP Rail mainline to Port Boundary. Estimated cost $5.85 Million.

Morrow County Planning Documents

Transportation System Plan (TSP)

The Morrow County TSP (2005) provides a framework for addressing the transportation needs of Morrow County over the next 20 years, and works within the framework provided by the related state, regional and local plans. The plan was created through an extensive citizen involvement process and represents the vision and goals of the community. The purpose of the plan is to facilitate multi-modal transportation needs of County citizens with coordination between transportation system improvements and land use requirements.

The plan defines goals and policies, identifies transportation system facilities in the county and suggests recommended improvements. Recommended improvements are based on county profiles, trends, and a detailed needs assessment.

Morrow County projects identified in the TSP include projects from the TSP needs assessment, the Oregon Transportation Plan and the Port of Morrow. The following projects identified in the 10-year Morrow County TSP project list will have an impact on the Boardman transportation system:

Near-Term, High Priority Projects (0-5 years)

- Rebuild and pave shoulders on Laurel Lane from Wilson Road to I-84 (0.8 miles). Estimated cost $80,000.

- Rebuild shoulder and chip seal Miller Lane from Wilson Road to Kunze Lane (0.5 miles). Estimated cost $19,000.

Long-Term Projects (5-20 years)

- Reconstruct and pave Kunze Lane from South Main Street to Olson Road and Olson Road from Kunze Lane to I-84 (2.0 miles total). Estimated cost $900,000.
- Reconstruct and pave Miller Road from Kunze Lane to Wilson Lane (0.5 miles). Estimated cost $250,000).
- Reconstruct and pave Kunze Lane from Olson Road to Miller Road (0.5 miles) Estimated cost $250,000).

Appendix E of the TSP addresses states: "Access within the influence area of existing or proposed state highway interchanges is regulated by standards in OAR 734-051, which are included as Appendix F of the 2005 Morrow County Transportation System Plan Update." OAR 734-051 is described earlier in the text.

City of Boardman Documents

Comprehensive Plan

The Boardman Comprehensive Plan provides a framework for future development by presenting goals and policies in a wide array of subjects related to development, including urbanization, land use, housing, natural and cultural resources, environmental quality, public facilities and services, energy and transportation.

Public involvement policies require public hearings and opportunities for citizen participation during the consideration of amendments to the City's Comprehensive Plan, a requirement that adoption of a TSP update will trigger. Natural resource policies protect habitat and natural systems around the city, the most sensitive areas being associated with the Columbia River and the Umatilla Wild Life Refuge. Transportation planning and projects should minimize impacts to these resources as well as minimize degradation of air, water, and general environmental quality.

The development of the City Center will use the Downtown Plan completed in 2000 as a resource document when guiding future development within the City of Boardman.

Transportation System Plan (TSP)

The adopted 1999 Boardman TSP was developed to provide an extensive review of the transportation system, evaluate deficiencies in the system and plan for future improvements for the area through the year 2020. A key objective of this plan was to achieve a balanced, safe transportation system that meets the needs of all modes of travel, including pedestrians, bicycles, transit, motor vehicles and other modes (e.g. rail, air). The

TSP outlines the City's goals for developing its transportation facilities to meet short and long term needs.

Existing conditions were assessed and future needs through 2020 were determined based on growth assumptions. A master plan for roadway improvements and pedestrian and bicycle system improvements were recommended to meet the city's goals and local performance standards. A summary of the project is shown below (estimated costs are in 1999 dollars):

Near-Term, High Priority Projects (0-5 years)

- Revise traffic control devices and improve pedestrian crossings at South Main Street & Wilson Road intersection. Estimated cost $6,000. (completed)
- Re-stripe Main Street to a 3-lane section and provide pedestrian and bicycle facilities in the Main Street corridor. Estimated cost $200,000. (TE Grant received)
- Construct sidewalk and bicycle lanes along Main Street from I-84 to Marine Drive. Estimated cost $46,000. (completed)

Mid-Term Projects (5-10 years)

- Construct Oregon Trail (including pedestrian and bicycle amenities) along the BPA easement. Estimated cost $162,000.
- Extend Olson Road across I-84. Estimated cost $8-10 Million.
- Construct multi-use path along Marine Drive from Main Street to Olson Road. (complete)
- Construct multi-use path along Columbia Avenue from Main Street to UGB. Estimated cost $56,000.

Long-Term Projects (10-20 years)

- Construct sidewalk and bicycle lanes along Olson Road from Kunze Road to Columbia Avenue. Estimated cost $230,000.

As Appropriate/Concurrent with Local Development

- Reduce reliance on vehicles through zoning and development code revisions.
- Extend NE Boardman Road to Olson Road. Estimated cost $420,000.
- Provide strategic roadway extensions (identified in TSP).
- Promote access management.
- Implement Transportation Demand Management measures.

- Construct sidewalk and/or multi-use path along Boardman Avenue, Front Street, Second Street, Third Street, Wilson Road, and Smith Road.

The TSP also provides funding strategies. The TSP update will consider and incorporate all findings and projects from the adopted TSP that are still relevant in addition to incorporating new projects.

Zoning Code

The City of Boardman Zoning Code specifies zoning and land use including permitted uses, conditional uses, standards and exceptions. The goal of zoning and development codes is to promote general welfare and to implement the Comprehensive Plan for the city. The following zoning designations are made in the City Code:

- Residential (R)
- Multi-Family Residential (MF)
- Manufactured Home Park (MH)
- Future Urban Residential (FU)
- Commercial (C)
- Commercial – Tourist Sub District (C)
- Commercial – City Center Sub District (C)
- Commercial – Service Center Sub District (C)
- Light Industrial (LI)
- General Industrial (GI)
- Port Industrial Sub District (PI)

The zoning code establishes permitted uses and design standards for each of these zones. Parking and loading requirements as well as signage standards are included.

The land near the IAMP study area at the Main Street interchange is zoned mostly commercial. North of I-84, the land is zoned for a mix of land uses. The land near the IAMP study area at the Laurel Avenue interchange is zone Service Center Commercial. The land north of I-84 is zoned General Industrial.

Main Street "Downtown" Development Plan

The Boardman Main Street "Downtown" Development Plan was produced as a result of recommendations from the 1999 TSP. The plan was created through an extensive citizen involvement process and represents the vision and goals of the community. The purpose of

the plan was to examine the TSP recommendation of focusing future commercial development in Boardman in a downtown area south of I-84. The preferred plan locates the commercial area south of I-84 on the west side of Main Street. The findings of the Plan were adopted into a TSP amendment in 2001.

Components of the Main Street "Downtown" Development Plan include:

- Flexible land use plan for the preferred Main Street "Downtown" location.
- Street design standards and Streetscape improvements in the Main Street "Downtown" area.
- Analysis of future traffic in the Main Street "Downtown" area and recommended future roadway improvements.
- Construction cost estimates and potential funding sources

Major Development Plans

There are no major development plans within the City of Boardman at this time.

x-drive:projects:2006:p06097-005 (boardman iamp):documents:task 1:task1a_reconnaissance_memo.doc

Appendix 2
Summary of Stakeholder Interviews

Stakeholder Interviews for Boardman Interchange Area Management Plan, January 10th and 11th, 2007
Compilation of Results

A series of stakeholder interviews were conducted at the Boardman city hall over a two-day period. Several additional interviews were done by phone for stakeholders that could not attend the selected days. The summary that follows is a compilation of the responses grouped into the general categories of questions. The initial questions identified on the survey are stated for reference, but, in most cases, the responses were more generalized that detailed replies to each question. The identities of the respondents have been kept confidential.

General

1. What works well today as it relates to traffic access and circulation around the freeway interchange area?
2. Are there any safety or operational issues that you feel need to be addressed through this study?
3. Do you have ideas or specific suggestions about how to address the issues you noted above?

Responses
Increased truck traffic activity at the Columbia / Laurel Lane (Port I/C) probably will need alternative traffic controls. Truckers that are unfamiliar with circulation patterns often stop or slow when they should not. It is a narrow intersection with tight curve radii. The banking feels opposite of what it should be and there is the potential for trucks to tip at high speeds. The 'free' right-turn from Columbia eastbound to the freeway interchange probably should be converted to a stop sign. It is also a tight turn to get onto the westbound on-ramp.
The Laurel Lane/Yates Lane intersection will be difficult to relocate to increase spacing to freeway ramps because of topography – 20-30 foot elevation gain up to BPA power lines. Also, configuration of card-lock station requires unique layout to accommodate long load trucks. Minor congestion is created by drivers who are not familiar with circulation patterns. Wider intersection is needed so trucks turning onto Laurel Lane do not crossover into oncoming traffic.
The current circulation system on Main Street, both north and south of I-84, works pretty well today. The only persistent issue is the lack of vehicle access controls on the retail sites in the south west corner of South Main and South Front Street (i.e., service station, car wash facilities). The absence of curb and sidewalk make it confusing for vehicles and for pedestrians. Vehicles have ingress or egress at any point along the frontage, which causes increased likelihood of conflicts with other motor vehicles and with pedestrians passing through the area.
School traffic is peak during the lunch break, for about one-half hour. It is busier than during the before / after school starts, because there is a relatively high volume of pedestrians traveling to / from local stores. The school has 7 or 8 buses that serve the local community. The school boundary recently added younger classes; so many of the students do not drive cars to the campus, which increases walking trips and bus usage. There should be a traffic light at North Main and Boardman Avenue to handle the school peak activity. Also, their should be another roadway crossing the freeway to allow for shift workers from the industrial area the circulate back to neighborhoods south of I-84. Shift changes about the same time as the high school (and middle school) campus ends. There should be wider sidewalks on the overcrossing to the freeway to better serve the high volume of pedestrians to and from school.
The existing left-turn access on and off of Main Street should not be restricted. This would reduce emergency service response times and adversely impact local businesses. ¼ mile spacing distance is a long way in a small town like Boardman. Please provide examples of other rural communities with these access controls.
The freeway overcrossing at Main Street should be widened. Issues include: 1) limited sight distance for vehicles on off-ramps looking across the bridge for a safe gap due to skewed angle of off-ramps, guard rail and protective fencing, 2) narrow sidewalks for pedestrians, 3) no room for left-turn lanes on Main

Stakeholder Interviews for Boardman Interchange Area Management Plan, January 10th and 11th, 2007
Compilation of Results

Street. Bike facilities on overpass are inadequate – shoulder/fog line is narrow and a drainage grate forces bicycles into travel lane. A dangerous situation if two trucks are passing at the same time. Freeway off-ramps need left and right turn lanes so traffic can pass vehicles/trucks waiting to make left turns. (Multiple respondents)
Need bus service between Boardman and nearby cities for general public.
Marine Drive should be re-paved and sidewalks added near residential and business uses.

Street Design

4. What works well today is it relates to traffic access and circulation around the two freeway interchanges?
5. How do you feel about the city street design standards (lighting, sidewalks, street trees, etc.?)

Responses
Increased truck traffic activity at the Columbia / Laurel Lane (Port I/C) probably will need alternative traffic controls. Truckers that are unfamiliar with circulation patterns often stop or slow when they should not. The 'free' right-turn from Columbia eastbound to the freeway interchange probably should be converted to a stop sign.
Need to extend sidewalks and curbs on South Main Street with a center turn lane through town. The adopted plan for 10-foot sidewalks on South Main Street are too wide. Should be narrowed to 6 feet, like North Main Street. (Nearly all respondents agreed on this point). 10-foot sidewalks would be more attractive and convenient for pedestrians, but the extra cost of a wider sidewalk should be considered. Local opinion does not share what is perceived as ODOT's vision for Main Street. A main street character, similar to Joseph,OR, with buildings at the edge of the sidewalk and parking behind does not fit Boardman.
A center turn lane on South Main Street should be included with any improvement package. By reducing the current standard from 10 feet to 6 feet (see note above), any extra width should be added to the center turn lane area or the landscaping area.
The street design standard should include safety lighting along Main Street (and any arterial roadways). Improves visibility and safety for pedestrians and bicycles, especially in the winter hours and for school kids. (Multiple respondents)

Stakeholder Interviews for Boardman Interchange Area Management Plan, January 10th and 11th, 2007
Compilation of Results

The existing roundabout in front of city hall was not designed to allow for large fire trucks to traverse it. It should be re-designed to allow for a parallel route to South Main Street, especially if Tatone Street is extended north up to South Front Street.
A new roundabout should be added at Wilson Road and Main Street to handle traffic growth and slow vehicles on Wilson Road. High vehicle speeds on Wilson Road conflicts with pedestrians and bike users within the city limits.
Little annual rainfall. Do not need in-street storm drainage area shown in standard cross-section.

Stakeholder Interviews for Boardman Interchange Area Management Plan, January 10th and 11th, 2007
Compilation of Results

Access and Circulation

6. As properties develop (or re-develop), how should truck and auto access be provided?
7. How do street spacing standards established by the city and ODOT relate to your answer above?
8. Do you foresee any circulation issues associated with Front Street intersections being so close to the freeway ramps at Exit 164? If so, what do you suggest for us to consider in correcting them?

Responses
The parallel street schemes for the Port Interchange and for South Main Street seem to be well conceived. North-south local street should parallel Main Street on either side, and connect at least between Front Street and Oregon Trail Boulevard. This would help reduces conflicts on the main road, and allows access to all the affected properties. Shared access between existing businesses is okay as long as circulation and access is still convenient for all properties. Multiple circulation options is good for economic development. Can BPA powerline easement be used for access roads? (Multiple respondents).
A recent example of where access controls went wrong was the access changes to the Napa Auto Parts store on South Main at City Center Boulevard. Patrons have to cross through adjoining parking lots for other businesses to reach the store. Same is true of shared access for Chevron Station and CND. Access to CND parking lot is difficult.
Increased truck traffic activity at the Columbia / Laurel Lane (Port I/C) probably will need alternative traffic controls. Truckers that are unfamiliar with circulation patterns often stop or slow when they should not. The 'free' right-turn from Columbia eastbound to the freeway interchange probably should be converted to a stop sign.
Some truckers (from out of the area) get confused by the existing circulation and traffic control pattern around the Port I/C.
Front Street works fine today, but as development occurs, operational and safety issues may become more of an issue. The concept of establishing growth thresholds based on traffic volumes for implementing solutions at the two Main / Front Street intersections would help to ease transitions to the next stages of improvements. (Multiple respondents)
The residential neighborhood north of Wilson Road at the far west end of town is isolated. A local street connection across (either Mt. Adams or Mt. Hood) the refuge area should extend to Kinkade Road, so local traffic and school kids do not need to walk along Wilson Road only. The existing multi-use path on the north side of Wilson Road terminates at Faler Road. It should be extended to Paul Smith Road.
Any left-turn lanes should be limited to striping only. No raised medians should be included, that restrict safe turning and are easily struck by vehicles
Oregon Trail Boulevard should be extended easterly to Olsen Road and westerly through the wildlife refuge to provide a parallel east-west circulation route other than Wilson Road.
The Front Street intersections with Main Street (both north and south) work fine today, and should not be altered.
The planned sidewalk along Laurel Lane at the Port I/C is not needed. A wide shoulder area is enough for pedestrian safety.

Stakeholder Interviews for Boardman Interchange Area Management Plan, January 10th and 11th, 2007
Compilation of Results

Multi-Modal Issues

9. How could the city improve the bicycle and pedestrian access and safety around the freeway interchange?
10. Would you be encouraged to bike around town if there were more bike lanes or other bike amenities?
11. Does large truck parking impact traffic access and circulation near the interchange?

Responses
Overnight parking for large trucks should be limited to those that are patrons at local hotels. Other recurring parking areas should be posted to restrict parking for extended periods. Posted signing should be put up after a city ordinance is passed to address this issue. (Multiple respondents) Truck parking around the freeway is no big deal. Some think parking around North Main Street reflects poorly on the image of the city. As new development comes, it will be an increasing problem. Any truck services added to the city should be at the Port I/C (Exit 165) and not at Main Street. Truck parking facilities should be added to make it more attractive for long-haul truckers to stop in the city and use its services. Mobile food vendors should be required to have a local business license to operate their services. Then they would have to comply with city standards.
The existing painted crosswalk at the car wash lot should be improved to make it safer. A lot of young kids cross at this point. Either at this location or further south at the Oregon Trail intersection to South Main Street. Or both locations. Also suggested that mid-block pedestrian crossing be located within the BPA right-of-way area, since this area will not develop and chance of conflicts with turning vehicles will be minimal. (Multiple respondents)
The only persistent issue is the lack of vehicle access controls on the retail sites in the southwest corner of South Main and South Front Street (i.e., service station, car wash facilities). The absence of curb and sidewalk make it confusing for vehicles and for pedestrians. Vehicles have ingress or egress at any point along the frontage, which causes increased likelihood of conflicts with other motor vehicles and with pedestrians passing through the area. (Multiple respondents)
Pedestrian access to / from the high school is limited for the neighborhood to the northeast. Residential lots are not set up for pathways, and recurring holes are made in backyard fences to make for more direct walking paths. Ultimately, it would be desirable to have an improved walkway through the neighborhood on a more direct route than is available today. School is also considering realigning the existing access onto Columbia Boulevard further east, around the backside of the ball fields to reduce vehicles and pedestrians conflicts between the two sports fields.
Sidewalks should be constructed on both sides of South Main Street. There are no good, safe walking routes for elementary school kids on South Main Street to and from the two schools along Wilson Road. Need continuous sidewalks improvements, and more safe crossings on arterial roads.
The mobile food vendors that locate on South Main Street exacerbate the uncontrolled vehicle access issues. Their location and activities should be considered as a part of any plans to change permanent access along South Main Street.
Needs better pedestrian and bicycle circulation on North Main Street across the railroad tracks to the Marina Park area. North of Columbia Boulevard the

Stakeholder Interviews for Boardman Interchange Area Management Plan, January 10th and 11th, 2007
Compilation of Results

street narrows, and the intersections with Marine Drive is confusing.

Stakeholder Interviews for Boardman Interchange Area Management Plan, January 10th and 11th, 2007
Compilation of Results

Funding

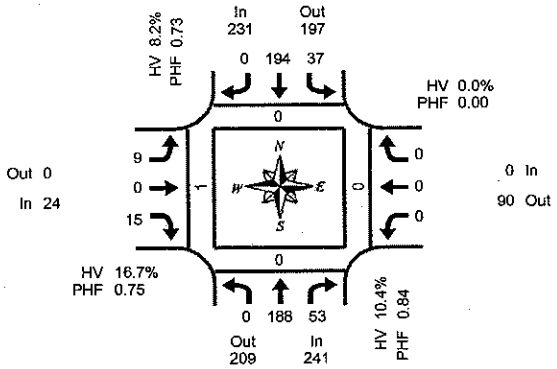
12. How should improvements identified through this plan be funded?
13. Would you be willing to contribute a proportional share to any locally funded portion of the improvements?

Responses
Any local share of the fund required to facilitate new improvements should be shared across the entire city and not just on the new development, or the existing businesses. There is a broader benefit for the whole community if new commercial uses come into town, and the developer of that site should not be left with the whole burden of off-site improvements, as required by this plan. (Multiple respondents).
New development should share in the cost of required improvements. Most other Oregon cities have system development charges (SDC) for transportation improvements. No reason why Boardman should be different. SDC programs are common in Oregon, but they do not help unless there is growth. Need other funding sources to get improvements built.
If local residents or businesses are going to have new costs for improvements related to development, any funding measure should be put to a general public vote.
New development should pay their way. This is typically in most other Oregon cities.
High growth at the Port of Morrow and the industrial users that are being added there should contribute to the funding of improvements within Boardman that provide them services.
If NASCAR does come to the region, the attractiveness of new commercial business will be much higher. Then a local SDC might work.
If local truck services are provided, an extra truck fee could be charged to offset costs of required improvements.
Boardman has a relatively low average income level, and the community would be sensitive to any new funding or fees required from them.

Appendix 3
Traffic Counts

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:00 AM to 8:00 AM

Main St & I-84 EB Ramps

Tuesday, September 19, 2006
6:00 AM to 8:00 AM

15-Minute Interval Summary
6:00 AM to 8:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	
6:00 AM	0	16	10	0	6	8	0	0	0	0	0	0	0	0	0	0	40
6:15 AM	0	36	17	0	4	12	0	0	0	1	0	0	0	0	0	0	70
6:30 AM	0	42	26	0	10	17	0	0	2	0	4	0	0	0	0	0	101
6:45 AM	0	54	17	0	9	17	0	0	0	0	3	0	0	0	0	0	100
7:00 AM	0	50	16	0	9	53	0	0	2	0	6	0	0	0	0	0	136
7:15 AM	0	62	10	0	14	65	0	0	2	0	4	0	0	0	0	0	157
7:30 AM	0	34	13	1	6	37	0	0	2	0	4	0	0	0	0	0	96
7:45 AM	0	42	14	0	8	39	0	0	3	0	1	0	0	0	0	0	107
Total Survey	0	336	123	1	66	248	0	0	11	1	22	0	0	0	0	0	807

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0
0	0	0	2
0	0	0	1
0	0	0	2
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	6

Peak Hour Summary
7:00 AM to 8:00 AM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	241	209	450	1	231	197	428	0	24	0	24	0	0	90	90	0	496
%HV	10.4%				8.2%				16.7%				0.0%				9.7%
PHF	0.84				0.73				0.75				0.00				0.79

Pedestrians Crosswalk			
North	South	East	West
0	0	0	1

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	188	53	241	37	194	0	231	9	0	15	24	0	0	0	0	496
%HV	0.0%	9.0%	15.1%	10.4%	21.6%	5.7%	0.0%	8.2%	11.1%	0.0%	20.0%	16.7%	0.0%	0.0%	0.0%	0.0%	9.7%
PHF	0.00	0.76	0.83	0.84	0.66	0.75	0.00	0.73	0.75	0.00	0.63	0.75	0.00	0.00	0.00	0.00	0.79

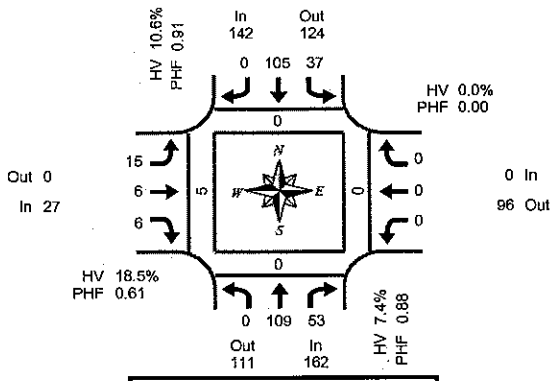
Rolling Hour Summary
6:00 AM to 8:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	
6:00 AM	0	148	70	0	29	54	0	0	2	1	7	0	0	0	0	0	311
6:15 AM	0	182	76	0	32	99	0	0	4	1	13	0	0	0	0	0	407
6:30 AM	0	208	69	0	42	152	0	0	6	0	17	0	0	0	0	0	494
6:45 AM	0	200	56	1	38	172	0	0	6	0	17	0	0	0	0	0	489
7:00 AM	0	188	53	1	37	194	0	0	9	0	15	0	0	0	0	0	496

Pedestrians Crosswalk			
North	South	East	West
0	0	0	5
0	0	0	5
0	0	0	3
0	0	0	3
0	0	0	1

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Main St & I-84 EB Ramps

Tuesday, September 19, 2006
8:00 AM to 10:00 AM

Peak Hour Summary
8:00 AM to 9:00 AM

15-Minute Interval Summary
8:00 AM to 10:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 AM	0	33	13	0	10	27	0	0	1	0	0	0	0	0	0	0	84	0	0	0	1
8:15 AM	0	24	13	0	7	32	0	0	4	1	3	0	0	0	0	0	84	0	0	0	1
8:30 AM	0	28	16	0	7	27	0	1	3	2	2	0	0	0	0	0	85	0	0	0	1
8:45 AM	0	24	11	2	13	19	0	0	7	3	1	0	0	0	0	0	78	0	0	0	2
9:00 AM	0	28	10	0	9	22	0	0	4	0	3	0	0	0	0	0	76	0	0	0	0
9:15 AM	0	29	9	0	13	27	0	1	2	0	3	0	0	0	0	0	83	0	0	0	1
9:30 AM	0	21	10	0	9	24	0	0	2	1	4	0	0	0	0	0	71	0	0	0	0
9:45 AM	0	30	6	0	10	27	0	0	4	0	3	0	0	0	0	0	80	0	0	0	0
Total Survey	0	217	88	2	78	205	0	2	27	7	19	0	0	0	0	0	641	0	0	0	6

Peak Hour Summary
8:00 AM to 9:00 AM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	162	111	273	2	142	124	266	1	27	0	27	0	0	96	96	0	331	0	0	0	5
%HV	7.4%				10.6%				18.5%				0.0%				9.7%				
PHF	0.88				0.91				0.61				0.00				0.97				

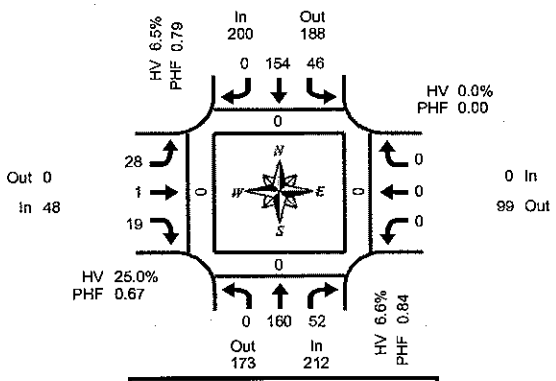
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	109	53	162	37	105	0	142	15	6	6	27	0	0	0	0	331
%HV	0.0%	6.4%	9.4%	7.4%	16.2%	8.6%	0.0%	10.6%	13.3%	50.0%	0.0%	18.5%	0.0%	0.0%	0.0%	0.0%	9.7%
PHF	0.00	0.83	0.83	0.88	0.71	0.82	0.00	0.91	0.54	0.50	0.50	0.61	0.00	0.00	0.00	0.00	0.97

Rolling Hour Summary
8:00 AM to 10:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 AM	0	109	53	2	37	105	0	1	15	6	6	0	0	0	0	0	331	0	0	0	5
8:15 AM	0	104	50	2	36	100	0	1	18	6	9	0	0	0	0	0	323	0	0	0	4
8:30 AM	0	109	46	2	42	95	0	2	16	5	9	0	0	0	0	0	322	0	0	0	4
8:45 AM	0	102	40	2	44	92	0	1	15	4	11	0	0	0	0	0	308	0	0	0	3
9:00 AM	0	108	35	0	41	100	0	1	12	1	13	0	0	0	0	0	310	0	0	0	1

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
11:00 AM to 12:00 PM

Main St & I-84 EB Ramps

Tuesday, September 19, 2006
10:00 AM to 12:00 PM

15-Minute Interval Summary
10:00 AM to 12:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
10:00 AM	0	21	17	0	3	30	0	0	5	0	1	0	0	0	0	0	77	0	0	0	2
10:15 AM	0	31	6	0	12	25	0	0	3	2	6	0	0	0	0	0	85	0	0	0	1
10:30 AM	0	33	11	0	12	31	0	2	4	0	6	0	0	0	0	0	97	0	0	0	0
10:45 AM	0	35	8	0	12	46	0	0	7	0	2	0	0	0	0	0	110	0	0	0	0
11:00 AM	0	42	8	0	13	31	0	0	8	1	2	0	0	0	0	0	105	0	0	0	0
11:15 AM	0	41	12	0	11	32	0	0	4	0	7	0	0	0	0	0	107	0	0	0	0
11:30 AM	0	35	11	0	12	38	0	0	10	0	8	0	0	0	0	0	114	0	0	0	0
11:45 AM	0	42	21	0	10	53	0	0	6	0	2	0	0	0	0	0	134	0	0	0	0
Total Survey	0	280	94	0	85	286	0	2	47	3	34	0	0	0	0	0	829	0	0	0	3

Peak Hour Summary
11:00 AM to 12:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	212	173	385	0	200	188	388	0	48	0	48	0	0	99	99	0	460	0	0	0	0
%HV	6.6%				6.5%				25.0%				0.0%				8.5%				
PHF	0.84				0.79				0.67				0.00				0.86				

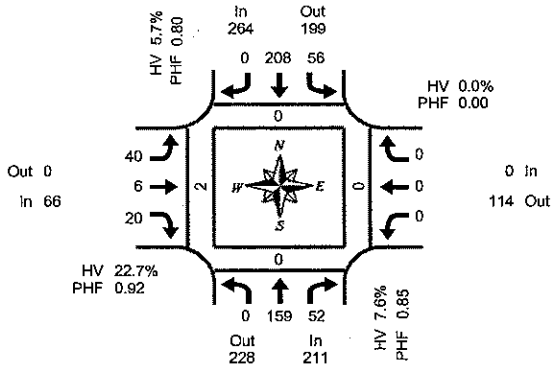
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	160	52	212	46	154	0	200	28	1	19	48	0	0	0	0	460
%HV	0.0%	5.6%	9.6%	6.6%	13.0%	4.5%	0.0%	6.5%	17.9%	#####	31.6%	25.0%	0.0%	0.0%	0.0%	0.0%	8.5%
PHF	0.00	0.95	0.62	0.84	0.88	0.73	0.00	0.79	0.70	0.25	0.59	0.67	0.00	0.00	0.00	0.00	0.86

Rolling Hour Summary
10:00 AM to 12:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
10:00 AM	0	120	42	0	39	132	0	2	19	2	15	0	0	0	0	0	369	0	0	0	3
10:15 AM	0	141	33	0	49	133	0	2	22	3	16	0	0	0	0	0	397	0	0	0	1
10:30 AM	0	151	39	0	48	140	0	2	23	1	17	0	0	0	0	0	419	0	0	0	0
10:45 AM	0	153	39	0	48	147	0	0	29	1	19	0	0	0	0	0	436	0	0	0	0
11:00 AM	0	160	52	0	46	154	0	0	28	1	19	0	0	0	0	0	460	0	0	0	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
12:00 PM to 1:00 PM

Main St & I-84 EB Ramps

Tuesday, September 19, 2006
12:00 PM to 2:00 PM

15-Minute Interval Summary
12:00 PM to 2:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
12:00 PM	0	31	10	0	17	66	0	0	11	1	6	0	0	0	0	0	142	0	0	0	0
12:15 PM	0	52	10	0	13	48	0	0	9	0	6	0	0	0	0	0	138	0	0	0	0
12:30 PM	0	36	14	0	9	46	0	0	9	4	2	0	0	0	0	0	120	0	0	0	2
12:45 PM	0	40	18	2	17	48	0	0	11	1	6	0	0	0	0	0	141	0	0	0	0
1:00 PM	0	41	20	0	11	47	0	0	14	0	6	0	0	0	0	0	139	0	0	0	0
1:15 PM	0	33	11	0	13	39	0	0	11	0	5	0	0	0	0	0	112	0	0	0	0
1:30 PM	0	26	17	0	14	36	0	0	6	1	1	0	0	0	0	0	101	0	0	0	0
1:45 PM	0	31	8	0	13	43	0	0	7	1	4	0	0	0	0	0	107	0	0	0	1
Total Survey	0	290	108	2	107	373	0	0	78	8	36	0	0	0	0	0	1,000	0	0	0	3

Peak Hour Summary
12:00 PM to 1:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	211	228	439	2	264	199	463	0	66	0	66	0	0	114	114	0	541	0	0	0	2
%HV	7.6%				5.7%				22.7%				0.0%				8.5%				
PHF	0.85				0.80				0.92				0.00				0.95				

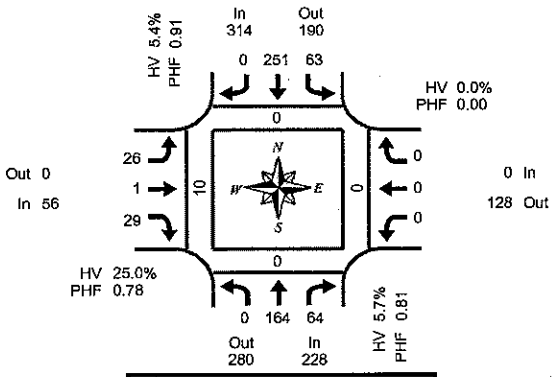
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	159	52	211	56	208	0	264	40	6	20	66	0	0	0	0	541
%HV	0.0%	5.7%	13.5%	7.6%	7.1%	5.3%	0.0%	5.7%	17.5%	66.7%	20.0%	22.7%	0.0%	0.0%	0.0%	0.0%	8.5%
PHF	0.00	0.76	0.72	0.85	0.82	0.79	0.00	0.80	0.91	0.38	0.83	0.92	0.00	0.00	0.00	0.00	0.95

Rolling Hour Summary
12:00 PM to 2:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
12:00 PM	0	159	52	2	56	208	0	0	40	6	20	0	0	0	0	0	541	0	0	0	2
12:15 PM	0	169	62	2	50	189	0	0	43	5	20	0	0	0	0	0	538	0	0	0	2
12:30 PM	0	150	63	2	50	180	0	0	45	5	19	0	0	0	0	0	512	0	0	0	2
12:45 PM	0	140	66	2	55	170	0	0	42	2	18	0	0	0	0	0	493	0	0	0	0
1:00 PM	0	131	56	0	51	165	0	0	38	2	16	0	0	0	0	0	459	0	0	0	1

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
3:00 PM to 4:00 PM

Main St & I-84 EB Ramps

Tuesday, September 19, 2006
2:00 PM to 4:00 PM

15-Minute Interval Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
2:00 PM	0	33	14	0	23	55	0	0	9	0	2	0	0	0	0	0	136	0	0	0	1
2:15 PM	0	32	12	0	10	46	0	0	7	0	4	0	0	0	0	0	111	0	0	0	0
2:30 PM	0	47	18	1	8	45	0	0	4	0	8	0	0	0	0	0	130	0	0	0	0
2:45 PM	0	42	11	1	3	29	0	1	5	0	6	0	0	0	0	0	96	0	0	0	0
3:00 PM	0	36	9	0	18	68	0	0	9	1	8	0	0	0	0	0	149	0	0	0	3
3:15 PM	0	36	15	1	19	61	0	0	6	0	5	0	0	0	0	0	142	0	0	0	4
3:30 PM	0	50	20	0	13	60	0	1	6	0	9	0	0	0	0	0	158	0	0	0	2
3:45 PM	0	42	20	0	13	62	0	0	5	0	7	0	0	0	0	0	149	0	0	0	1
Total Survey	0	318	119	3	107	426	0	2	51	1	49	0	0	0	0	0	1,071	0	0	0	11

Peak Hour Summary
3:00 PM to 4:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	228	280	508	1	314	190	504	1	56	0	56	0	0	128	128	0	598
%HV	5.7%				5.4%				25.0%				0.0%				7.4%
PHF	0.81				0.91				0.78				0.00				0.95

Pedestrians Crosswalk			
North	South	East	West
0	0	0	10

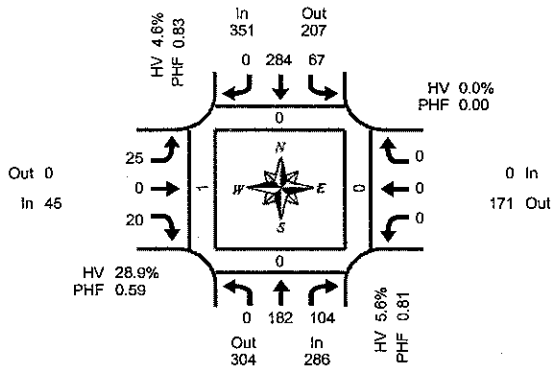
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	164	64	228	63	251	0	314	26	1	29	56	0	0	0	0	598
%HV	0.0%	5.5%	6.3%	5.7%	4.8%	5.6%	0.0%	5.4%	19.2%	#####	27.6%	25.0%	0.0%	0.0%	0.0%	0.0%	7.4%
PHF	0.00	0.82	0.80	0.81	0.83	0.92	0.00	0.91	0.72	0.25	0.81	0.78	0.00	0.00	0.00	0.00	0.95

Rolling Hour Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
2:00 PM	0	154	55	2	44	175	0	1	25	0	20	0	0	0	0	0	473	0	0	0	1
2:15 PM	0	157	50	2	39	188	0	1	25	1	26	0	0	0	0	0	486	0	0	0	3
2:30 PM	0	161	53	3	48	203	0	1	24	1	27	0	0	0	0	0	517	0	0	0	7
2:45 PM	0	164	55	2	53	218	0	2	26	1	28	0	0	0	0	0	545	0	0	0	9
3:00 PM	0	164	64	1	63	251	0	1	26	1	29	0	0	0	0	0	598	0	0	0	10

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:15 PM to 5:15 PM

Main St & I-84 EB Ramps

Tuesday, September 19, 2006
4:00 PM to 6:00 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	43	23	0	15	73	0	0	6	0	7	0	0	0	0	0	167	0	0	0	0
4:15 PM	0	55	33	0	21	61	0	1	4	0	6	0	0	0	0	0	180	0	0	0	1
4:30 PM	0	44	19	0	14	62	0	0	4	0	4	0	0	0	0	0	147	0	0	0	0
4:45 PM	0	49	20	0	11	76	0	0	11	0	8	0	0	0	0	0	175	0	0	0	0
5:00 PM	0	34	32	0	21	85	0	0	6	0	2	0	0	0	0	0	180	0	0	0	0
5:15 PM	0	42	10	0	13	54	0	0	9	0	7	0	0	0	0	0	135	0	0	0	1
5:30 PM	0	44	21	2	11	49	0	0	8	0	6	0	0	0	0	0	139	0	0	0	0
5:45 PM	0	37	18	0	15	87	0	0	7	2	4	0	0	0	0	0	170	0	0	0	0
Total Survey	0	348	176	2	121	547	0	1	55	2	44	0	0	0	0	0	1,293	0	0	0	2

Peak Hour Summary
4:15 PM to 5:15 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	286	304	590	0	351	207	558	1	45	0	45	0	0	171	171	0	682	0	0	0	1
%HV	5.6%				4.6%				28.9%				0.0%				6.6%				
PHF	0.81				0.83				0.59				0.00				0.95				

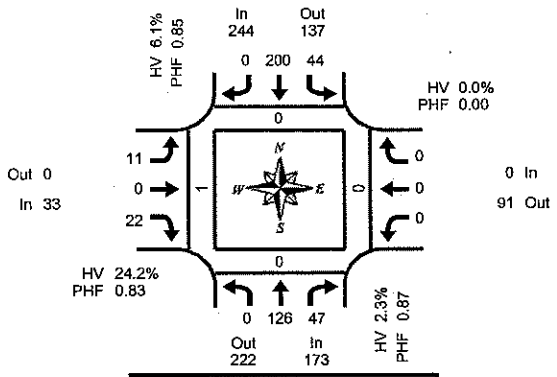
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	182	104	286	67	284	0	351	25	0	20	45	0	0	0	0	682
%HV	0.0%	3.3%	9.6%	5.6%	4.5%	4.6%	0.0%	4.6%	28.0%	0.0%	30.0%	28.9%	0.0%	0.0%	0.0%	0.0%	6.6%
PHF	0.00	0.83	0.79	0.81	0.80	0.84	0.00	0.83	0.57	0.00	0.63	0.59	0.00	0.00	0.00	0.00	0.95

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	191	95	0	61	272	0	1	25	0	25	0	0	0	0	0	669	0	0	0	1
4:15 PM	0	182	104	0	67	284	0	1	25	0	20	0	0	0	0	0	682	0	0	0	1
4:30 PM	0	169	81	0	59	277	0	0	30	0	21	0	0	0	0	0	637	0	0	0	1
4:45 PM	0	169	83	2	56	264	0	0	34	0	23	0	0	0	0	0	629	0	0	0	1
5:00 PM	0	157	81	2	60	275	0	0	30	2	19	0	0	0	0	0	624	0	0	0	1

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Main St & I-84 EB Ramps

Tuesday, September 19, 2006
6:00 PM to 8:00 PM

Peak Hour Summary
6:00 PM to 7:00 PM

15-Minute Interval Summary
6:00 PM to 8:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
6:00 PM	0	35	15	0	10	62	0	0	4	0	5	0	0	0	0	0	131	0	0	0	0
6:15 PM	0	27	14	0	10	35	0	0	3	0	7	0	0	0	0	0	96	0	0	0	0
6:30 PM	0	33	11	0	10	49	0	0	2	0	3	0	0	0	0	0	108	0	0	0	1
6:45 PM	0	31	7	0	14	54	0	0	2	0	7	0	0	0	0	0	115	0	0	0	0
7:00 PM	0	42	5	0	6	54	0	0	2	0	5	0	0	0	0	0	114	0	0	0	2
7:15 PM	0	35	10	0	14	39	0	0	9	0	4	0	0	0	0	0	111	0	0	0	0
7:30 PM	0	14	9	0	5	42	0	0	5	0	7	0	0	0	0	0	82	0	0	0	0
7:45 PM	0	15	8	0	4	32	0	0	5	0	12	0	0	0	0	0	76	0	0	0	2
Total Survey	0	232	79	0	73	367	0	0	32	0	50	0	0	0	0	0	833	0	0	0	5

Peak Hour Summary
6:00 PM to 7:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	173	222	395	0	244	137	381	0	33	0	33	0	0	91	91	0	450	0	0	0	1
%HV	2.3%				6.1%				24.2%				0.0%				6.0%				
PHF	0.87				0.85				0.83				0.00				0.86				

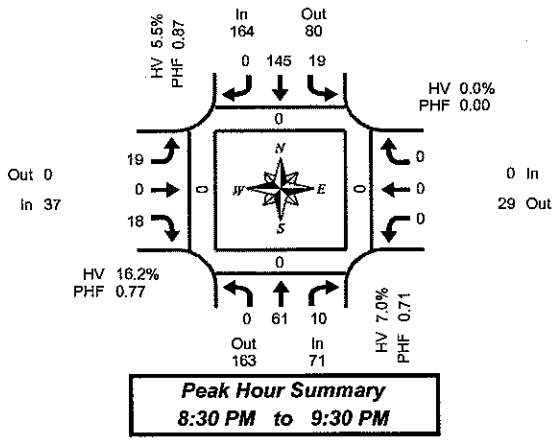
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	126	47	173	44	200	0	244	11	0	22	33	0	0	0	0	450
%HV	0.0%	2.4%	2.1%	2.3%	6.8%	6.0%	0.0%	6.1%	9.1%	0.0%	31.8%	24.2%	0.0%	0.0%	0.0%	0.0%	6.0%
PHF	0.00	0.90	0.78	0.87	0.79	0.81	0.00	0.85	0.69	0.00	0.79	0.83	0.00	0.00	0.00	0.00	0.86

Rolling Hour Summary
6:00 PM to 8:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
6:00 PM	0	126	47	0	44	200	0	0	11	0	22	0	0	0	0	0	450	0	0	0	1
6:15 PM	0	133	37	0	40	192	0	0	9	0	22	0	0	0	0	0	433	0	0	0	3
6:30 PM	0	141	33	0	44	196	0	0	15	0	19	0	0	0	0	0	448	0	0	0	3
6:45 PM	0	122	31	0	39	189	0	0	18	0	23	0	0	0	0	0	422	0	0	0	2
7:00 PM	0	106	32	0	29	167	0	0	21	0	28	0	0	0	0	0	383	0	0	0	4

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
8:30 PM to 9:30 PM

Main St & I-84 EB Ramps

Tuesday, September 19, 2006
8:00 PM to 10:00 PM

15-Minute Interval Summary
8:00 PM to 10:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 PM	0	9	3	0	5	35	0	0	2	0	6	0	0	0	0	0	60	0	0	0	2
8:15 PM	0	12	10	0	5	26	0	0	3	0	9	0	0	0	0	0	65	0	0	0	0
8:30 PM	0	20	5	0	4	43	0	0	5	0	5	0	0	0	0	0	82	0	0	0	0
8:45 PM	0	12	4	0	7	29	0	0	6	0	3	0	0	0	0	0	61	0	0	0	0
9:00 PM	0	10	0	0	3	38	0	0	6	0	6	0	0	0	0	0	63	0	0	0	0
9:15 PM	0	19	1	0	5	35	0	0	2	0	4	0	0	0	0	0	66	0	0	0	0
9:30 PM	0	17	0	0	2	35	0	0	3	0	4	0	0	0	0	0	61	0	0	0	0
9:45 PM	0	19	1	0	6	33	0	0	4	0	2	0	0	0	0	0	65	0	0	0	0
Total Survey	0	118	24	0	37	274	0	0	31	0	39	0	0	0	0	0	523	0	0	0	2

Peak Hour Summary
8:30 PM to 9:30 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	71	163	234	0	164	80	244	0	37	0	37	0	0	29	29	0	272	0	0	0	0
%HV	7.0%				5.5%				16.2%				0.0%				7.4%				
PHF	0.71				0.87				0.77				0.00				0.83				

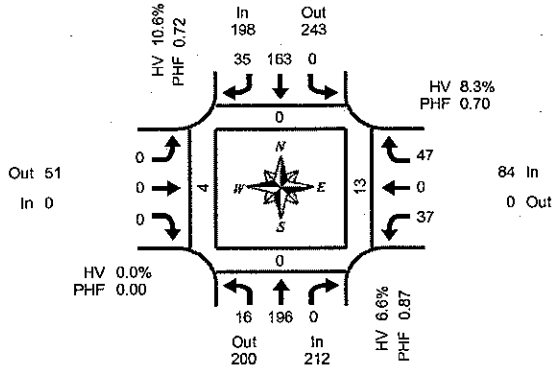
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	61	10	71	19	145	0	164	19	0	18	37	0	0	0	0	272
%HV	0.0%	4.9%	20.0%	7.0%	5.3%	5.5%	0.0%	5.5%	5.3%	0.0%	27.8%	16.2%	0.0%	0.0%	0.0%	0.0%	7.4%
PHF	0.00	0.76	0.50	0.71	0.68	0.84	0.00	0.87	0.79	0.00	0.75	0.77	0.00	0.00	0.00	0.00	0.83

Rolling Hour Summary
8:00 PM to 10:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 PM	0	53	22	0	21	133	0	0	16	0	23	0	0	0	0	0	268	0	0	0	2
8:15 PM	0	54	19	0	19	136	0	0	20	0	23	0	0	0	0	0	271	0	0	0	0
8:30 PM	0	61	10	0	19	145	0	0	19	0	18	0	0	0	0	0	272	0	0	0	0
8:45 PM	0	58	5	0	17	137	0	0	17	0	17	0	0	0	0	0	251	0	0	0	0
9:00 PM	0	65	2	0	16	141	0	0	15	0	16	0	0	0	0	0	255	0	0	0	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
6:30 AM to 7:30 AM

Main St & I-84 WB Ramps

Tuesday, September 19, 2006
6:00 AM to 8:00 AM

15-Minute Interval Summary
6:00 AM to 8:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
6:00 AM	1	16	0	0	0	11	4	0	0	0	0	0	5	0	5	0	42	0	0	0	0
6:15 AM	11	26	0	0	0	14	17	0	0	0	0	0	4	0	11	0	83	0	0	0	0
6:30 AM	7	37	0	0	0	23	15	0	0	0	0	0	6	0	11	0	99	0	0	8	3
6:45 AM	4	48	0	0	0	19	7	0	0	0	0	0	3	0	8	0	89	0	0	2	1
7:00 AM	3	52	0	0	0	56	9	0	0	0	0	0	10	0	16	0	146	0	0	3	0
7:15 AM	2	59	0	0	0	65	4	0	0	0	0	0	18	0	12	0	160	0	0	0	0
7:30 AM	3	30	0	1	0	26	8	0	0	0	0	0	7	0	8	0	82	0	0	1	0
7:45 AM	5	39	0	0	0	27	1	0	0	0	0	0	21	0	8	0	101	0	0	0	0
Total Survey	36	307	0	1	0	241	65	0	0	0	0	0	74	0	79	0	802	0	0	14	4

Peak Hour Summary
6:30 AM to 7:30 AM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	212	200	412	0	198	243	441	0	0	51	51	0	84	0	84	0	494	0	0	13	4
%HV	6.6%				10.6%				0.0%				8.3%				8.5%				
PHF	0.87				0.72				0.00				0.70				0.77				

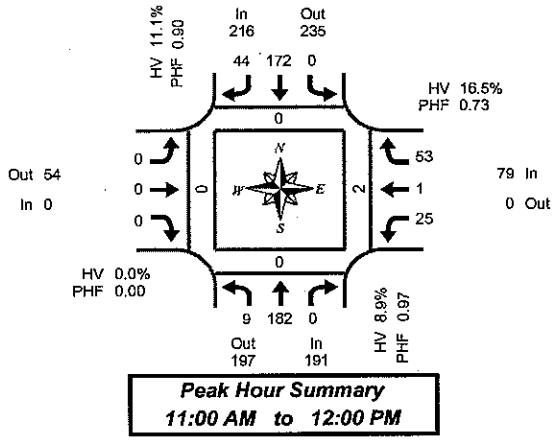
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	16	196	0	212	0	163	35	198	0	0	0	0	37	0	47	84	494
%HV	43.8%	3.6%	0.0%	6.6%	0.0%	5.5%	34.3%	10.6%	0.0%	0.0%	0.0%	0.0%	5.4%	0.0%	10.6%	8.3%	8.5%
PHF	0.57	0.83	0.00	0.87	0.00	0.63	0.58	0.72	0.00	0.00	0.00	0.00	0.51	0.00	0.73	0.70	0.77

Rolling Hour Summary
6:00 AM to 8:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
6:00 AM	23	127	0	0	0	67	43	0	0	0	0	0	18	0	35	0	313	0	0	10	4
6:15 AM	25	163	0	0	0	112	48	0	0	0	0	0	23	0	46	0	417	0	0	13	4
6:30 AM	16	196	0	0	0	163	35	0	0	0	0	0	37	0	47	0	494	0	0	13	4
6:45 AM	12	169	0	1	0	166	28	0	0	0	0	0	38	0	44	0	477	0	0	6	1
7:00 AM	13	180	0	1	0	174	22	0	0	0	0	0	56	0	44	0	489	0	0	4	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
11:00 AM to 12:00 PM

Main St & I-84 WB Ramps

Tuesday, September 19, 2006
10:00 AM to 12:00 PM

15-Minute Interval Summary
10:00 AM to 12:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
10:00 AM	2	22	0	0	0	28	11	0	0	0	0	0	5	0	13	0	81	0	0	0	0
10:15 AM	2	35	0	0	0	30	7	0	0	0	0	0	5	0	14	0	93	0	0	0	0
10:30 AM	3	32	0	0	0	44	9	2	0	0	0	0	5	0	13	0	106	0	0	0	0
10:45 AM	3	44	0	0	0	51	11	0	0	0	0	0	7	0	17	0	133	0	0	0	0
11:00 AM	3	45	0	0	0	43	11	0	0	0	0	0	4	0	12	0	118	0	0	1	0
11:15 AM	2	47	0	0	0	36	12	0	0	0	0	0	5	0	10	0	112	0	0	1	0
11:30 AM	2	44	0	0	0	41	13	0	0	0	0	0	6	0	15	0	121	0	0	0	0
11:45 AM	2	46	0	0	0	52	8	0	0	0	0	0	10	1	16	0	135	0	0	0	0
Total Survey	19	315	0	0	0	325	82	2	0	0	0	0	47	1	110	0	899	0	0	2	0

Peak Hour Summary
11:00 AM to 12:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	191	197	388	0	216	235	451	0	0	54	54	0	79	0	79	0	486	0	0	2	0
%HV	8.9%				11.1%				0.0%				16.5%				11.1%				
PHF	0.97				0.90				0.00				0.73				0.90				

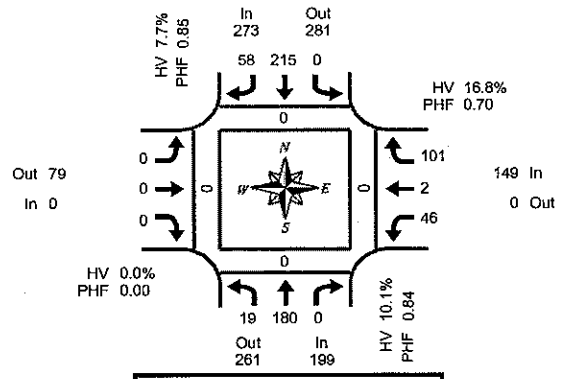
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	9	182	0	191	0	172	44	216	0	0	0	0	25	1	53	79	486
%HV	55.6%	6.6%	0.0%	8.9%	0.0%	5.8%	31.8%	11.1%	0.0%	0.0%	0.0%	0.0%	12.0%	#####	17.0%	16.5%	11.1%
PHF	0.75	0.97	0.00	0.97	0.00	0.83	0.85	0.90	0.00	0.00	0.00	0.00	0.63	0.25	0.83	0.73	0.90

Rolling Hour Summary
10:00 AM to 12:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
10:00 AM	10	133	0	0	0	153	38	2	0	0	0	0	22	0	57	0	413	0	0	0	0
10:15 AM	11	156	0	0	0	168	38	2	0	0	0	0	21	0	56	0	450	0	0	1	0
10:30 AM	11	168	0	0	0	174	43	2	0	0	0	0	21	0	52	0	469	0	0	2	0
10:45 AM	10	180	0	0	0	171	47	0	0	0	0	0	22	0	54	0	484	0	0	2	0
11:00 AM	9	182	0	0	0	172	44	0	0	0	0	0	25	1	53	0	486	0	0	2	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Camey
(503) 833-2740



Peak Hour Summary
12:00 PM to 1:00 PM

Main St & I-84 WB Ramps

Tuesday, September 19, 2006
12:00 PM to 2:00 PM

15-Minute Interval Summary
12:00 PM to 2:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
12:00 PM	5	38	0	0	0	66	14	0	0	0	0	0	18	2	33	0	176	0	0	0	0
12:15 PM	6	53	0	0	0	49	16	0	0	0	0	0	11	0	26	0	161	0	0	0	0
12:30 PM	1	44	0	0	0	47	10	0	0	0	0	0	8	0	16	0	126	0	0	0	0
12:45 PM	7	45	0	1	0	53	18	0	0	0	0	0	9	0	26	0	158	0	0	0	0
1:00 PM	4	51	0	0	0	60	10	0	0	0	0	0	8	0	14	0	147	0	0	0	0
1:15 PM	2	43	0	0	0	34	9	0	0	0	0	0	11	0	10	0	109	0	0	0	0
1:30 PM	2	27	0	0	0	42	15	0	0	0	0	0	10	0	10	0	106	0	0	0	0
1:45 PM	1	37	0	0	0	47	13	0	0	0	0	0	11	1	15	0	125	0	0	0	0
Total Survey	28	338	0	1	0	398	105	0	0	0	0	0	86	3	150	0	1,108	0	0	0	0

Peak Hour Summary
12:00 PM to 1:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	199	261	460	1	273	281	554	0	0	79	79	0	149	0	149	0	621	0	0	0	0
%HV	10.1%				7.7%				0.0%				16.8%				10.6%				
PHF	0.84				0.85				0.00				0.70				0.88				

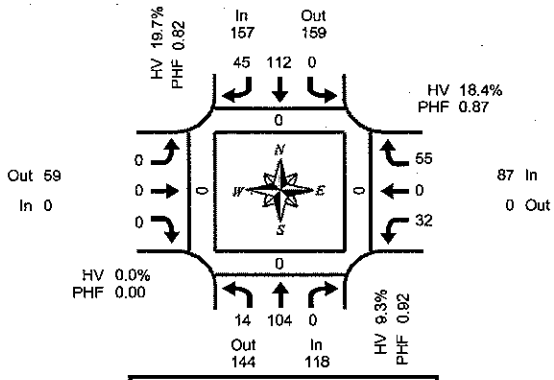
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	19	180	0	199	0	215	58	273	0	0	0	0	46	2	101	149	621
%HV	15.8%	9.4%	0.0%	10.1%	0.0%	5.6%	15.5%	7.7%	0.0%	0.0%	0.0%	0.0%	15.2%	#####	15.8%	16.8%	10.6%
PHF	0.68	0.85	0.00	0.84	0.00	0.81	0.81	0.85	0.00	0.00	0.00	0.00	0.64	0.25	0.77	0.70	0.88

Rolling Hour Summary
12:00 PM to 2:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
12:00 PM	19	180	0	1	0	215	58	0	0	0	0	0	46	2	101	0	621	0	0	0	0
12:15 PM	18	193	0	1	0	209	54	0	0	0	0	0	36	0	82	0	592	0	0	0	0
12:30 PM	14	183	0	1	0	194	47	0	0	0	0	0	36	0	66	0	540	0	0	0	0
12:45 PM	15	166	0	1	0	189	52	0	0	0	0	0	38	0	60	0	520	0	0	0	0
1:00 PM	9	158	0	0	0	183	47	0	0	0	0	0	40	1	49	0	487	0	0	0	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
9:00 AM to 10:00 AM

Main St & I-84 WB Ramps

Tuesday, September 19, 2006
8:00 AM to 10:00 AM

15-Minute Interval Summary
8:00 AM to 10:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 AM	5	30	0	0	0	31	9	0	0	0	0	0	8	0	11	0	94	0	0	1	0
8:15 AM	1	27	0	0	0	31	9	0	0	0	0	0	9	0	11	0	88	0	0	0	0
8:30 AM	3	29	0	0	0	26	7	1	0	0	0	0	8	0	8	0	81	0	0	0	0
8:45 AM	2	28	0	1	0	23	8	0	0	0	0	0	6	1	12	0	80	0	0	0	0
9:00 AM	5	25	0	0	0	27	10	0	0	0	0	0	9	0	15	0	91	0	0	0	0
9:15 AM	4	28	0	0	0	29	9	0	0	0	0	0	8	0	17	0	95	0	0	0	0
9:30 AM	4	20	0	0	0	28	6	1	0	0	0	0	7	0	10	0	75	0	0	0	0
9:45 AM	1	31	0	0	0	28	20	0	0	0	0	0	8	0	13	0	101	0	0	0	0
Total Survey	25	218	0	1	0	223	78	2	0	0	0	0	63	1	97	0	705	0	0	1	0

Peak Hour Summary
9:00 AM to 10:00 AM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	118	144	262	0	157	159	316	1	0	59	59	0	87	0	87	0	362	0	0	0	0
%HV	9.3%				19.7%				0.0%				18.4%				16.0%				
PHF	0.92				0.82				0.00				0.87				0.90				

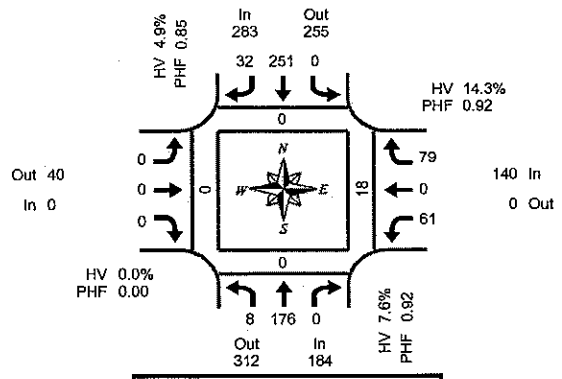
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	14	104	0	118	0	112	45	157	0	0	0	0	32	0	55	87	362
%HV	42.9%	4.8%	0.0%	9.3%	0.0%	11.6%	40.0%	19.7%	0.0%	0.0%	0.0%	0.0%	9.4%	0.0%	23.6%	18.4%	16.0%
PHF	0.70	0.84	0.00	0.92	0.00	0.97	0.56	0.82	0.00	0.00	0.00	0.00	0.89	0.00	0.81	0.87	0.90

Rolling Hour Summary
8:00 AM to 10:00 AM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
8:00 AM	11	114	0	1	0	111	33	1	0	0	0	0	31	1	42	0	343	0	0	1	0
8:15 AM	11	109	0	1	0	107	34	1	0	0	0	0	32	1	46	0	340	0	0	0	0
8:30 AM	14	110	0	1	0	105	34	1	0	0	0	0	31	1	52	0	347	0	0	0	0
8:45 AM	15	101	0	1	0	107	33	1	0	0	0	0	30	1	54	0	341	0	0	0	0
9:00 AM	14	104	0	0	0	112	45	1	0	0	0	0	32	0	55	0	362	0	0	0	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Main St & I-84 WB Ramps

Tuesday, September 19, 2006
2:00 PM to 4:00 PM

Peak Hour Summary
3:00 PM to 4:00 PM

15-Minute Interval Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
2:00 PM	2	38	0	0	0	62	11	0	0	0	0	0	14	0	11	0	138	0	0	0	0
2:15 PM	2	36	0	0	0	46	11	0	0	0	0	0	10	0	18	0	123	0	0	0	0
2:30 PM	1	51	0	0	0	39	8	0	0	0	0	0	16	0	13	0	128	0	0	0	0
2:45 PM	4	48	0	0	0	24	9	1	0	0	0	0	12	1	16	0	114	0	0	0	0
3:00 PM	3	42	0	0	0	73	10	0	0	0	0	0	13	0	19	0	160	0	0	14	0
3:15 PM	1	41	0	0	0	63	4	0	0	0	0	0	13	0	25	0	147	0	0	3	0
3:30 PM	1	49	0	0	0	61	10	1	0	0	0	0	16	0	19	0	156	0	0	1	0
3:45 PM	3	44	0	0	0	54	8	0	0	0	0	0	19	0	16	0	144	0	0	0	0
Total Survey	17	349	0	0	0	422	71	2	0	0	0	0	113	1	137	0	1,110	0	0	18	0

Peak Hour Summary
3:00 PM to 4:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	184	312	496	0	283	255	538	1	0	40	40	0	140	0	140	0	607
%HV	7.6%				4.9%				0.0%				14.3%				7.9%
PHF	0.92				0.85				0.00				0.92				0.95

Pedestrians Crosswalk			
North	South	East	West
0	0	18	0

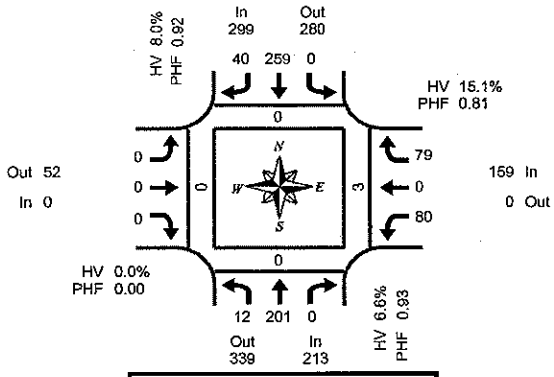
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	8	176	0	184	0	251	32	283	0	0	0	0	61	0	79	140	607
%HV	37.5%	6.3%	0.0%	7.6%	0.0%	3.6%	15.6%	4.9%	0.0%	0.0%	0.0%	0.0%	11.5%	0.0%	16.5%	14.3%	7.9%
PHF	0.67	0.90	0.00	0.92	0.00	0.86	0.80	0.85	0.00	0.00	0.00	0.00	0.80	0.00	0.79	0.92	0.95

Rolling Hour Summary
2:00 PM to 4:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
2:00 PM	9	173	0	0	0	171	39	1	0	0	0	0	52	1	58	0	503	0	0	0	0
2:15 PM	10	177	0	0	0	182	38	1	0	0	0	0	51	1	66	0	525	0	0	14	0
2:30 PM	9	182	0	0	0	199	31	1	0	0	0	0	54	1	73	0	549	0	0	17	0
2:45 PM	9	180	0	0	0	221	33	2	0	0	0	0	54	1	79	0	577	0	0	18	0
3:00 PM	8	176	0	0	0	251	32	1	0	0	0	0	61	0	79	0	607	0	0	18	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:00 PM to 5:00 PM

Main St & I-84 WB Ramps

Tuesday, September 19, 2006
4:00 PM to 6:00 PM

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	3	47	0	0	0	66	9	0	0	0	0	0	24	0	25	0	174	0	0	0	0
4:15 PM	5	52	0	0	0	63	10	0	0	0	0	0	14	0	19	0	163	0	0	3	0
4:30 PM	2	47	0	0	0	59	11	1	0	0	0	0	18	0	17	0	154	0	0	0	0
4:45 PM	2	55	0	0	0	71	10	0	0	0	0	0	24	0	18	0	180	0	0	0	0
5:00 PM	4	38	0	0	0	81	9	0	0	0	0	0	19	0	15	0	166	0	0	4	0
5:15 PM	4	47	0	0	0	51	10	0	0	0	0	0	17	1	23	0	153	0	0	2	0
5:30 PM	5	43	0	2	0	45	14	0	0	0	0	0	17	0	17	0	141	0	0	4	0
5:45 PM	1	45	0	0	0	82	3	0	0	0	0	0	21	0	15	0	167	0	0	4	0
Total Survey	26	374	0	2	0	518	76	1	0	0	0	0	154	1	149	0	1,298	0	0	17	0

Peak Hour Summary
4:00 PM to 5:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	213	339	552	0	299	280	579	1	0	52	52	0	159	0	159	0	671	0	0	3	0
%HV	6.6%				8.0%				0.0%				15.1%				9.2%				
PHF	0.93				0.92				0.00				0.81				0.93				

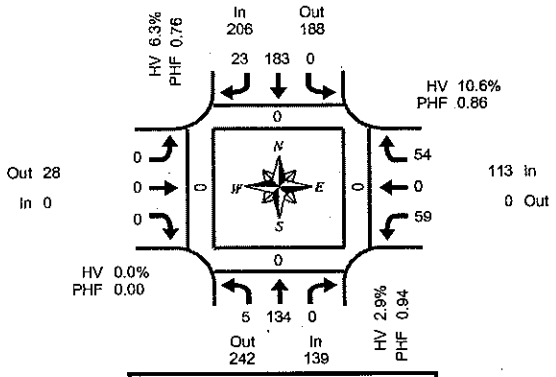
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	12	201	0	213	0	259	40	299	0	0	0	0	80	0	79	159	671
%HV	25.0%	5.5%	0.0%	6.6%	0.0%	3.1%	40.0%	8.0%	0.0%	0.0%	0.0%	0.0%	11.3%	0.0%	19.0%	15.1%	9.2%
PHF	0.60	0.91	0.00	0.93	0.00	0.91	0.91	0.92	0.00	0.00	0.00	0.00	0.83	0.00	0.79	0.81	0.93

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	12	201	0	0	0	259	40	1	0	0	0	0	80	0	79	0	671	0	0	3	0
4:15 PM	13	192	0	0	0	274	40	1	0	0	0	0	75	0	69	0	663	0	0	7	0
4:30 PM	12	187	0	0	0	262	40	1	0	0	0	0	78	1	73	0	653	0	0	6	0
4:45 PM	15	183	0	2	0	248	43	0	0	0	0	0	77	1	73	0	640	0	0	10	0
5:00 PM	14	173	0	2	0	259	36	0	0	0	0	0	74	1	70	0	627	0	0	14	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
6:00 PM to 7:00 PM

Main St & I-84 WB Ramps

Tuesday, September 19, 2006
6:00 PM to 8:00 PM

15-Minute Interval Summary
6:00 PM to 8:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
6:00 PM	1	36	0	0	0	62	6	0	0	0	0	0	6	0	24	0	135	0	0	0	0
6:15 PM	1	30	0	0	0	31	6	0	0	0	0	0	15	0	13	0	96	0	0	0	0
6:30 PM	2	33	0	0	0	40	9	0	0	0	0	0	19	0	14	0	117	0	0	0	0
6:45 PM	1	36	0	0	0	50	2	0	0	0	0	0	19	0	3	0	110	0	0	0	0
7:00 PM	1	40	0	0	0	49	3	0	0	0	0	0	12	0	16	0	121	0	0	0	0
7:15 PM	0	39	0	0	0	45	1	0	0	0	0	0	12	0	4	0	101	0	0	0	0
7:30 PM	1	22	0	0	0	26	5	0	0	0	0	0	19	0	11	0	84	0	0	0	0
7:45 PM	2	17	0	0	0	24	2	0	0	0	0	0	12	0	7	0	64	0	0	0	0
Total Survey	9	252	0	0	0	327	34	0	0	0	0	0	114	0	92	0	828	0	0	0	0

Peak Hour Summary
6:00 PM to 7:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	139	242	381	0	206	188	394	0	0	28	28	0	113	0	113	0	458	0	0	0	0
%HV	2.9%				6.3%				0.0%				10.6%				6.3%				
PHF	0.94				0.76				0.00				0.86				0.85				

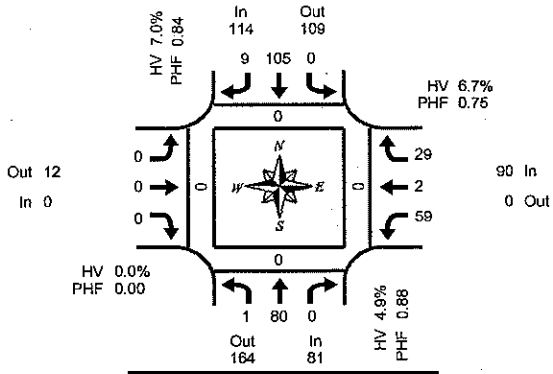
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	5	134	0	139	0	183	23	206	0	0	0	0	59	0	54	113	458
%HV	20.0%	2.2%	0.0%	2.9%	0.0%	4.4%	21.7%	6.3%	0.0%	0.0%	0.0%	0.0%	11.9%	0.0%	9.3%	10.6%	6.3%
PHF	0.63	0.93	0.00	0.94	0.00	0.74	0.64	0.76	0.00	0.00	0.00	0.00	0.78	0.00	0.56	0.86	0.85

Rolling Hour Summary
6:00 PM to 8:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
6:00 PM	5	134	0	0	0	183	23	0	0	0	0	0	59	0	54	0	458	0	0	0	0
6:15 PM	5	138	0	0	0	170	20	0	0	0	0	0	65	0	46	0	444	0	0	0	0
6:30 PM	4	147	0	0	0	184	15	0	0	0	0	0	62	0	37	0	449	0	0	0	0
6:45 PM	3	136	0	0	0	170	11	0	0	0	0	0	62	0	34	0	416	0	0	0	0
7:00 PM	4	118	0	0	0	144	11	0	0	0	0	0	55	0	38	0	370	0	0	0	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
8:30 PM to 9:30 PM

Main St & I-84 WB Ramps

Tuesday, September 19, 2006
8:00 PM to 10:00 PM

15-Minute Interval Summary
8:00 PM to 10:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	
8:00 PM	1	12	0	0	0	17	4	0	0	0	0	0	24	0	5	0	63
8:15 PM	0	12	0	0	0	20	0	0	0	0	0	0	11	0	2	0	45
8:30 PM	0	23	0	0	0	30	4	0	0	0	0	0	17	2	11	0	87
8:45 PM	1	19	0	0	0	25	2	0	0	0	0	0	11	0	6	0	64
9:00 PM	0	19	0	0	0	28	2	0	0	0	0	0	14	0	5	0	68
9:15 PM	0	19	0	0	0	22	1	0	0	0	0	0	17	0	7	0	66
9:30 PM	0	22	0	0	0	26	4	0	0	0	0	0	15	0	2	0	69
9:45 PM	1	20	0	0	0	25	2	0	0	0	0	0	13	0	6	0	67
Total Survey	3	146	0	0	0	193	19	0	0	0	0	0	122	2	44	0	529

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0
0	0	2	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	2	0

Peak Hour Summary
8:30 PM to 9:30 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	81	164	245	0	114	109	223	0	0	12	12	0	90	0	90	0	285
%HV	4.9%				7.0%				0.0%				6.7%				6.3%
PHF	0.88				0.84				0.00				0.75				0.82

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0

By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	80	0	81	0	105	9	114	0	0	0	0	59	2	29	90	285
%HV	0.0%	5.0%	0.0%	4.9%	0.0%	6.7%	11.1%	7.0%	0.0%	0.0%	0.0%	0.0%	3.4%	#####	6.9%	6.7%	6.3%
PHF	0.25	0.87	0.00	0.88	0.00	0.88	0.56	0.84	0.00	0.00	0.00	0.00	0.87	0.25	0.66	0.75	0.82

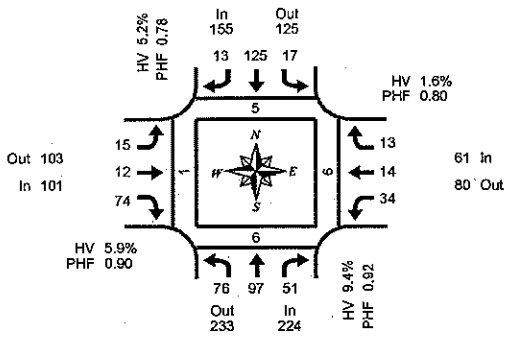
Rolling Hour Summary
8:00 PM to 10:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Interval Total
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	
8:00 PM	2	66	0	0	0	92	10	0	0	0	0	0	63	2	24	0	259
8:15 PM	1	73	0	0	0	103	8	0	0	0	0	0	53	2	24	0	264
8:30 PM	1	80	0	0	0	105	9	0	0	0	0	0	59	2	29	0	285
8:45 PM	1	79	0	0	0	101	9	0	0	0	0	0	57	0	20	0	267
9:00 PM	1	80	0	0	0	101	9	0	0	0	0	0	59	0	20	0	270

Pedestrians Crosswalk			
North	South	East	West
0	0	2	0
0	0	2	0
0	0	0	0
0	0	0	0
0	0	0	0

Total Vehicle Summary

All Traffic Data
Services Inc
Clay Carney
(503) 833-2740



Main St & Boardman Ave

Tuesday, September 19, 2006
4:00 PM to 6:00 PM

Peak Hour Summary
4:00 PM to 5:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Boardman Ave				Westbound Boardman Ave				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	7	7	6	0	1	10	0	0	1	2	6	0	2	1	1	0	44	0	0	1	0
4:05 PM	12	10	5	0	1	16	0	0	0	1	5	0	4	0	0	0	54	0	0	0	0
4:10 PM	4	7	3	0	2	11	1	0	0	2	10	0	4	1	0	0	45	0	0	0	0
4:15 PM	5	8	6	0	3	13	3	0	0	0	7	1	2	0	2	0	49	0	2	1	0
4:20 PM	6	7	3	0	0	8	0	0	1	1	7	0	5	2	3	1	43	1	2	2	0
4:25 PM	6	9	3	0	2	10	0	0	4	3	4	0	0	0	1	0	42	2	0	0	0
4:30 PM	5	8	2	0	3	7	3	0	2	0	4	0	3	2	1	0	40	0	0	0	0
4:35 PM	5	7	4	0	0	12	2	0	2	1	7	0	1	1	1	0	43	0	1	0	0
4:40 PM	6	9	7	0	1	11	2	0	1	1	5	0	2	1	4	0	50	1	0	0	0
4:45 PM	7	8	3	0	2	10	1	0	0	0	7	1	2	3	0	0	43	0	0	0	0
4:50 PM	9	9	2	0	1	6	1	0	1	1	9	0	1	3	0	0	43	1	1	0	1
4:55 PM	4	8	7	0	1	11	0	0	3	0	3	0	8	0	0	0	45	0	0	2	0
5:00 PM	6	5	4	0	1	13	1	0	1	1	2	1	6	2	1	0	43	0	0	0	0
5:05 PM	3	7	2	0	0	7	1	0	0	1	2	0	3	2	0	0	28	0	0	0	3
5:10 PM	2	3	3	0	2	10	0	0	0	0	9	0	3	3	2	2	37	0	3	0	3
5:15 PM	4	5	5	0	0	10	0	0	2	1	6	0	3	1	2	0	39	0	0	0	0
5:20 PM	3	7	4	0	1	5	0	0	1	1	4	0	6	2	1	0	35	0	0	0	0
5:25 PM	4	2	2	0	0	3	1	0	0	0	2	0	4	3	0	0	21	0	0	0	0
5:30 PM	1	6	6	1	2	7	1	0	1	2	6	0	9	1	2	0	44	0	0	0	0
5:35 PM	3	7	3	0	0	6	0	0	1	1	2	0	7	2	0	0	32	0	0	0	0
5:40 PM	1	5	2	0	0	5	1	0	0	0	2	0	5	1	1	0	23	0	0	0	0
5:45 PM	3	3	3	0	0	9	0	0	2	1	9	0	12	0	1	0	43	0	0	0	0
5:50 PM	6	6	5	0	0	4	2	0	0	0	4	0	6	0	3	0	36	2	0	0	2
5:55 PM	2	6	9	0	2	9	3	0	0	3	6	0	6	3	0	0	49	0	0	0	0
Total Survey	114	159	99	1	25	213	23	0	23	23	128	3	104	34	26	3	971	7	9	6	9

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Boardman Ave				Westbound Boardman Ave				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	23	24	14	0	4	37	1	0	1	5	21	0	10	2	1	0	143	0	0	1	0
4:15 PM	17	24	12	0	5	31	3	0	5	4	18	1	7	2	6	1	134	3	4	3	0
4:30 PM	16	24	13	0	4	30	7	0	5	2	16	0	6	4	6	0	133	1	1	0	0
4:45 PM	20	25	12	0	4	27	2	0	4	1	19	1	11	6	0	0	131	1	1	2	1
5:00 PM	11	15	9	0	3	30	2	0	1	2	13	1	12	7	3	2	108	0	3	0	6
5:15 PM	11	14	11	0	1	18	1	0	3	2	12	0	13	6	3	0	95	0	0	0	0
5:30 PM	5	18	11	1	2	18	2	0	2	3	10	0	21	4	3	0	99	0	0	0	0
5:45 PM	11	15	17	0	2	22	5	0	2	4	19	0	24	3	4	0	128	2	0	0	2
Total Survey	114	159	99	1	25	213	23	0	23	23	128	3	104	34	26	3	971	7	9	6	9

Peak Hour Summary
4:00 PM to 5:00 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound Boardman Ave				Westbound Boardman Ave				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	224	233	457	0	155	125	280	0	101	103	204	2	61	80	141	1	541	5	6	6	1
%HV	9.4%				5.2%				5.9%				1.6%				6.7%				
PHF	0.92				0.78				0.90				0.80				0.91				

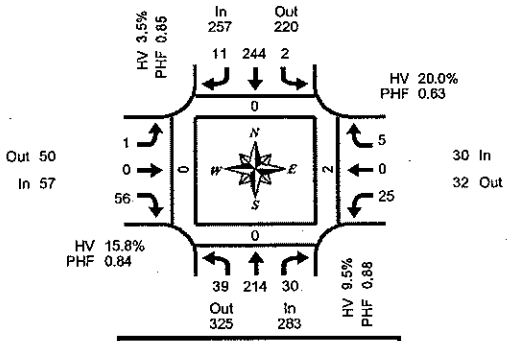
By Movement	Northbound Main St				Southbound Main St				Eastbound Boardman Ave				Westbound Boardman Ave				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	76	97	51	224	17	125	13	155	15	12	74	101	34	14	13	61	541
%HV	5.3%	9.3%	15.7%	9.4%	0.0%	3.2%	30.8%	5.2%	0.0%	8.3%	6.8%	5.9%	2.9%	0.0%	0.0%	1.6%	6.7%
PHF	0.83	0.93	0.91	0.92	0.71	0.78	0.46	0.78	0.47	0.60	0.77	0.90	0.77	0.50	0.54	0.80	0.91

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Boardman Ave				Westbound Boardman Ave				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	76	97	51	0	17	125	13	0	15	12	74	2	34	14	13	1	541	5	6	6	1
4:15 PM	64	88	46	0	16	118	14	0	15	9	66	3	36	19	15	3	506	5	9	5	7
4:30 PM	58	78	45	0	12	105	12	0	13	7	60	2	42	23	12	2	467	2	5	2	7
4:45 PM	47	72	43	1	10	93	7	0	10	8	54	2	57	23	9	2	433	1	4	2	7
5:00 PM	38	62	48	1	8	88	10	0	8	11	54	1	70	20	13	2	430	2	3	0	8

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:05 PM to 5:05 PM

Main St & Front St NW

Tuesday, September 19, 2006
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Front St NW				Westbound Front St NW				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	15	2	0	0	12	0	0	1	0	4	0	0	0	0	0	34	0	0	0	0
4:05 PM	2	20	4	0	0	22	0	0	0	0	2	0	2	0	0	0	52	0	0	0	0
4:10 PM	3	21	1	0	0	30	2	0	0	0	6	0	5	0	0	0	68	0	0	0	0
4:15 PM	3	25	0	0	0	19	0	0	0	0	7	0	0	0	0	0	54	0	0	0	0
4:20 PM	6	18	3	0	0	25	0	0	0	0	3	0	1	0	1	0	57	0	0	1	0
4:25 PM	4	12	1	0	0	15	0	1	0	0	5	0	0	0	2	0	39	0	0	0	0
4:30 PM	3	17	2	0	0	17	3	0	1	0	6	0	4	0	0	0	53	0	0	0	0
4:35 PM	2	18	4	0	0	19	2	0	0	0	2	0	1	0	0	0	48	0	0	0	0
4:40 PM	2	18	1	0	0	17	1	0	0	0	2	0	1	0	0	0	42	0	0	0	0
4:45 PM	1	18	3	0	1	19	0	0	0	0	7	0	1	0	0	0	50	0	0	0	0
4:50 PM	4	17	6	0	0	20	2	0	0	0	2	0	3	0	1	0	55	0	0	0	0
4:55 PM	6	15	2	0	1	15	0	0	0	0	8	0	4	0	1	0	52	0	0	0	0
5:00 PM	3	15	3	0	0	26	1	0	0	0	6	0	3	0	0	0	57	0	0	1	0
5:05 PM	3	15	3	0	0	18	1	0	0	3	6	0	1	0	0	0	48	0	0	0	0
5:10 PM	0	10	4	0	0	25	1	0	0	0	6	0	2	0	0	0	48	0	0	0	1
5:15 PM	1	12	2	0	1	20	1	0	0	0	3	0	1	0	0	0	41	0	0	0	1
5:20 PM	8	18	6	0	0	12	0	0	1	0	2	0	3	0	1	0	51	0	0	0	0
5:25 PM	3	20	3	0	0	13	0	0	0	1	5	0	3	0	0	0	48	0	0	1	0
5:30 PM	2	8	1	2	0	13	1	0	0	0	2	0	2	0	0	0	29	0	0	0	0
5:35 PM	4	17	3	0	1	7	1	0	0	0	5	0	1	0	0	0	39	0	0	0	0
5:40 PM	1	16	4	0	0	23	0	0	0	0	4	0	2	1	1	0	52	0	0	4	0
5:45 PM	5	12	3	0	0	22	0	0	0	0	4	0	4	1	1	0	52	0	0	2	0
5:50 PM	3	14	3	0	1	18	2	0	0	1	0	0	4	0	2	0	48	0	0	0	0
5:55 PM	2	12	3	0	0	24	1	0	0	1	3	0	1	0	0	0	47	0	0	0	0
Total Survey	71	383	67	2	5	449	19	1	3	6	100	0	49	2	10	0	1,164	0	0	9	2

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Front St NW				Westbound Front St NW				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	5	56	7	0	0	64	2	0	1	0	12	0	7	0	0	0	154	0	0	0	0
4:15 PM	13	55	4	0	0	59	0	1	0	0	15	0	1	0	3	0	150	0	0	1	0
4:30 PM	7	53	7	0	0	53	6	0	1	0	10	0	6	0	0	0	143	0	0	0	0
4:45 PM	11	50	11	0	2	54	2	0	0	0	17	0	8	0	2	0	157	0	0	0	0
5:00 PM	6	40	10	0	0	67	3	0	0	3	18	0	6	0	0	0	153	0	0	1	1
5:15 PM	12	50	11	0	1	45	1	0	1	1	10	0	7	0	1	0	140	0	0	1	1
5:30 PM	7	41	8	2	1	43	2	0	0	0	11	0	5	1	1	0	120	0	0	4	0
5:45 PM	10	38	9	0	1	64	3	0	0	2	7	0	9	1	3	0	147	0	0	2	0
Total Survey	71	383	67	2	5	449	19	1	3	6	100	0	49	2	10	0	1,164	0	0	9	2

Peak Hour Summary
4:05 PM to 5:05 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound Front St NW				Westbound Front St NW				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	283	325	608	0	257	220	477	1	57	50	107	0	30	32	62	0	627	0	0	2	0
%HV	9.5%				3.5%				15.8%				20.0%				8.1%				
PHF	0.88				0.85				0.84				0.63				0.88				

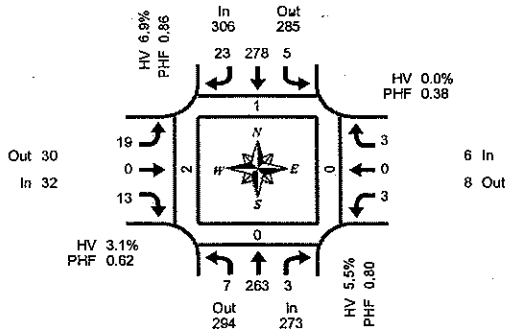
By Movement	Northbound Main St				Southbound Main St				Eastbound Front St NW				Westbound Front St NW				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	39	214	30	283	2	244	11	257	1	0	56	57	25	0	5	30	627
%HV	5.1%	9.3%	16.7%	9.5%	0.0%	3.7%	0.0%	3.5%	0.0%	0.0%	16.1%	15.8%	20.0%	0.0%	20.0%	20.0%	8.1%
PHF	0.75	0.81	0.68	0.88	0.25	0.82	0.46	0.85	0.25	0.00	0.82	0.84	0.63	0.00	0.42	0.63	0.88

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Front St NW				Westbound Front St NW				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	36	214	29	0	2	230	10	1	2	0	54	0	22	0	5	0	604	0	0	1	0
4:15 PM	37	198	32	0	2	233	11	1	1	3	60	0	21	0	5	0	603	0	0	2	1
4:30 PM	36	193	39	0	3	219	12	0	2	4	55	0	27	0	3	0	593	0	0	2	2
4:45 PM	36	181	40	2	4	209	8	0	1	4	56	0	26	1	4	0	570	0	0	6	2
5:00 PM	35	169	38	2	3	219	9	0	1	6	46	0	27	2	5	0	560	0	0	8	2

Total Vehicle Summary

All Traffic Data Services Inc
Clay Carney
(503) 833-2740



Peak Hour Summary
4:05 PM to 5:05 PM

Main St & Front St SW

Tuesday, September 19, 2006
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Front St SW				Westbound Front St SW				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	21	0	0	0	20	1	0	2	0	0	0	0	0	1	0	45	0	0	0	0
4:05 PM	0	20	1	0	0	32	0	0	0	0	1	0	0	0	0	0	54	0	0	0	0
4:10 PM	0	22	1	0	0	24	3	0	1	0	1	0	0	0	0	0	52	0	0	0	0
4:15 PM	1	33	0	0	1	24	5	0	4	0	3	0	0	0	0	0	71	0	0	0	0
4:20 PM	0	22	0	0	0	15	1	1	0	0	4	0	1	0	0	0	43	1	0	0	2
4:25 PM	1	28	0	0	3	17	0	0	1	0	0	0	1	0	2	0	53	0	0	0	0
4:30 PM	0	15	1	0	1	18	3	0	0	0	0	0	0	0	0	0	38	0	0	0	0
4:35 PM	0	21	0	0	0	22	1	0	3	0	1	0	0	0	1	0	49	0	0	0	0
4:40 PM	2	21	0	0	0	19	1	0	2	0	0	0	1	0	0	0	46	0	0	0	0
4:45 PM	1	19	0	0	0	30	1	0	3	0	2	0	0	0	0	0	56	0	0	0	0
4:50 PM	1	18	0	0	0	22	3	0	1	0	1	0	0	0	0	0	46	0	0	0	0
4:55 PM	1	23	0	0	0	22	4	0	0	0	0	0	0	0	0	0	50	0	0	0	0
5:00 PM	0	21	0	0	0	33	1	0	4	0	0	0	0	0	0	0	59	0	0	0	0
5:05 PM	0	30	1	0	1	18	1	0	0	0	0	0	1	0	1	0	53	0	0	0	0
5:10 PM	0	12	0	0	0	34	0	0	0	0	0	0	0	0	0	0	46	0	0	0	0
5:15 PM	0	17	0	0	0	23	2	0	2	0	0	0	0	0	0	0	44	0	0	0	0
5:20 PM	1	18	0	0	2	18	1	0	1	0	0	0	0	0	0	0	41	0	0	0	1
5:25 PM	0	15	0	0	1	13	0	0	0	0	0	0	0	0	0	0	29	0	0	0	0
5:30 PM	0	23	0	1	0	18	1	0	0	0	0	0	0	0	1	0	43	0	0	0	0
5:35 PM	1	11	0	0	0	14	1	0	1	0	0	0	0	0	2	0	30	0	0	0	0
5:40 PM	4	23	0	0	0	19	2	0	3	0	0	0	0	1	0	0	52	0	0	0	0
5:45 PM	0	15	2	0	1	35	2	0	2	0	0	0	0	0	0	0	57	0	0	0	0
5:50 PM	2	15	0	0	1	18	3	0	2	0	1	0	2	0	0	0	44	0	0	0	0
5:55 PM	0	21	0	0	0	29	2	0	1	0	0	0	1	0	0	0	54	0	0	0	0
Total Survey	15	484	6	1	11	537	39	1	33	0	14	0	7	1	8	0	1,155	1	0	0	3

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Front St SW				Westbound Front St SW				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	63	2	0	0	76	4	0	3	0	2	0	0	0	1	0	151	0	0	0	0
4:15 PM	2	83	0	0	4	56	6	1	5	0	7	0	2	0	2	0	167	1	0	0	2
4:30 PM	2	57	1	0	1	59	5	0	5	0	1	0	1	0	1	0	133	0	0	0	0
4:45 PM	3	60	0	0	0	74	8	0	4	0	3	0	0	0	0	0	152	0	0	0	0
5:00 PM	0	63	1	0	1	85	2	0	4	0	0	0	1	0	1	0	158	0	0	0	0
5:15 PM	1	50	0	0	3	54	3	0	3	0	0	0	0	0	0	0	114	0	0	0	1
5:30 PM	5	57	0	1	0	51	4	0	4	0	0	0	0	1	3	0	125	0	0	0	0
5:45 PM	2	51	2	0	2	82	7	0	5	0	1	0	3	0	0	0	155	0	0	0	0
Total Survey	15	484	6	1	11	537	39	1	33	0	14	0	7	1	8	0	1,155	1	0	0	3

Peak Hour Summary
4:05 PM to 5:05 PM

By Approach	Northbound Main St				Southbound Main St				Eastbound Front St SW				Westbound Front St SW				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	273	294	567	0	306	285	591	1	32	30	62	0	6	8	14	0	617	1	0	0	2
%HV	5.5%				6.9%				3.1%				0.0%				6.0%				
PHF	0.80				0.86				0.62				0.38				0.87				

By Movement	Northbound Main St				Southbound Main St				Eastbound Front St SW				Westbound Front St SW				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	7	263	3	273	5	278	23	306	19	0	13	32	3	0	3	6	617
%HV	0.0%	5.7%	0.0%	5.5%	80.0%	4.7%	17.4%	6.9%	0.0%	0.0%	7.7%	3.1%	0.0%	0.0%	0.0%	0.0%	6.0%
PHF	0.44	0.79	0.38	0.80	0.31	0.87	0.64	0.86	0.59	0.00	0.41	0.62	0.38	0.00	0.25	0.38	0.87

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Front St SW				Westbound Front St SW				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	7	263	3	0	5	265	23	1	17	0	13	0	3	0	4	0	603	1	0	0	2
4:15 PM	7	263	2	0	6	274	21	1	18	0	11	0	4	0	4	0	610	1	0	0	2
4:30 PM	6	230	2	0	5	272	18	0	16	0	4	0	2	0	2	0	557	0	0	0	1
4:45 PM	9	230	1	1	4	264	17	0	15	0	3	0	1	1	4	0	549	0	0	0	1
5:00 PM	8	221	3	1	6	272	16	0	16	0	1	0	4	1	4	0	552	0	0	0	1

Appendix 4
Operational Analysis

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Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 2 Front S @ Main	B	13.7	0.000	B	13.7	0.000	+ 0.000 D/V
# 3 I84 EB Ramps @ Main	B	13.9	0.000	B	13.9	0.000	+ 0.000 D/V
# 4 I84 WB Ramps @ Main	B	13.4	0.000	B	13.4	0.000	+ 0.000 D/V
# 5 Front N @ Main	C	16.9	0.000	C	16.9	0.000	+ 0.000 D/V
# 6 Boardman @ Main	B	14.4	0.000	B	14.4	0.000	+ 0.000 D/V

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Front S @ Main

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: B[13.7]

Street Name:	Main						Front S					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			1 0 0 1 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	10	265	5	5	280	25	20	0	15	5	0	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	265	5	5	280	25	20	0	15	5	0	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
PHF Volume:	11	305	6	6	322	29	23	0	17	6	0	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	11	305	6	6	322	29	23	0	17	6	0	6
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.2	xxxx	xxxxx	7.1	xxxx	6.2	7.1	xxxx	6.2
FollowUpTim:	2.3	xxxx	xxxxx	2.3	xxxx	xxxxx	3.5	xxxx	3.3	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	351	xxxx	xxxxx	310	xxxx	xxxxx	681	xxxx	336	687	xxxx	307
Potent Cap.:	1186	xxxx	xxxxx	1222	xxxx	xxxxx	363	xxxx	704	364	xxxx	737
Move Cap.:	1186	xxxx	xxxxx	1222	xxxx	xxxxx	356	xxxx	704	351	xxxx	737
Volume/Cap:	0.01	xxxx	xxxx	0.00	xxxx	xxxx	0.06	xxxx	0.02	0.02	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.1	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	452	xxxxx	xxxx	476	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	13.7	xxxxx	xxxxx	12.8	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			13.7			12.8		
ApproachLOS:	*			*			B			B		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 I84 EB Ramps @ Main

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[13.9]

Street Name:	Main						I84 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 1! 0 0			0 0 0 0 0		
Volume Module:												
Base Vol:	0	180	105	70	285	0	25	0	20	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	180	105	70	285	0	25	0	20	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	189	111	74	300	0	26	0	21	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	189	111	74	300	0	26	0	21	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	6.7	xxxx	6.5	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.8	xxxx	3.6	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	300	xxxx	xxxxx	692	xxxx	300	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1244	xxxx	xxxxx	372	xxxx	680	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1244	xxxx	xxxxx	354	xxxx	680	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.06	xxxx	xxxx	0.07	xxxx	0.03	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	450	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx	xxxxx	13.9	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	B	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			13.9			xxxxxx		
ApproachLOS:	*			*			B			*		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 I84 WB Ramps @ Main

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: B[13.4]

Street Name:	Main						I84 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0 0	0	0 0 0	1 0		0 0 0	0 0		0 0 1!	0 0	
Volume Module:												
Base Vol:	10	200	0	0	260	40	0	0	0	80	0	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	200	0	0	260	40	0	0	0	80	0	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	11	215	0	0	280	43	0	0	0	86	0	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	11	215	0	0	280	43	0	0	0	86	0	86
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.6	xxxx	6.4
FollowUpTim:	2.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.6	xxxx	3.4
Capacity Module:												
Cnflict Vol:	323	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	538	xxxx	215
Potent Cap.:	1210	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	483	xxxx	793
Move Cap.:	1210	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	479	xxxx	793
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.18	xxxx	0.11
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	598	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.2	xxxxx
Shrd ConDel:	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	13.4	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			13.4		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Front N @ Main

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: C[16.9]

Street Name:	Main						Front N					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0	1 0		1 0 0	1 0		0 0 1!	0 0		0 0 1!	0 0	
Volume Module:												
Base Vol:	40	215	30	5	245	10	5	0	55	25	0	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	215	30	5	245	10	5	0	55	25	0	5
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	45	244	34	6	278	11	6	0	63	28	0	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	45	244	34	6	278	11	6	0	63	28	0	6
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.1	xxxx	xxxxx	7.3	xxxx	6.4	7.3	xxxx	6.4
FollowUpTim:	2.3	xxxx	xxxxx	2.2	xxxx	xxxxx	3.6	xxxx	3.4	3.7	xxxx	3.5
Capacity Module:												
Cnflict Vol:	290	xxxx	xxxxx	278	xxxx	xxxxx	651	xxxx	284	679	xxxx	261
Potent Cap.:	1228	xxxx	xxxxx	1273	xxxx	xxxxx	363	xxxx	723	342	xxxx	736
Move Cap.:	1228	xxxx	xxxxx	1273	xxxx	xxxxx	349	xxxx	723	303	xxxx	736
Volume/Cap:	0.04	xxxx	xxxx	0.00	xxxx	xxxx	0.02	xxxx	0.09	0.09	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.0	xxxx	xxxxx	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	663	xxxxx	xxxx	336	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	0.3	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.0	xxxxx	xxxxx	16.9	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			11.0			16.9		
ApproachLOS:	*			*			B			C		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 Boardman @ Main

Average Delay (sec/veh): 5.0 Worst Case Level Of Service: B[14.4]

Street Name:	Main						Boardman					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0	1 0		0 1 0	0 1		0 0	1! 0 0		0 0	1! 0 0	
Volume Module:												
Base Vol:	75	100	50	20	125	15	15	10	75	35	15	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	100	50	20	125	15	15	10	75	35	15	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	82	110	55	22	137	16	16	11	82	38	16	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	82	110	55	22	137	16	16	11	82	38	16	16
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.1	xxxx	xxxxx	7.2	6.6	6.3	7.1	6.5	6.2
FollowUpTim:	2.3	xxxx	xxxxx	2.2	xxxx	xxxxx	3.6	4.1	3.4	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	154	xxxx	xxxxx	165	xxxx	xxxxx	500	511	137	538	500	137
Potent Cap.:	1385	xxxx	xxxxx	1395	xxxx	xxxxx	475	460	901	454	473	911
Move Cap.:	1385	xxxx	xxxxx	1395	xxxx	xxxxx	427	426	901	381	437	911
Volume/Cap:	0.06	xxxx	xxxx	0.02	xxxx	xxxx	0.04	0.03	0.09	0.10	0.04	0.02
Level Of Service Module:												
2Way95thQ:	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.8	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	705	xxxxx	xxxx	456	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	0.6	xxxxx	xxxxx	0.6	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	11.0	xxxxx	xxxxx	14.4	xxxxx
Shared LOS:	*	*	*	A	*	*	*	B	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			11.0			14.4		
ApproachLOS:	*			*			B			B		

Note: Queue reported is the number of cars per lane.

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Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 2 Front S @ Main	F	129.6	0.000	F	129.6	0.000	+ 0.000 D/V
# 3 I84 EB Ramps @ Main	E	38.0	0.000	E	38.0	0.000	+ 0.000 D/V
# 4 I84 WB Ramps @ Main	F	206.0	0.000	F	206.0	0.000	+ 0.000 D/V
# 5 Front N @ Main	D	30.4	0.000	D	30.4	0.000	+ 0.000 D/V
# 6 Boardman @ Main	F	57.3	0.000	F	57.3	0.000	+ 0.000 D/V

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Front S @ Main

Average Delay (sec/veh): 10.5 Worst Case Level Of Service: F[129.6]

Street Name:	Main						Front S					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			1 0 0 1 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	30	515	65	55	635	55	45	0	35	30	0	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	515	65	55	635	55	45	0	35	30	0	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
PHF Volume:	34	592	75	63	730	63	52	0	40	34	0	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	34	592	75	63	730	63	52	0	40	34	0	57
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.2	xxxx	xxxxx	7.1	xxxx	6.2	7.1	xxxx	6.2
FollowUpTim:	2.3	xxxx	xxxxx	2.3	xxxx	xxxxx	3.5	xxxx	3.3	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	793	xxxx	xxxxx	667	xxxx	xxxxx	1615	xxxx	761	1606	xxxx	629
Potent Cap.:	810	xxxx	xxxxx	900	xxxx	xxxxx	83	xxxx	403	86	xxxx	486
Move Cap.:	810	xxxx	xxxxx	900	xxxx	xxxxx	67	xxxx	403	70	xxxx	486
Volume/Cap:	0.04	xxxx	xxxx	0.07	xxxx	xxxx	0.77	xxxx	0.10	0.49	xxxx	0.12
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.6	xxxx	xxxxx	9.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	105	xxxxx	xxxx	151	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	5.1	xxxxx	xxxxx	3.2	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	130	xxxxx	xxxxx	60.1	xxxxx
Shared LOS:	*	*	*	*	*	*	*	F	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			129.6			60.1		
ApproachLOS:	*			*			F			F		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 I84 EB Ramps @ Main

Average Delay (sec/veh): 4.6 Worst Case Level Of Service: E[38.0]

Street Name:	Main						I84 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 1! 0 0			0 0 0 0 0		
Volume Module:												
Base Vol:	0	385	245	95	640	0	35	0	125	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	385	245	95	640	0	35	0	125	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	405	258	100	674	0	37	0	132	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	405	258	100	674	0	37	0	132	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	6.7	xxxx	6.5	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	3.8	xxxx	3.6	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	663	xxxx	xxxxx	1408	xxxx	674	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	912	xxxx	xxxxx	134	xxxx	411	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	912	xxxx	xxxxx	122	xxxx	411	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.11	xxxx	xxxx	0.30	xxxx	0.32	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	270	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxxx	3.8	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx	xxxxx	38.0	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	E	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			38.0			xxxxxx		
ApproachLOS:	*			*			E			*		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 I84 WB Ramps @ Main

Average Delay (sec/veh): 65.9 Worst Case Level Of Service: F[206.0]

Street Name:	Main						I84 Ramps					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0 0	0	0 0 0	1 0		0 0 0	0 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	80 245	0		0 455	60		0 0	0		275	0	115
Growth Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00	1.00	1.00
Initial Bse:	80 245	0		0 455	60		0 0	0		275	0	115
User Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00	1.00	1.00
PHF Adj:	0.93 0.93	0.93		0.93 0.93	0.93		0.93 0.93	0.93		0.93	0.93	0.93
PHF Volume:	86 263	0		0 489	65		0 0	0		296	0	124
Reduct Vol:	0 0	0		0 0	0		0 0	0		0	0	0
Final Vol.:	86 263	0		0 489	65		0 0	0		296	0	124
Critical Gap Module:												
Critical Gp:	4.2 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		6.6	xxxx	6.4
FollowUpTim:	2.3 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		3.6	xxxx	3.4
Capacity Module:												
Cnflict Vol:	554 xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		957	xxxx	263
Potent Cap.:	992 xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		271	xxxx	745
Move Cap.:	992 xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		252	xxxx	745
Volume/Cap:	0.09 xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		1.17	xxxx	0.17
Level Of Service Module:												
2Way95thQ:	0.3 xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx
Control Del:	9.0 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx
LOS by Move:	A *	*	*	*	*	*	*	*		*	*	*
Movement:	LT - LTR	- RT	LT - LTR	- RT	LT - LTR	- RT	LT - LTR	- RT		LT - LTR	- RT	
Shared Cap.:	xxxx xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	313	xxxxx
SharedQueue:	0.3 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	20.8	xxxxx
Shrd ConDel:	9.0 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	206	xxxxx
Shared LOS:	A *	*	*	*	*	*	*	*		*	F	*
ApproachDel:	xxxxxx		xxxxxx			xxxxxx				206.0		
ApproachLOS:	*		*			*				F		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Front N @ Main

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: D[30.4]

Street Name:	Main						Front N					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0	1 0		1 0 0	1 0		0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	40	375	35	5	435	15	10	0	65	35	0	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	40	375	35	5	435	15	10	0	65	35	0	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	45	426	40	6	494	17	11	0	74	40	0	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	45	426	40	6	494	17	11	0	74	40	0	23
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.1	xxxx	xxxxx	7.3	xxxx	6.4	7.3	xxxx	6.4
FollowUpTim:	2.3	xxxx	xxxxx	2.2	xxxx	xxxxx	3.6	xxxx	3.4	3.7	xxxx	3.5
Capacity Module:												
Cnflict Vol:	511	xxxx	xxxxx	466	xxxx	xxxxx	1063	xxxx	503	1088	xxxx	446
Potent Cap.:	1014	xxxx	xxxxx	1085	xxxx	xxxxx	189	xxxx	542	178	xxxx	576
Move Cap.:	1014	xxxx	xxxxx	1085	xxxx	xxxxx	175	xxxx	542	148	xxxx	576
Volume/Cap:	0.04	xxxx	xxxx	0.01	xxxx	xxxx	0.06	xxxx	0.14	0.27	xxxx	0.04
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.7	xxxx	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	423	xxxxx	xxxx	203	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	xxxxx	1.2	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	15.6	xxxxx	xxxxx	30.4	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	D	*
ApproachDel:	xxxxxx			xxxxxx			15.6			30.4		
ApproachLOS:	*			*			C			D		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 Boardman @ Main

Average Delay (sec/veh): 14.0 Worst Case Level Of Service: F[57.3]

Street Name:	Main						Boardman					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0	1 0		0 1 0	0 1		0 0	1! 0 0		0 0	1! 0 0	
Volume Module:												
Base Vol:	105	145	140	40	190	25	20	15	110	125	20	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	105	145	140	40	190	25	20	15	110	125	20	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	115	159	154	44	209	27	22	16	121	137	22	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	115	159	154	44	209	27	22	16	121	137	22	38
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.1	xxxx	xxxxx	7.2	6.6	6.3	7.1	6.5	6.2
FollowUpTim:	2.3	xxxx	xxxxx	2.2	xxxx	xxxxx	3.6	4.1	3.4	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	236	xxxx	xxxxx	313	xxxx	xxxxx	794	841	209	846	791	236
Potent Cap.:	1291	xxxx	xxxxx	1230	xxxx	xxxxx	301	297	822	282	322	803
Move Cap.:	1291	xxxx	xxxxx	1230	xxxx	xxxxx	245	260	822	208	282	803
Volume/Cap:	0.09	xxxx	xxxx	0.04	xxxx	xxxx	0.09	0.06	0.15	0.66	0.08	0.05
Level Of Service Module:												
2Way95thQ:	0.3	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.1	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	531	xxxxx	xxxx	251	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	1.3	xxxxx	xxxxx	5.9	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	14.7	xxxxx	xxxxx	57.3	xxxxx
Shared LOS:	*	*	*	A	*	*	*	B	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			14.7			57.3		
ApproachLOS:	*			*			B			F		

Note: Queue reported is the number of cars per lane.

Preliminary Signal Warrants

Introduction

The single most important criterion for preliminary signal warrant analysis is engineering judgment. In the following procedures only the fundamental parameters of volumes and approach lanes are provided.

Background

There are 8 traffic signal warrants found in the Manual on Uniform Traffic Control Devices (MUTCD), Page 4C-1. The signal warrants are:

Warrant 1, Eight-Hour Vehicular Volume.
- Case A – Minimum Vehicular Volume.
- Case B – Interruption of Continuous Traffic.

Warrant 2, Four-Hour Vehicular Volume.
Warrant 3, Peak Hour.
Warrant 4, Pedestrian Volume.
Warrant 5, School Crossing.
Warrant 6, Coordinated Signal System.
Warrant 7, Crash Experience.
Warrant 8, Roadway Network.

OAR 734-020-0460 (1) stipulates that only MUTCD warrant 1 Case A and Case B may be used to project a future need for a traffic signal. (Corrected to reflect numbering used in the Millennium Edition of the MUTCD.) In the Transportation Planning Analysis Unit (TPAU), we are typically projecting traffic into the future and analyzing future years, so we consider warrants 1, Case A and Case B. Case A deals primarily with high volumes on the intersecting minor street. Case B addresses high volumes on the major street and the delays and hazards to vehicles on the minor street trying to either access or cross the major street.

Analysis

In MUTCD warrant 1 the eighth highest hour of an average day is used to determine whether a warrant is met. At the analysis stage in TPAU, Average Daily Traffic (ADT) is used for preliminary signal warrant analysis. We apply a conversion factor of 5.65% to the ADT to reach the eighth highest hour. The conversion factor of 5.65% is acceptable as shown using 1991 to 1994 manual counts and as agreed on by TPAU and Traffic Management Section. To convert MUTCD hourly volumes to ADT volumes, divide the MUTCD volume by the factor .0565, this equals the target ADT volume to meet MUTCD warrant 1.

If the “85 percentile speed of major street traffic exceeds 40 mph in either an urban or rural area, or when the intersection lies within the built-up area of an isolated community having a population of less that 10,000” (MUTCD), reduce the target volume for the warrants to 70 percent of the normal requirements. The warrant volumes, along with the number of lanes, are shown in the preliminary traffic signal warrant analysis sheet on the following page.

Preliminary Traffic Signal Warrant Analysis[1]

Major Street:	Main Street	**Minor Street:**	I-84 Westbound Ramp
Project:	Boardman IAMP	**City/County:**	Boardman, Morrow
Year:	2026	**Alternative:**	

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	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
Case B: Interruption of Continuous Traffic					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

5.65% of the above ADT volumes is equal to the MUTCD vehicles per hour (vph)

	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	6,200	8,800	
	Minor	2	2,500	3,325	Y
Case B	Major	1	9,300	8,800	
	Minor	2	1,250	3,325	N

Analyst and Date: PJO 3/15/07 | Reviewer and Date:

Determining the number of approach lanes and determining the approach volumes to use in the warrant analysis requires knowledge of the involved intersection.

[1] Meeting preliminary signal warrants does **not** guarantee that a signal will be installed. Before a signal can be installed a traffic signal investigation must be conducted or reviewed by the Region Traffic Manager. Traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal can be installed on a state highway.

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

Oregon Department of Transportation
Transportation Development Branch
Transportation Planning Analysis Unit

Preliminary Traffic Signal Warrant Analysis[1]

Major Street:	Main Street	**Minor Street:**	I-84 Eastbound Ramp
Project:	Boardman IAMP	**City/County:**	Boardman, Morrow
Year:	2026	**Alternative:**	

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	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
Case B: Interruption of Continuous Traffic					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

5.65% of the above ADT volumes is equal to the MUTCD vehicles per hour (vph)

	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	6,200	11,200	
	Minor	2	2,500	975	N
Case B	Major	1	6,200	11,200	
	Minor	2	2,500	975	N

Analyst and Date: PJO 3/15/07 | Reviewer and Date:

[1] Meeting preliminary signal warrants does **not** guarantee that a signal will be installed. Before a signal can be installed a traffic signal investigation must be conducted or reviewed by the Region Traffic Manager. Traffic signal warrants must be met and the State Traffic Engineer's approval obtained before a traffic signal can be installed on a state highway.

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

Appendix 5
Main Street Land Use Assumptions

Future Land Use/Trip Generation Assumptions:

- Land use assumptions were developed by Winterbrook Planning and reviewed by the City of Boardman and ODOT.
- Trips generation was based on the ITE Trip Generation Manual, 7th Edition.
- Trip reduction (pass by and shared trips) was based on ITE Trip Generation Manual, 7th Edition and was applied to Retail, Fast Food Restaurants, Convenience Mart and Gas Station.
- There were no background through trips added to the network, since the only development in the area would be in Boardman. There is minimal historical growth of traffic volumes on roadways in the area, so there was no additional growth rate applied to existing volumes.

Main Street Trip Distribution:

East N Front "TAZ"

- 70% towards I-84 Ramps (south)
- 25% north
- 5% west

East S Front "TAZ"

- 60% towards I-84 Ramps (north)
- 35% south
- 5% west

West S Front "TAZ"

- 70% towards I-84 Ramps (north)
- 30% south

South Main "TAZ"

- 45% towards I-84 Ramps (north)
- 45% south
- 10% west

South Oregon Trail "TAZ"

- 45% towards I-84 Ramps (north)
- 45% south
- 10% west

South "TAZ"

- 100% towards I-84 Ramps (north)

Traffic was distributed at the ramps so that 45% was directed to the east, 25% was directed to the west and 30% was directed north.

Trip Generation

Main Street IAMP

Table A1: Cumulative Development Raw Trip Generation – Main Street IAMP Area

Land Use	ITE Code	Units (square ft)	Trip Generation				
			Daily	AM In	AM out	PM In	PM Out
Convenience Mart	851	2,000	1,476	67	67	53	51
Fast Food w Drive-Thru	934	3,000	1,488	81	78	54	50
Free Standing Discount Store	815	20,000	1,120	11	5	51	51
East N Front - Subtotal			**4,085**	**160**	**150**	**158**	**152**
Gas Station w/Mart	945	8 pumps	1,302	40	40	54	54
Motel	320	65 rooms	592	15	27	20	18
Sit-Down High Turn Restaurant	932	6,000	763	36	33	40	26
SF Housing	210	120 units	1,148	23	68	76	45
Fast Food w Drive-Thru	934	4	1,984	108	104	72	67
Self Service Car Wash	947	3 stalls		0	0	8	8
Auto Care Center	942	2		4	2	3	3
East S Front - Subtotal			**5,790**	**226**	**274**	**274**	**220**
Motel	320	65 rooms	592	15	27	20	18
Sit-Down High Turn Restaurant	932	6	763	36	33	40	26
East S Front - Subtotal			**1,355**	**51**	**60**	**60**	**43**
Fast Food with Drive-Thru	934	4,000	1,984	108	104	72	67
Bank Drive-In	912	4,000	986	28	22	91	91
Single Tenant Office	715	5,000	58	8	1	1	7
Single Tenant Office	715	5,000	58	8	1	1	7
Medical Clinic	630	10,000	315	18	18	26	26
Single Tenant Office	715	5,000	58	8	1	1	7
Single Tenant Office	715	5,000	58	8	1	1	7
South Main - Subtotal			**3,216**	**186**	**148**	**195**	**213**
Drug Store with Drive Thru	881	20,000	1,763	30	23	84	88
Hardware/Paint Store	816	10,000	513	6	5	29	32
Specialty Retail	812	10,000	452	17	9	21	24
Housing – condos	230	120 units	703	9	44	42	21
South Main - Subtotal			**3,431**	**62**	**80**	**176**	**164**
Housing	210	100 units	957	19	56	64	37
South – Subtotal			**957**	**19**	**56**	**64**	**37**
Subtotal (Main Street IAMP Area)			**18,834**	**1,329**		**1,415**	

Table A1a: Cumulative Development Trip Generation – Main Street IAMP Area

Including Trip Reductions

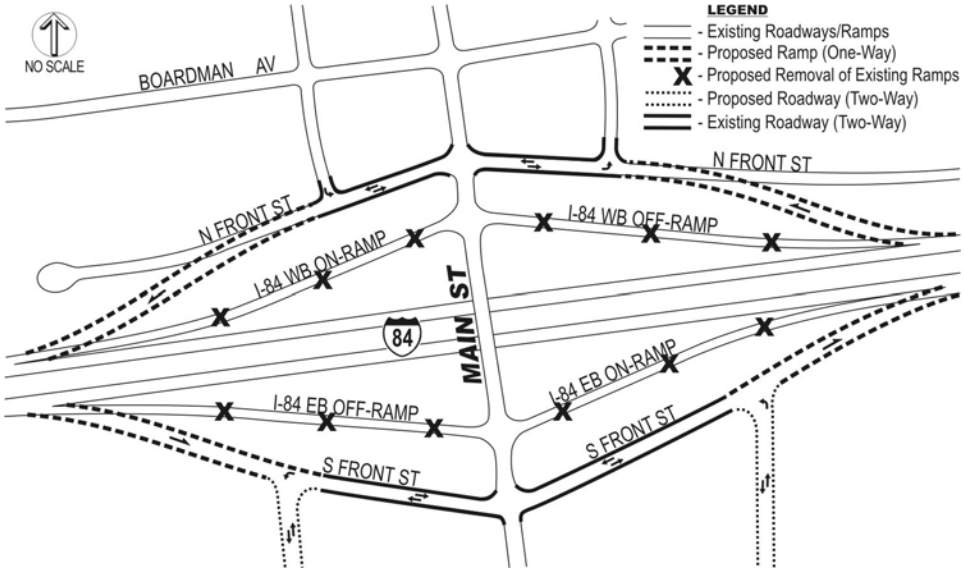
		Trip Generation			
Land Use	**Daily**	**AM In**	**AM out**	**PM In**	**PM Out**
Convenience Mart*	590	27	27	21	21
Fast Food w Drive-Thru**	848	46	45	31	28
Free Standing Discount Store***	728	7	3	33	33
East N Front - Subtotal	**2,167**	**81**	**75**	**85**	**82**
Gas Station w/Mart****	951	29	29	39	39
Motel	592	15	27	20	18
Sit-Down High Turn Restaurant	763	36	33	40	26
SF Housing	1,148	23	68	76	45
Fast Food w Drive-Thru**	1,131	62	59	41	38
Self Service Car Wash****		0	0	6	6
Auto Care Center****		3	2	2	2
East S Front - Subtotal	**4,585**	**167**	**218**	**225**	**174**
Motel	592	15	27	20	18
Sit-Down High Turn Restaurant	763	36	33	40	26
East S Front - Subtotal	**1,355**	**51**	**60**	**60**	**43**
Fast Food with Drive-Thru**	1,131	62	59	41	38
Bank Drive-In	986	28	22	91	91
Single Tenant Office	58	8	1	1	7
Single Tenant Office	58	8	1	1	7
Medical Clinic	315	18	18	26	26
Single Tenant Office	58	8	1	1	7
Single Tenant Office	58	8	1	1	7
South Main - Subtotal	**2,663**	**140**	**103**	**164**	**185**
Drug Store with Drive Thru***	1,146	20	15	55	57
Hardware/Paint Store***	333	4	3	19	21
Specialty Retail***	294	11	6	14	15
Housing – condos	703	9	44	42	21
South Main - Subtotal	**2,776**	**44**	**68**	**129**	**114**
Housing	957	19	56	64	37
South – Subtotal	**957**	**19**	**56**	**64**	**37**
Subtotal – Main Street IAMP	**11,727**	**969**		**1,118**	

* Trip Reduction of 60% (Convenience Store)
** Trip Reduction of 43% (Fast Food)
***Trip Reduction of 35% (Retail)
****Trip Reduction of 27% (gas station)

Appendix 6
Main Street Alternatives

Main Street Alt. 2: Convert Front Street into Freeway Ramps

The second concept would abandon the existing freeway on and off-ramps, and construct new ramps that connect to the existing North Front Street and South Front Street road segments. This concept eliminates the conflicts discussed with Alt. 1 by removing one of the two intersections. The other benefit of this concept is that is negates the need for widening the I-84 overpass bridge. The new ramp terminal intersections would not have restricted sight distance because of the overpass railing, and there could be some provision for left-turn pockets, although it would be less than ODOT standards require.



The negative aspects of this concept are very significant, based on reviews of ODOT and Federal Highway Administration design practices, and it is essentially fatally flawed. The primary reasons that this concept could not be supported by current safety and highway design standards include:

- Transition from interstate to local streets would be unusual, and motorists not familiar with the area could be confused and make poor driving decisions, which could lead to higher crash rates.
- Two-way streets circulation next to one-way off-ramps creates the potential for wrong-way entry onto the Interstate.
- Reduce safety associated with higher conflicting movements between vehicles exiting the freeway, and local circulation to and from the adjoining businesses on Front Street.

Because of these and other issues not listed, this concept was rejected from further consideration for this interchange.

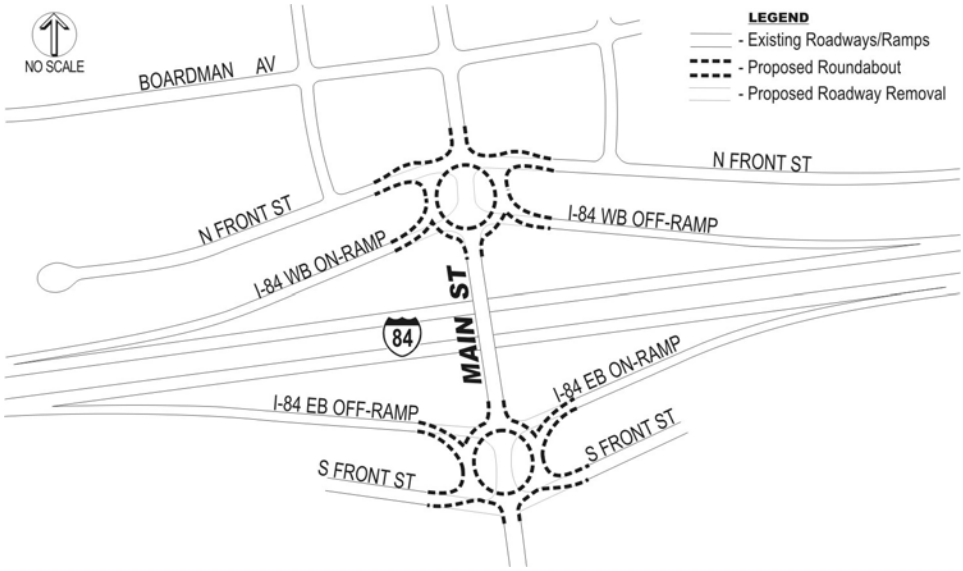
Main Street Alt. 3: Combine Ramp Terminals and Front Street by Roundabouts

The third concept for Main Street would combine the freeway ramp terminals with existing Front Street to form one large intersection on either side of the freeway. This concept would use a

roundabout configuration to reduce conflicts for the six approaching legs to the newly formed intersections.

The value of this concept would be to retain full access on Front Street without a dramatic change to the existing freeway ramp configuration, as was proposed in Alternative 2, above. Combining the intersection partially addresses the vehicle queue issues noted with Alternative 1, and the temporary blockage of traffic accessing Front Street.

The negative aspects of this concept are very significant, for many of the reasons noted for Alternative 2, plus a few others reasons that are unique to roundabout applications. Pedestrian and bicycle travel through the interchange would be significantly more complex, since vehicles are not required to fully stop on the approach legs, except to yield to other vehicles. Typically, crosswalks are set back away from the inner circle of the roundabout to improve visibility of the pedestrian by the approaching motorist. This would lengthen the walking path for pedestrians.



ODOT highway design engineers identified a list of other reasons that roundabouts would not be appropriate at this location, and those include:

- All legs should have near balanced volumes,
- Not more than one level of street functional classification between legs,
- Should be mostly commuter traffic,
- Should not have more than 4 legs and
- Should not have a high volume of truck traffic (interchange would anticipate high trucks).

The second bullet refers to the street functional classification; Main Street is an arterial, and Front Street is a local street, and the freeway off ramps are interstate highways. Mixing these types of street types at one intersection is very unusual, and it could cause uncertainty and confusion for drivers not familiar with the area. For the above reasons, the third alternative was deemed to be flawed, and was rejected from further consideration for the Main Street interchange.

HATTENHAUER DISTRIBUTING CO.

PO Box 1397, 201 West 1st Street, The Dalles, OR 97058

Ph. (541) 296-3515 Fax (541) 296-0040

April 10, 2024

VIA E-MAIL (mclanec@cityofboardman.com)

Carla McLane
Planning Official
City of Boardman
200 City Center Circle
PO Box 229
Boardman, OR 97818

RE: OPPOSITION TO PROPOSED MEDIAN BARRIER CUTTING OFF NORTH-BOUND TRAFFIC ALONG N MAIN STREET FROM ACCESSING OUR PLACE OF BUSINESS

Dear Carla:

As you know, since the early 1980s, my family has owned and operated the gas station and convenience store located at 100 Main St. N. in Boardman. We recently learned the City intends to make roadway changes that will negatively impact the current use of our business location, as we serve the motoring public in regards to both domestic and transient traffic. Traffic using I-84 exit 164 is our main customer base for fuel sales and ancillary convenience store sales. I believe the motoring public appreciates us being there for their needs, including re-fueling, cold drinks, hot food, and available restrooms. The proposed changes to the roadway will drastically deter, if not eliminate, any I-84 traffic from the ability to reach our location. For that reason, we strongly encourage the City to explore other options than what is currently being considered.

Currently, our business has several access points from traffic from I-84 exit 164: an approximately 100' open driveway on Front St; an approximately 40' curbed driveway on Main St.; and an approximately 140' open driveway on Boardman Ave. With the proposed road changes, the first two access points will be eliminated and the third severely hampered by forcing a left turn across a double yellow line and two lanes of traffic. While we are not traffic or civil engineers, we do have a good sense of business, built up over 60 years and 3 generations of knowledge. We feel the City's proposed traffic changes will be detrimental to our business and the many people that count on us.

In addition to the above, we currently have commercial truck fuel business and off-s short-term parking on our property as well. If the City's proposed traffic changes are implemented, this facet of our business will likely be eliminated as well.

Our Boardman operation currently has 23 employees, all of whom are residents of Boardman. With the anticipated decline of our business resulting from these traffic changes, many of these positions could be eliminated.

Our company currently has a fuel contract and supply agreement with Sinclair Oil Corp. In that contract are specific minimum annual gallonage requirements for the Boardman location. Any shortfall on annual gallons can trigger a shortfall penalty. A major disruption to traffic patterns accessing our place of business could definitely have a drastic impact on these gallon requirements. This amount could be significant and in the 10's of thousands of dollars.

As you may know, our Boardman facility recently underwent site improvements, which amounted to just shy of an $1,000,000 investment in the community. Additionally, we had hoped to remodel and expand the existing convenience store to better serve the community and the motoring public that travels along I-84. If these traffic changes are implemented, we will need to rethink such future investments in Boardman. If it is your desire to push us out of business I would like to negotiate the dollar amount I feel would be just compensation.

Considering the above, in order to facilitate a productive conversation that preserves our current business operations, yet still allows the City to modernize the traffic pattern in the area, we propose the City preserve a 40' access driveway from N Main St. to our property. Our property has approximately 200' of frontage along N. Main St., so I believe this can be accomplished. As I previously mentioned in our phone call, my dislike for the changes along Boardman Ave., it was stated that west Boardman Ave. is not a busy or a growing part of town and traffic is light and expected to be so in the future. So I find this contrary to your position that there will be a stacking issue for northbound trafic queuing in the left turn lane at the proposed stop light at the intersection of Boardman Ave. and N Main St.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Alex Hattenhauer
CEO

FINAL FINDINGS OF FACT
CONDITIONAL USE PERMIT
CUP24-000001

REQUEST: To approve the installation of a HAWK (High-Intensity Activated CrossWalK) signal with related street improvements at the corner of North Main and Boardman Avenue to include conversion of the North Main Street intersection with the NE and NW Front Streets to a right-in/right-out configuration. To determine that the installation is in conformance with the Main Street Interchange Area Management Plan and meets necessary warrants.

APPLICANT/OWNER: City of Boardman
Post Office Box 229
Boardman, Oregon 97818

ZONING OF THE AREA: Commercial (Tourist Commercial Sub District) and Residential

PROPERTY LOCATION: The subject property includes the rights-of-way for both Main Street and Boardman Avenue north of the Main Street Interchange. Adjacent businesses include C&D, Chevron, Sinclair, the Boardman Office Center, and Riverside High School.

I. BACKGROUND: A number of years ago the City of Boardman experienced a loss of life at the subject intersection after which the currently installed Rectangular Rapid Flashing Beacon (RRFB) was installed. During peak pedestrian crossings, predominantly at school departure times, use of the RRFB can create traffic backups along Main Street that can impact queuing on the west bound Interstate 84 off ramp creating potential impediments into the west bound travel lane.

This area is subject to the Boardman Main Street Interchange Area Management Plan (MS IAMP) and any development or street projects within the Management Area must conform to the requirements of the IAMP. In the MS IAMP there are streetlights envisioned at the ramp intersections but not other intersections. About two years ago the City engaged Kittelson & Associates to do an evaluation of the Main Street corridor to accomplish an update to the planning level analysis documented in the 2009 MS IAMP. The purpose was to provide an updated list of improvement projects to support multi-modal circulation improvements along the corridor and at the interchange.

After lengthy discussion with the Oregon Department of Transportation (ODOT) concerning the necessary planning process to authorize the installation of a streetlight it was determined that an amendment to the MS IAMP would not be necessary but signal warrants needed to be identified and no impacts to the interchange could occur. Signal warrants were justified and the streetlight was shown not to impact the interchange in the Kittleson & Associates Main Street corridor assessment. Installation of the center median is also justified to convert NW and NE Front Street to right-in/right-out and for traffic queueing/staging at the signalized intersection.

It should be noted that the MS IAMP does say the following about access to Main Street in the vicinity of the Interchange: "A key element of the IAMP is to the long-range preservation of operational efficiency and safety of the interchange is the management of access to Main

Street. Because access points introduce a number of potential vehicular conflicts on a roadway and are frequently the causes of slowing or stopping vehicles, they can significantly degrade the flow of traffic and reduce the efficiency of the transportation system. However, reducing the overall number of access points and providing greater separation between them can minimize the impacts of these conflicts." The proposed center median and limiting left hand turns on North Main Street between Front Street and Boardman Avenue affectively achieves the intent of this statement without closing those accesses.

In limiting NE and NW Front Streets to a right-in/right-out configuration the Boardman Avenue and North Main Street intersection allows full turning movements. For comparison the same configuration on South Main Street would mean that Oregon Trail Boulevard will also allow full turning movements.

The street light installation, including street, sidewalk, and parking improvements, has been designed. It is anticipated that the project will go to bid in July 2024 with construction starting in March or April of 2025 and ending in July or August of that same year. The duration of time between the construction bidding process and the start of construction is for the procurement of long-lead time equipment and materials.

This project is identified in the Capital Improvement Plan adopted by the Boardman City Council on April 2 of this year. The City Manager and Planning Official have met with several of the immediately impacted landowners to discuss the project, the safety concerns it is addressing, mitigation of construction impacts, and to express our understanding of how this can create negative impacts to business operations.

After the initial Planning Commission public hearing on April 17 staff did follow up with ODOT to further discuss the impacts of the proposal and their participation in accomplishing the requirements as laid out in the MS IAMP. Based on that conversation and further review of the Kittelson & Associates Main Street Assessment the city is modifying their project in two ways. First the street light infrastructure will be installed but the signal will initially be a High-Intensity Activated CrossWalK, or HAWK and second the median will only affect the Front Street intersection allowing, for now, left turns across Main Street between Front Street and Boardman Avenue. The modification of Front Streets to a right-in/right-out configuration is maintained.

What is a HAWK signal? *It is a device used to assist people with safely crossing busy streets. They work the same as other button-activated signals, either by pushing a button or an automatic sensor, which directs the person walking or biking to wait for the signal to change and traffic to stop allowing them to cross safely. For a driver, the HAWK signal appears differently than other traffic lights. At rest, HAWKs remain dark. Once triggered, it will then go through a series of yellow and red sequences requiring motorists to slow down and stop. After the people walking and biking cross, the HAWK will go dark again, allowing motorists to continue through the intersection.*

Why are they helpful? *HAWK signals provide safer crossing alternatives for people walking and biking than traditional crosswalks especially in mid-block locations with heavy demand. Because the devices are only activated when walkers or bikers are present, people driving experience minimal delays. HAWK signals can also be installed at the intersection of an arterial road with a smaller side street, which would not otherwise warrant a traffic light signalized crossing. This amounts to easier crossing on busy streets for people walking and biking. Data also suggests*

that HAWK signals crate safer crossings, reduce crashes, and increase driver compliance with crosswalk laws.

The city is maintaining the conversion of the Front Street intersection to a right-in/right-out configuration for several reasons outlined here:

1. *The City's Level of Service, or LOS, standard is C which is higher than ODOTs and allows for less congestion.*
2. *Access points introduce a number of potential vehicular conflicts on a roadway and are frequently the causes of slowing or stopping vehicles, they can significantly degrade the flow of traffic, and reduce the efficiency of the transportation types. Reducing the overall number of access points and providing greater separation between them can minimize the impacts of these conflicts. Reducing Front Street to a right-in-right-out configuration reduces a significant vehicular conflict adjacent to the west bound off-ramp.*
3. *At the time the MS IAMP was adopted the LOS for Main Street and North Front Street was C. Today it is D which, under the MS IAMP, does require action on the part of the city. It should be noted that the LOS for South Front Street is also at a LOS of D. Without action both of those intersections are identified to achieve a LOS of F by 2042.*
4. *The MS IAMP does identify that the City is to work towards two items, the first being development of the local street network both east and west of Main Street and second to limit access at Main Street at both north and south Front Street. The first step of this is to limit those intersections to right turn only.*

For these reasons this request needs to be approved as presented

II. **APPROVAL CRITERIA:** The Boardman Development Code Residential and Commercial use zones both identify in their respective Tables of allowed uses that "transportation projects that are not designated improvements in the Transportation System Plan" are subject to a Conditional Use Permit. While street lights are envisioned in the MS IAMP they are planned for the on- and off-ramps, not other intersections. The applicable criteria are found in Chapter 4.4 Conditional Use Permits at 4.4.400 Criteria, Standards and Conditions of Approval which is in **bold** text with responses in regular text.

4.4.400 Criteria, Standards and Conditions of Approval

The City shall approve, approve with conditions, or deny an application for a conditional use or to enlarge or alter a conditional use based on findings of fact with respect to each of the following standards and criteria:

D. Transportation System Facilities and Improvements

1. City or County facilities and improvements. Construction, reconstruction, or widening of highways, roads, bridges or other transportation facilities that are (1) not designated in the City's adopted Transportation System Plan ("TSP"), or (2) not designed and constructed as part of an approved subdivision or partition, are allowed in all Districts subject to a Conditional Use Permit and satisfaction of all of the following criteria:

a. The project and its design are consistent with the City's adopted TSP, or, if the city has not adopted a TSP, consistent with the State Transportation Planning Rule, OAR 660-012 ("the TPR").

b. The project design is compatible with abutting land uses in regard to noise generation and public safety and is consistent with the applicable zoning and development standards and criteria for the abutting properties.

c. The project design minimizes environmental impacts to identified wetlands, wildlife habitat, air and water quality, cultural resources, and scenic qualities; and a site with

fewer environmental impacts is not reasonably available. The applicant shall document all efforts to obtain a site with fewer environmental impacts, and the reasons alternative sites were not chosen.

d. **The project preserves or improves the safety and function of the facility through access management, traffic calming, or other design features.**
e. **The project includes provisions for bicycle and pedestrian access and circulation consistent with the comprehensive plan, the requirements of this ordinance, and the TSP or TPR.**

The proposed HAWK signal and related improvements are on a city facility and involves the construction of the area in and around the Main Street and Boardman Avenue intersection. The construction will involve the installation of the HAWK signal and its components, improved street base and new pavement in the intersection and along Boardman Avenue to both the east and west, new sidewalk and improved access points, a median along North Main to convert the Front Street intersection into a right-in/right-out only configuration, and new striping throughout the area.

Staff have determined that the HAWK signal is consistent with the MS IAMP as it does conform to the Access Management Plan by:

- Continuing to restrict access to the interchange and interchange ramps and is, in fact, working to eliminate impacts to the interchange ramps from traffic that currently backs up when continual use of the RRFB causes delays of northbound travelers on Main Street.
- Improve safety factors not only within the interchange but also along Main Street and at this intersection in particular.
- Eliminating or reducing turning conflicts along the Main Street corridor at the Front Street intersection.
- Assuring that all current accesses are maintained to allow some level of ingress or egress and improving several accesses with improvements that also support pedestrian utilization.

Staff have also determined that the HAWK signal is warranted based on the following:

- While not within the standard time frame for consideration there has been a pedestrian loss of life at this intersection.
- This intersection is a primary school crossing area for Riverside High School during the arrival, lunch, and departure times. Use of the current RRFB creates backups along Main Street impacting the west bound off ramp queuing and can result in traffic backing up into the west bound travel lane. This is further discussed on page 7 of the Kittelson & Associates analysis that is attached.
- Pedestrian volume outside of school pedestrian usage continues to increase along Main Street.
- Crash data from 2016 through 2020 identified in the Kittelson & Associates report shows that there are a variety of different types of crashes throughout the study corridor.

Abutting land uses are commercial in nature with the exception of the school. The school building is located 1,000 feet or more from the intersection with school green space and recreational space in between. The C&D Drive-In is most affected by the installation of the HAWK signal and design of the project took into consideration their setback distance from the road with a desire to maintain their outdoor seating on the west side of their development. On street parking has been the most effected element through the design process with a number of angle and parallel parking spaces being removed. At least as many, if not more, parking spaces are being constructed resulting in a positive number of parking spaces. The new parking opportunity is being developed along the frontage of the Riverside High School with discussion ongoing to extend the parking further to the east from the current terminus shown on the Schematic Layout.

This project is locationally dependent. It is not specifically being designed to move more traffic, but to move current traffic more efficiently and safely.

Safety is one of the primary reasons for pursuing the street light project based on the loss of life from some years ago along with the reporting of a significant number of near misses with both cars and pedestrians.

Pedestrian, and by extension bicycle, movement and safety will be improved with the HAWK signal allowing for protected crossing times and spacing those crossing times to reduce if not eliminate backups along Main Street that can currently affect the queuing of west bound travelers on the west bound off ramp.

2. **State facilities and improvements. The State Department of Transportation ("ODOT") shall provide a narrative statement with the application demonstrating compliance with all of the criteria and standards in Section 4.4.400.D. 1.b. – e. above. Where applicable, an Environmental Impact Statement or Environmental Assessment may be used to address one or more of these criteria.**

The intersection of Main Street and Boardman Avenue is not a state facility. It is within the Management Area of the MS IAMP which was addressed through significant conversation with ODOT staff about the light, the mechanism to approve the installation of the street light, and will also include conversation with ODOT about management of the light once installed. The above criteria for a state facility have been deemed to not be applicable.

3. **Proposal inconsistent with TSP/TPR. If the City determines that the proposed use or activity or its design is inconsistent with the TSP or TPR, then the applicant shall apply for and obtain a plan and/or zoning amendment prior to or in conjunction with conditional use permit approval. The applicant shall choose one of the following options: a. If the city determination of inconsistency is made prior to a final decision on the conditional use permit application, the applicant shall withdraw the conditional use permit application; or b If the city determination of inconsistency is made prior to a final decision on the conditional use permit application, the applicant shall withdraw the conditional permit application, apply for a plan/zone amendment, and re-apply for a conditional use permit if and when the amendment is approved; or**
    a. **If the city determination of inconsistency is made prior to a final decision on the conditional use permit application, the applicant shall submit a plan/zoning amendment application for joint review and decision with the conditional use permit application, along with a written waiver of the ORS 227.178 120-day period within which to complete all local reviews and appeals once the application is deemed complete; or**
    b. **If the city determination of inconsistency is part of a final decision on the conditional use permit application, the applicant shall submit a new conditional use permit application, along with a plan/zoning amendment application for joint review and decision.**

The city has determined that the installation of the HAWK signal is consistent with the MS IAMP and is therefore consistent with the Transportation Planning Rule. See the discussion under 1. above and the attached Boardman Main Street Circulation Assessment dated March 2024 and prepared by Kittelson & Associates.

4. **Expiration. A Conditional Use Permit for Transportation System Facilities and Improvements shall be void after three (3) years.**

It is the intent of the City to have this project go to bid in July 2024 with construction to start in March or April 2025 and concluding in July or August 2025.

III. LEGAL NOTICE PUBLISHED: March 26 and April 23, 2024
East Oregonian

IV. PROPERTY OWNERS NOTIFIED: March 26, 2024
List on file.

V. AGENCIES NOTIFIED: Teresa Penninger, Rich Lani, David Boyd, and Cheryl Jarvis-Smith, Oregon Department of Transportation; Marty Broadbent and Michael Hughes, Boardman Fire Rescue District; Emily Roberts, Morrow County Health District; Mike Lees and Rolf Prag, City of Boardman.

VI. HEARING DATES: April 17 and May 15, 2024
Boardman City Hall

VII. COMMENTS RECEIVED: The following summarize comments received:

- Letter dated April 10, 2024, from Alex Hattenhauer, Hattenhauer Distributing, in opposition.
- Site Team was held on April 11, 2024, with local utilities, the Fire Marshall, and ODOT staff in attendance. No changes to the proposal emerged from this discussion.
- Public comment was received at the Planning Commission public hearing held on April 17 from Alex Hattenhauer, Greg Miller, Karen Purcell, and Nora Reyna and is summarized in the meeting minutes.

VIII. PLANNING OFFICIAL RECOMMENDATION: The Planning Official recommends that the Planning Commission approve this request as presented affirming that the HAWK signal is consistent with the MS IAMP and is warranted.

16-MAY-2024

Zack Barresse, Chair Date

ATTACHMENTS:
Schematic Layout
Boardman Main Street Circulation Assessment (March 2024)
Boardman Main Street Interchange Area Management Plan (2009)
April 10, 2024, letter in opposition – Alex Hattenhauer, Hattenhauer Distributing

TBD
TOMASI BRAGAR DUBAY

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June 6, 2024

BY UPLOAD TO CITIZEN PORTAL

City Council of the City of Boardman
c/o Mike Lees
200 City Center Circle
P.O. Box 229
Boardman, OR 97818

Re: Appeal of Planning Commission's Decision on File Number CUP24-000001

Dear Mayor Keefer and Council Members:

This office represents Hattenhauer Distributing Co. ("Appellant" or "Hattenhauer"), the owner of the Sinclair gas station located at 100 North Main Street, Boardman, Oregon 97818. Hattenhauer's mailing address is PO Box 1397, The Dalles, OR 97058. This letter is submitted in support of Hattenhauer's appeal application for the above-referenced file and the Planning Commission decision dated May 16, 2024 ("Decision"), with mailed notice sent by the City on May 17, 2024. The application submitted by the City of Boardman (the "Applicant") is referenced as File No. CUP24-000001 and involves rights-of-way for both Main Street and Boardman Avenue north of Main Street Interchange ("subject property") and proposes a conditional use transportation improvement to install a High-Intensity Activated CrossWalk ("HAWK") signal with related street improvements, including a partially contemplated median along Main Street and other related Street Improvements (collectively, the "Project"). Please include this appeal in the record for the above referenced file.

While the Appellant generally agrees with the concept that a HAWK signal should be installed at the corner of North Main Street and the intersection of NW Boardman, the application is not fully thought out, supported, or clear as to its proposal, extent, and impact. The decision of the Planning Commission should be overturned, or the matter continued for a full analysis of impacts and options.

Appellant requests *de novo* review by the City Council because the Planning Commission's findings about the applicable criteria are inadequate, are not supported by substantial evidence, and fail to adequately consider alternatives that reduce impacts to surrounding businesses. The *de novo* review will allow Appellant an opportunity to address design and scope of the Project, rather than suffer adverse impacts to its business resulting from a piecemeal, incomplete application

submittal. The appeal should be reviewed with the purpose to prepare a decision to limit the scope of the application to the HAWK signal and not include the median installation and right-in/right-out at North Main Street and North Front Street at this time for the following reasons, and additional reasons to be raised at the hearing:

- While right-in/right-out at North Front Street may have been identified as part of the solution for traffic control along North Main Street under the 2009 IAMP, the timing for such decision should not occur as part of a piecemeal approach. Rather the traffic signal at N.E. Boardman should be installed and then the level of service at North Front Street should be revisited, prior to installing a median to accomplish right-in/right-out access. Further, ODOT's work on the overpass should occur before the right-in/right-out decision is made.

- The City is exceeding its authority to propose the median as part of the contemplated scope of improvements.

- Full analysis should be done to ensure the City is not creating a stacking issue on Main Street that does not currently exist.

- A consistency finding is required for existing uses and there is no analysis that removal of parking from the C & D Drive-in will be consistent with current parking requirements for that use.

- The proposal is too premature because the Applicant has no authority over the school property for which it proposes to convert to parking, no basis to turn public school property into parking, and there is no finding of consistency with the school use and whether the proposed parking is allowed on school property.

- The Planning Commission decision is tainted by allowing Planning Commissioner Jennifer Leighton to vote and participate in deliberations when she has a financial benefit from the proposed parking on the school property, and a direct interest as her business will be impacted by the proposal.

- Even if a median at North Main Street and North Front Street is approved, the application should not be approved without significant design constraints imposed through this review process to preserve full access to Appellant's property along North Main Street.

///

Appellant will provide additional information during the appeal to augment the issues raised in this appeal. The appeal fee and appeal form have been submitted through the City's portal. Thank you.

Sincerely,

Jennifer M. Bragar

cc: (by e-mail)
client

Morrow County School District

Serving the Families of Boardman, Heppner, and Irrigon in Northeastern Oregon

P.O. Box 100
Heppner, OR 9
http://www.morrow.k12.or.us

Matt Combe, Superintendent
Erin Stocker, Human Resources
Gabriel Hansen, Business Manager
Marie Shimer, Educational Services
Marissa Turner, SPED Coordinator

Phone: 541-676-5705
Fax: 541-676-5742

July 1, 2024

Mayor Keefer and Council Members
Carla McLane, Planning Official
Post Office Box 229
Boardman, Oregon 97818

RE: School District – HAWK signal and related improvements along Boardman Avenue

Mayor Keefer and Council Members:

Please accept this letter as support of the request to install the HAWK signal at the intersection of North Main Street and Boardman Avenue, to convert North Front Streets into a right-in/right-out configuration, and to help improve parking and safety along East Boardman Avenue.

Morrow County School District realizes that pedestrian flows at the North Main Street and Boardman Avenue intersection can be challenging and that the improvement of the technology at that intersection, going from an RRFB pedestrian movement signal to the HAWK signal, will improve traffic flow particularly to the south. As part of the installation the city has reviewed parking availability along Boardman Avenue suggesting angled parking along the north side of Boardman Avenue to serve local businesses and the school. Conversations have led to the project extending that angled parking and sidewalk installation to the east to further benefit the school and community. For these and other safety related reasons the school district, prior to construction, will work with the City of Boardman to dedicate the necessary right-of-way access to support this project.

The City of Boardman and the Morrow County School District, working collaboratively together, will continue to improve Boardman as we work to address the growth that Boardman has been experiencing and will continue to experience in the foreseeable future.

Cordially,

Matt Combe
Superintendent

Morrow County Schools, in partnership with families and communities, provide each student the opportunity to develop values, knowledge, skills and self-confidence to become life-long learners and responsible citizens.

Matt.Combe@morrowsd.org
Erin.Stocker@morrowsd.org
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Gabriel.Hansen@morrowsd.org

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August 6, 2024

BY HAND DELIVERY

City Council of the City of Boardman
200 City Center Circle
P.O. Box 229
Boardman, OR 97818

Re: Hattenhauer Submittal for Appeal of Planning Commission's Decision on File Number CUP24-000001

Dear Mayor Keefer and Council Members:

As you know, this office represents Hattenhauer Distributing Co. ("Appellant" or "Hattenhauer"), the owner of the Sinclair gas station located at 100 North Main Street, Boardman, Oregon 97818. Hattenhauer's mailing address is PO Box 1397, The Dalles, OR 97058. This letter is submitted in support of Hattenhauer's appeal application for the above-referenced file and the Planning Commission decision dated May 16, 2024 ("Decision"). The application submitted by the City of Boardman (the "Applicant") is referenced as File No. CUP24-000001 and involves rights-of-way for both Main Street and Boardman Avenue north of the Main Street Interchange ("subject property") and proposes a conditional use transportation improvement to install a High-Intensity Activated CrossWalk ("HAWK") signal with related street improvements, including a partially contemplated median along Main Street and other related Street Improvements (collectively, the "Project"). Please include this letter in the record for the above referenced file.

The Appellant generally agrees with the concept that a HAWK signal should be installed at the corner of North Main Street and the intersection of NW Boardman, but only after the Applicant submits a complete application in compliance with the law. The Appellant does not support inclusion of the median installation and right-in/right-out at North Main Street and North Front Street (the "Median") at this time because the full proposal has not been designed or coordinated in a manner to effectively address the 2009 Boardman Main Street Interchange Management Plan ("IAMP"), Capital Improvement Plan ("CIP"), or land use restrictions on the affected property. The application is not fully thought out, supported, or clear as to its proposal, extent, and impact. The decision of the Planning Commission should be overturned, or the matter continued for a full analysis of impacts and options. In all events the Median should be removed from the Project scope.

I. The City Council will exceed its authority approving a Project that is inconsistent with the Transportation System Plan and IAMP.

A. The Project is not currently justified under the IAMP

The reason that the IAMP contained certain triggers for right-in/right-out at N. Main and Front Streets is to fully take into account a traffic signal and improvements to ODOT facilities that would inform the appropriate time to install the Median. Hattenhauer retained Rick Nys, Principal Traffic Engineer of Greenlight Engineering to assess the IAMP and March 2024 Technical Memorandum prepared by Kittelson & Associates (the "Technical Memorandum"). Mr. Nys's analysis is included here as Attachment 1. His full analysis explains that to date the City has failed to address the IAMP adopted triggers for the modifications to the N. Main/Front Street intersection and that, in any event, it is clear that none of the triggers have been met to justify conversion of the intersection to right-in/right-out.

The IAMP triggers for conversion of the intersection of N. Main/Front Streets to right-in/right-out are:

- "Side street level of service drops below LOS E (15-20 years from now)
- Traffic signal installed at the I-84 westbound ramp (10-15 years from now)
- Increase in crashes
- Bridge improvement project constructed (15-20 years from now)
- Recurring public complaints about conflicts and safety at these locations."[1]

Mr. Nys explains that none of these triggers are met:

- The Technical Memorandum does not support the Planning Commission's or staff's conclusion that the Applicant or City Council are compelled to undertake this Project based on level of service ("LOS"). In fact, the Technical Memorandum shows the LOS at the intersection of N. Main/Front Street is LOS C and the City's standard is met.
- No traffic signal is installed or currently proposed at the I-84 westbound ramp/N. Main Street intersection.
- As set forth in the Technical Memorandum, crash numbers are consistently low and do not constitute evidence that there is an increase in crashes at the intersection.
- No bridge improvement project has been constructed or is currently planned.
- The record contains no evidence that there are recurring public complaints about conflicts and safety at this location.

None of the triggers that were adopted and agreed upon as part of the IAMP to restrict turning movements at the intersection are met.[2] Taking this analysis together with the significant

[1] IAMP, p. 36.

[2] The Planning Commission attempts to make other findings regarding the operations at the N. Main Street/Front Street intersection to claim the current configuration causes slowing or stopping of vehicles, significantly degrades

public process in developing the IAMP, there is no justification to restrict access at this time at the N. Main Street/Front Street intersection.

Further, the application lacks evidence of existing operational issues at the N. Main Street/Boardman Avenue NE intersection and provides no engineering analysis of a HAWK signal or evidence that a HAWK signal will resolve operational issues. As Mr. Nys points out, the Applicant has not complied with the Manual on Uniform Traffic Control Devices ("MUTCD"), the national standard for installation of signals contemplated by this Project. Failure to analyze the Project under this standard is possible because the Applicant knows the standard would not be met. See Attachment 1. Until the MUTCD is applied and a traffic signal warrant analysis is done for the proposed HAWK and/or traffic signal, this application cannot be approved.

Additionally, the Technical Memorandum does not provide any substantial evidence or analysis of queuing at the N. Main Street/Boardman Avenue NE intersection. The analysis does not show that a HAWK signal will alleviate this unanalyzed, unquantified queuing. Further, the City staff acknowledged the problem before the Planning Commission at the May 15, 2024 meeting, explaining that the construction of the Median may cause stacking problems that could further exacerbate traffic problems for the City's transportation facilities and the interchange. The unexplored, but potential stacking problem can be avoided if full assessment is made of the impact of the Median, and appropriate amendments to the Transportation System Plan ("TSP"), and IAMP are made pursuant to OAR 660-012-0060, including its subsections (4) and (7). This process would include the public engagement described at OAR 660-012-0120, including equitable outreach as described under OAR 660-012-0125, -0130, and -0135. The proposal is really a disguised amendment to the IAMP without going through the correct land use process.

In point of fact, the City is just beginning its update of the TSP, as staff updated City Council at its July 2, 2024 meeting. Attachment 2, Item 14.E (stating TSP is in the beginning stage of development). Any consideration of changes to the intersection of N. Main and Front Streets should be considered as part of the TSP update, which will reflect current conditions and more realistic assumptions about potential future growth in the City. For example, the IAMP anticipated a city population of just over 5,000 by 2026. However, according to the Portland State University Population Study for 2023-2073, the population in 2020 was only 4,150, and it is not until 2040 that the population is anticipated to reach 5,246. Attachment 3, p. 2.[3] Further, the 2009 IAMP assumed that a total of 340 residential units would be built between 2019-2029. However, the PSU Population Study shows that only 265 units were constructed between 2010-2020, far below the rate expected in the IAMP. Attachment 3, p. 3. This data shows that the 2009 IAMP forecasts that Kittelson assumedly based its Technical Memorandum on (as no updated projection of land uses is provided in the Technical Memorandum, p. 8) do not reflect reality, and any changes contemplated in this application should wait until the TSP is updated. This application should be denied.

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the flow of traffic or reduces the efficiency of the transportation types, but there is no evidence to support those findings, and the IAMP does not list these factors as triggers for the Project. Attachment 1.

[3] Excerpts of the PSU Population Forecast are provided in Attachment 3.

B. The construction of a Median at N. Main Street and Front Street is not included in the CIP.

Attached hereto is the City Council's approval of the CIP for 2024. Attachment 4. Project No. ST 7.0 only funds the signalizing of the intersection at N. Main Street and Boardman Avenue:

> "The project will consist of signalizing the intersection of N. Main Street and Boardman Avenue. A center median on N. Main Street will also be constructed to improve traffic flow and pedestrian safety. The intersection will be reconfigured to accommodate the signal and center median." Attachment 4, p. 51.

The center median referenced is for that specific intersection – N. Main and Boardman, not the Median being contemplated to accomplish right-in/right-out at N. Main and Front Streets. The CIP makes no mention of funds available for a Median extending between N. Main Street and Front Street. Thus, approval of the Median exceeds the City's capital improvement authority.[4]

Consistent with the TSP, IAMP, and CIP, the traffic signal at N.E. Boardman, for which the CIP was adopted, should be installed and then the level of service at North Front Street should be revisited, prior to installing a Median to accomplish right-in/right-out access at the intersection with N. Main Street. Further, ODOT's work on the overpass should occur before the right-in/right-out decision is made. The scope of ODOT's needed improvements are set forth in the 2009 IAMP, and should occur prior to changing the traffic controls that will adversely impact the operations at Sinclair and other businesses on the west side of N. Main Street.

II. The Planning Commission's decision is in error because it does not correctly, completely or adequately address the conditional use criteria.

A. The Planning Commission's generic findings under BDC 4.4.400(D)(1) are not accurate or adequate.

The Planning Commission's decision errs in its adoption of staff's determinations regarding the HAWK signals consistency with the IAMP:

> "Staff have determined that the HAWK signal is consistent with the MS IAMP as it does conform to the Access Management Plan by:
>
> - Continuing to restrict access to the interchange and interchange ramps and is, in fact, working to eliminate impacts to the interchange ramps from traffic that currently back up when continual use of the RRFB causes delays of northbound travelers on Main Street.

[4] The Technical Memorandum includes some effort to estimate cost impacts to the City with its proposed Alternative #1. However, no assessment of the cost to the City of obtaining an easement from Appellant, is discussed. With the inclusion of the median proposed at North Main and North Front Streets, Appellant would contest any attempt to obtain the easement required for this conditional use, increasing costs to the City.

- Improve safety factors not only within the interchange but also along Main Street and at this intersection in particular.
- Eliminating or reducing turning conflicts along the Main Street corridor at the Front Street intersection.
- Assuring that all current accesses are maintained to allow some level of ingress or egress and improving several accesses with improvements that also support pedestrian utilization."

Mr. Nys's analysis describes that staff's determinations about queuing issues are not analyzed or addressed in the Technical Memorandum. As a result the HAWK signal's impact cannot be considered, and nothing in the Technical Memorandum establishes the HAWK signal would mitigate such queuing problem. Attachment 1. Further, there is no evidence that the HAWK signal at N. Main and Boardman Avenue NE would improve safety at the interchange because there is no evidence that the HAWK signal would resolve such safety issue or that the N. Main/N. Front Street intersection is causing such safety issue at the interchange. Attachment 1. Moreover, there is no evidence that the HAWK signal eliminates or reduces turning conflicts along the Main Street corridor because there is no traffic analysis of the HAWK signal. Attachment 1. Finally, even the support for the HAWK signal installation is inadequate as there is no evidence about the operations at the N. Main/Boardman Avenue NE intersection during the arrival, lunch, and departure at the nearby school or that such operations at those times create a queuing problem; or that general pedestrian volumes are continuing to increase at that intersection. Attachment 1.

Further, as described above, the record does not support that the Project preserves or improves the safety and function of N. Main Street at the Front Street intersection since staff has stated that stacking problems may result. Additionally, the design of the Median is not fully disclosed so safety and function cannot be fully assessed, as discussed below.

Thus, based on the foregoing discussion, Attachment 1, and other information provided in this letter, the City cannot make findings that BDC 4.4.400(D)(1)(a), (b), (d)(or (e).

B. <u>The failure of an adequate site plan means this application is premature and prevents Appellant from providing full comment on the conditional use approval criteria.</u>

As applicable to general conditional use criteria at BDC 4.4.400(B) and to the specific requirements under BDC 4.4.400(D), discussed in more detail below, one of the conditional use permit application requirements is a site plan submittal, which should include all of the proposed development including the dimensions of any structures and pedestrian circulation patterns, like the Median. See BDC 4.4.300 and 4.2.500(B)(2). The site plans submitted to date are not accurate or binding according to the City staff's testimony before the Planning Commission because the design of the N. Main and Front Street Median is not included in its final form. As a result, Appellant has no design for which to base its comments and protect its interests. However, based on what has been submitted, the design of the Median will interfere with access to the Sinclair property and have a high likelihood of interference with existing traffic patterns. The decision on this Project should be reversed and denied unless the Median is removed, or the design is refined

on the public record to not interfere with access to the Sinclair property. No approval findings under BDC 4.2.600 are included in the decision as required under BDC 4.4.400(B). All of these problems must be rectified before the City can make a decision on the application. Once more, this application is premature.

Other deficiencies result from a failure to provide an adequate site plan for the Project. The IAMP lists Boardman as a minor collector. 2009 IAMP, p. 12. Under the BDC Table 3.4.100, the Boardman right-of-way must be at least 68 feet in width and have a roadway at least 47 feet. Using the scale on the application materials from the April 17, 2024 Planning Commission packet, Figure 1 (also attached to the Notice of Decision), it appears that Boardman is being designed with about a 60 foot width right-of-way, and less than 47 feet of roadway. There does not seem to be adequate room as presented in the schematic layout to accommodate the required roadway width. Further, maintenance of the north side of Boardman Avenue is not addressed in the decision. However, under BDC 3.4.100(J), maintenance of sidewalks, curbs, and planter strips is the continuing obligation of the adjacent property owner. No portion of the decision addresses maintenance of these same sidewalks, curbs, and planter strips by any of the adjacent owners of property along NE Boardman Avenue.

Further, even if the public parking near the school were viable (see below discussion questioning the ability of the City to accept a dedication of such property) the design is not disclosed in the record and no ADA-accessible parking spaces are designated or depicted with a showing that adequate space is available, or that the parking spaces or stormwater infrastructure is designed to meet Code. BDC 3.3.300(D) and (E).

C. No findings are provided for the general conditional use permit approval criteria.

As stated under BDC 4.4.400(D)(1), the Project may be allowed "[s]ubject to a Conditional Use Permit *and* satisfaction of all of the following criteria…" Thereafter the provision lists criteria in BDC 4.4.400(D)(1)(a-e). However, the first requirement making the Project subject to a Conditional Use Permit means that the general conditional use criteria under BDC 4.4.400(A) also apply. The City must make findings under BDC 4.4.400(A)(1) that the size, dimensions, location, and access are adequate for the proposed use, considering the traffic impacts. As stated in Hattenhauer's appeal letter, the size of the contemplated Median at N. Main and Front Streets is not defined. However, the City staff described that the construction of the Median could lead to more stacking problems along N. Main Street as cars and vehicles line up to turn left. Thus, the required findings have not been made and cannot be made on this record and the application should be denied.

Under BDC 4.4.400(A)(2), the City needs to find that the negative impacts of the proposed use on adjacent properties and the public can be mitigated through application of other Code standards, or other reasonable conditions of approval. Here, the negative impacts to Appellant's property cannot be mitigated because reducing access to its site by construction of a Median at N. Main Street and Front Street will necessarily impede access to the Sinclair gas station from Front Street for vehicles that are exiting I-84. Also, the design of the Median and the Applicant's decision to extend the Median north on Main Street will adversely impact access to the Sinclair gas station off N. Main Street. Moreover, the City staff acknowledged during the Planning Commission hearing

that the decision to make N. Main/Front Streets right-in/right-out with the contemplated Median may lead to stacking problems for the left turn on Main Street into Sinclair, further exacerbating traffic problems instead of solving them. This last point, also raises concerns that the public facilities (i.e. N. Main Street) has adequate capacity to serve the proposal. Such a stacking problem means that the application cannot meet BDC 4.4.400(A)(1) and (3) and should be denied.

D. The Planning Commission's decision does not comply with the specific conditional use criteria for Transportation System Facilities and Improvements and other Code requirements.

Under BDC 4.4.400(D)(1)(b), the Project can only be approved if "the project design is compatible with abutting land uses in regard to noise generation and public safety and is consistent with the applicable zoning and development standards and criteria for abutting properties." Such a consistency finding is required for existing uses. As stated throughout this letter, the Project design is not compatible with Appellant's use of the Sinclair Property and the full design and analysis of the Project has not occurred.

In addition, the record is devoid of findings for two existing uses. First, the proposal is too premature because the Applicant has no authority over the school property. Even if the Morrow County School District is open to dedicating a portion of its property as stated in its July 1, 2024, letter, the Code only allows the City to accept dedications that are consistent with the TSP. BDC 3.4.100(A) and (C). As described above and in Attachment 1, the entire improvement is not in compliance with the TSP. Yet, the application proposes to convert a portion of the school property to public parking. In addition, under BDC 3.3.300(A)(4), schools are only allowed to provide parking at the rate of 1.5 spaces per classroom. So if the dedication cannot be accepted, then there is no authorization for public parking as a school use, or auxiliary parking for C & D Drive-In ("C & D") are permitted in the zone. Further, the school is not an applicant.

Second, the record contains no analysis that removal of parking from the C & D will be consistent with current parking requirements for that use under BDC 2.2.170 and BDC 3.3.300. The staff report to the City Council states that no consistency finding is required relative to the current parking requirements for C & D. As far as Appellant can discern, the claim is that C& D is nonconforming under BDC Ch. 5.2, and so consistency is not required. However, the history of the development of C & D is not at issue, rather, the Project cannot make C &D more non-conforming by removing necessary parking. Thus, findings regarding consistency with the current Code requirements for parking are necessary.

Under BDC 2.2.170(3)(a), all parking areas for the C & D are supposed to be provided so that they must be accessed from alleys or common driveways, placed underground, placed in structures above the ground floor, or in parking areas located behind or to the side of a building. The Code does not contemplate offsite parking that is being proposed as part of the Project (to be located on public school property). Further, under BDC 3.3.300(A)(2), the C & D's minimum parking requirements are one space per four seats or one space per 100-sq. ft. of gross leasable floor area, whichever is less. Nothing in the record quantifies the number of parking spaces that C & D is required to have under the Code and whether the parking requirements will be met onsite

after the Project is built. In order to not make the use more nonconforming under either BDC 5.2.200(A). The Planning Commission's decision cannot be sustained on this record.

III. Review of the application should be sent back to the Planning Commission to ensure a fair public review process.

If the City Council is not willing to deny the Project based on the foregoing, the review of the application should start again at the Planning Commission level. The Planning Commission decision is tainted because two Planning Commissioners did not disclose their conflicts of interest or recuse themselves. ORS 244.120. With respect to C & D and the Planning Commission decision, the parking accommodation proposed at the school as replacement C & D parking is tainted because Planning Commissioner Jennifer Leighton voted and participated in deliberations when she stands to financially benefit from this aspect of the Project. Ms. Leighton did not disclose her conflict of interest or recuse herself. Further, Planning Commissioner Mike Connell also had an undisclosed conflict of interest. His apparent spouse and/or relative Toni Connell is the Utility Clerk for the City of Boardman. The City is the Applicant for the Project. Mr. Connell should have announced his conflict and recused himself from further involvement in the review of the application. As a result of this taint, the City Council should not hear this appeal, but instead start the process over again before the Planning Commission without the participation of the conflicted members. Hattenhauer and the public deserve review of this application through a fair and untainted process.

CONCLUSION

Appellant requests the application be sent back to the Planning Commission or denied for failure to comply with local and state law. Thank you for your attention to this matter.

Sincerely,

Jennifer M. Bragar

Enclosures
cc: (by e-mail)
client

HATTENHAUER DISTRIBUTING CO.
PRESENTATION TO CITY COUNCIL

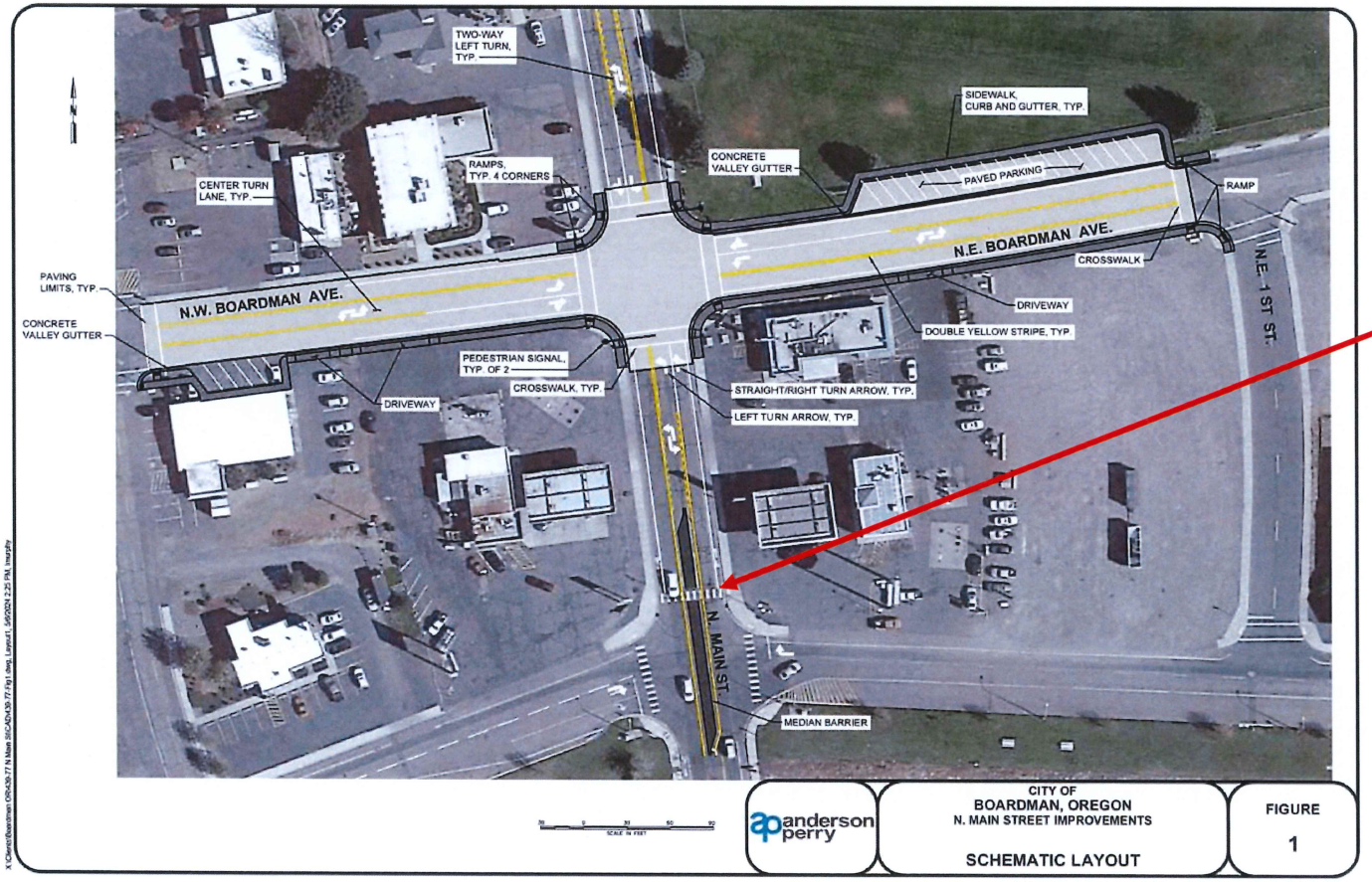
Boardman, Oregon
August 6, 2024

Presented by Jennifer Bragar on behalf of
Hattenhauer Distributing Co.
121 SW Morrison Street, Suite 1850, Portland, OR 97204
jbragar@tomasilegal.com

Appeal of Application of File CUP24-000001

TBD
TOMASI BRAGAR DUBAY

The Project



Proposed Median at N. Main and Front Streets (the "Median")

Significant Legal Deficiencies in the Application

- The application is not fully thought out, supported, or clear as to its proposal, extent, and impact
- City Council will exceed its authority approving a Project that is inconsistent with the Transportation System Plan and IAMP
- The Planning Commission's decision is in error because it does not correctly, completely or adequately address the conditional use criteria
- Review of the application should be sent back to the Planning Commission to ensure a fair public review process

Defects in Transportation Analysis of the Project

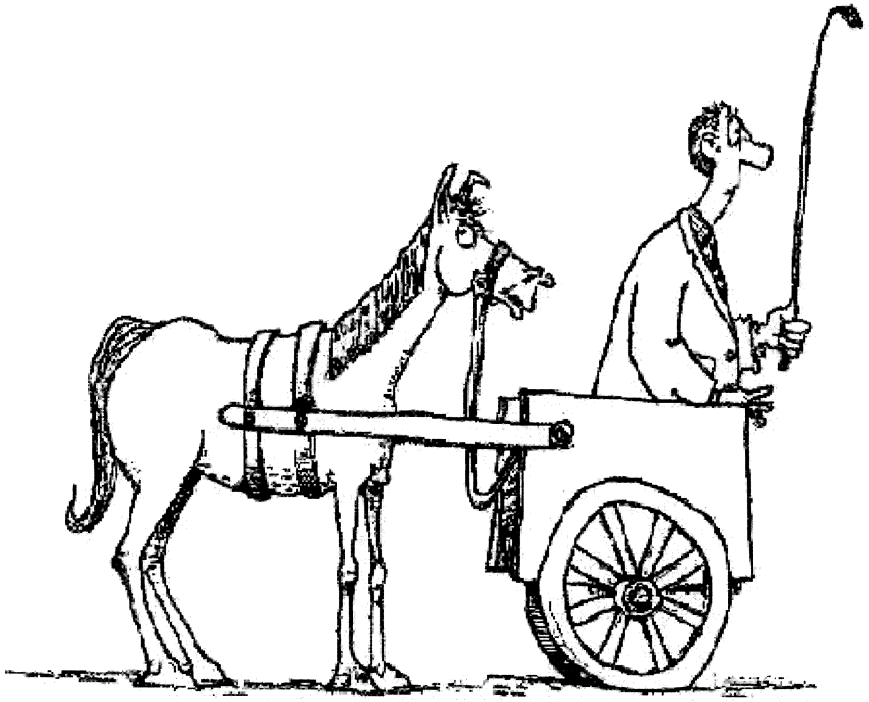
- IAMP triggers for the conversion of N. Main Street/Front Streets to right-in/right-out are not met
- The Applicant has not complied with the Manual on Uniform Traffic Control Devices (the "MUTCD")
- Queuing at N. Main Street and Boardman Avenue NE has not been quantified or adequately analyzed
- City's staff report and Planning Commission decision have incorrect findings as to compliance with applicable Code provisions

The Project has not been reviewed consistent with the Transportation Planning Rule

- Population Growth is not matching the rate anticipated in the 2009 IAMP

  The 2009 IAMP anticipated city population of just over 5,000 by 2026

  In contrast, the PSU Population Study for 2023-2073 shows the city population in 2020 was only 4,150, and it is not until 2040 that the population is anticipated to reach 5,246



Construction of the Median at N. Main/Front Streets is not included in the CIP

City of Boardman, Oregon
Capital Improvements Plan Street Department

ST 7.0

Project Number:	ST 7.0
Project Name:	Boardman Avenue and N. Main Street Intersection
Fund:	Street
Estimated Cost:	$1,000,000
Fiscal Year:	2025-26

Project Description:

The project will consist of signalizing the intersection of N. Main Street and Boardman Avenue. A center median on N. Main Street will also be constructed to improve traffic flow and pedestrian safety. The intersection will be reconfigured to accommodate the signal and center median.

Project Justification:

The improvements have been identified in the Technical Memorandum "Boardman Main Street Circulation Assessment" published by Kittelson & Associates, Inc. This intersection was identified as an intersection that would benefit from becoming signalized and will greatly improve traffic flow for the City's main north-south arterial.

The only intersection discussed is N. Main Street and Boardman Avenue

Conditional Use Criteria Findings are Incorrect, Incomplete, and Inadequate

- Generic findings under BDC 4.4.400(D)(1) are not accurate or adequate
- The failure of an adequate site plan as required under BDC 4.4.300 renders the application premature and prevents full comment on the approval criteria
- No findings are provided for the general conditional use permit approval criteria under BDC 4.4.400(B)
- The decision does not comply with the specific conditional use criteria under BDC 4.4.400(D)(1) and other Code criteria

The Planning Commission Decision is Tainted by Conflicts of Interest

Planning Commissioners Jennifer Leighton and Mike Connell had undisclosed conflicts of interest that tainted the Planning Commission decision.

The application should be sent back to the Planning Commission for a new review without participation by these two commissioners who improperly influenced the decision.

The City Council should not rush this review

- While it may be that a HAWK signal should be installed at the corner of North Main Street and the intersection of NW Boardman, a decision should not be rendered prior to submission of a complete application in compliance with the law and before a full analysis of the impacts and options are disclosed for public comment.

GREENLIGHT ENGINEERING

August 6, 2024

City Council of the City of Boardman
200 City Center Circle
P.O. Box 229
Boardman, OR 97818

RE: Appeal APP24-000002, CUP24-000001 Transportation Impacts

Dear Mayor Keefer and Council Members:

Greenlight Engineering has been asked by Hattenhauer Distributing Co. to evaluate the proposed conditional use transportation improvement to install a High-Intensity Activated CrossWalK ("HAWK") signal and a median at N. Main Street/Front Street in Boardman, Oregon (collectively, the "Project"). I have reviewed the March 2024 Technical Memorandum prepared by Kittelson & Associates (hereafter referred to as the "Technical Memorandum"), the April 2009 Boardman Main Street Interchange Area Management Plan ("IAMP"), the Planning Commission's decision, and the City Council Findings of Fact on Appeal.

Executive Summary

- The application and Planning Commission decision fail to address the IAMP adopted triggers for modifications to the N. Main Street/Front Street intersection. It is clear that none of the triggers for converting the intersection to right-in/right-out operations are met.
- The application lacks evidence of existing operational issues at the N. Main Street/Boardman Avenue NE intersection and provides no engineering analysis of a HAWK signal or evidence that a HAWK signal will resolve the operational issues.

IAMP Triggers for Making Improvements at N. Main Street/Front Street Not Met

The IAMP provides triggers for making planned improvements in the area and access changes to N. Main Street/Front Street, the IAMP notes that "It is important to establish thresholds for limiting the North and South Front Street access at Main Street so that decisions can be made through the land use review process, and as various traffic issues arise or the community reports significant conflicts."

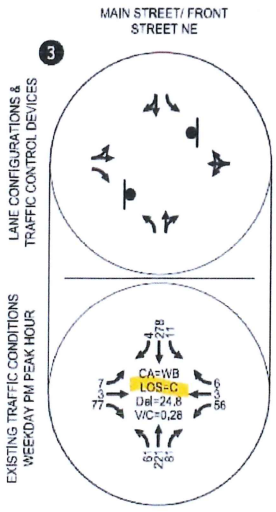
Moreover, the IAMP further states:

> "Below is a description of when the improvements would be expected to be needed...
>
> Main Street & Front Avenue (sic) (North and South)
>
> The traffic volumes at the intersections of Main Street & Front Avenue North and Main Street & Front Avenue South should be monitored as development occurs to determine if certain turning movements should be prohibited...
>
> Triggers for access changes at Front Street North and Front Street South include:
>
> - Side street level of service drops below LOS E (15-20 years from now)
> - Traffic signal installed at the I-84 westbound ramp (10-15 years from now)
> - Increase in crashes
> - Bridge improvement project constructed (15-20 years from now)
> - Recurring public complaints about conflicts and safety at these locations"

In order to appropriately evaluate whether the N. Main Street/Front Street intersection should be converted to right-in/right-out only as part of this conditional use application, the proposed access changes should be evaluated against the adopted IAMP. These triggers were adopted with substantial community involvement. Each of the five triggers are evaluated below.

1. Side Street Level of Service

At the May 15, 2024 Planning Commission meeting, City staff indicated that the N. Main Street/Front Street intersection currently operates at LOS D and the Planning Commission states that "Today it is D which, under the MS IAMP, does require action on the part of the city." LOS D exceeds the City of Boardman's level of service standard of LOS C. The City concludes that they are compelled to take action based on this LOS. However, Figure 1 (see below) of the Technical Memorandum clearly illustrates that this intersection currently operates at LOS C. There is no evidence that this intersection currently operates at LOS D or otherwise fails to meet City of Boardman mobility standards. In fact, the Technical Memorandum states "As shown, the study intersection operations satisfy...City of Boardman mobility targets/standards." There is no evidence that the IAMP adopted trigger of LOS E is met.



Excerpt of Figure 1 from Technical Memorandum

2. I-84 Signal at Westbound Ramp

No traffic signal is installed or currently proposed at the I-84 westbound ramp/N. Main Street intersection. Therefore, another IAMP trigger point has not occurred to justify a median.

3. Increase in Crashes

Table 3.4 of the IAMP reports two crashes at the N. Main Street/Front Street intersection from 2000-2004. The Technical Memorandum reports that there was one crash at the N. Main Street/Front Street intersection from 2016-2020. Appendix A of this report illustrates that there were only two reported crashes at the intersection from 2013-2022. These numbers are consistently low and do not constitute evidence that there is an increase in crashes at the intersection.

4. Bridge Improvement Project

There is no bridge improvement project that has been constructed or is currently planned.

5. Recurring Public Complaints

There is no evidence that there are "Recurring public complaints about conflicts and safety at these location." Given that the intersection continues to operate adequately at LOS C, significantly better than the trigger of LOS E and there are very few reported crashes at this intersection, this is unsurprising.

None of the triggers that were adopted and agreed upon as part of the IAMP to restrict turning movements at the intersection are met. Taking this analysis together with the significant public

process in developing the IAMP, it does not appear that it is warranted to restrict access at this time at the N. Main Street/Front Street intersection.

No Engineering Study for HAWK Signal or Traffic Signal

The Manual on Uniform Traffic Control Devices ("MUTCD") is the national standard for traffic control devices. The 2009 MUTCD is adopted in Oregon under OAR 734-020-0005. The City of Boardman is required to comply with the MUTCD.

The 2009 MUTCD addresses the analysis of potential pedestrian hybrid beacons, of which HAWK signals are a possible tool:

> "If a traffic control signal is not justified under the signal warrants of Chapter 4C and if gaps in traffic are not adequate to permit pedestrians to cross, or if the speed for vehicles approaching on the major street is too high to permit pedestrians to cross, or if pedestrian delay is excessive, the need for a pedestrian hybrid beacon should be considered on the basis of an engineering study that considers major-street volumes, speeds, widths, and gaps in conjunction with pedestrian volumes, walking speeds, and delay...
>
> For a major street where the posted or statutory speed limit or the 85th-percentile speed is 35 mph or less, the need for a pedestrian hybrid beacon should be considered if the engineering study finds that the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding total of all pedestrians crossing the major street for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4F-1 for the length of the crosswalk."

The Technical Memorandum fails to address the need for a HAWK signal at the N. Main Street/Boardman Avenue NE intersection. It does not appear there is an engineering study that supports the City's decision to install a HAWK signal.

It does not appear that the criteria of Figure 4F-1 of the MUTCD is met based on the evidence submitted as part of the Technical Memorandum as illustrated below. The red dot illustrates the intersection's pedestrian crossing and vehicular traffic volumes per the Technical Memorandum along with the MUTCD guidelines. The north leg of the N. Main Street crosswalk is approximately 50 feet wide.

The Technical Memorandum fails to provide an engineering study that supports the installation of a HAWK at this intersection, which may present a potential legal liability for the City as the installation may not be based on standard MUTCD procedures. While Hattenhauer Distributing Co. may not oppose the installation of the HAWK signal, the City should still make an informed decision consistent with best practices prior to its installation.

Figure 4F-1. Guidelines for the Installation of Pedestrian Hybrid Beacons on Low-Speed Roadways

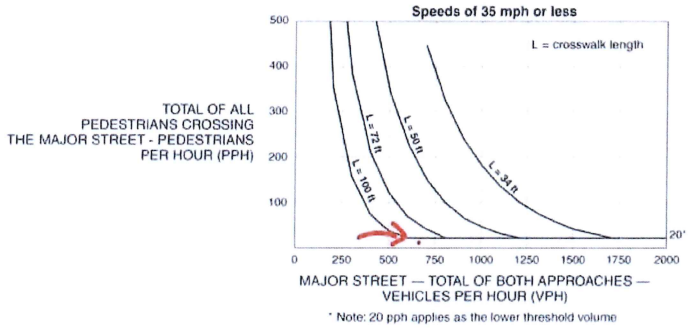


Figure 4F-1. Guidelines for the Installation of Pedestrian Hybrid Beacons on Low-Speed Roadways

The City previously proposed a full traffic (not a HAWK signal) based on the Technical Memorandum. However, the Technical Memorandum fails to provide evidence of the traffic volumes that were used in the traffic signal warrant analysis to establish that a traffic signal is warranted. The traffic signal warrant analysis is also based upon a future 2042 year.

There is no evidence that suggests that a full traffic signal or a HAWK signal is warranted at this intersection under existing conditions.

Technical Memorandum Fails to Provide Evidence or Analysis of Queuing

It appears that the primary purpose of modifying the N. Main Street/Boardman Avenue NE intersection is to mitigate queues that are generated from pedestrians crossing in the crosswalk with the rectangular rapid flashing beacon ("RRFB"). The Technical Memorandum refers to:

> "periods of occassional (sic) vehicle queue spillback generated by a pedestrian crossing beacon at the Boardman Avenue intersection...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...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."

The Technical Memorandum provides a traffic count that illustrates low pedestrian crossing volumes of N. Main Street at Boardman Avenue NE that would not likely create the reported queuing issue. It does not appear that traffic counts were collected and they certainly were not provided for these reported peak activation periods.

The Technical Memorandum fails to quantify the existing queuing or provide traffic analysis that illustrates the reported queuing issues. There is no analysis of the RRFB operations for queuing. It is unclear how frequently these issues exist.

The Technical Memorandum suggests a traffic signal be installed at the intersection. The existing RRFB wasn't analyzed for queuing and the proposed HAWK signal wasn't analyzed for queuing. In fact, there is no evidence of any analysis for a HAWK signal at all. There is no evidence that operations at the intersection will improve with a HAWK signal.

It is unusual to make conclusions about traffic operations without first analyzing the existing conditions and the impacts of proposed solutions.

Evaluation of Planning Commission Decision

The Planning Commission decision states that "Installation of the center median is also justified to convert NW and NE Front Street to right-in/right-out and for traffic queueing/staging at the signalized intersection." It is not clear how the Planning Commission determined that the installation of the median was justified given that the Technical Memorandum does not provide evidence that the center median is needed to address traffic queuing/staging at the signalized intersection of N. Main Street/Boardman Avenue NE.

The Planning Commission decision further states:

> "It should be noted that the MS IAMP does say the following about access to Main Street in the vicinity of the Interchange: 'A key element of the IAMP is to the long-range preservation of operational efficiency and safety of the interchange if the management of access to Main Street. Because access points introduce a number of potential vehicular conflicts on a roadway and are frequently the causes of slowing or stopping vehicles, they can significantly degrade the flow of traffic and reduce the efficiency of the transportation system. However, reducing the overall number of access points and providing greater separation between them can minimize the impacts of these conflicts.' The proposed center median and limiting left hand turns on North Main Street between Front Street and Boardman Avenue affectively (sic) achieves the intent of this statement without closing those accesses."

As noted above, the IAMP provides certain triggers that should be met before access restrictions are implemented. None of those triggers are referenced in the Planning Commission's decision and none of those triggers are met.

There is no evidence that the intersection of N. Main Street/Front Street is "frequently the cause[s] of slowing or stopping vehicles...significantly degrade(s) the flow of traffic and reduce(s) the efficiency of the transportation system" nor that any of the IAMP adopted triggers are met.

The Planning Commission's decision further states:

> "The city is maintaining the conversion of the Front Street intersection to a right-in/right-out configuration for several reasons outlined here:

1. The City's Level of Service, or LOS, standard is C which is higher than ODOTs and allows for less congestion.
2. Access points introduce a number of potential conflicts on a roadway and are frequently the causes of slowing or stopping vehicles, they can significantly degrade the flow of traffic, and reduce the efficiency of the transportation types. Reducing the overall number of access points and providing greater separation between them can minimize the impacts of these conflicts. Reducing Front Street to a right-in-right-out configuration reduces a significant vehicular conflict adjacent to the west bound off-ramp.
3. At the time the MS IAMP was adopted the LOS for Main Street and North Front Street was C. Today it is D which, under the MS IAMP, does require action on the part of the city. It should be noted that the LOS for South Front Street is also at LOS of D. Without action both of those intersections are identified to achieve a LOS of F by 2042.
4. The MS IAMP does identify that the City is to work towards two items, the first being development of the local street network both east and west of Main Street and second to limit access at Main Street at both north and south Front Street. The first step of this is to limit those intersections to right turn only."

Notably, the Planning Commission's decision again fails to reference the adopted IAMP triggers for modifications to the N. Main Street/Front Street intersection. However, problems associated with each of the above Planning Commission's determinations for converting to right-in/right-out operation are addressed below.

1. LOS Standard

The City's LOS standard is C and while the City has concluded that the intersection operates at LOS D, the Technical Memorandum is clear that the intersections operate at LOS C under existing conditions. Nonetheless, the trigger for conversion per the IAMP is LOS E and that trigger is not met.

2. Access Point Causes Conflicts

The Technical Memorandum provides no evidence that the operations at the Main Street/Front Street cause slowing or stopping of vehicles, significantly degrades the flow of traffic or reduces the efficiency of the transportation types. Regardless, none of these situations are adopted as a trigger as part of the adopted IAMP.

3. LOS of Intersection

The Planning Commission Decision notes that "At the time the MS IAMP was adopted the LOS for Main Street and North Front Street was C. Today it is D which, under the MS IAMP, does require action on the part of the city...Without action both of those intersections are identified to achieve a LOS of F by 2042."

However, the intersection continues to operate at LOS C per the Technical Memorandum. Per the IAMP, no action is triggered until the intersection operates at LOS E. There is no action required per the IAMP.

4. City Should Work Towards Action

The Planning Commission Decision states that the City should be working to "limit those intersections to right turn only." However, none of the adopted triggers of the IAMP are met.

The Planning Commission Decision states:

> "Staff have determined that the HAWK signal is consistent with the MS IAMP as it does conform to the Access Management Plan by:
>
> - Continuing to restrict access to the interchange and interchange ramps and is, in fact, working to eliminate impacts to the interchange ramps from traffic that currently back up when continual use of the RRFB causes delays of northbound travelers on Main Street.
> - Improve safety factors not only within the interchange but also along Main Street and at this intersection in particular.
> - Eliminating or reducing turning conflicts along the Main Street corridor at the Front Street intersection.
> - Assuring that all current accesses are maintained to allow some level of ingress or egress and improving several accesses with improvements that also support pedestrian utilization."

Three of the Planning Commission's determinations that a HAWK signal is consistent with the IAMP are addressed below.

1. Restricting Access

It is unclear how the HAWK signal would "restrict access" although the Technical Memorandum and Planning Commission decision reference queuing impacts. As noted earlier, the Technical Memorandum fails to provide substantial evidence of queuing issues or any analysis that establishes that a queuing issues exists or how a HAWK signal would mitigate this issue. The Technical Memorandum fails to provide any analysis of a HAWK signal. The Technical Memorandum fails to provide evidence of pedestrian counts that may result in queuing issues.

2. Improves Safety

There is no evidence that the HAWK signal would improve safety at the intersection as the HAWK was not even a consideration of the Technical Memorandum. There is also not substantial evidence that there is a safety issue at the interchange caused by the current operations at N. Main Street/Boardman Avenue NE intersection.

3. Reducing Conflicts/Maintaining Some Access at the Front Street Intersection

There is not substantial evidence that the HAWK signal at N. Main Street/Boardman Avenue NE eliminates or reduces turning conflicts along the Main Street corridor at the Front Street intersection. There is no traffic analysis of a HAWK signal.

There is no apparent connection with the HAWK signal in "assuring that all current accesses are maintained to allow some level of ingress or egress and improving several accesses with improvements that also support pedestrian utilization."

The Planning Commission further states:

> "Staff have also determined that the HAWK signal is warranted based on the following:
>
> - While not within the standard time frame for consideration there has been a pedestrian loss of life at this intersection.
> - This intersection is a primary school crossing area for Riverside High School during the arrival, lunch and departure times. Use of the current RRFB creates backs along Main Street impacting the west bound off ramp queuing and can result in traffic backing up into the west bound travel lane. This is further discussed on page 7 of the Kittelson & Associates analysis that is attached.
> - Pedestrian volume outside of school pedestrian usage continues to increase along Main Street.
> - Crash data from 2016 through 2020 identified in the Kittelson & Associates report shows that there are a variety of different types of crashes throughout the study corridor."

Two of the Planning Commission's determinations that a HAWK signal is warranted are addressed below.

1. Queuing and RRFB

The Technical Memorandum fails to provide substantial evidence of the existing operations of the N. Main Street/Boardman Avenue NE intersection during the arrival, lunch and departure times at the intersection nor the queuing created by the intersection. The Technical Memorandum doesn't even consider a HAWK signal. There is no traffic analysis that illustrates there is a problem at the intersection nor how a HAWK signal will operate at the intersection and whether the HAWK will mitigate the reported conditions.

2. Pedestrian Volumes Increasing

There is no evidence that "Pedestrian volume outside of school pedestrian usage continues to increase along Main Street."

Additionally, from a technical perspective, it is evident that the N. Main Street/Boardman Avenue NE intersection does not likely meet the guidelines of the MUTCD for installation of a HAWK signal. Again, it appears that no engineering analysis has been completed in support of the proposed HAWK signal.

Evaluation of City Council Findings of Fact on Appeal

For the most part, the City Council's Findings of Fact on Appeal report adopts the findings of the Planning Commission. However, the report also addresses items of the appeal in section "III: Issues Raised on Appeal" of the report. An evaluation of three of those issues is provided below:

The City Council's Findings of Fact state:

> "The City of Boardman secured the Boardman Main Street Circulation Assessment to evaluate the various needs along Main Street and the current Level of Service (LOS) identified for the Front Streets is at D which based on the Main Street Interchange Area Management Plan (IAMP) requires action by the city once a LOS of C is reached...One of the primary reasons for evaluating these intersections is the conflict between pedestrians and vehicles at the Front Street intersection as well as the Boardman Avenue intersection. Use of the currently installed RRFB causes backup and delay issues along both Main Street to the south and Boardman Avenue to the east. Replacing the RRFB with a HAWK Signal should allow for smoother interaction between vehicle travel and pedestrian crossing, particularly at the Boardman Avenue intersection..."

As previously established in this report, there is no evidence that the N. Main Street/Front Street currently operates at LOS D. In fact, the Technical Memorandum clearly illustrates that the intersection operates at an acceptable LOS C. Even so, the IAMP does not require any action at LOS D. One of the triggers for taking action per the IAMP would be if the intersection was operating at LOS E, which it is not.

The IAMP does not reference pedestrian conflicts at the N. Main Street/Front Street intersection as a trigger for modifications.

There is not substantial evidence that the RRFB causes backup and delay issues along Main Street and Boardman Avenue. The traffic analysis prepared for the intersections illustrates acceptable delays.

There is no evidence that replacing the RRFB with a HAWK signal would allow for "smoother interaction between vehicle travel and pedestrian crossing. As previously referenced, there is no traffic analysis or engineering study that includes the use of a HAWK signal.
The City Council Findings of Fact state that "The median is defined in the MS IAMP as a solution to be implemented when certain conditions have been met, which is the case." The IAMP does provide triggers for the median, but as previously addressed herein, none of the conditions have been met to trigger a median at N. Main Street/Front Street intersection.

The City Council Findings of Fact state that "As discussed previously in these Findings of Fact there is already a stacking issue on Main Street that the upgrade from the RRFB to the HAWK signal should mitigate reducing the stacking that currently occurs. This will be achieved as the HAWK signal uses more advanced logic to balance the needs of the pedestrian crossing with motor vehicle needs."

The application provides no substantial evidence of a stacking issue generated at the N. Main Street/Boardman Avenue intersection. The Technical Memorandum provides no traffic analysis that illustrates stacking issues. The application provides no evidence of any analysis involving a HAWK signal and does not provide evidence that the HAWK signal will achieve reduction of a stacking issue.

Approval Criteria & Conclusion

To approve this application, the City must find that the application satisfies Section 4.4.400 of the City of Boardman Development Code:

1. "City or County facilities and improvements. Construction, reconstruction, or widening of highways, roads, bridges or other transportation facilities that are (1) not designated in the City's adopted Transportation System Plan ("TSP"), or (2) not designed and constructed as part of an approved subdivision or partition, are allowed in all Districts subject to a Conditional Use Permit and satisfaction of all of the following criteria:

    a. The project and its design are consistent with the City's adopted TSP, or, if the city has not adopted a TSP, consistent with the State Transportation Planning Rule, OAR 660-012 ("the TPR")...

3. Proposal inconsistent with TSP/TPR. If the City determines that the proposed use or activity or its design is inconsistent with the TSP or TPR, then the applicant shall apply for and obtain a plan and/or zoning amendment prior to or in conjunction with conditional use permit approval..."

In reviewing this criteria, the Planning Commission decision states that "The city has determined that the installation of the HAWK signal is consistent with the MS IAMP and is therefore consistent with the Transportation Planning Rule...See the discussion...above and the attached Boardman Main Street Circulation Assessment [Technical Memorandum]."

As discussed previously, the Technical Memorandum doesn't contemplate a HAWK signal at all. There is no analysis that supports the installation of a HAWK signal.

Logically, if the Project is not consistent with the IAMP, then it cannot be consistent with the TSP. The Planning Commission's decision fails to conclude that the remainder of the proposed Project is consistent with the IAMP.

It is clear based on the analysis above that the Project is not consistent with the IAMP as the Planning Commission's Decision ignores the adopted triggers for implementation of the access restrictions at N. Main Street/Front Avenue. There is no evidence that any of the adopted triggers have been met.

Therefore, the application cannot be approved.

Should you have any questions, feel free to contact me at rick@greenlightengineering.com or 503-317-4559.

Sincerely,

Rick Nys, P.E.
Principal Traffic Engineer

RENEWS: 12/31/2024

City of Boardman OR

CITY COUNCIL MEETING

July 02, 2024 at 7:00 PM

Boardman City Hall Council Chambers

AGENDA

1. **CALL TO ORDER**
2. **FLAG SALUTE**
3. **ROLL CALL/EXCUSED ABSENCES**
4. **APPROVAL OF MINUTES**
   - A. City Council Meeting Minutes, June 4, 2024
5. **FINANCIAL REPORT**
   - **A.** May 2024 Financial Report - Final
   - **B.** June 2024 Financial Report - Preliminary
6. **FORMAL PROCEEDINGS**
   - A. Public Hearing - Surplus Property
7. **INTRODUCTIONS**
   - **A.** New Positions and Employees:

     Toni Connell - Office Administrator

     Luis Campos - Public Works Lead

     Luis Flores - Maintenance/Mechanic

     Jose Ponce - Public Works Worker

     Humberto Sanchez - Public Works Worker
8. **PUBLIC COMMENT**
   - **A.** Prearranged Presentation - Premium Tire & Lube
   - **B.** Prearranged Presentation - Boardman Parks & Recreation District - George Shimer
9. **ACTION ITEMS - ORDINANCES**
10. **ACTION ITEMS - RESOLUTIONS**
    - A. Resolution 16-2024 Surplus Property
11. **ACTION ITEMS - OTHER BUSINESS**
    - **A.** Missing Middle Housing Fund
    - **B.** Premium Tire & Lube
    - **C.** Boardman Parks and Recreation District
12. **OTHER PUBLIC COMMENT**

    INVITATION FOR PUBLIC COMMENT – The mayor will announce that any interested audience members are invited to provide comments. Anyone may speak on any topic other

than: a matter in litigation, a quasi-judicial land use matter; or a matter scheduled for public hearing at some future date. The mayor may limit comments to 3 minutes per person for a total of 30 minutes. Please complete a request to speak card prior to the meeting. Speakers may not yield their time to others.

A. Report Only - May Boardman Chamber/BCDA Report

13. DOCUMENT SIGNATURES

14. REPORTS, CORRESPONDENCE, AND DISCUSSION

A. Police Report

B. Building Department Report

C. Public Works Department Report

D. Committee Reports

E. City Manager

F. Councilors

G. Mayor

15. EXECUTIVE SESSION

A. Real Estate ORS 192.660 (2)(e)

16. ACTION ITEMS - OTHER BUSINESS

A. Decision from Executive Session

17. ADJOURNMENT

Zoom Meeting Link: https://us02web.zoom.us/j/2860039400?omn=89202237716

This meeting is being conducted with public access in-person and virtually in accordance with Oregon Public Meeting Law. If remote access to this meeting experiences technical difficulties or is disconnected and there continues to be a quorum of the council present, the meeting will continue.

The meeting location is accessible to persons with disabilities. Individuals needing special accommodations such as sign language, foreign language interpreters or equipment for the hearing impaired must request such services at least 48 hours prior to the meeting. To make your request, please contact a city clerk at 541-481-9252 (voice), or by e-mail at city.clerk@cityofboardman.com.

City of Boardman OR

CAPITAL IMPROVEMENT PROJECTS
2024-25

	PROGRESS
General	
BPA Greenspace	Obtaining BPA final approval
Surplus Old City Shop	Need council resolution
Planning	
Economic Opportunity Analysis	Obtaining quotes and selection
Transportation System Plan	In beginning stage of development
Parks Master Plan	Obtaining quotes and selection
Development Code	Obtaining quotes and selection
Municipal Code	In house project
Housing Need Analysis	Waiting for state final requirements
Public Works	
Maintenance Shop	Site design
Streets/Sidewalk	
SE Front St	Construction underway
Wilson & Faler Sidewalk	Going out for bid
S Main	Developing scope
Boardman Ave & N Main	In approval process
Water/Wastewater	
Bio Solids Removal	Summer project
Headworks Screen & Septage Receiving	Ordered headworks
NW Columbia Ave	Construction underway

Coordinated Population Forecast

2023 Through 2073

Morrow County

County UGB Coordinated Forecasts

June 25, 2023

Portland State
Population Research Center

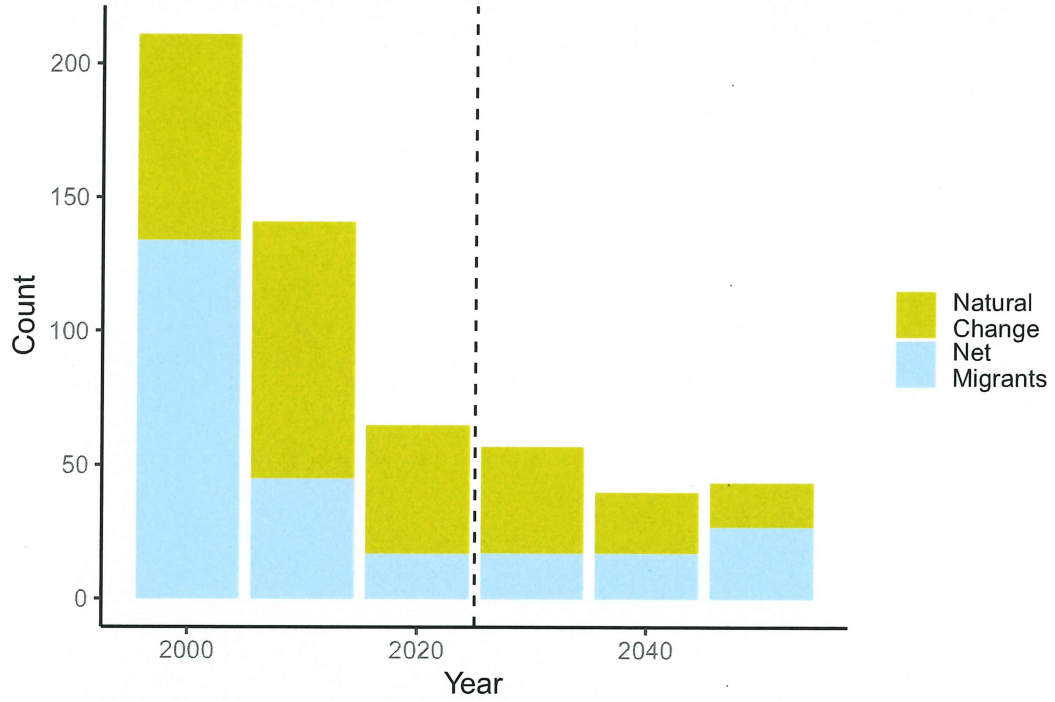


Figure 8: Forecast of county population chnage by natural change and net migration. Natural change refers to the balance of births and deaths which occur in any given year.

4.7 Sub-Area Population

Sub-area populations within and outside the urban growth boundaries (UGBs) are forecasted using the housing unit method, and then adjusted to be consistent with the county level forecast. The UGBs in Morrow County have historically had different trajectories, and we anticipate that these trajectories will also differ in the near future. Boardman is anticipated to continue to be the fastest growing UGB within the county, however, Irrigon and Ione are expected to continue to grow in population size as well. Housing unit and population statistics for city areas of UGBs and maps defining city and UGB boundaries may be found in Appendix C and D.

UGB	Estimate: 1990	Estimate: 2020	Forecast: 2040	Forecast: 2070
County Wide	**7,618**	**12,186**	**13,317**	**14,981**
Boardman	1,630	4,150	5,246	6,521
Heppner	1,499	1,273	1,169	978
Ione	270	338	375	405
Irrigon	894	2,236	2,503	2,963
Lexington	291	250	262	262
Unincorporated	3,040	3,939	3,763	3,853

Table 2: UGB population estimates and projections. 1990 and 2020 are derived from population estimates while 2040 and 2070 are derived from population forecasts.

Portland State
Population Research Center

8 Appendix C: City level characteristics

City	Metric	2000	2010	2020
Boardman	Pop 65+	5.32%	5.84%	
Boardman	Housing Units	947	1,017	1,282
Boardman	Housing Occ	90.07%	94.79%	90.64%
Boardman	PPH	3.33	3.34	3.29
Boardman	Median Income	$56,405	$54,756	$66,359
Boardman	Employment Rate	66.67%	74.69%	67.36%
Heppner	Pop 65+	20.29%	21.53%	
Heppner	Housing Units	660	647	608
Heppner	Housing Occ	88.33%	86.40%	87.66%
Heppner	PPH	2.36	2.30	2.20
Heppner	Median Income	$58,717	$41,851	$45,385
Heppner	Employment Rate	59.74%	55.32%	48.25%
Ione	Pop 65+	15.89%	14.59%	
Ione	Housing Units	142	154	147
Ione	Housing Occ	89.44%	85.71%	90.48%
Ione	PPH	2.53	2.49	2.53
Ione	Median Income	$65,884	$71,700	$76,373
Ione	Employment Rate	59.07%	68.48%	44.35%
Irrigon	Pop 65+	9.40%	11.23%	
Irrigon	Housing Units	609	640	691
Irrigon	Housing Occ	92.78%	94.06%	96.09%
Irrigon	PPH	3.01	3.03	3.03
Irrigon	Median Income	$62,895	$67,533	$69,527
Irrigon	Employment Rate	67.22%	67.26%	63.38%
Lexington	Pop 65+	15.97%	17.65%	
Lexington	Housing Units	111	101	104
Lexington	Housing Occ	91.89%	93.07%	85.58%
Lexington	PPH	2.58	2.53	2.67
Lexington	Median Income	$75,766	$58,157	$39,826
Lexington	Employment Rate	57.40%	59.22%	45.71%

Table 7: City population statistics. All statistics derived from US Census and American Community Survey.

CITY COUNCIL MEETING

April 02, 2024 at 7:00 PM

Boardman City Hall Council Chambers

AGENDA

1. **CALL TO ORDER**
2. **FLAG SALUTE**
3. **ROLL CALL/EXCUSED ABSENCES**
4. **APPROVAL OF MINUTES**
   - A. City Council Workshop Minutes - March 5, 2024
   - B. City Council Meeting Minutes - March 5, 2024
5. **FINANCIAL REPORT**
6. **FORMAL PROCEEDINGS**
   - A. Public Hearing - Naming Unity Loop in the Malhi Manufactured Home Park
7. **PUBLIC COMMENT**
   - **A.** Prearranged Presentation - Morrow County Schools, Boardman
   - **B.** Prearranged Presentation - Motto Winner
   - **C.** Prearranged Presentation - The Loop Transportation
   - **D.** Other Public Comment
8. **ACTION ITEMS - ORDINANCES**
   - A. ORDINANCE 3-2024 - Naming Unity Loop in the Malhi Manufactured Home Park
9. **ACTION ITEMS - RESOLUTIONS**
   - A. RESOLUTION 8-2024 - Surplus Property Declaration - 2016 Ford Interceptors
   - B. RESOLUTION 9-2024 - CREZ III Boundary Expansion
10. **ACTION ITEMS - OTHER BUSINESS**
    - A. Planning Commission Vacancy
    - B. Capital Improvement Plan
    - C. Letter of Support - Broadband Deployment Program
11. **DOCUMENT SIGNATURES**
12. **REPORTS, CORRESPONDENCE, AND DISCUSSION**
    - A. Police Report
    - B. Building Department Report
    - C. Public Works Department Report

D. Planning Department
E. Committee Reports
F. City Manager
G. Councilors
H. Mayor

13. ADJOURNMENT

Zoom Meeting Link: https://us02web.zoom.us/j/2860039400?omn=89202237716

This meeting is being conducted with public access in-person and virtually in accordance with Oregon Public Meeting Law. If remote access to this meeting experiences technical difficulties or is disconnected and there continues to be a quorum of the council present, the meeting will continue.

The meeting location is accessible to persons with disabilities. Individuals needing special accommodations such as sign language, foreign language interpreters or equipment for the hearing impaired must request such services at least 48 hours prior to the meeting. To make your request, please contact a city clerk at 541-481-9252 (voice), or by e-mail at city.clerk@cityofboardman.com.

CAPITAL IMPROVEMENTS PLAN

FOR

CITY OF BOARDMAN, OREGON

March 2024

ANDERSON PERRY & ASSOCIATES, INC.

La Grande, Redmond, Hermiston, and Enterprise, Oregon

Walla Walla, Washington

Job No. 439-80

Table of Contents

Introduction

This Capital Improvements Plan (CIP) provides the framework for implementing the City of Boardman's facility and infrastructure asset-based improvement process over a five-year period starting in fiscal year 2023-24. The CIP outlines cost estimates for projects that require significant capital investment and are essential for safeguarding the City's financial health, while providing continued delivery of services to citizens and businesses.

The CIP is anticipated to continue to be reviewed and updated periodically (at least every two years) to accommodate community needs and changes in financial resources. The CIP includes a list of the City's capital improvements projects, prioritizes the projects (subject to periodic review), and schedules the projects for funding and construction.

The CIP is a tool to be used in the development of responsible and progressive financial planning goals. The CIP complies with the City's financial policies. City policies and the CIP form the basis for making annual capital budget decisions and support the City's continued commitment to sound, long-range financial planning and direction.

The CIP identifies budgets and fiscal years for several types of capital projects. Capital improvements projects will be coordinated with the annual budget process to maintain full utilization of available resources. For each capital improvements project, the CIP provides a variety of information, including a project description, the service needs to be addressed, a proposed timetable, and proposed funding sources.

Generally, capital improvements projects will be prioritized with the most urgent projects first. In some instances, projects have been scheduled to coincide with an urgently needed project of another department to maximize effort, saving overall cost and/or maintaining the integrity of previously made investments. Ongoing operating costs are not included in the CIP.

Development of the CIP is a collaborative effort between the City's leadership team and departments to identify projects via specific master plans and other planning tools. Major capital improvements projects require City Council interaction during the development and funding stages.

Department Area Descriptions

This CIP is divided into the following sections:

- General
- Planning Department
- Water Department
- Wastewater Department
- Street Department
- General Appendix
- Planning Department Appendix
- Water Department Appendix
- Wastewater Department Appendix
- Street Department Appendix

Project Types

Projects generally fall within the primary categories identified below:

- System Repairs and Replacements - Projects needed to maintain existing infrastructure, typically needed to ensure reliable service.
- System Improvements - Projects designed to increase the functionality, efficiency, and/or capability of the infrastructure.
- Capacity-increasing Projects to Meet Population and Commercial Business Growth.
- Redevelopment and Community Enhancement - Projects created for urban renewal, overall community or neighborhood livability, and safety enhancement.
- Guidance and Regulatory Systems - Amendment of land use or other long-range planning documents to facilitate development of residential, commercial, and industrial land to help ensure water, wastewater, and transportation systems are adequate.

Department Goals

- Provide quality management of the CIP.
- Provide meaningful input for the City Council to make fiscally responsible decisions.
- Update the City Council on program implementation.
- Ensure timely information is provided to the Finance Department and City Council for cost differences.
- Provide timely project starts and completions.

What Projects Are in the Capital Improvements Plan

Capital assets are defined as tangible and intangible assets acquired for use in operations that will benefit more than a single fiscal period. This CIP presents capital improvements and capital outlay. Capital improvements are expansions of, or improvements to, the City's physical facilities, such as buildings, land, and infrastructure, including roads, bridges, sidewalks, and utility systems. Capital outlay is generally used for equipment, vehicles, and technologies. The City's capitalization threshold has a minimum value of $5,000 and a life expectancy of at least three years. Projects costing less than $5,000 are not considered capital and are funded through operating budgets. Land use and other planning processes are also incorporated into this CIP to help ensure adequate funding for this important work is available going forward.

Projects in the CIP can include:

- Construction costs (i.e., labor, materials, and contractors involved in completing a project).
- Acquisition of land or structures.
- Engineering or architectural services, professional studies, or other administrative costs.
- Costs associated with the development or amendment of land use or other long-range planning documents.
- Expenses for City equipment, vehicles, and technologies.
- Expenses for expanding City facilities.

Funding Overview

Implementation of the CIP relies on a variety of potential funding sources. These include utility rate charges, tax increment revenues, user fees, general fund revenues, grants, and system development charges. Most of the funding scenarios may be somewhat complex and interwoven based on project goals, anticipated construction elements, and project timelines. The accounting of infrastructure income prohibits the transfer of funds between some departments. For example, street income can only be utilized for repair and maintenance or capital improvements associated with the Street Department.

Capital improvement cost estimates are created and/or updated based on discussions with City staff and vendors and current bid results of other recent construction projects in the area. Each project estimate includes a 4.0 percent per year inflation rate anticipated to cover escalating project costs realized each year. This percentage is based on inflation rates that vary based on the economy, and it is anticipated that rates will vary from those estimated. Estimates include planning fees, if any, design engineering fees, construction costs, and anticipated construction engineering service fees (i.e., bidding assistance, project observations technical assistance, construction surveying, etc.).

Each of the four department sections, as well as the general section, contain figures that show project priority with an estimated cost for the next five-year period.

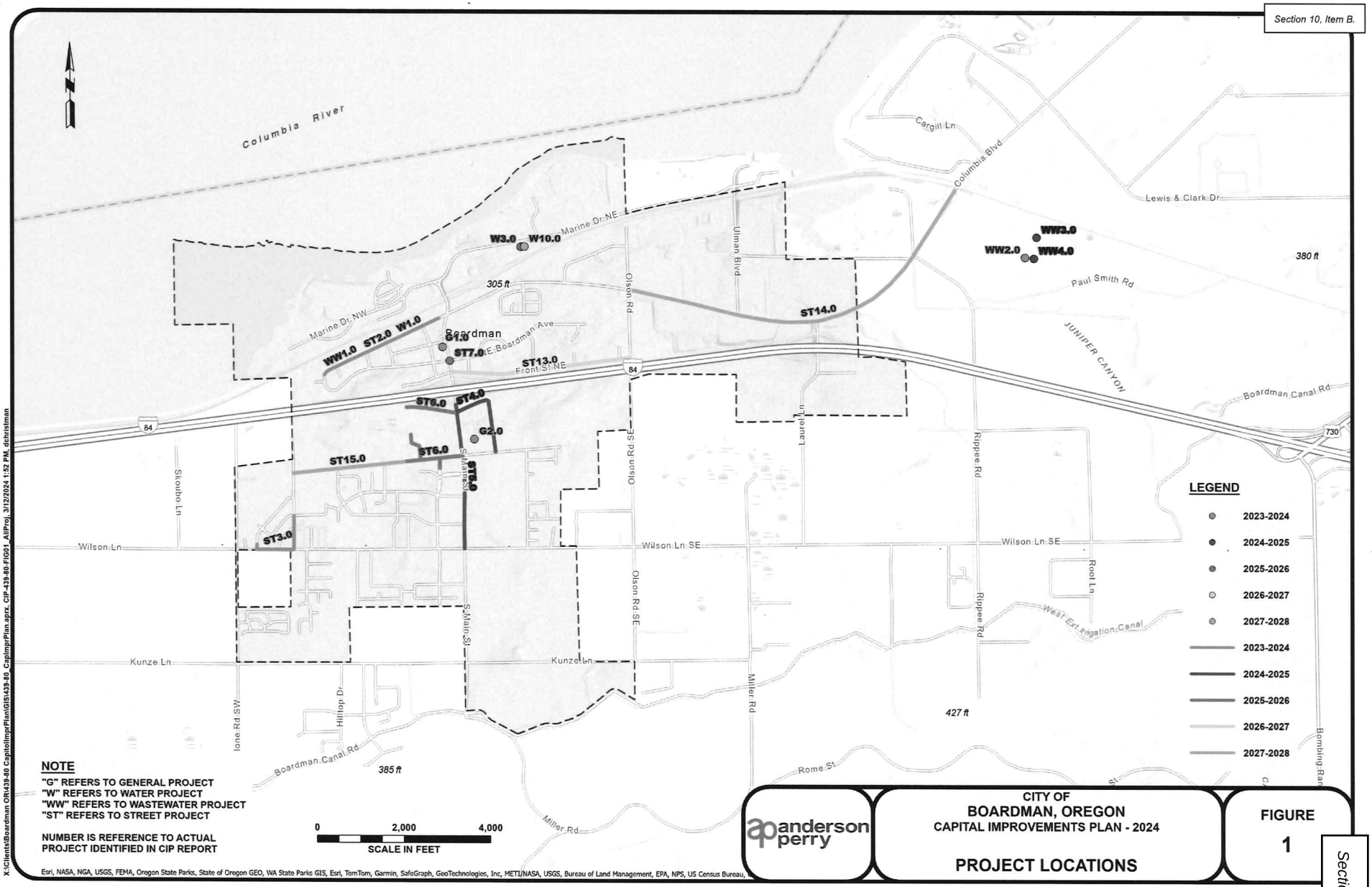
The CIP is not a financing document. Rather, the CIP is a planning document that places projects in the annual budget whereby funds are appropriated for them by the City Council. Prior to actual project work, refined scopes of work, construction cost estimates, and associated design fees will be presented to the City Council for final approval to expend funds.

Project Overview

Projects across the City that entail infrastructure improvements for the Water, Wastewater, Street, and Community Development and Planning Departments, as well as the General section, are identified in this CIP. The projects within these departments are identified on Figure 1, and the associated labels are referenced to project summaries included in each of the five department sections.

Additional projects within each of the five departments that are currently prioritized outside of the five-year CIP window due to funding limitations have been identified. These projects are included in the appendices for inclusion in future CIP updates.

Completed CIP projects within each of the five departments are shown in the appendices for reference.



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anderson perry

CITY OF
BOARDMAN, OREGON
CAPITAL IMPROVEMENTS PLAN - 2024

PROJECT LOCATIONS

FIGURE
1

General

The City of Boardman has projects that need to be planned, but will not be planned by the planning, water, wastewater, or street departments. The general fund covers all projects not planned by the planning, water, wastewater, and street departments. Table 1 provides an overview of the proposed general projects, anticipated financial expenditures, and the proposed fiscal year of each improvement. Figure 2 shows the physical locations of the proposed general improvements throughout the City.

City of Boardman, Oregon
Capital Improvements Plan
Future Value - General Project Summary

Project No.	Project	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
	General Projects					
G 1.0	Surplus Old City Shop	$ -	$ -	$ 50,000	$ -	$ -
G 2.0	Bonneville Power Administration Greenspace	$ -	$ 440,000	$ -	$ -	$ -
	General Total	$ -	$ 440,000	$ 50,000	$ -	$ -

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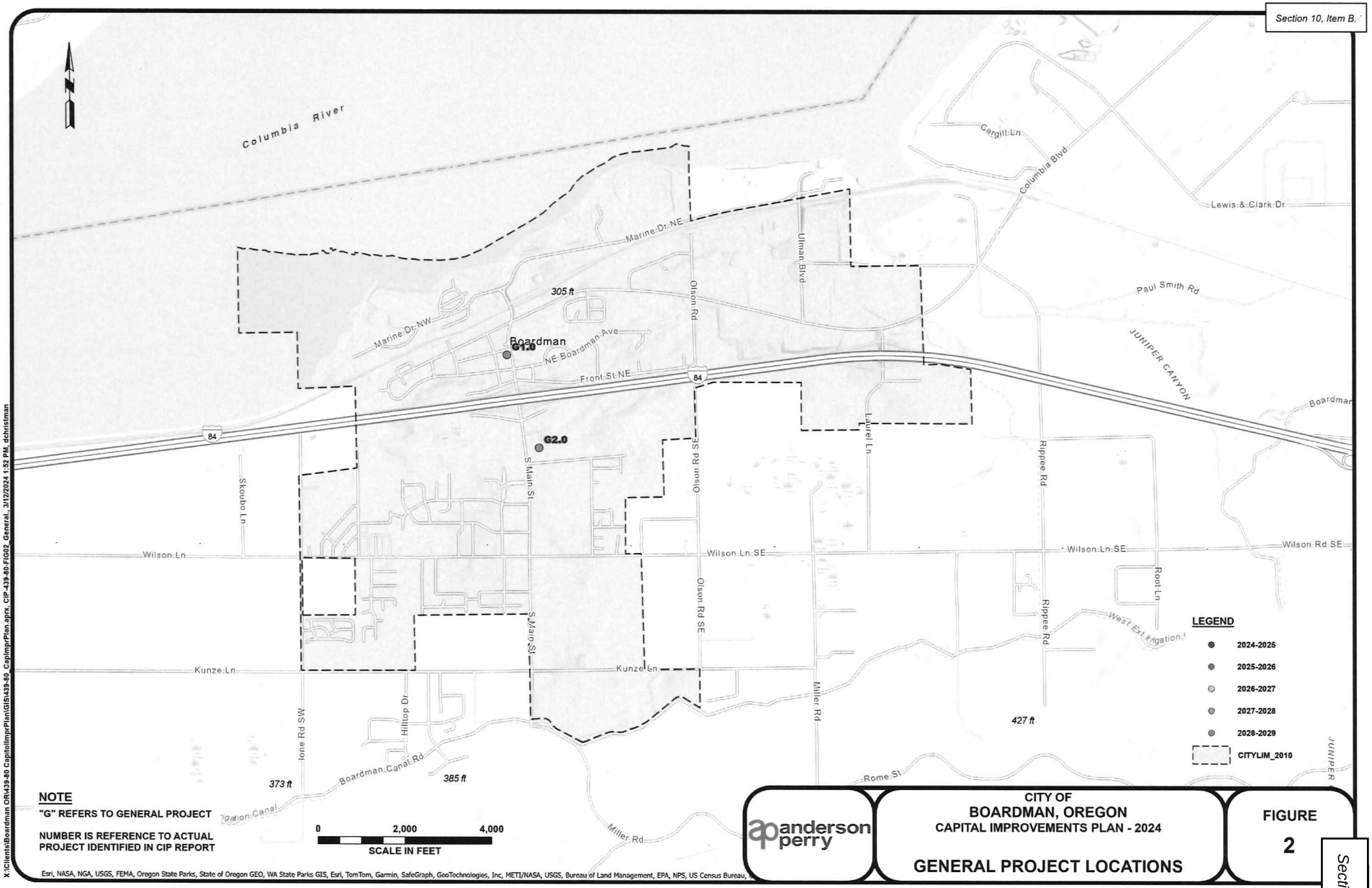
CITY OF
BOARDMAN, OREGON
CAPITAL IMPROVEMENTS PLAN
FUTURE VALUE - GENERAL
PROJECT SUMMARY

TABLE
1



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CITY OF
BOARDMAN, OREGON
CAPITAL IMPROVEMENTS PLAN - 2024

GENERAL PROJECT LOCATIONS

FIGURE
2

Project Number:	G 1.0
Project Name:	Surplus Old City Shop
Fund:	General
Estimated Cost:	$50,000
Fiscal Year:	2025-26

Project Description:

The project will include decommissioning the infrastructure associated with the old City Shop such as the groundwater well, backup generator, etc., so the City can sell the property.

Project Justification:

The City desires to sell the property so it can be developed.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
G 1.0	General Fund	$50,000	2025-26
	Total	$50,000	

Project Number:	G 2.0
Project Name:	Bonneville Power Administration Greenspace
Fund:	General
Estimated Cost:	$440,000
Fiscal Year:	2024-25

Project Description:

The City will acquire approximately 28 acres for a net cost of $290,000 around the Bonneville Power Administration (BPA) right-of-way (ROW). The project will develop the BPA ROW into usable space for public use. The project will include walking paths, sidewalks, grass areas, and public restrooms. Project will be funded by the Central Urban Renewal Area (CURA).

Project Justification:

The City of Boardman is dissected by the BPA ROW. This space is generally unusable as allowed uses around the ROW are minimal. Constructing greenspaces around the ROW are an allowed use of the space. The greenspace will beautify the area and bring recreation, both providing benefit to the community.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
G 2.0	CURA Funds	$440,000	2024-25
	Total	$440,000	

Community Development and Planning

The City of Boardman's Community Development and Planning Department (CDPD) is responsible for assisting citizens and developers by applying the adopted City codes for proposed developments. The CDPD has identified the long-range planning work needed to update and upgrade the City of Boardman planning program.

Projects included in the Capital Improvements Plan are anticipated to be completed by subconsultants. Therefore, updates to planning documents that will be completed by the CDPD are not included.

Table 2 provides an overview of the proposed CDPD projects, anticipated financial expenditures, and the proposed fiscal year of each project.

City of Boardman, Oregon
Capital Improvements Plan
Future Value - Community Development and Planning Project Summary

Project No.	Project	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
	Planning Projects					
P 1.0	Comprehensive Plan					
P 1.1	Housing Needs Analysis	$ 20,000	$ 20,000	$ -	$ -	$ -
P 1.2	Economic Opportunity Analysis	$ -	$ 50,000	$ -	$ -	$ -
P 1.3	Parks Master Plan	$ -	$ 40,000	$ -	$ -	$ -
P 2.0	Boardman Development Code Update	$ -	$ 50,000	$ 100,000	$ -	$ -
P 3.0	Boardman Municipal Code Update	$ -	$ -	$ 25,000	$ -	$ -
	Planning Total	$ 20,000	$ 160,000	$ 125,000	$ -	$ -

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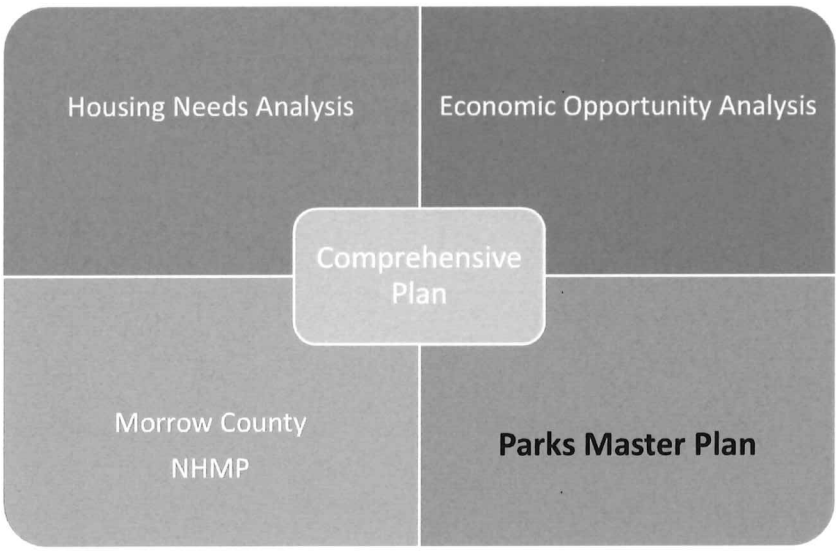
CITY OF
BOARDMAN, OREGON
CAPITAL IMPROVEMENTS PLAN

FUTURE VALUE - COMMUNITY DEVELOPMENT AND PLANNING PROJECT SUMMARY

TABLE 2



Project Number:	P 1.3
Project Name:	Parks Master Plan
Fund:	Planning
Estimated Cost:	$40,000
Fiscal Year:	2024-25

Project Description:

This includes a collaborative effort between the City of Boardman and the Boardman Parks & Recreation District to develop a Parks Master Plan for the City.

Project Justification:

Parks Master Plans are written for new and existing parks and present a balance of recreation opportunities with resource protection while guiding future park development and community engagement.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
P 1.3	Planning Fund	$40,000	2024-25
	Total	$40,000	

Boardman Development Code Update

Project Number:	P 2.0
Project Name:	Boardman Development Code Update
Fund:	Planning
Estimated Cost:	$150,000
Fiscal Year:	2024-25 to 2025-26

Project Description:

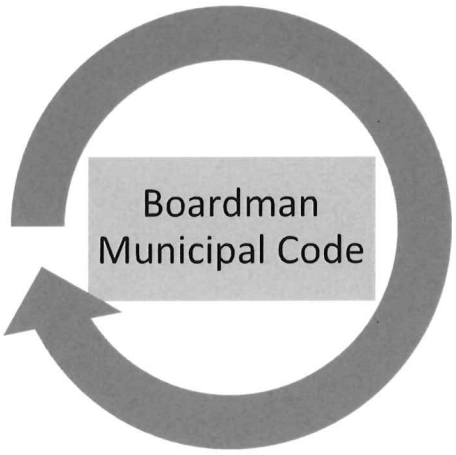
Update the Boardman Development Code, which was last adopted in 2002.

Project Justification:

The Boardman Development Code needs to be updated to be consistent with current Oregon State law and to form the basis for the other planning document updates.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
P 2.0	Planning Fund	$50,000	2024-25
P 2.0	Planning Fund	$100,000	2025-26
	Total	$150,000	



Project Number:	P 3.0
Project Name:	Boardman Municipal Code Update
Fund:	Planning
Estimated Cost:	$25,000
Fiscal Year:	2025-26

Project Description:

Update the Boardman Municipal Code.

Project Justification:

The Boardman Municipal Code needs to be updated to adopt new codes related to business licenses and the City's current Code Enforcement program including animal control. There will be other updates to the Municipal Code for consistency with the Development Code updates.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
P 3.0	Planning Fund	$25,000	2025-26
	Total	$25,000	

Water Department

The City of Boardman completed a Water System Master Plan (WSMP) in September 2015 that presents a detailed description and evaluation of the City's water system. In general, the City's water system consists of:

- Water Reservoirs 3
- Total Water Storage 725,000 gallons
- Miles of Pipe Approximately 17.5 miles
- Water Wells 3
- Booster Pump Stations 1

The City supplies water to residential, commercial, and industrial water users within its service area. The proposed projects in the Capital Improvements Plan may include "increased-capacity" projects, "replacement/ renewal" projects, and equipment upgrades. The proposed improvements have been programmed based on facility needs, the urgency of proposed upgrades, and anticipated funding availability.

Table 3 provides an overview of the proposed water system projects, anticipated financial expenditures, and the proposed fiscal year of each improvement. Figure 3 shows the physical locations of the proposed water system improvements throughout the City.

The capital improvements list for the Water Department provided herein is based on replacement/renewal/ repair projects completed and the City's WSMP prepared in 2015. Projects within the Water Department include distribution system improvements, reservoir modifications/construction, and improvements planned to improve system reliability.

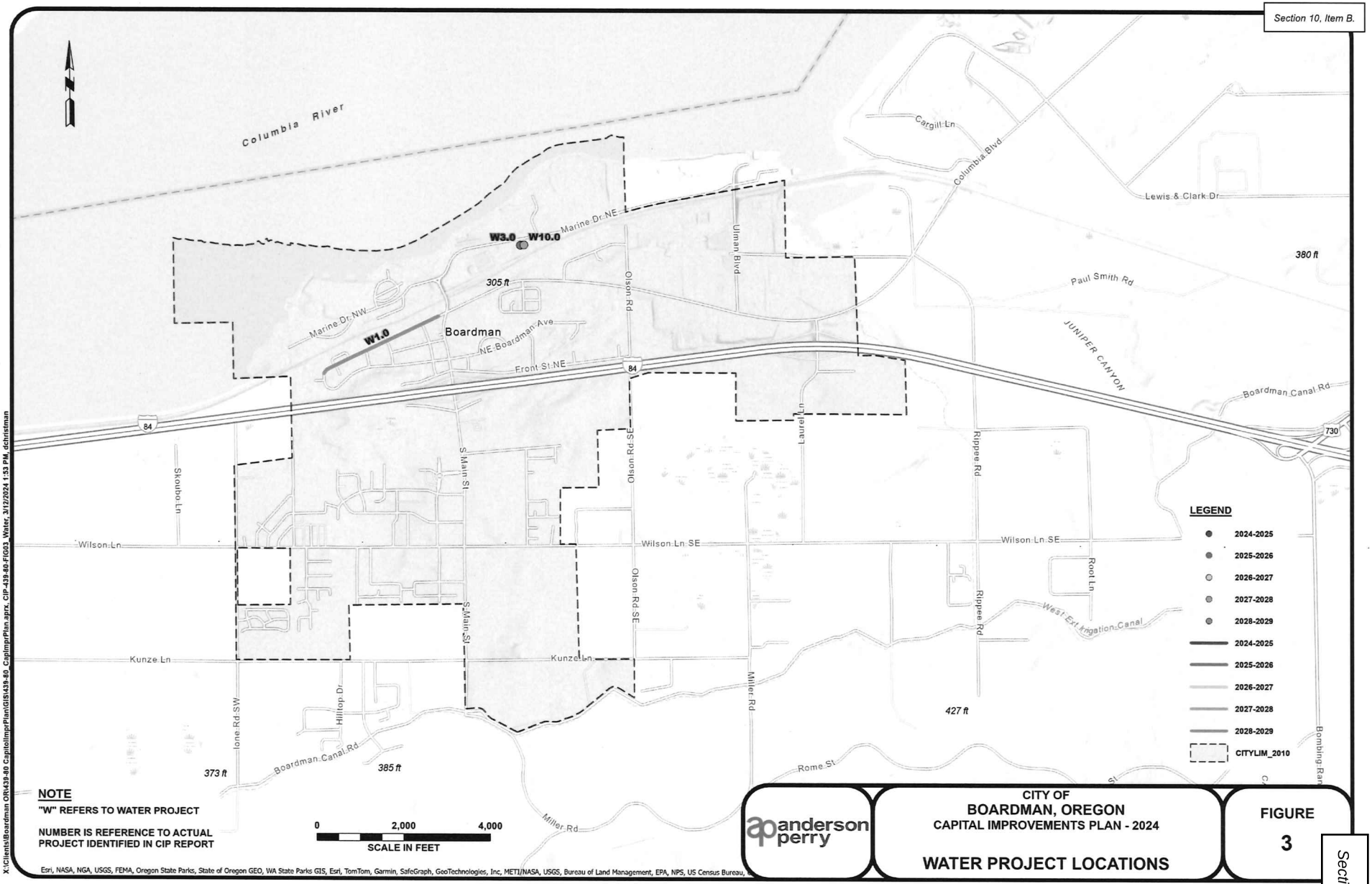
City of Boardman, Oregon
Capital Improvements Plan
Future Value - Water Project Summary

Project No.	Project	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
	Water Projects					
W 1.0	Columbia Avenue N.W. Improvements	$ 400,000	$ -	$ -	$ -	$ -
W 2.0	South Boardman Water System Feasibility Study	$ 50,000	$ -	$ -	$ -	$ -
W 3.0	300,000-gallon Reservoir Recoating	$ -	$ -	$ 350,000	$ -	$ -
W 4.0	Water System Master Plan Update	$ -	$ -	$ 70,000	$ -	$ -
W 5.0	Maintenance and Storage Shop	$ -	$ -	$ 120,000	$ -	$ -
W 6.0	Loader	$ -	$ -	$ 70,000	$ -	$ -
W 7.0	Vac Truck	$ -	$ -	$ 175,000	$ -	$ -
W 8.0	Ten-yard Dump Truck	$ -	$ -	$ 20,000	$ -	$ -
W 9.0	Water Management and Conservation Plan Update	$ -	$ -	$ -	$ 40,000	$ -
W 10.0	Decommission Old Water Booster Pump Station	$ -	$ -	$ -	$ -	$ 20,000
	Water Total	$ 450,000	$ -	$ 805,000	$ 40,000	$ 20,000

anderson perry

CITY OF
BOARDMAN, OREGON
CAPITAL IMPROVEMENTS PLAN
FUTURE VALUE - WATER PROJECT SUMMARY

TABLE 3



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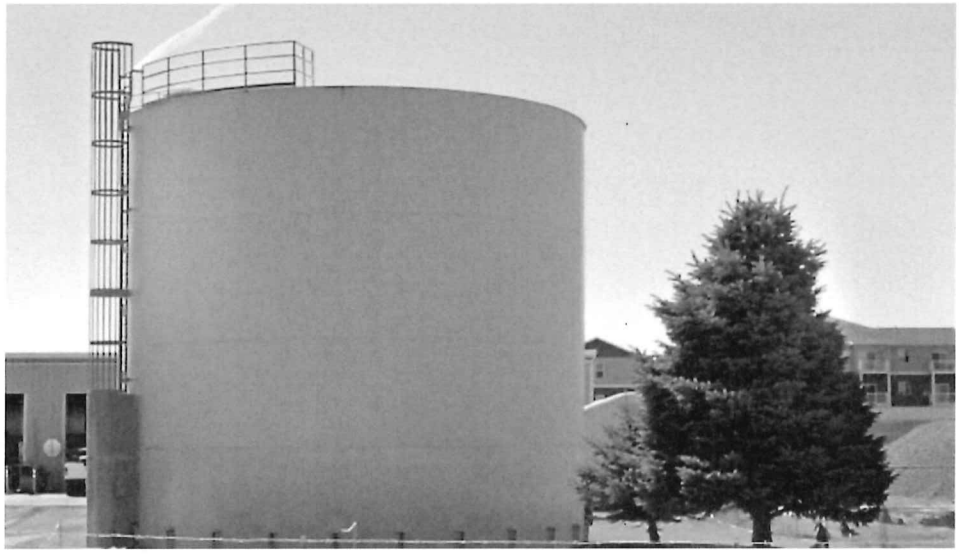
CITY OF
BOARDMAN, OREGON
CAPITAL IMPROVEMENTS PLAN - 2024

WATER PROJECT LOCATIONS

FIGURE
3

W 3.0



Project Number:	W 3.0
Project Name:	300,000-gallon Reservoir Recoating
Fund:	Water
Estimated Cost:	$350,000
Fiscal Year:	2025-26

Project Description:

The project will include painting the welded steel reservoir interior and exterior surfaces. The reservoir will be drained and sandblasted to remove compromised coatings and rust. The reservoir will be coated with industry standard coatings and the cathodic protection system will be upgraded.

Project Justification:

The welded steel reservoir was constructed in 2001 with an inspection completed in approximately 2018. The inspection revealed coatings failure and rusting. Recoating of the welded steel reservoir and upgrading the cathodic protection system is needed to prolong the City's investments and are common practice considering the age of the reservoir.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 3.0	Water Fund	$350,000	2025-26
	Total	$350,000	

Project Number:	W 4.0
Project Name:	Water System Master Plan Update
Fund:	Water
Estimated Cost:	$70,000
Fiscal Year:	2025-26

Project Description:

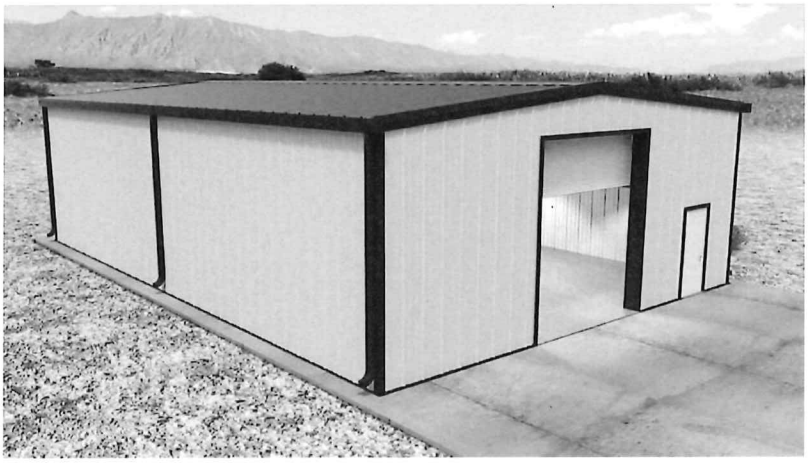
Updating the City's current Water System Master Plan (WSMP) will include analyzing the City's water system and providing suggestions for improvements to increase, or meet, capacity and distribution requirements.

Project Justification:

The City's WSMP needs to be updated every ten years to maintain regulatory compliance. Since the WSMP was adopted in 2015, an update will be needed within the five-year scope of this Capital Improvements Plan. The WSMP will help the City identify areas of the water system that need improvements and help ensure the City will meet distribution and capacity needs for the future.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 4.0	Water Fund	$70,000	2025-26
	Total	$70,000	



Project Number:	W 5.0, WW 6.0, ST 8.0
Project Name:	Maintenance and Storage Shop
Fund:	Water, Wastewater, Street
Estimated Cost:	$120,000
Fiscal Year:	2025-26

Project Description:

Construct a maintenance and storage shop to support the Public Works Department.

Project Justification:

As the City of Boardman grows, so does the Public Works Department. There is a need to provide additional vehicle/equipment storage in conditioned space.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 5.0	Water Fund	$120,000	2025-26
WW 6.0	Wastewater Fund	$110,000	2025-26
ST 8.0	Street Fund	$120,000	2025-26
	Total	$350,000	

Project Number:	W 6.0, WW 7.0, ST 10.0
Project Name:	Loader
Fund:	Water, Wastewater, Street
Estimated Cost:	$70,000
Fiscal Year:	2025-26

Project Description:

Purchase a loader for Public Works use.

Project Justification:

Public Works needs a loader to be more efficient in daily operations.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 6.0	Water Fund	$70,000	2025-26
WW 7.0	Wastewater Fund	$60,000	2025-26
ST 10.0	Street Fund	$70,000	2025-26
	Total	$200,000	

W 7.0

Project Number:	W 7.0, WW 8.0, ST 11.0
Project Name:	Vac Truck
Fund:	Water, Wastewater, Street
Estimated Cost:	$175,000
Fiscal Year:	2025-26

Project Description:

Purchase a new vac truck for Public Works use.

Project Justification:

The existing vac truck has surpassed its service life and needs to be replaced.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 7.0	Water Fund	$175,000	2025-26
WW 8.0	Wastewater Fund	$175,500	2025-26
ST 11.0	Street Fund	$150,000	2025-26
	Total	$500,000	

W 8.0

Project Number:	W 8.0, WW 9.0, ST 12.0
Project Name:	Ten-yard Dump Truck
Fund:	Water, Wastewater, Street
Estimated Cost:	$20,000
Fiscal Year:	2025-26

Project Description:

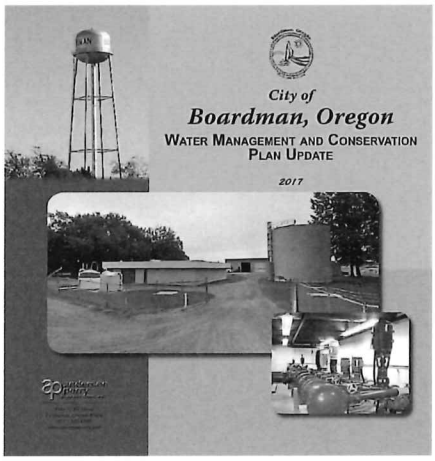
Purchase a ten-yard dump truck for Public Works use.

Project Justification:

Public Works needs a ten-yard dump truck to be more efficient in daily operations.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 8.0	Water Fund	$20,000	2025-26
WW 9.0	Wastewater Fund	$40,000	2025-26
ST 12.0	Street Fund	$40,000	2025-26
	Total	$100,000	



Project Number:	W 9.0
Project Name:	Water Management and Conservation Plan Update
Fund:	Water
Estimated Cost:	$40,000
Fiscal Year:	2026-27

Project Description:

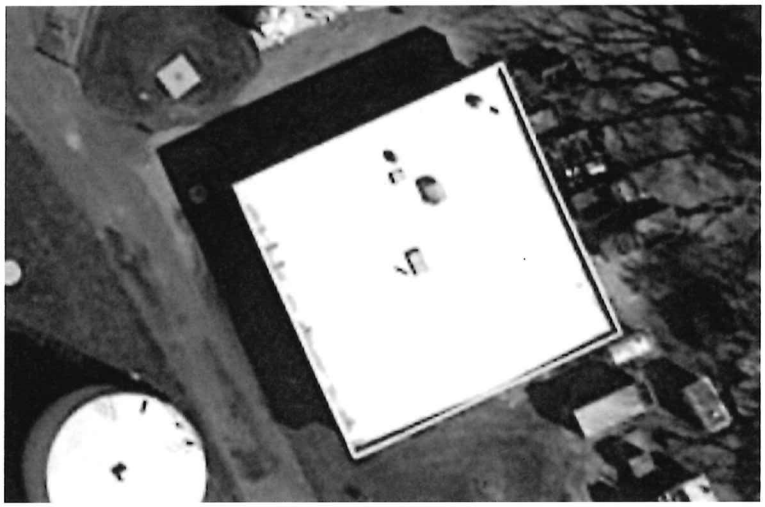
Updating the City's current Water Management and Conservation Plan (WMCP) will require analyzing the City's water system. After an analysis is finished, the WMCP will discuss how the City is managing and conserving water as well as permit requirements.

Project Justification:

The City's WMCP is required to be updated every ten years to maintain regulatory compliance. Since the last update to the WMCP was in 2017, an update will be needed within the five-year scope of this Capital Improvements Plan. The WMCP will help the City identify areas of the water system that need improvements. This will help the City meet distribution and capacity needs for the future.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 9.0	Water Fund	$40,000	2026-27
	Total	$40,000	



Project Number:	W 10.0
Project Name:	Decommission Old Water Booster Pump Station
Fund:	Water
Estimated Cost:	$20,000
Fiscal Year:	2027-28

Project Description:

Decommission the old water booster pump station.

Project Justification:

After construction of the new water booster pump station, the City's old booster pump station is redundant. The building structure and equipment enclosed is past its service life, and it is not feasible or reasonable to restore a redundant booster pump station.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 10.0	Water Fund	$20,000	2027-28
	Total	$20,000	

Wastewater Department

The City of Boardman completed a Wastewater Facilities Plan in 2021 that presents a detailed description and evaluation of the City's wastewater system. In general, the City's wastewater system consists of:

- Miles of Pipe — Approximately 28
- Manhole Structures — Approximately 417
- Cleanouts — 30
- Recycled Water Discharge Point — The City's land application site (Circle 52)
- Sanitary Lift Stations — Seven

The proposed projects included in the Capital Improvements Plan are based on "increased-capacity" projects where upgrades are required to accommodate growth and "replacement" projects for collection system components that have deteriorated past the reasonable point of repair. When upgrading a system component, the project is sized to accommodate growth, reduce infiltration and inflow of stormwater and groundwater into the system, and to repair identified deficiencies in older collection system components.

Table 4 provides an overview of the proposed sewer system projects, anticipated financial expenditures, and the proposed fiscal year of each improvement. Figure 4 provides maps showing the physical locations of the proposed sewer system improvements throughout the City.

City of Boardman, Oregon
Capital Improvements Plan
Future Value - Wastewater Project Summary

Project No.	Project	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
	Wastewater Projects					
WW 1.0	Columbia Avenue N.W. Improvements	$ 400,000	$ -	$ -	$ -	$ -
WW 2.0	Headworks Screen and Septage Receiving Station	$ 50,000	$ 1,000,000	$ -	$ -	$ -
WW 3.0	Lagoon 1 Biosolids Removal	$ -	$ 1,250,000	$ -	$ -	$ -
WW 4.0	Replace On-Site Sodium Hypochlorite System	$ -	$ 200,000	$ -	$ -	$ -
WW 5.0	Collection System Study	$ -	$ -	$ 80,000	$ -	$ -
WW 6.0	Maintenance and Storage Shop	$ -	$ -	$ 110,000	$ -	$ -
WW 7.0	Loader	$ -	$ -	$ 60,000	$ -	$ -
WW 8.0	Vac Truck	$ -	$ -	$ 175,000	$ -	$ -
WW 9.0	Ten-yard Dump Truck	$ -	$ -	$ 40,000	$ -	$ -
	Wastewater Total	$ 450,000	$ 2,450,000	$ 465,000	$ -	$ -

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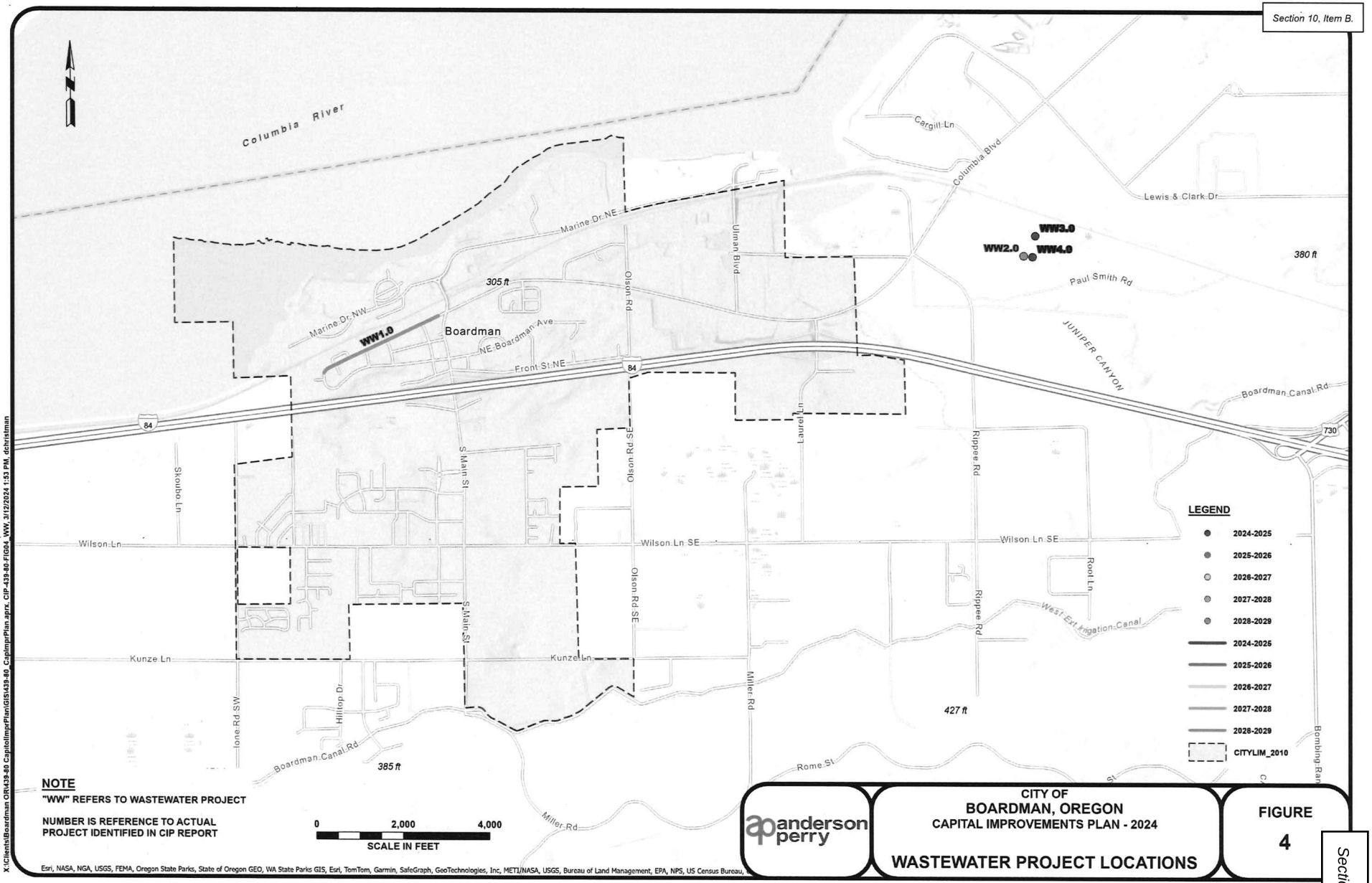
CITY OF
BOARDMAN, OREGON
CAPITAL IMPROVEMENTS PLAN
FUTURE VALUE - WASTEWATER
PROJECT SUMMARY

TABLE
4



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CITY OF
BOARDMAN, OREGON
CAPITAL IMPROVEMENTS PLAN - 2024

WASTEWATER PROJECT LOCATIONS

FIGURE
4

Project Number:	W 1.0, WW 1.0, ST 2.0
Project Name:	Columbia Avenue N.W. Improvements
Fund:	Water, Wastewater, Street
Estimated Cost:	$400,000
Fiscal Year:	2023-24

Project Description:

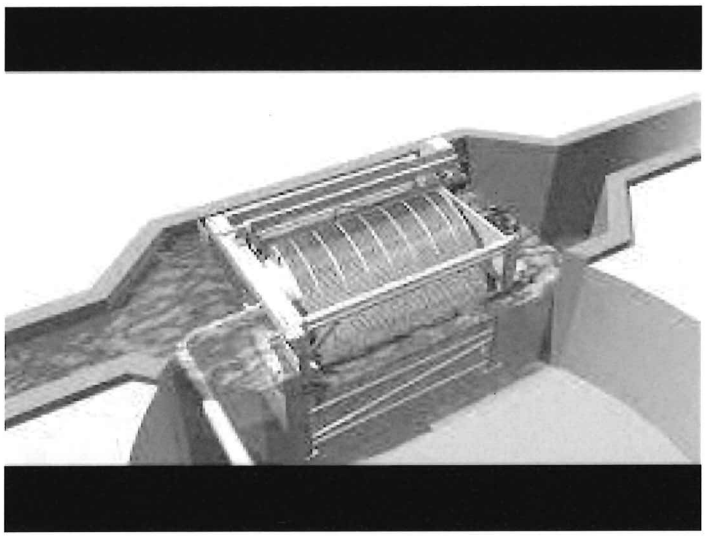
The City intends to replace the two parallel 8-inch concrete sewer lines along Columbia Avenue N.W. with one 15-inch polyvinyl chloride (PVC) sewer line. The project will include reinstating sewer service to residences, installing new manholes, and all work required to replace the sewer lines.

Project Justification:

In 2022, the City performed a closed-circuit television inspection of the sewer lines along this stretch of road. The inspection identified deficiencies, including root intrusions, pipe sags, and failed joints, and revealed that both sewer lines were reaching capacity during high demand periods. Replacing the existing concrete sewer lines with a single PVC line will ensure capacity requirements for the area are met.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 1.0	Water Fund	$400,000	2023-24
WW 1.0	Wastewater Fund	$400,000	2023-24
ST 2.0	Street Fund	$500,000	2023-24
	Total	$1,300,000	



Project Number:	WW 2.0
Project Name:	Headworks Screen and Septage Receiving Station
Fund:	Wastewater
Estimated Cost:	$1,050,000
Fiscal Year:	2023-24 to 2024-25

Project Description:

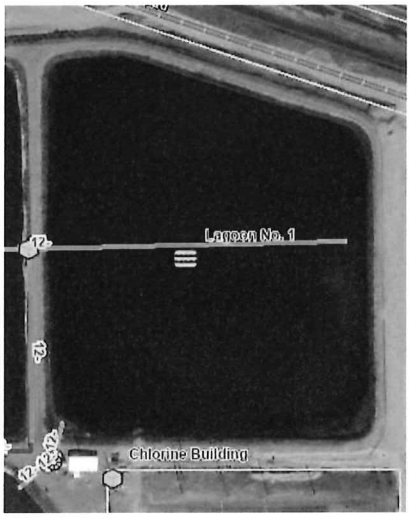
Construct a new headworks and septage receiving station.

Project Justification:

The City's lagoon system operates without a headworks screen allowing garbage to accumulate in the lagoon system. The project will involve installation of a new headworks screen to help remove garbage from wastewater influent and the installation of a septage receiving station to accept hauled waste.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
WW 2.0	Wastewater Fund	$50,000	2023-24
WW 2.0	Wastewater Fund	$1,000,000	2024-25
	Total	$1,050,000	



Project Number:	WW 3.0
Project Name:	Lagoon 1 Biosolids Removal
Fund:	Wastewater
Estimated Cost:	$1,250,000
Fiscal Year:	2024-25

Project Description:

The project will include draining Lagoon 1 at the wastewater treatment facility (WWTF). After the lagoon is drained, the biosolids will take approximately one to two years to dry. Once the biosolids have dried, work can begin to remove the biosolids, which will restore Lagoon 1 to its original depth. Since the WWTF does not currently have a headworks screen, the biosolids removed will contain inorganics and will need to be disposed of at the landfill.

Project Justification:

Increasing the depth of Lagoon 1 via biosolids removal will increase the overall capacity of the City's WWTF. Increasing the capacity of the WWTF will allow the City to accept more wastewater as the City grows. By removing biosolids from Lagoon 1, the overall efficiency of the WWTF will be improved, ensuring the City has reliable wastewater treatment for years to come.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
WW 3.0	Wastewater Fund	$1,250,000	2024-25
	Total	$1,250,000	

Project Number:	WW 4.0
Project Name:	Replace On-Site Sodium Hypochlorite System
Fund:	Wastewater
Estimated Cost:	$200,000
Fiscal Year:	2024-25

Project Description:

Replace the on-site sodium hypochlorite system.

Project Justification:

The existing on-site sodium hypochlorite system used for disinfecting recycled water land applied at Circle 52 has surpassed its service life and needs replaced.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
WW 4.0	Wastewater Fund	$200,000	2024-25
	Total	$200,000	

Project Number:	WW 5.0
Project Name:	Collection System Study
Fund:	Wastewater
Estimated Cost:	$80,000
Fiscal Year:	2025-26

Project Description:

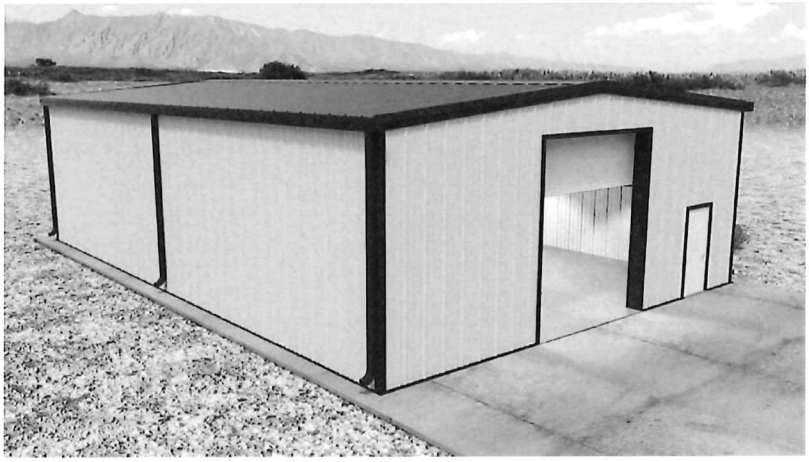
Develop a Collection System Study.

Project Justification:

The Collection System Study will be developed for a 20-year planning period and will include design criteria and service goals for the planning period, identifying present and anticipated future system deficiencies, and evaluating future collection system needs. A system improvements implementation program will be developed to be incorporated in the Capital Improvements Plan.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
WW 5.0	Wastewater Fund	$80,000	2025-26
	Total	$80,000	



Project Number:	W 5.0, WW 6.0, ST 8.0
Project Name:	Maintenance and Storage Shop
Fund:	Water, Wastewater, Street
Estimated Cost:	$110,000
Fiscal Year:	2025-26

Project Description:

Construct a maintenance and storage shop to support the Public Works Department.

Project Justification:

As the City of Boardman grows, so does the Public Works Department. There is a need to provide additional vehicle/equipment storage in conditioned space.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 5.0	Water Fund	$120,000	2025-26
WW 6.0	Wastewater Fund	$110,000	2025-26
ST 8.0	Street Fund	$120,000	2025-26
	Total	$350,000	

WW 7.0

Project Number:	W 6.0, WW 7.0, ST 10.0
Project Name:	Loader
Fund:	Wastewater
Estimated Cost:	$60,000
Fiscal Year:	2025-26

Project Description:

Purchase a loader for Public Works use.

Project Justification:

Public Works needs a loader to be more efficient in daily operations.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 6.0	Water Fund	$70,000	2025-26
WW 8.0	Wastewater Fund	$60,000	2025-26
ST 10.0	Street Fund	$70,000	2025-26
	Total	$200,000	

Project Number:	W 7.0, WW 8.0, ST 11.0
Project Name:	Vac Truck
Fund:	Water, Wastewater, Street
Estimated Cost:	$175,000
Fiscal Year:	2025-26

Project Description:

Purchase a new vac truck for Public Works use.

Project Justification:

The existing vac truck has surpassed its service life and needs to be replaced.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 7.0	Water Fund	$175,000	2025-26
WW 8.0	Wastewater Fund	$175,000	2025-26
ST 11.0	Street Fund	$150,000	2025-26
	Total	$500,000	

Project Number:	W 8.0, WW 9.0, ST 12.0
Project Name:	Ten-yard Dump Truck
Fund:	Water, Wastewater, Street
Estimated Cost:	$40,000
Fiscal Year:	2025-26

Project Description:

Purchase a ten-yard dump truck for Public Works use.

Project Justification:

Public Works needs a ten-yard dump truck to be more efficient in daily operations.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 8.0	Water Fund	$20,000	2025-26
WW 9.0	Wastewater Fund	$40,000	2025-26
ST 12.0	Street Fund	$40,000	2025-26
	Total	$100,000	

Street Department

The capital improvements list for the City of Boardman Street Department is based on knowledge of the system provided by the Street Department staff. In general, the City's street system consists of:

- Roadway Centerline Miles — Approximately 19
- Traffic Signals — 0

The Capital Improvements Plan projects identified by the Street Department include street rehabilitation, street beautification, street widening, intersection safety improvements, pedestrian improvements, and new streets.

Table 5 provides an overview of the proposed street system projects, anticipated financial expenditures, and the proposed fiscal year of each improvement. Figure 5 shows the physical locations of the proposed system improvements throughout the City.

City of Boardman, Oregon
Capital Improvements Plan
Future Value - Street Project Summary

Project No.	Project	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
	Street Projects					
ST 1.0	Pavement Evaluation Study	$ 10,000	$ -	$ -	$ -	$ -
ST 2.0	Columbia Avenue N.W. Improvements	$ 500,000	$ -	$ -	$ -	$ -
ST 3.0	Wilson Lane and Faler Road Sidewalk Improvements	$ 400,000	$ -	$ -	$ -	$ -
ST 4.0	S.E. Front Street and S.E. 1st Street Improvements	$ -	$ 1,500,000	$ -	$ -	$ -
ST 5.0	S. Main Street	$ -	$ 1,250,000	$ 1,250,000	$ -	$ -
ST 6.0	S.W. Loop Road Improvements	$ -	$ -	$ 2,130,000	$ -	$ -
ST 7.0	Boardman Avenue and N. Main Street Intersection	$ -	$ -	$ 1,000,000	$ -	$ -
ST 8.0	Maintenance and Storage Shop	$ -	$ -	$ 120,000	$ -	$ -
ST 9.0	Sand Shed	$ -	$ -	$ 200,000	$ -	$ -
ST 10.0	Loader	$ -	$ -	$ 70,000	$ -	$ -
ST 11.0	Vac Truck	$ -	$ -	$ 150,000	$ -	$ -
ST 12.0	Ten-yard Dump Truck	$ -	$ -	$ 40,000	$ -	$ -
ST 13.0	N.E. Front Street	$ -	$ -	$ -	$ 2,950,000	$ -
ST 14.0	N.E. Columbia Avenue: Olson Road to Union Pacific Railroad Overpass	$ -	$ -	$ -	$ -	$ 3,200,000
ST 15.0	Oregon Trail Boulevard to Faler Road S.W.	$ -	$ -	$ -	$ -	$ 2,300,900
	Street Total	$ 910,000	$ 2,750,000	$ 4,960,000	$ 2,950,000	$ 5,500,900

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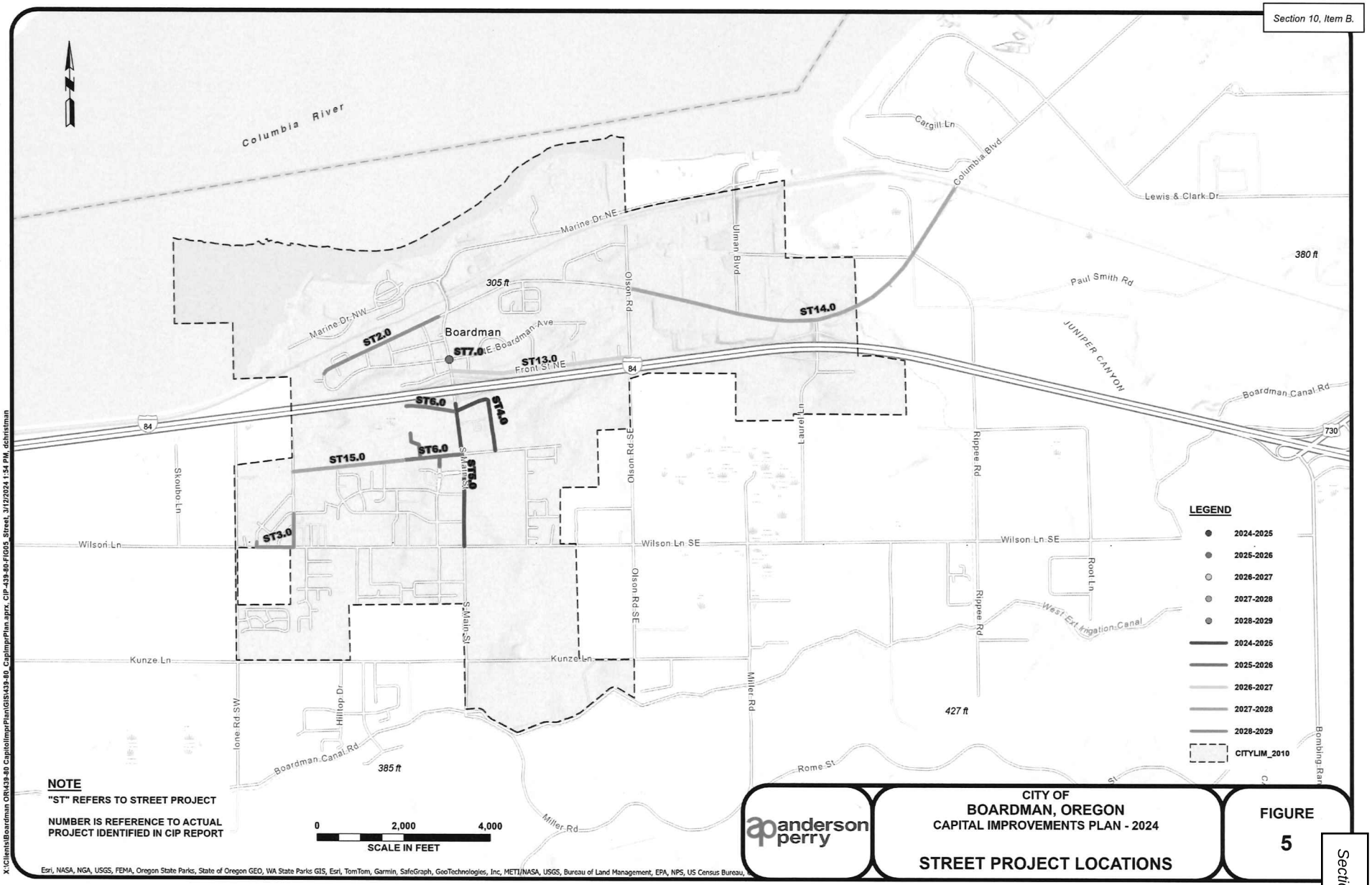
CITY OF
BOARDMAN, OREGON
CAPITAL IMPROVEMENTS PLAN
FUTURE VALUE - STREET
PROJECT SUMMARY

TABLE
5



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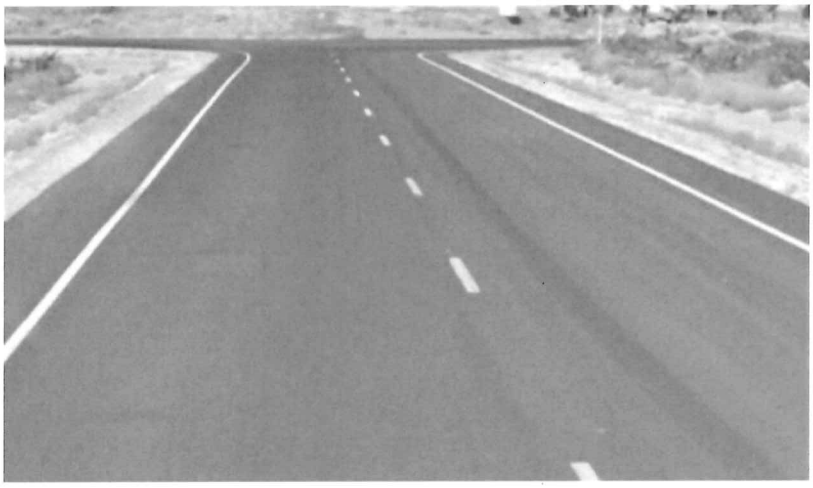
CITY OF
BOARDMAN, OREGON
CAPITAL IMPROVEMENTS PLAN - 2024

STREET PROJECT LOCATIONS

FIGURE 5



Project Number:	ST 1.0
Project Name:	Pavement Evaluation Study
Fund:	Street
Estimated Cost:	$10,000
Fiscal Year:	2023-24

Project Description:

The purpose of the Pavement Evaluation Study is to document the existing condition of paved streets within the City, to develop recommended maintenance practices and options, and to serve as a guide for maintaining and improving street conditions.

Project Justification:

The City does not currently have a set plan for road maintenance, and generally repairs roads when they are in poor condition or other work is in progress, such as during water and sewer projects. Without adequate planning and funding, streets receive limited maintenance and deteriorate. Implementation of the pavement maintenance recommendations outlined in the Pavement Evaluation Study will help to produce a high-quality, reliable street network that will meet the City's needs for the foreseeable future.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
ST 1.0	Street Fund	$10,000	2023-24
	Total	$10,000	

Project Number:	W 1.0, WW 1.0, ST 2.0
Project Name:	Columbia Avenue N.W. Improvements
Fund:	Water, Wastewater, Street
Estimated Cost:	$500,000
Fiscal Year:	2023-24

Project Description:

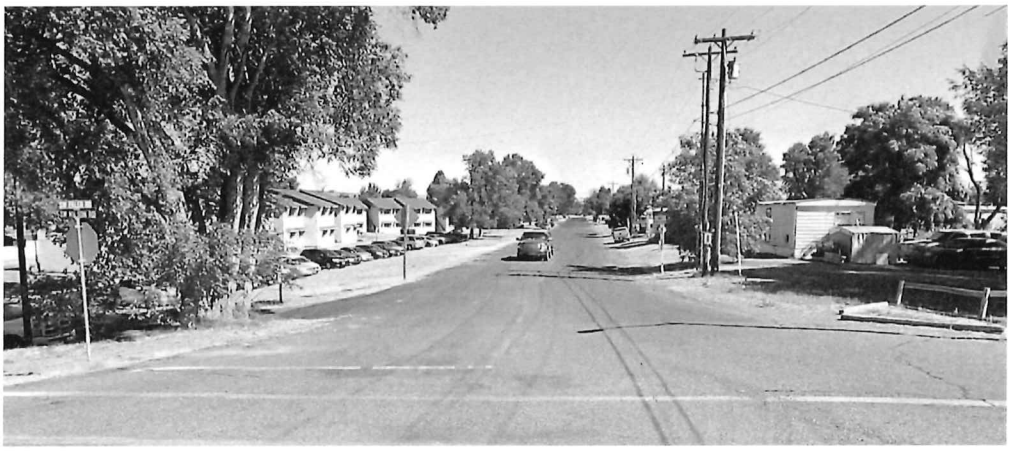
The project will include the reconstruction of Columbia Avenue N.W. from N. Main Street to approximately 350 feet southwest of N.W. Allen Court. The project will reconstruct the roadway after the completion of water and sewer line improvements and will include storm drainage improvements. Work will restore centerline stripes and adjust all roadway monumentation, manholes, catch basins, and existing valve boxes.

Project Justification:

New water and sewer lines will be installed, requiring roadwork for this stretch of road. Currently, the road has sections of very good, fair, and poor conditions. Conditions for fair and poor include poor ride quality, cracking, trench settlement, drainage problems, potholes, and obvious structural deficiencies. Roadway improvements are required to prevent premature roadway failure and ensure the roadway is functional for the community and area.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 1.0	Water Fund	$400,000	2023-24
WW 1.0	Wastewater Fund	$400,000	2023-24
ST 2.0	Street Fund	$500,000	2023-24
	Total	$1,300,000	



Project Number:	ST 3.0
Project Name:	Wilson Lane and Faler Road Sidewalk Improvements
Fund:	Street
Estimated Cost:	$400,000
Fiscal Year:	2023-24

Project Description:

The City wishes to construct concrete sidewalk, curb and gutter, and storm drainage improvements along Wilson Lane between Faler Road and Mt. Adams Avenue and along Faler Road between Wilson Lane and Mt. Hood Avenue. The project will include Americans with Disabilities Act (ADA) curb ramps and concrete driveway approaches.

Project Justification:

Currently, this stretch of road does not have adequate pedestrian accessibility or storm drainage. Constructing sidewalk, curb and gutter, ADA curb ramps, and other storm drainage improvements will provide adequate pedestrian accessibility and storm drainage to the area.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
ST 3.0	Street Fund	$400,000	2023-24
	Total	$400,000	

Project Number:	ST 4.0
Project Name:	S.E. Front Street and S.E. 1st Street Improvements
Fund:	Street
Estimated Cost:	$1,500,000
Fiscal Year:	2024-25

Project Description:

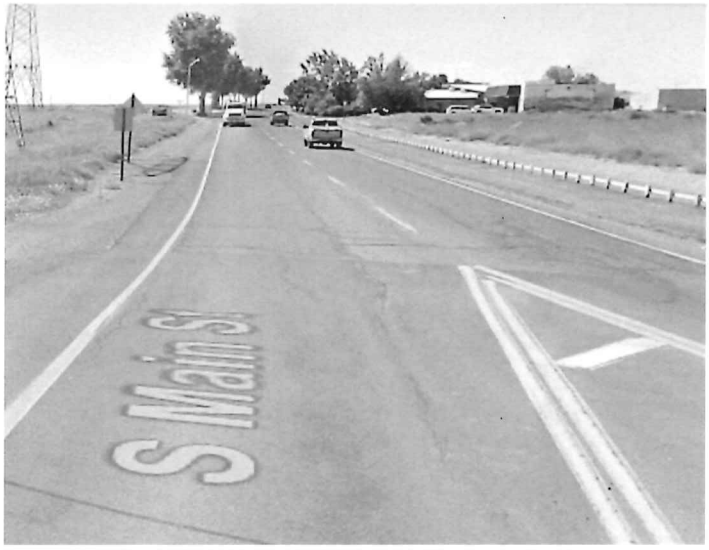
The project will include the reconstruction of S.E. Front Street and the construction of S.E. 1st Street between S.E. Front Street and Oregon Trail Boulevard. Work for the project will include approximately 7,290 square yards of roadway, 10,200 square feet of sidewalk, 2,210 linear feet of curb and gutter, storm drainage improvements, and parking improvements.

Project Justification:

S.E. Front Street needs to be reconstructed due to the poor condition of the road. This road has areas of instability with poor ride quality; extensive transverse, longitudinal, and alligator cracking with trench settlement and/or potholes; drainage problems; and obvious evidence of structural deficiencies. The construction of S.E. 1st Street will create a road section that supports increased traffic volumes from future development in the area.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
ST 4.0	Street Fund	$1,500,000	2024-25
	Total	$1,500,000	



Project Number:	ST 5.0
Project Name:	S. Main Street
Fund:	Street
Estimated Cost:	$2,500,000
Fiscal Year:	2024-25 to 2025-26

Project Description:

The project will include a complete road reconstruction, include demolition of the existing asphalt concrete road surface, concrete curbs, and asphalt concrete pedestrian path. After the demolition of existing surfaces and structures, construction of a new asphalt concrete road surface, curb and gutter, Americans with Disabilities Act curb ramps, center concrete median, and concrete sidewalk will be accomplished. Additionally, decorative streetlights will be installed, and storm drainage improvements will be made.

Project Justification:

This road is identified in the City's Main Street Downtown Development Plan as the main north-south arterial for the City and is considered the "downtown" portion of the City. Improvements to this stretch of road will ensure future traffic and pedestrian demands will be met and will accommodate future development of the area.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
ST 5.0	Street Fund	$1,250,000	2024-25
ST 5.0	Street Fund	$1,250,000	2025-26
	Total	$2,500,000	

Project Number:	ST 6.0
Project Name:	S.W. Loop Road Improvements
Fund:	Street
Estimated Cost:	$2,130,000
Fiscal Year:	2025-26

Project Description:

The project will be an extension of approximately 1,200 feet of Oregon Trail Boulevard to the west. The project will include curb and gutter, concrete sidewalk, Americans with Disabilities Act (ADA) curb ramps, storm drainage systems, and street lighting. ADA curb ramps will be developed to meet current ADA standards. All aspects of the project will be constructed according to City standards.

Project Justification:

Extending Oregon Trail Boulevard is identified in the City's 2009 Main Street Interchange Area Management Plan. Extending this road can strengthen east-west as well as north-south connectivity. This section of road will also provide access to future development in the area.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
ST 6.0	Street Fund	$2,130,000	2025-26
	Total	$2,130,000	

Project Number:	ST 7.0
Project Name:	Boardman Avenue and N. Main Street Intersection
Fund:	Street
Estimated Cost:	$1,000,000
Fiscal Year:	2025-26

Project Description:

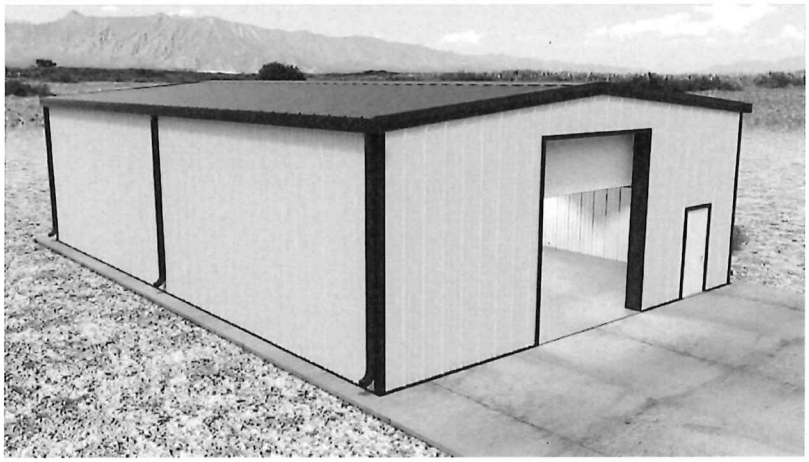
The project will consist of signalizing the intersection of N. Main Street and Boardman Avenue. A center median on N. Main Street will also be constructed to improve traffic flow and pedestrian safety. The intersection will be reconfigured to accommodate the signal and center median.

Project Justification:

The improvements have been identified in the Technical Memorandum "Boardman Main Street Circulation Assessment" published by Kittelson & Associates, Inc. This intersection was identified as an intersection that would benefit from becoming signalized and will greatly improve traffic flow for the City's main north-south arterial.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
ST 7.0	Street Fund	$1,000,000	2025-26
	Total	$1,000,000	



Project Number:	W 5.0, WW 6.0, ST 8.0
Project Name:	Maintenance and Storage Shop
Fund:	Water, Wastewater, Street
Estimated Cost:	$120,000
Fiscal Year:	2025-26

Project Description:

Construct a maintenance and storage shop to support the Public Works Department.

Project Justification:

As the City of Boardman grows, so does the Public Works Department. There is a need to provide additional vehicle/equipment storage in conditioned space.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 5.0	Water Fund	$120,000	2025-26
WW 6.0	Wastewater Fund	$110,000	2025-26
ST 8.0	Street Fund	$120,000	2025-26
	Total	$350,000	

Project Number:	ST 9.0
Project Name:	Sand Shed
Fund:	Street
Estimated Cost:	$200,000
Fiscal Year:	2025-26

Project Description:

Construct a sand shed to store material for the City.

Project Justification:

The City's current sand storage uses tarps to keep sand free of moisture. The tarps often catch wind, allowing the sand to become saturated and causes a safety hazard for staff. Constructing a sand shed will eliminate the use of tarps, therefore increasing the safety of City staff and keeping the sand dry.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
ST 9.0	Street Fund	$200,000	2025-26
	Total	$200,000	

Project Number:	W 6.0, WW 7.0, ST 10.0
Project Name:	Loader
Fund:	Water, Wastewater, Street
Estimated Cost:	$70,000
Fiscal Year:	2025-26

Project Description:

Purchase a loader for Public Works use.

Project Justification:

Public Works needs a loader to be more efficient in daily operations.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 6.0	Water Fund	$70,000	2025-26
WW 8.0	Wastewater Fund	$60,000	2025-26
ST 10.0	Street Fund	$70,000	2025-26
	Total	$200,000	

Project Number:	W 7.0, WW 8.0, ST 11.0
Project Name:	Vac Truck
Fund:	Water, Wastewater, Street
Estimated Cost:	$150,000
Fiscal Year:	2025-26

Project Description:

Purchase a new vac truck for Public Works use.

Project Justification:

The existing vac truck has surpassed its service life and needs to be replaced.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 7.0	Water Fund	$175,000	2025-26
WW 8.0	Wastewater Fund	$175,000	2025-26
ST 11.0	Street Fund	$150,000	2025-26
	Total	$100,000	

Project Number:	W 8.0, WW 9.0, ST 12.0
Project Name:	Ten-yard Dump Truck
Fund:	Water, Wastewater, Street
Estimated Cost:	$40,000
Fiscal Year:	2025-26

Project Description:

Purchase a ten-yard dump truck for Public Works use.

Project Justification:

Public Works needs a ten-yard dump truck to be more efficient in daily operations.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
W 8.0	Water Fund	$20,000	2025-26
WW 9.0	Wastewater Fund	$40,000	2025-26
ST 12.0	Street Fund	$40,000	2025-26
	Total	$100,000	

Project Number:	ST 13.0
Project Name:	N.E. Front Street
Fund:	Street
Estimated Cost:	$2,950,000
Fiscal Year:	2026-27

Project Description:

The project will include the reconstruction of N.E. Front Street from N. Main Street to Olson Road. The project consists of rebuilding N.E. Front Street, which includes the construction of curb and gutter, concrete sidewalk, and Americans with Disabilities Act (ADA) curb ramps. The project also includes storm drainage improvements and new street lighting. ADA curb ramps will be developed to meet current ADA standards. All other aspects of the project will be constructed according to City standards.

Project Justification:

N.E. Front Street needs to be reconstructed due to the road's poor condition. This road has areas of instability with poor ride quality; extensive transverse, longitudinal, and alligator cracking with trench settlement and/or potholes; drainage problems; and obvious evidence of structural deficiencies. Reconstruction of this road will ensure the roadway is functional for the community and area. Along with ADA curb ramps, sidewalk improvements will benefit the public by allowing greater mobility to the area for future development.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
ST 13.0	Street Fund	$2,950,000	2026-27
	Total	$2,950,000	

Project Number:	ST 14.0
Project Name:	N.E. Columbia Avenue: Olson Road to Union Pacific Railroad Overpass
Fund:	Street
Estimated Cost:	$3,200,000
Fiscal Year:	2027-28

Project Description:

The project will consist of an overlay for the entire length of N.E. Columbia Avenue, ranging from Olson Road to the Union Pacific Railroad overpass to the northeast. The project includes removing cold plane pavement, adjusting utility covers and valve boxes to grade, and permanent pavement markings and striping.

Project Justification:

The condition of this stretch of road has been rated as fair quality and contains cracking, deformations, drainage problems, and structural deficiencies. Generally, this road provides a stable, fair ride, but improvements will ensure a safe and comfortable road for all to use. Improvements will also ensure that this stretch of road will be functional for use for the foreseeable future.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
ST 14.0	Street Fund	$3,200,000	2027-28
	Total	$3,200,000	

Project Number:	ST 15.0
Project Name:	Oregon Trail Boulevard to Faler Road S.W.
Fund:	Street
Estimated Cost:	$2,300,900
Fiscal Year:	2027-28

Project Description:

The project will be an extension of approximately 2,800 feet of Oregon Trail Boulevard to the west following the completion of the extension of Oregon Trail Boulevard to S.W. 1st Street. The project will include curb and gutter, concrete sidewalk, Americans with Disabilities Act (ADA) curb ramps, storm drainage systems, and street lighting. ADA curb ramps will be developed to meet current ADA standards. All aspects of the project will be constructed according to City standards.

Project Justification:

Extending Oregon Trail Boulevard is identified in the City's 2009 Main Street Interchange Area Management Plan. Extending this road can strengthen east-west as well as north-south connectivity. This section of road will also provide access to future development in the area.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
ST 15.0	Street Fund	$2,300,900	2027-28
	Total	$2,300,900	

General Appendix

Projects in the "General Appendix" are either completed or are proposed projects that are not included in the five-year Capital Improvements Plan (CIP) planning period. Any dates included with the projects in the "General Appendix" section have not been approved by the City Council. These projects should be considered as supported by the City Council, pending adequate funding. Projects included in this list should be the first to be considered during updates to the five-year CIP, as well as for potential grant funding opportunities if they arise and do not compete for grant funds with projects listed in the current five-year CIP.

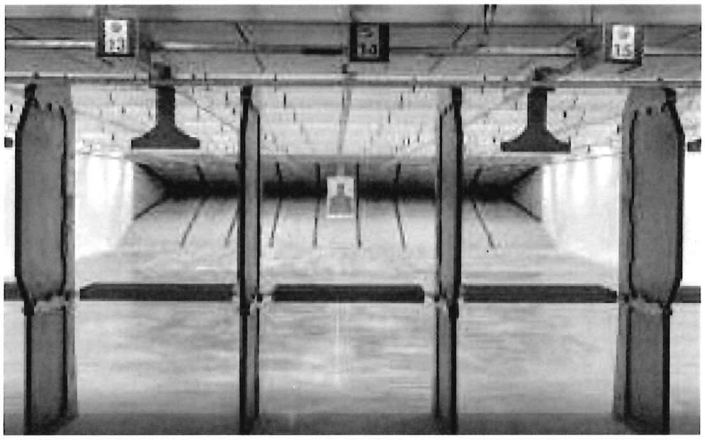
PROPOSED GENERAL CAPITAL IMPROVEMENT PROJECTS

Project No.*	Project Name	Cost Estimate
G 3.0	Indoor Shooting Range	$2,500,000
G 4.0	City Hall Expansion - Police Department	$3,000,000

**Project numbers have no implication to priority.*

COMPLETED GENERAL CAPITAL IMPROVEMENT PROJECTS

Project No.	Project Name	Fiscal Year Completed



Project Number:	G 3.0
Project Name:	Indoor Shooting Range
Fund:	General
Estimated Cost:	$2,500,000
Fiscal Year:	2027-28

Project Description:

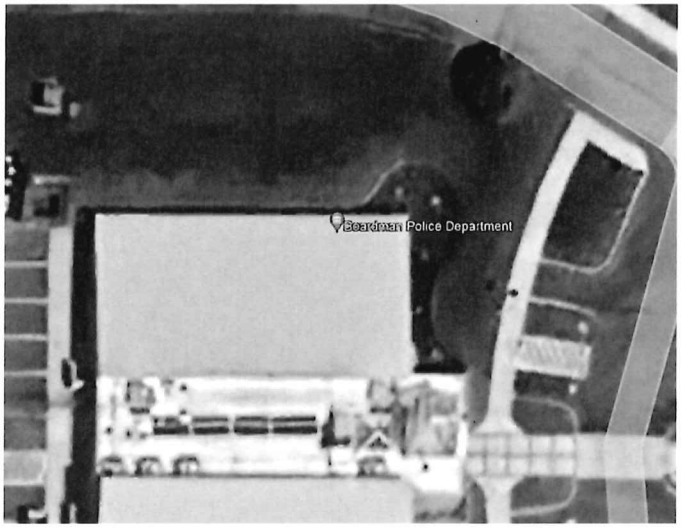
Construct an indoor shooting range.

Project Justification:

The City's old shooting range was demolished and is now the location of the new wastewater storage lagoon. The City desires to construct a new indoor shooting range for training purposes and for public use.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
G 3.0	General Fund	$2,500,000	2027-28
	Total	$2,500,000	



Project Number:	G 4.0
Project Name:	City Hall Expansion - Police Department
Fund:	General
Estimated Cost:	$3,000,000
Fiscal Year:	2027-28

Project Description:

Expand City Hall to facilitate the growing Police Department.

Project Justification:

The Police Department has nearly reached space capacity. The proposed expansion to City Hall would provide additional office and storage space to accommodate growth and support operations.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
G 4.0	General Fund	$3,000,000	2027-28
	Total	$3,000,000	

Community Development and Planning Department Appendix

Projects in the "Community Development and Planning Department Appendix" are either completed or are proposed projects that are not included in the five-year Capital Improvements Plan (CIP) planning period. Any dates included with the projects in the "Community Development and Planning Department Appendix" section have not been approved by the City Council. These projects should be considered as supported by the City Council, pending adequate funding. Projects included in this list should be the first to be considered during updates to the five-year CIP, as well as for potential grant funding opportunities if they arise and do not compete for grant funds with projects listed in the current five-year CIP.

PROPOSED COMMUNITY DEVELOPMENT AND PLANNING CAPITAL IMPROVEMENT PROJECTS

Project No.*	Project Name	Cost Estimate

**Project numbers have no implication to priority.*

COMPLETED COMMUNITY DEVELOPMENT AND PLANNING CAPITAL IMPROVEMENT PROJECTS

Project No.	Project Name	Fiscal Year Completed

Water Department Appendix

Projects in the "Water Department Appendix" are either completed or are proposed projects that are not included in the five-year Capital Improvements Plan (CIP) planning period. Any dates included with the projects in the "Water Department Appendix" section have not been approved by the City Council. These projects should be considered as supported by the City Council, pending adequate funding. Projects included in this list should be the first to be considered during updates to the five-year CIP, as well as for potential grant funding opportunities if they arise and do not compete for grant funds with projects listed in the current five-year CIP.

PROPOSED WATER CAPITAL IMPROVEMENT PROJECTS

Project No.*	Project Name	Cost Estimate

**Project numbers have no implication to priority.*

COMPLETED WATER CAPITAL IMPROVEMENT PROJECTS

Project No.	Project Name	Fiscal Year Completed

Wastewater Department Appendix

Projects in the "Wastewater Department Appendix" are either completed or are proposed projects that are not included in the five-year Capital Improvements Plan (CIP) planning period. Any dates included with the projects in the "Wastewater Department Appendix" section have not been approved by the City Council. These projects should be considered as supported by the City Council, pending adequate funding. Projects included in this list should be the first to be considered during updates to the five-year CIP, as well as for potential grant funding opportunities if they arise and do not compete for grant funds with projects listed in the current five-year CIP.

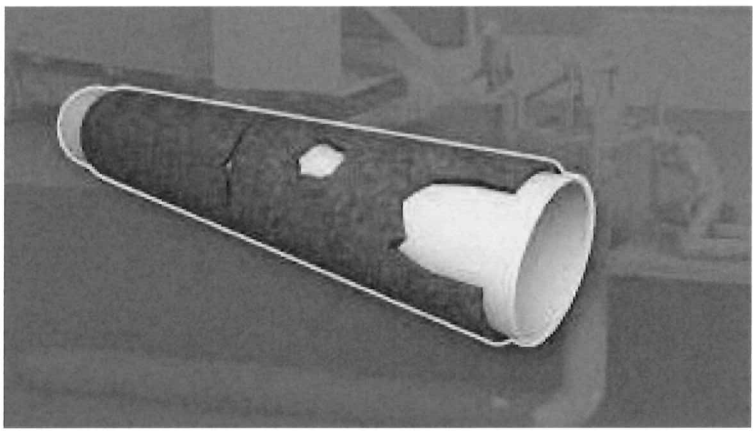
PROPOSED WASTEWATER CAPITAL IMPROVEMENT PROJECTS

Project No.*	Project Name	Cost Estimate
WW 10.0	Annual Collection System Repair Project	$100,000/year

**Project numbers have no implication to priority.*

COMPLETED WASTEWATER CAPITAL IMPROVEMENT PROJECTS

Project No.	Project Name	Fiscal Year Completed



Project Number:	WW 10.0
Project Name:	Annual Collection System Repair Project
Fund:	Wastewater
Estimated Cost:	$100,000 per year
Fiscal Year:	2026-27 to TBD

Project Description:

Annual maintenance project for the collection system.

Project Justification:

The Collection System Study is anticipated to identify deficiencies in the collection system that need to be repaired. Therefore, budgeting for future collection system repairs is recommended.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
WW 10.0	Wastewater Fund	$100,000 per year	2026-27
	Total Annual Cost	$100,000 per year	

Street Department Appendix

Projects in the "Street Department Appendix" are either completed or are proposed projects that are not included in the five-year Capital Improvements Plan (CIP) planning period. Any dates included with the projects in the "Street Department Appendix" section have not been approved by the City Council. These projects should be considered as supported by the City Council, pending adequate funding. Projects included in this list should be the first to be considered during updates to the five-year CIP, as well as for potential grant funding opportunities if they arise and do not compete for grant funds with projects listed in the current five-year CIP.

PROPOSED STREET CAPITAL IMPROVEMENT PROJECTS

Project No.*	Project Name	Cost Estimate
ST 16.0	Annual Sidewalk Improvements	$400,000/year
ST 17.0	Annual Road Projects	$1,000,000/year

**Project numbers have no implication to priority.*

COMPLETED STREET CAPITAL IMPROVEMENT PROJECTS

Project No.	Project Name	Fiscal Year Completed

Project Number:	ST 16.0
Project Name:	Annual Sidewalk Improvements
Fund:	Street
Estimated Cost:	$400,000 per year
Fiscal Year:	2024-25 to TBD

Project Description:

The project is a multi-year program to improve sidewalks around the City. The City will allocate $400,000 per year for the purpose of improving sidewalks. Improvements include Americans with Disabilities Act (ADA) curb ramps, concrete sidewalk, concrete curb and gutter, and other improvements important to improving pedestrian safety and mobility around the City. City staff will identify portions of the City in need of sidewalk improvements.

Project Justification:

Portions of the City are missing essential elements to pedestrian safety and mobility. Likewise, it is important the City complies with the ADA and updates curb ramps at locations that are noncompliant.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
ST 16.0	Street Fund	$400,000 per year	2024-25
	Total Annual Cost	$400,000 per year	

Project Number:	ST 17.0
Project Name:	Annual Road Projects
Fund:	Street
Estimated Cost:	$1,000,000 per year
Fiscal Year:	Annual

Project Description:

The City will conduct an annual road maintenance project based on the recommendations in the Pavement Evaluation Study. If a road project has been planned, such as Columbia Ave N.W. Improvements (ST 2.0) or S.E. Front Street (ST 1.0), those projects will be considered the annual road project for the year. After all planned projects have been completed, the City will plan a road project based on the recommendations made in the Pavement Evaluation Study.

Project Justification:

Implementation of the pavement maintenance recommendations outlined in the Pavement Evaluation Study will help provide the City with a high-quality, reliable street network that will meet the City's needs for many years to come.

Funding Data:

Project No.	Fund Name	Amount	Fiscal Year
ST 17.0	Street Fund	$1,000,000 per year	Annual
	Total Annual Cost	$1,000,000 per year	

Brandon Hammond

From: Leslie Pierson <lesliepierson@windermere.com>
Sent: Friday, August 9, 2024 3:25 PM
To: Brandon Hammond
Subject: Main Street Improvements

Good afternoon, Brandon.

I'm writing to express concerns with traffic and safety issues along Main St in Boardman, specifically between Oregon Trail and Boardman Ave. I've witnessed many near-accidents in this area and a few crashes over the years.

The traffic congestion in this area seems to be worsening, most especially in the evening hours between 3:30-5:30 pm, and when traffic from the I-84 offramps dart in front of others to cross traffic (I feel visibility is very low in these locations).

When leaving the Windermere office and heading south on Main, it's become difficult to make a left/east turn onto NE Front St as traffic bottlenecks on the I-84 offramps, or traffic fills the center lanes when making turns. I used to travel this route to pick up my children at Families First Child Care Center about 4 days a week. The trip in reverse became so hazardous (making a left/south turn from NE Front), I opted for the safer and longer route from daycare to Columbia Ave and around to make that left/south turn onto Main St.

This area also becomes very congested when Riverside is in session and students need to cross the crosswalk at Boardman Ave, not to mention the cars overflowing from Banner Bank on Friday evenings.

This all raises many concerns for the pedestrians and cyclists traveling north/south on Main St as well.

Considering these observations, I'd provide my support for improvements that increase safety along this busy corridor. Please contact me with any questions.

Thank you,

LESLIE PIERSON
Licensed Realtor® in OR

WINDERMERE GROUP ONE

541.561.0330
lesliepierson@windermere.com
LesliePierson.WithWre.com
202 N Main St / Boardman OR 97818

TBD
TOMASI BRAGAR DUBAY

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Portland, Oregon 97204
Tel 503-894-9900
Fax 971-544-7236
www.tomasilegal.com

August 14, 2024

BY EMAIL

City Council of the City of Boardman
c/o Carla McLane
200 City Center Circle
P.O. Box 229
Boardman, OR 97818

Re: Hattenhauer Open Record Submittal for Appeal of Planning Commission's Decision on File Number CUP24-000001

Dear Mayor Keefer and Council Members:

As you know, this office represents Hattenhauer Distributing Co. ("Appellant" or "Hattenhauer"), the owner of the Sinclair gas station located at 100 North Main Street, Boardman, Oregon 97818. Hattenhauer's mailing address is PO Box 1397, The Dalles, OR 97058. This letter is submitted in support of Hattenhauer's appeal application for the above-referenced file and the Planning Commission decision dated May 16, 2024 ("Decision").[1] Please include this letter in the record for the above referenced file.

I. The IAMP triggers should govern whether the median at North Main and Front Streets should be constructed now.

As Hattenhauer and its transportation expert testified at the August 6, 2024 hearing, the IAMP contains several triggers that must be considered prior to changing the traffic controls at North Main and Front Streets with inclusion of the proposed median (the "Median"). Namely, ODOT should upgrade the highway off ramp intersections before the Median is contemplated. These upgrades include both the installation of a traffic signal at the I-84 westbound ramp and the anticipated bridge project. Until those ODOT improvements are made, it is unclear whether a Median would work in conjunction with those efforts or is needed prior to either those ODOT improvements, or the installation of a full traffic signal at N. Main and Boardman.

Significantly, the single public comment received by the City Council at the hearing was from a woman describing conflicts that arise out of the stacking problem on the I-84 off ramp.

[1] Capitalized terms not defined in this letter have the same definition as used in our August 6, 2024 letter.

These dangerous situations will not be alleviated by the installation of Median, as there is no reason that people would stop using the shoulder of the off ramp to break the law. This is an ODOT problem that needs resolution, and/or an enforcement matter. More to the point, the intersection of N. Main and Front Street remains at LOS C as compared to when the IAMP was prepared. Attachment 1.

Additionally, the HAWK signal should be installed and allowed to work, consistent with the full analysis that is currently lacking and discussed in Hattenhauer's August 6 testimony, before the City installs a Median. Once more, Hattenhauer reiterates that there is no evidence in the record that the HAWK and Median either individually or collectively, will not have negative impacts on the highway off ramp.

A few comments were made to the City Council from staff regarding general safety concerns. As described in Greenlight Engineering's responsive letter attached here as Attachment 1, Mr. Nys points out that the actual data available to the City Council remains unchanged from the passage of the IAMP. The observed crashes have actually decreased over time at N. Main and Front Streets. Attachment 1. Staff tries to overcome this hard data by complaining that crash reports are unreliable and the "near misses" justify the project. However, the decision not to report crashes has been the same as when the IAMP was prepared, as reporting requirements in Oregon are not always mandatory. The IAMP was based on hard data after serious consideration, and it was included in the Transportation System Plan. Attachment 2.[2] As staff recalled at the August 6, 2024 hearing, the IAMP was adopted after considerable testimony and public engagement. The triggers for right-in/right-out controls at the intersection of N. Main and Front Streets cannot be ignored or based on a feeling about safety, when the Level of Service functionality, and the crash data do not support an overriding public safety concern.

Recall, the rectangular rapid flashing beacon ("RRFB") was installed to protect student safety, and the HAWK signal will address those same safety issues, ostensibly making the traffic flow better for both pedestrians and vehicles. The installation of the Median is a piecemeal approach to solving a problem that is not in need of a solution without consideration of the full set of IAMP triggers.

While staff made reference to the pedestrian death in 2013, the reference suggests, without any facts related to the accident, that such occurrence justifies the Median. However, the Median would have had no impact on the facts of that accident. The accident occurred on Main Street, at 8:30 pm on September 20, 2013. Attachment 3. Sunset on September 20, 2013 was at 7:00 pm. Attachment 4. Hattenhauer employees familiar with the situation, recall that Mr. Prado-Reyes was wearing dark clothes on a dark evening and that lighting was part of the problem. As a result of Mr. Prado-Reyes' unfortunate passing, the City installed street lighting to increase visibility. Again, a Median was not going to resolve the tragedy that occurred in 2013.

///

[2] Attachment 2 is the staff report adopting the IAMP.

II. The Median should not be installed until it is fully analyzed and reviewed during the City's TSP Update.

The Median portion of the Project should not be included at this time. The unintended consequences of the Median have not been fully thought out or assessed. As stated in Hattenhauer's August 6, 2024 testimony, the impacts to adjacent properties, including Appellant's Sinclair property have not been considered, assessed or acknowledged. Further, other adjacent and nearby properties will be adversely impacted. For example, Hattenhauer was contacted by the owner of Café Cultura, another local business that operates on the west side of N. Main Street near Sinclair that will be adversely affected by installation of the Median. The Café Cultura owner had never been contacted by the City with notice of this Project, yet her drive-through traffic will be limited by the proposal. She is exactly the type of business owner, one that opened well after preparation of the IAMP, whose voice should have been heard with advance notice of this Project and whose voice should be heard during the TSP update. Significantly, the Café Cultura website notes that the business is Hispanic and woman owned, and the Transportation Planning Rule (OAR Ch. 660-012), now specifically speaks to considering equitable outcomes for such business owners. Further, if the Median is extended in the future, Main Street traffic will be kicked north through residential neighborhoods. As Hattenhauer has emphasized, the full and complete assessment of the Median should occur during the TSP update so that full reconsideration of the traffic control approach can be reviewed in the context of the modern plans for Boardman. During the TSP update, full public engagement will occur.

While staff said, in response to our testimony about the lack of communication with Sinclair about these improvements while Hattenhauer upgraded its facility, that staff did in fact reach out to area businesses about this Project, such outreach only occurred after local business owners started to attend the Planning Commission hearings on the Project. No advance notice was given to Hattenhauer, despite the $1 million in site improvements it just undertook (and the Mayor's statement that this Project has been contemplated by the City for three years). This is yet another reason why the TSP update process is the right way to approach a modern plan for N. Main Street, which would allow all stakeholders an opportunity to review the big picture plan for the entire area. Until then, the HAWK and Median are not consistent with the TSP and IAMP because a HAWK was never contemplated, and as discussed above, the Median is not yet triggered under the IAMP.

Further, the City Council is receiving conflicting information. The City staff says that the full signal at N. Main and NE Boardman would occur in the next one to five years. However, the Kittelson Technical Memorandum states that the same traffic signal is not likely needed for approximately 15 years. The staff should not be considered reliable as to the timing for the full improvement when the City's experts have determined a longer horizon for placement of the signal. The disparity in information in this record does not justify the City spending millions of dollars in funding to install electrical connections for a signal that may become outdated in the next 15 years. Further, the City Attorney said that the Median does not need to be included in the CIP because the CIP is used to assess system development charges ("SDCs"). So now, the City Attorney is promoting a package on the taxpayer's dime, to install a Median that is going to adversely impact area businesses. This is inconsistent with the conditions of approval for the IAMP, which required

a funding plan. Attachment 2. The City has not identified the funding source for the HAWK signal or Median, which are not included in the CIP. Again, both the TSP and CIP should be updated so that a full look at impacts from the project, including on the taxpayer are considered.

CONCLUSION

Appellant requests the application be denied for failure to comply with local and state law; or, at a minimum, that approval be delayed until the City complies with state and local laws as to the HAWK and removal of the Median from the Project scope. Thank you for your attention to this matter.

Sincerely,

Jennifer M. Bragar

Enclosures
cc: (by e-mail)
client

GREENLIGHT ENGINEERING

August 14, 2024

City Council of the City of Boardman
200 City Center Circle
P.O. Box 229
Boardman, OR 97818

RE: CUP24-000001/Appeal APP24-000002 – Open Record Testimony

Dear Mayor Keefer and Council Members:

This memorandum responds to staff and public testimony given at the August 6, 2024 City Council meeting.

Testimony Regarding "Near Misses"

At the City Council hearing, City police urged City Council to focus on public safety in making their decision. While public safety is an important consideration, if the application does not comply with the city's Transportation System Plan, then the city cannot approve the application.

In the discussion of public safety, staff provided testimony about recent "near misses" at study intersections. There was notably no testimony about previous "near miss" activity near the time the IAMP was adopted and only recent "near miss" observations.

In comparing previous crash data from the IAMP to the current crash data from the Technical Memorandum, the observed crash rates have actually decreased over time at N. Main Street/Front Avenue (from 0.17 crashes per million entering vehicles to 0.07) and N. Main Street/Boardman Avenue (from 0.20 to 0.09). All illustrate very low crash rates. As presented in my August 6, 2024 report, the number of crashes per year have decreased at the N. Main Street/Front Avenue intersection in the last 15 years.

There was testimony that there are more crashes at intersections than reported. While not all crashes are reported due to reporting requirements in Oregon, this has been the case at the time data was compiled for the IAMP and it remains true today. If safety was deteriorating, it would likely be exhibited by increasing reported crashes and not likely in decreasing reported crashes.

Data does not support a conclusion that N. Main Street/Front Street and N. Main Street/Boardman Avenue are becoming less safe or that safety improvements are needed. Importantly, the city has provided no evidence that the installation of a HAWK signal at N. Main Street/Boardman Avenue generates the need to modify the N. Main Street/Front Street intersection. The city has provided no evidence that the operations at N. Main Street/Front Street intersection negatively affects the remainder of the transportation network such that action must be taken.

The city went to great expense to develop and agree with the community when the N. Main Street/Front Street intersection would be modified via the adopted IAMP to create triggers. Thus far, the application and city's review of the application have ignored the adopted IAMP triggers. As previously established, none of the triggers are met.

Testimony Regarding Increasing Congestion

There was testimony that there is increasing congestion at N. Main Street/Front Avenue. The IAMP illustrates that in 2009 that the N. Main Street/Front Street intersection operated as LOS C in the weekday PM peak hour and the Technical Memorandum illustrates that 15 years later, the intersection still operates at LOS C, both acceptable per the city performance standards and operating far better than the IAMP adopted trigger of "below LOS E." There is certainly no level of service based criteria under which to modify the N. Main Street/Front Avenue intersection.

Given that none of the triggers of the IAMP are met and there is no evidence that the construction of a HAWK signal creates the need to modify the N. Main Street/Front Avenue intersection, it is unclear why the city is considering modifications to the intersection at this time.

Should you have any questions, feel free to contact me at rick@greenlightengineering.com or 503-317-4559.

Sincerely,

Rick Nys, P.E.
Principal Traffic Engineer

City of Boardman
Main Street Interchange Area Management Plan
City Council Public Hearing
September 15, 2009

IAMP ADOPTION SUMMARY

(Adapted from CC/PC Joint Work Session of July 22, 2009)

The City of Boardman is proposing to adopt the Main Street Interchange Area Management Plan (June 2009 Draft). The purpose of the Interchange Area Management Plan, or "IAMP," is to identify long-term circulation and access improvements to preserve the capacity and function of the interchange. The draft plan projects how growth is expected to change transportation conditions over the next 20 years and recommends transportation solutions to meet the needs of the community over this time horizon. To this end, the IAMP includes recommendations that enhance the reliability, safety and efficiency of the local transportation system in and around the interchange.

As part of the upcoming adoption process, the City will be considering amendments to the Development Code that implement the IAMP. Proposed Development Code amendments address access management, transportation analysis, and circulation and local street connectivity that may be required when parcels in the vicinity of the interchange develop or redevelop.

The following points summarize the City's actions in adopting the IAMP and the implications for future development in the vicinity of the interchange.

- **The City will legislatively amend the Transportation System Plan to incorporate the IAMP in the City's adopted long-range plan.**
    - The IAMP identifies a local street network, access management, and specific roadway and interchange improvements that will ensure that the transportation system around the interchange operates efficiently and safely.
    - Planning for an efficient local street system in advance of full build-out of development around the interchange will ensure that a logical and efficient network will be available to provide access to existing and future businesses.
    - Adopting the IAMP's list of needed transportation improvements prioritizes these projects locally, is a required action before the City can seek state funding, and will ensure that proportional private investment in the system, as part of future development, will be strategically allocated.

- **To implement the IAMP, the City will amend the Zoning Map to include an overlay district and will amend the Development Code to include a chapter devoted to land use, development, and redevelopment requirements within the district.**

    - The proposed IAMP Overlay District does not change the underlying zoning of property in the defined management area.

    - Development proposals for any parcel that is wholly or partially within the IAMP Overlay District boundary, as shown on the City's Zoning Map, will be reviewed pursuant to the new IAMP-related Development Code requirements.

    - In large part, the proposed IAMP Overlay District Overlay Zone chapter refines and clarifies existing city requirements, as they pertain to development within the overlay, and does not represent extra requirements; in many instances the IAMP reduces the requirements for commercial development traffic impact analyses.

- **The IAMP is a long-range plan with a 20-year planning horizon; the City's adoption of the IAMP will not result in immediate changes in the vicinity of the interchange, but rather will set the parameters for future development over time.**

    - Based on an annual growth rate of 2.5% and related development assumptions, no short-range (0-5 years) transportation improvements will be necessary in the vicinity of the interchange.

    - Medium- (5-10 years) and long-range (10 – 20 years) improvements identified in the IAMP will be triggered by system failures (such as the level of service drops below standards or an unacceptable increase in crashes) and will be implemented as money becomes available and/or property (re)develops.

    - Access management is key to safe and efficient traffic circulation near the interchange, **but under no circumstances will existing accesses be closed without a reasonable alternate access first being available.**

CITY of BOARDMAN
Community Development
STAFF REPORT

DATE: September 8, 2009

TO: Boardman City Council

FROM: Barry C. Beyeler, Community Development Director

SUBJECT: Post Acknowledgement Plan Amendment 01-2009 – Boardman Main Street Interchange Area Management Plan

HISTORY

The City of Boardman, through the Transportation Growth Management (TGM) Grant Program administered jointly by the Oregon Department of Land Conservation and Development (DLCD) and the Oregon Department of Transportation (ODOT), initiated an Interchange Area Management Plan (IAMP) study to establish an IAMP for the Interstate 84 interchanges within the City of Boardman. The previous public hearings on the IAMP in 2007 did not produce an approved IAMP. Then Mayor Ed Glenn appointed a Steering Committee, comprised of affected land owners and three City Councilors, to work collaboratively with ODOT to find solutions to the issues which posed barriers to approval of the IAMP. The appointed Steering Committee held numerous meetings with representatives of ODOT to work out these issues. As a result of the work of the Steering Committee, the City elected to remove the Port of Morrow interchange from the original plan and continued with planning for the Main Street interchange only. The City received additional funding, through ODOT and the TGM Program, to complete the revisions sought by the Steering Committee and to draft implementation language within the Boardman Development Code.

The Steering Committee and ODOT produced a Revised Final DRAFT Report of the Boardman Main Street IAMP in late April of 2009 and have finalized draft language for the Boardman Development Code to implement of the current version IAMP. There have been several public meetings held, concerning the changes to the report and the IAMP implementation language, an open house to explain the changes to affected landowners and citizens, and a joint Planning Commission and City Council workshop on the changes made to the Interchange Area Management Plan and the associated implementation language. The IAMP and draft code language is now at the Planning Commission public hearing stage in the Post Acknowledgement Plan Amendment process. The Planning Commission will gather testimony from the public on the approval and implementation of the IAMP and will forward a recommendation on to City Council for their consideration at a hearing scheduled for September 15, 2009.

APPLICANT'S PROPOSAL

The City of Boardman is the applicant in this proposal. The proposal is to legislatively amend the Transportation System Plan to incorporate the IAMP in the City's adopted long-range plan. The IAMP identifies a local street network, access management, and specific roadway and interchange improvements that, upon adoption, will become the long range transportation plan for the area identified as the Interchange Area Management Plan Overlay District (Figure 3.1). **Figure 3.1 is included as Attachment "A" The proposed zoning map changes indicating the Overlay District are attached as Attachment "A-1"**

The proposal includes actions to implement the IAMP, including establishing an Interchange Area Management Plan (IAMP) Overlay District on the City's Comprehensive Plan and Zoning Map. Associated changes to the Boardman Development Code will apply to the properties within the boundaries of the Interchange Area Management Plan, to implement the provisions of the Final Report for the Boardman Main Street Interchange Area Management Plan.

The City will establish an overlay district by addition of Chapter 2.5 – Interchange Area Management Plan Overlay District, which identifies the requirements of development approval within the district, including transportation impact review. The overlay district does not change the underlying zoning, and therefore does not change the allowable uses, of the properties within the district. **Chapter 2.5 is included as Attachment "B".**

The City will amend language Boardman Development Code Chapter 3.1 – Access and Circulation, to include cross references to Chapter 2.5 - Interchange Area Management Plan Overlay District and to indicate access requirements in the Overlay District. **Chapter 3.1 is included as Attachment "C".**

The City will amend Boardman Development Code 4.10 – Traffic Impact Study to include cross reference to the requirements of Development Code Chapter 2.5 and 3.1 and to clarify traffic impact review and traffic study requirements. **Chapter 4.10 is Included as Attachment "D".**

The City will adopt the amendments to Chapter 5 of the April 2009 Final Report of the Boardman Main Street Interchange Area Management Plan. **Amendments to Chapter 5 are included as Attachment "E", Figure 5.5 as Attachment "E-1" and Figure 5.6 as Attachment "E-2"..**

The Boardman Main Street IAMP Findings of Compliance: State Policies and Requirements is **included as Attachment "F".**

With language changes to the Boardman Development Code and amendments to Chapter 5 of the Boardman Main Street Interchange Area Management Plan (IAMP), which include figures 5.5 and 5.6, the implementation for the approval of the provisions contained within the IAMP can be approved and adopted by the City Council. Should the City Council adopt the IAMP, with noted amendments, and Development Code amendments the Oregon Transportation Commission (OTC) will begin review and the adoption process for the Main Street IAMP as an official part of the Oregon Highway Plan. The OTC, should they not approve

and adopt the Main Street IAMP, will remand the issue back to the City with noted necessary corrections for OTC approval.

OVERVIEW OF EXISTING CONDITIONS

The Boardman Main Street Overpass, I-84 Exit 164, is of a 1964 design and 1966 construction for freeway overpasses. The overpass is structurally sound and is currently functionally adequate. Although there are publicly identified deficiencies concerning sight lines and distances exiting the freeway off ramps, the interchange still meets ODOT standards for safety and function. The overpass does not have adequate bicycle lanes and must be significantly reconfigured to allow for bicycle lanes and a center turn lane to address future traffic demand projections.

Under existing Development Code requirements and applicable Oregon land use planning requirements, complete traffic impact studies and compliance with the Transportation Planning Rule (Oregon Administrative Rule 660.0012) and Oregon Department of Transportation Access Management Rules (Oregon Administrative Rule 734-051) would be required for approval of developments in the commercial areas adjacent to the Boardman Main Street Overpass.

APPLICABLE COMPREHENSIVE PLAN GOALS OVERVIEW

There are six planning Goals of the Boardman Comprehensive Plan directly applicable in this application. They are; Goal 1 Citizen Involvement; Goal 2: Housing; Goal 9: Economic Needs; Goal 10 Housing; Goal 11: Public Facilities; and Goal 12 Transportation.

CHAPTER 1: CITIZEN INVOLVEMENT: Notification of all potential affected property owners has been accomplished by notice letters to each property, posting of the property and publication in the East Oregonian daily newspaper. In addition the City has the notice available on the city's website at www.cityofboardman.com along with the staff report for the applicant's request.

CHAPTER 1 – CITIZEN INVOLVEMENT COMPREHENSIVE PLAN POLICIES:

1. Provide for change in Comprehensive Plan relative to new or unanticipated developments, major change in community, change in Council or Planning Commission policy, and through regular review and re-evaluation.

2. Consistency must be maintained between the Comprehensive Plan and Development Code and other supplemental ordinances and policies in order to maintain the integrity of the planning effort.

3. The City should endeavor to adhere to the spirit of the Land Conservation and Development Commission in its planning activities.

4. The Planning Commission is officially designated as the Citizen Involvement Committee.

5. The City completed a Community Visioning workshop in 1997 to gain understanding of the current needs and concerns of the community.

The request is consistent with policies 1-4 of Goal 1 Citizen Involvement polices of the Boardman Comprehensive Plan. Adoption of the Main Street IAMP, which will become an element of the City's Transportation System Plan, will amend the City's Comprehensive Plan. Consistent with Policy #1, the IAMP has been developed to respond to the City's long-range development needs. As demonstrated in findings elsewhere within this report, the development of the Main Street IAMP is consistent with State transportation goals and policies and the adoption of the plan is consistent with LCDC's Goals (**included as Attachment "F"**). Policy #5 is not related to the proposed action; however, additional citizen input was gathered through the Interchange Area Management Plan process, as such policy #5 this action is consistent with policy #5.

CHAPTER 2: LAND USE PLANNING: The directly related policies of this proposed action are policies #3, #4, #5 and #6. These policies are to coordinate the land use planning efforts of the city and to meet the overall Comprehensive Plan Policies and Goals.

CHAPTER 2 – LAND USE PLANNING COMPREHENSIVE PLAN POLICIES:

1. *The City completed a Buildable Lands Analysis in 1997 which reflected that the City has ample land within its Urban Growth Boundary to meet commercial and housing needs of the City for the next 20 years.*
2. *The City encourages the development of infill and redevelopment of existing land in order to balance the need to expand the Urban Growth Boundary (UGB).*
3. *The City has adopted the City of Boardman Development Code, a unified zoning and subdivision land use code to facilitate the development process and implement the land use goals of the City as outlined in the Comprehensive Plan.*
4. *The City recognizes that the location of a City Center is important to the development of the City of Boardman.*
5. *The City has adopted language in the Development Code as Chapter 2.2.190 that will assist in the implementation of a City Center in Boardman.*
6. *The development of the City Center will use the Downtown Plan completed in 2000 as a resource document when guiding future development within the City of Boardman.*
7. *The City will continue to work with Morrow County to maintain a consistent and coordinated plan for management of the Urban Growth Boundary (UGB) and the Urban Growth Area (UGA).*
8. *The City will continue to work with the Port of Morrow to encourage development of industrial lands within the Urban Growth Boundary.*

This proposal is consistent with policies #1 and #2 but not directly related to the proposal. The proposal is consistent with policies #3 - #6 as it directly addresses policies concerning the downtown plan and areas around the freeway interchange by provision of transportation connectivity planning and protection of the existing system function until improvements are necessary. As this proposal does not include industrial lands or areas outside of the city limits of the city policies #7 and #8.

CHAPTER 9: ECONOMIC NEEDS: The directly related policies in Goal 9 – Economic Needs are #1, #2, and #4. Polices #3 and #5 are related to industrial lands which this proposal does not address directly.

CHAPTER 9 – ECONOMIC NEEDS COMPREHENSIVE PLAN POLICIES:

1. *Advance the position of Boardman as a regional center for industry, power generation, commerce, recreation, and culture.*
2. *Encourage tourist commercial activity near Interstate 84.*
3. *Allow for the creation of industrial park development with adequate off-street parking, landscaping, and site screening.*
4. *Promote cooperation among the city, the Port of Morrow, and other interested parties to facilitate the most effective uses of public facilities serving the planning area.*
5. *As resources permit, review the City's supply industrial land to monitor supply and demand.*

Adoption of this proposal directly addresses policy #1, #2 and #4 in it provides a plan to address the transportation needs and connectivity for the commercial areas in an effective manner, providing for future commercial growth while meeting transportation demands. Policies #3 and #5 are unrelated in they deal with industrial lands issues which are not related to the IAMP proposal.

CHAPTER 10: HOUSING: Goal 10 policies, although not directly related to the adoption of the April 2009 Boardman Main Street Interchange Area Management Plan, do influence the overall functional operation of the interchange area through traffic counts from housing projects adding to overall traffic at the interchange.

CHAPTER 10 – HOUSING COMPREHENSIVE PLAN POLICIES

1. *The City shall provide a variety of living environments to meet regional housing needs for those of different family size and income.*
2. *The City, recognizing the financial difficulties of a segment of the City's population in providing themselves safe, sanitary and healthful shelter, shall work cooperatively with the private sector to seek state and federal aid where desirable to assist persons to obtain suitable housing.*
3. *Encourage new development concepts to meet changing housing demands and to provide self-contained recreation facilities.*
4. *Locate high-density multiple-family developments in areas to offer a buffer between single-family residential and commercial or industrial uses, close to schools and shopping, and with quick access to arterial streets.*
5. *Encourage planned unit developments while maintaining an overall low-density profile by incorporation of more open space in the development.*
6. *Promote energy efficient programs.*
7. *Provide infill opportunities for attached rowhouse development, duplex and triplex development in residential neighborhoods.*
8. *The City shall promote where possible, the evolution of safe and aesthetically pleasing residential neighborhoods that are efficiently integrated with business and commercial property, schools, parks, public facilities and other urban development.*
9. *The City shall give consideration to development of alternative residential construction both in form and layout for such reasons as aesthetics, energy conservation, reduced development costs and provision of open space.*

10. *Encourage through provisions in the City's Development Code, the opportunity to develop mixed use Development (commercial and higher density residential) to provide affordable housing options for all residents of Boardman.*
11. *The City shall encourage residential development within city limits in areas which are appropriate for urban development.*
12. *Work with federal and State agencies to establish funding for low to moderate income housing projects within Boardman.*
13. *Given recent growth trends, it will be important for the City and Morrow County staff to monitor the supply of buildable land and, if necessary, revise future housing need and land supply projections.*

Although these policies are not directly related to the Interchange Area Management Plan, housing uses do add to the traffic totals at the Main Street interchange. The IAMP accounts for overall existing and future trips from all types of land uses at the interchange by identifying triggers for improvements as traffic demand warrants them. The triggers are based on overall traffic demand in the interchange area and will be tracked through a system of traffic generation reports from commercial development and by review of projected trip generation based on the ITE Traffic Generation Manual for proposed residential developments outside of the IAMP boundaries. This proposal is consistent with the policies of Goal 10 - Housing.

It should be noted there are approximately 27 acres of "Manufactured Home Park Sub-district" zoned property within the IAMP boundaries. This acreage was calculated in the IAMP traffic projections as "commercial" zoning. This provides a worse case scenario in terms of traffic generation; however, the current zoning does not change with the adoption of the IAMP, even though the property owner has expressed a desire to change this zone in the future and the city supports this desire. A future zone change for this parcel will require a separate land use action and the replacement of residential acreage to meet the 20-year needs for the Manufactured Home Park Sub-District zone prior to any change of zone being finalized.

CHAPTER 11: PUBLIC FACILITIES: Policies #1, #2, #3, #5, #6, #8, #9, #11, #12, #13, #14, #16, and #20 are directly or indirectly related to transportation. The provisions of these policies are met; however, several actions will be required in the near future to ensure that funding is available for the improvements identified in the IAMP. Most of these changes will be related to current efforts being undertaken by the City concerning reconfiguration of the Capital Improvement Plan (CIP) projects list. This reconfiguration of the CIP includes numerous projects which are not currently contained in the Public Facilities Plan, mostly through the addition of projects associated with the IAMP and overall transportation circulation connectivity. The completion of the CIP is an essential element to accurately work out the funding mechanisms to be used for funding improvements associated with the IAMP. The City Council has provided guidelines for the addition of several options to fund transportation improvements, which include systems development charges (SDC's), local improvement districts (LID's), general fund transfers, exactions at the time of development, portions of the transient room tax devoted to transportation, and others to adequately fund future roadway improvements to facilitate the IAMP and overall network connectivity. The city will need to complete this work within a 12 -18 month period to adequately fund all the identified projects in the IAMP. There are currently 109 projects in the CIP of which approximately 35% currently have accurate cost estimates. When these changes are accomplished an additional Post Acknowledgement Plan Amendment to make the required changes to the Public Facilities Plan, the Capital Improvement Plan and the Comprehensive Plan will need to be accomplished.

CHAPTER 11 – PUBLIC FACILITIES COMPREHENSIVE PLAN POLICIES

1. The City shall assure urban services (water, sewer and storm drainage services and transportation infrastructure) to residential, commercial and industrial lands within the City's Urban Growth Area as these lands are urbanized.

2. To minimize the cost of providing public services and infrastructure, the City shall discourage inefficient development without adequate public services and promote efficient use of urban and urbanizable land within the City's urban growth boundary, including requiring all urban development to be served by full urban services.

3. The City shall support development that is compatible with the City's ability to provide adequate public facilities and services.

4. The City shall assure there are adequate sites for solid waste disposal and solid waste collection for the City and Urban Growth Boundary. The service may be provided by private contractors or public entities.

5. The City shall promote coordination among the City, Port of Morrow, and other interested parties to facilitate the most effective uses of public facilities serving the planning area.

6. The City shall prioritize development of land serviced by utilities and require the extension of water, sewer and storm drainage facilities for all urban level development within the UGB.

7. The City shall coordinate provision of public services with annexation of land outside the City limits.

8. The City shall adopt long range master plans for its water, sewer, storm drainage and transportation systems and review and/or update them periodically.

9. The City shall adopt and periodically update the City's Public Facilities Plan for development of public services and facilities in conformance with the policies of the Comprehensive Plan. Significant changes in projected capacity of public facilities required by proposed new development to be served by the City may necessitate update of the Public Facilities Plan.

10. The City shall comply with state and federal regulations for utility systems.

11. The City shall establish and maintain a range of funding mechanisms for building new water, sewer, storm drainage and transportation infrastructure and maintaining existing infrastructure.

12. The City shall monitor the condition of water, sewer, storm drainage and transportation infrastructure and finance regular maintenance of these facilities.

13. The City shall utilize its adopted System Development Charges (SDCs) to finance new water and wastewater infrastructure as allowed by state law, and adjust SDCs to keep them up to date with current costs.

14. The City shall establish and maintain utility rates and user fees that equitably allocate costs for operations and maintenance to users.

15. The City shall maintain an eight (8) year supply of commercial and industrial land that is serviceable by water, sewer, storm drainage and transportation infrastructure.

16. The City will periodically amend the Comprehensive Plan list of public facility projects when implementing plans or agreements are updated.

17. The City shall protect its water supply and enhance groundwater quality and quantity of the City's drinking water supplies by:

- *Establishing wellhead protection measures;*
- *Working with landowners and managers for protection of water sources; and*
- *Adhering to applicable permitting requirements when approving new residential, commercial and industrial development and when constructing new water, sewer, storm drainage transportation infrastructure.*

18. The City shall plan for and establish standards for storm drainage detention and management facilities for management of urban storm runoff as an environmental service, rather than flood control, during periods of heavy rain. In doing so, where feasible, the City will encourage natural storm drainage management techniques, such as modified bio-swales, landscaping, retention ponds and natural drainage ways.

19. The City shall take steps to minimize adverse impacts from construction and other sources of erosion and sedimentation on natural drainage ways and storm drainage facilities.

20. In order to allow for safe, orderly and coordinated development, the City shall adopt utility and transportation design standards and construction specifications as part of its development code.

21. The City will continue to work with the Boardman Rural Fire Protection District in their provision of fire protection services for the City.

22. The City is working (as of 2003) with the Oregon Water Resources Department to complete and obtain approval for, a Water Management and Conservation Plan, pursuant to OAR 690-86. Should the approved Plan include system improvement projects, the Capital Improvements Project list will be updated to reflect these additional projects.

The general provisions of Goal 11 policies are met with this proposed Interchange Area Management Plan. The necessary actions noted above concerning funding mechanisms are currently being pursued for completion. The recommendation is for the City to commit the capital outlay necessary for establishment of SDC's, LID's and other funding mechanisms to ensure that the transportation improvements of the IAMP are available to sustain future growth and development.

CHAPTER 12: TRANSPORTATION:

CHAPTER 12 – TRANSPORTATION COMPREHENSIVE PLAN POLICIES:

1. *The Transportation System Plan is an element of the Boardman Comprehensive Plan (as a Technical Appendix).*
2. *The City of Boardman shall protect the function of existing and planned roadways as identified in the Transportation System Plan.*

3. *The City of Boardman shall include a consideration of land use impacts on existing or planned transportation facilities in all land use decisions.*
4. *The City of Boardman will plan and develop a network of streets, accessways and other improvements, including bikeways, sidewalks, and safe street crossings to promote safe and convenient bicycle and pedestrian circulation within the community.*
5. *Several large properties in the southern portion of Boardman that are categorized in the North Morrow County TGM Project Community Visioning Analysis of Buildable Lands and Housing Needs as having potential for infill have limited access, posing potential problems for future development. In addition, other areas, such as the one south of Kunze Road, are served by unpaved roads that are in very poor condition. A well connected street pattern will be essential for efficient future urban development in these areas both to provide the opportunity for development at more urban densities and to make it possible to travel easily between and among different parts of the community. The City has developed a local street plan, as part of the Transportation System Plan and require development to improve local streets to city standards.*

The approval and adoption of the Boardman Main Street Interchange Area Management Plan is consistent will all of the transportation policies of the Comprehensive Plan. Adoption of the Main Street IAMP will become an element of the City's Transportation System Plan, thereby amending the City's Comprehensive Plan. The IAMP includes a planned local street system south of the Main Street interchanges and other transportation improvements that were developed in response to projected traffic from planned land uses. Bicycle and pedestrian improvements are part of the preferred interchange alternative, including the long-range reconstruction and expansion of the Main Street overpass to accommodate a center left turn lane, bicycle lanes and wider sidewalks.

TRANSPORTATION SYSTEM PLAN POLICIES

The Transportation System Plan (TSP) Policies, contained in Section 7 of the Boardman Transportation System Plan, associated with this proposed Interchange Area Management Plan (IAMP) are as follows; policies of approval process, policies for protection of transportation facilities, policies for coordinated review, and policies for pedestrian and bicycle circulation. Each of these categories has several policies and directives to accomplish the goals of the Transportation System Plan.

POLICIES FOR APPROVAL PROCESS:

- *The Transportation System Plan is an element of the Boardman Comprehensive Plan. It identifies the general location of transportation improvements. Changes in the specific alignment of proposed public road and highway projects that shall be permitted without plan amendment if the new alignment falls within a transportation corridor identified in the Transportation System Plan.*

- *Operation, maintenance, repair, and preservation of existing transportation facilities shall be allowed without land use review, except where specifically regulated.*

- *Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, for improvements designated in the Transportation System Plan, the classification of the roadway and approved road standards shall be allowed without land use review.*

- *Changes in the frequency of transit, rail and airport services that are consistent with the Transportation System Plan shall be allowed without land use review.*

- *For State projects that require an Environmental Impact Study (EIS) or Environmental Assessment (EA), the draft EIS or EA shall serve as the documentation for local land use review, if local review is required.*

Review of this proposal indicates all of the policies for the approval process are met and will be enhanced by the adoption of this Interchange Area Management Plan by the City of Boardman and the Oregon Transportation Commission.

POLICIES FOR PROTECTING EXISTING AND FUTURE OPERATION OF FACILITIES

- *The City of Boardman shall protect the function of existing and planned roadways as identified in the Transportation System Plan.*

- *The City of Boardman shall include a consideration of their impact on existing or planned transportation facilities in all land use decisions.*

- *The City of Boardman shall protect the function of existing or planned roadways or roadway corridors through the application of appropriate land use regulations.*

- *The City of Boardman shall consider the potential to establish or maintain accessways, paths, or trails prior to the vacation of any public easement or right-of-way.*

- *The City of Boardman shall preserve right-of-way for planned transportation facilities through exactions, voluntary dedication, or setbacks.*

The Interchange Area Management Plan is specifically designed to address the policies of protection of existing and future operation of the transportation infrastructure in the vicinity of the Main Street interchange. The IAMP identifies necessary transportation projects and actions to meet the needs of planned land uses within the area, including an enhanced local street network and access management measures to improve safety and operations of the interchange facility and I-84. The steps necessary to implement the improvements, and the "triggers" at which point the traffic demand requires the improvements, are identified in the plan. Upon adoption by the City of Boardman and the Oregon Transportation Commission, the projects and actions in the IAMP will become the blueprint for incremental steps to attain protection of the existing system and enhancement of the future transportation system. All of the City's TSP policies are met in this Interchange Area Management Plan.

POLICIES FOR COORDINATED REVIEW

- *The City of Boardman shall coordinate with the Department of Transportation to implement the highway improvements listed in the Statewide Transportation Improvement Program (STIP) that are consistent with the Transportation System Plan and comprehensive plan.*

- *The City of Boardman shall consider the findings of ODOT's draft Environmental Impact Statements and Environmental Assessments as integral parts of the land use decision-making procedures. Other actions*

required, such as a goal exception or plan amendment, will be combined with review of the draft EA or EIS and land use approval process.

Existing language in the Boardman Development Code provide for the required coordination of traffic reviews by the Department of Transportation. Proposed changes in the language to the Boardman Development Code enhance the notification and coordination between the City of Boardman and Department of Transportation in the review of land use and development proposals within the IAMP Overlay District. Additionally, changes to the language also clarify when updates to the IAMP are necessary.

POLICIES FOR PEDESTRIAN AND BICYCLE CIRCULATION AND ACCESS

- *It is the policy of the City of Boardman to plan and develop a network of streets, accessways, and other improvements, including bikeways, sidewalks, and safe street crossings to promote safe and convenient bicycle and pedestrian circulation within the community.*

- *The City of Boardman shall require streets and accessways where appropriate to provide direct and convenient access to major activity centers, including downtown, schools, shopping areas, and community centers.*

- *In areas of new development the City of Boardman shall investigate the existing and future opportunities for bicycle and pedestrian accessways. Many existing accessways such as user trails established by school children distinguish areas of need and should be incorporated into the transportation system.*

- *Bikeways shall be included on all new arterials and collectors within the Urban Growth Boundary except on limited access freeways.*

- *Retrofitting existing arterials and collectors with bike lanes shall proceed on a prioritized schedule as appropriate and practical (i.e., bike lanes may not be appropriate in downtown core areas where it would require the removal of parking).*

- *Sidewalks shall be included on all new streets within the Urban Growth Boundary except on limited access freeways.*

- *Retrofitting existing streets with sidewalks shall proceed on a prioritized schedule.*

- *Priority shall be given to developing accessways to major activity centers within the Urban Growth Boundary, such as the downtown commercial center, schools, and community centers.*

- *Bikeways and pedestrian accessways shall connect to local and regional travel routes.*

- *Bikeways and pedestrian accessways shall be designed and constructed to minimize potential conflicts between transportation modes. Design and construction of such facilities shall follow the guidelines established by the Oregon Bicycle and Pedestrian Plan.*

- *Maintenance and repair of existing bikeways and pedestrian accessways (including sidewalks) shall be given equal priority to the maintenance and repair of motor vehicle facilities.*

- *Bicycle parking facilities shall be provided at all new residential multifamily developments of four units or more, commercial, industrial, recreational, and institutional facilities.*

- *A citizens advisory committee shall be established to protect and promote bicycle and pedestrian transportation within the Urban Growth Boundary.*

Existing pedestrian and bicycle circulation and access was evaluated as part of the IAMP planning process and future improvements are part of the preferred interchange alternative. All incremental improvements along with the connective roadways identified in the IAMP are to include provisions for pedestrian and bicycle travel routes. The provisions of pedestrian and bicycle circulation and access polices are met with this proposal.

APPLICABLE STATE GOALS, POLICIES AND RULES

The City is proposing to adopt the Boardman Main Street Interchange Area Management Plan (IAMP) as an element of the City of Boardman Transportation System Plan, thereby amending the state-acknowledged City of Boardman Comprehensive Plan. Findings have been made to demonstrate that the adoption of the Boardman Main Street IAMP is consistent with LCDC's Goals. In addition, an IAMP must be consistent with applicable State transportation goals and policies. Findings of compatibility with the Oregon Transportation Plan and the Oregon Highway Plan, as well as the Administrative Rules that govern transportation planning, will be part of the basis for IAMP approval.

Pertinent State goals and policies for interchange planning are found in Attachment "E" and include findings addressing:

- Statewide Planning Goals
- OAR 660 Division 12 Transportation Planning Rule (TPR)
- OAR 731-015-0065 Coordination Procedures for Adopting Final Facility Plans
- OAR 734, Division 51. Highway Approaches, Access Control, Spacing Standards and Medians

CONDITIONS OF APPROVAL FOR CONSIDERATION

The following list of items includes possible conditions to be considered by the Planning Commission in their deliberations on the April 2009 Final Report for Boardman Main Street Interchange Area Management Plan.

1) Complete within 12 months the necessary changes to the Public Facilities Plan, Capital Improvement Plan and Chapter 11 of the Boardman Comprehensive Plan to solidify the funding mechanisms necessary to implement the IAMP.

2) Establish transportation funding mechanisms, including transportation systems development charges, consistent with the consensus of the Council developed at the City Council Workshop on Transportation Funding held September 20, 2008.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The Boardman Main Street Interchange Area Management Plan has been open to public input and has been thoughtfully crafted by the consultants, the Boardman Steering Committee,

the Oregon Department of Transportation, the Oregon Department of Land Conservation and Development and Boardman staff. The IAMP provides a blueprint to assuring transportation improvements are accomplished commensurate with traffic demand created by development.

Staff recommends, and the Planning Commission recommends the City Council approve the April, 2009, Final Report for the Boardman Main Street Interchange Area Management Plan, including the amendments to Chapter 5 of the IAMP (see Attachment "E") and revised Figures 5.5 and 5.6, and the implementation measures included in the associated code amendments (see Attachments "B," "C," and "D"),. The Planning Commission further recommends the Boardman City Council to adopt the plan through an implementing ordinance which includes the following conditions:

1) Complete within 12 months the necessary changes to the Public Facilities Plan, Capital Improvement Plan and Chapter 11 of the Boardman Comprehensive Plan to solidify the funding mechanisms necessary to implement the IAMP.

2) Establish transportation funding mechanisms, including transportation systems development charges, consistent with the consensus of the Council developed at the City Council Workshop on Transportation Funding held September 20, 2008.

Pedestrian dies in Boardman

East Oregonian Sep 23, 2013 Updated Dec 13, 2018 0

BOARDMAN — A pedestrian hit by a motor vehicle Friday night in Boardman died of his injuries after arriving at the hospital.

Filemon Prado-Reyes of Boardman was crossing Main Street when he was struck by a car at approximately 8:30 p.m. Sept. 20.

Boardman police chief Richard Stokoe said the incident is still under investigation and crash reconstructionists have not yet determined whether Prado-Reyes was in a crosswalk when he was hit. No arrests have been made in connection with the incident.

Stokoe said Prado-Reyes was transported to Good Shepherd Medical Center in Hermiston and later succumbed to his injuries.

September 2013

Boardman, Oregon, USA

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Sunrise: 6:19am Sunset: 7:38pm	2 Sunrise: 6:21am Sunset: 7:36pm	3 Sunrise: 6:22am Sunset: 7:35pm	4 Sunrise: 6:23am Sunset: 7:33pm	5 Sunrise: 6:24am Sunset: 7:31pm	6 Sunrise: 6:26am Sunset: 7:29pm	7 Sunrise: 6:27am Sunset: 7:27pm
8 Sunrise: 6:28am Sunset: 7:25pm	9 Sunrise: 6:29am Sunset: 7:23pm	10 Sunrise: 6:31am Sunset: 7:21pm	11 Sunrise: 6:32am Sunset: 7:19pm	12 Sunrise: 6:33am Sunset: 7:17pm	13 Sunrise: 6:34am Sunset: 7:15pm	14 Sunrise: 6:36am Sunset: 7:13pm
15 Sunrise: 6:37am Sunset: 7:12pm	16 Sunrise: 6:38am Sunset: 7:10pm	17 Sunrise: 6:39am Sunset: 7:08pm	18 Sunrise: 6:41am Sunset: 7:06pm	19 Sunrise: 6:42am Sunset: 7:04pm	20 Sunrise: 6:43am Sunset: 7:02pm	21 Sunrise: 6:44am Sunset: 7:00pm
22 Sunrise: 6:45am Sunset: 6:58pm	23 Sunrise: 6:47am Sunset: 6:56pm	24 Sunrise: 6:48am Sunset: 6:54pm	25 Sunrise: 6:49am Sunset: 6:52pm	26 Sunrise: 6:51am Sunset: 6:50pm	27 Sunrise: 6:52am Sunset: 6:48pm	28 Sunrise: 6:53am Sunset: 6:46pm
29 Sunrise: 6:54am Sunset: 6:44pm	30 Sunrise: 6:56am Sunset: 6:42pm					

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September 3, 2024

Kathy Street

655 SW Mt Hood Ave

Boardman, OR 97818

I would like to comment on the proposed changes to Boardman Main Street at the north side of I-84. When you use the westbound exit for Boardman it can be very dangerous. It appears to be one lane. But cars split left and right for turning onto Main Street. I personally have seen so many near accidents there.

When you are in a sedan you cannot see if traffic is heading north on Main Street due to the fence on the overpass. You wait and watch and finally think it is safe and then cars shoot out of the Chevron station parking lot. If there was the short median those cars would not be doing that. Currently there are so many places to look to see if you can turn it is not safe.

Thank you for this opportunity to speak.

Boardman Police Department

200 City Center Circle P.O. Box 229
Boardman, OR 97818
Admin (541) 481-6071 - Fax (541) 481-6171

Chief Of Police
Rick Stokoe

Captain
Loren Dieter

October 22, 2024

I am writing to bring to your attention a pressing traffic safety concern at the intersection of Boardman Ave and Main Street, which handles an astonishing 8,000+ vehicles daily. As the Chief of Police, it is my duty to ensure the safety of our citizens, and I firmly believe this intersection poses a significant risk to drivers, pedestrians, and cyclists.

The intersection in question has seen an increase in accidents and near-misses over a ten-year period. Our department has responded to numerous calls for service, including pedestrian-involved incidents. Unfortunately, a pedestrian fatality has occurred, and the potential for further tragic events is ever-present.

Several factors contribute to the hazardous conditions at this intersection:

1. Heavy traffic volume: The intersection is a major thoroughfare, with a high volume of vehicles passing through during peak hours.

2. Poor visibility: The intersection's design, including the placement of signs, parked vehicles and buildings, creates blind spots and reduces visibility for drivers.

3. Insufficient lighting: The existing lighting is inadequate, making it difficult for drivers to see pedestrians, cyclists, and other vehicles, especially at night or during inclement weather.

4. Aggressive driving, including speeding and tailgating, is prevalent due to the intersection's design and driver frustration.

To address these concerns, I recommend the following:

1. Conduct a comprehensive traffic study to identify the root causes of the safety issues and develop targeted solutions.

2. Install improved lighting, including LED streetlights and pedestrian-scale lighting, to enhance visibility.

3. Enhance traffic and pedestrian management devices.

4. Consider implementing Intelligent Transportation System technologies, such as traffic signals with pedestrian countdown timers.

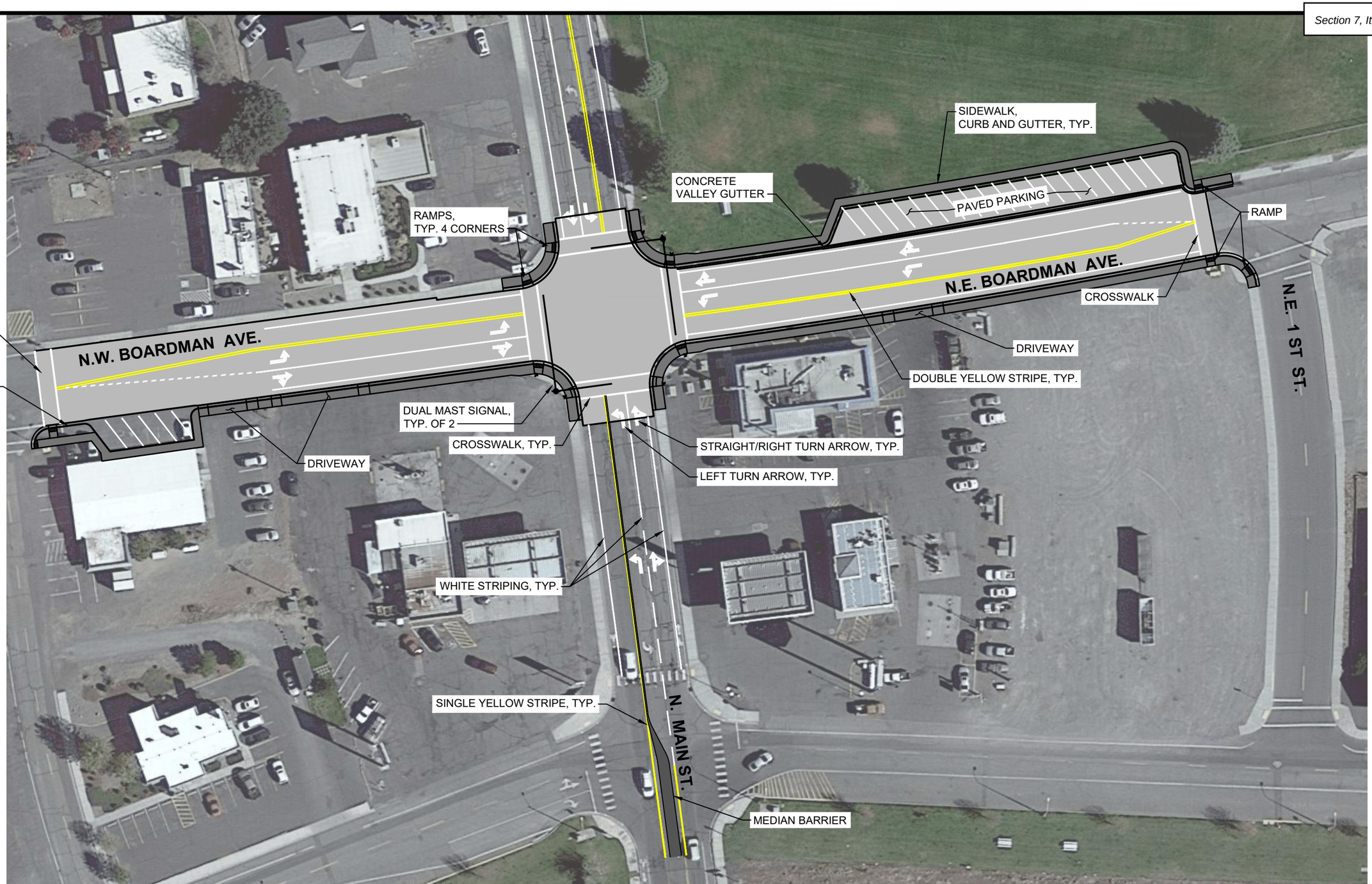
I request that the city allocate necessary resources to address these safety concerns. I am willing to work closely with city officials, engineers, and other stakeholders to develop and implement effective solutions.

Given the high volume of traffic and the severity of the safety concerns, I urge you to prioritize this matter. I look forward to collaborating with you to ensure the safety of our community.

Sincerely,

Rick Stokoe

Chief of Police



30 0 30 60 90
SCALE IN FEET

anderson perry

CITY OF
BOARDMAN, OREGON
N. MAIN STREET IMPROVEMENTS

SCHEMATIC LAYOUT

FIGURE
1

X:\Clients\Boardman OR\439-77 N Main St\CAD\439-77-Fig1.dwg, Layout1, 3/7/2024 4:50 PM, cgilmore

Project Number 167194
Project Name Boardman Near-Miss

TO VIEW LOCATION DETAILS, SELECT LINKS BELOW

			Total Conflicts			Veh - Veh Conflicts			Ped - Veh Conflicts			Bike - Veh Conflicts			Left Turn Conflict Rate (Conflicts Divided by Total Lefts)			
Site Code(s)	**Site Name**	**Total Hours Studied**	0.0 - 1.5s	1.5 - 2.0s	2.0 - 3.0s	0.0 - 1.5s	1.5 - 2.0s	2.0 - 3.0s	0.0 - 1.5s	1.5 - 2.0s	2.0 - 3.0s	0.0 - 1.5s	1.5 - 2.0s	2.0 - 3.0s	NB	SB	WB	EB
21,22	N Main St - Business Dwys	28	1	2	21	0	1	13	1	1	7	0	0	1	0.8%	0.5%	1.0%	0.8%
23,24	N Main St - Front St NW	28	2	3	65	1	3	57	1	0	1	0	0	7	1.3%	0.5%	2.4%	3.6%
25,26	N Main St - I-84 WB Ramps	28	0	0	41	0	0	36	0	0	2	0	0	3	1.2%	--	1.4%	--

Website www.QualityCounts.net
Email info@QualityCounts.net
Phone 971.223.0000

TO VIEW LOCATION DETAILS, SELECT LINKS IN THE PROJECT SUMMARY TAB

Site Name:	N Main St - Business Dwys	
Total Conflicts:		24
Total Hours Studied:		28

Site Code	Starting Time	Ending Time	Starting Date
21	06:00:00	20:00:00	09/04/2024
22	06:00:00	20:00:00	09/07/2024

Near Miss Summary	Veh-Veh	Veh-Ped	Veh-Bike	Total	Video Links
0.0 - 1.5s	0	1	0	1	Link
1.5 - 2.0s	1	1	0	2	Link
2.0 - 3.0s	13	7	1	21	Link

Near Misses by Movement Type		0.0 - 3.0s	Total Lefts	Conflict Rate
WB Left	NB Thru	7	729	1.0%
NB Left	SB Thru	3	369	0.8%
NB Thru	NL E to W Ped	3		
NB Thru	NL W to E Ped	2		
SB Left	NB Thru	1	187	0.5%
SB Thru	WB Thru	1		
EB Left	SB Thru	1	119	0.8%
EB Thru	SB Thru	1		
WL Ped	SB Thru	1		
NL W to E Ped	NB Thru	1		
SB Thru	NL E to W Ped	1		
EL S to N Ped	NB Thru	1		
EL Bicycle	SB U-Turn	1		

PEDESTRIANS

Movement 1	Movement 2	Ped Leg	Vehicle class	PET (sec)	Event time	Date	Camera Facing Direction
NB Thru	E to W Ped	NL	cl2_passenger_	2.84	10:59:55	09/04/2024	South West
Ped	SB Thru	WL	cl2_passenger_	2.93	11:11:52	09/04/2024	South West
NB Thru	W to E Ped	NL	cl5_two_axle_s	2.8	11:14:30	09/04/2024	South East
W to E Ped	NB Thru	NL	cl2_passenger_	2.77	11:25:29	09/04/2024	South West
SB Thru	E to W Ped	NL	cl3_four_tire_s	2.73	13:04:01	09/04/2024	South East
NB Thru	W to E Ped	NL	cl2_passenger_	2.46	16:04:53	09/04/2024	South East
NB Thru	E to W Ped	NL	cl2_passenger_	1.26	17:31:51	09/04/2024	South West
S to N Ped	NB Thru	EL	cl3_four_tire_s	1.91	18:18:35	09/04/2024	South West
NB Thru	E to W Ped	NL	cl2_passenger_	2.53	19:40:39	09/04/2024	South West

BICYCLES

Movement 1	Movement 2	Movement 1 C	Movement 2 Cl	PET (sec)	Event time	Date	Camera Facing Direction
EL Bicycle	SB U-Turn	bicycle	cl2_passenger_	2.32	16:11:53	09/07/2024	South West

VEHICLES

Movement 1	Movement 2	Movement 1 C	Movement 2 Cl	PET (sec)	Event time	Date	Camera Facing Direction
NB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.96	11:10:36	09/04/2024	South West
WB Left	NB Thru	cl3_four_tire_s	cl2_passenger_	2.23	13:10:05	09/04/2024	South West
SB Thru	WB Thru	cl2_passenger_	cl2_passenger_	1.95	13:38:38	09/04/2024	South East
EB Thru	SB Thru	cl2_passenger_	cl2_passenger_	2.5	14:10:52	09/04/2024	South West
SB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.5	15:09:33	09/04/2024	South West
EB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.23	15:34:31	09/04/2024	South West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.59	16:26:44	09/04/2024	South West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.62	17:32:17	09/04/2024	South West
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.8	17:58:24	09/04/2024	South East
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.8	18:07:36	09/04/2024	South East
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.84	19:26:58	09/04/2024	South East
NB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.8	07:40:57	09/07/2024	South West
NB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.74	12:51:29	09/07/2024	South West
WB Left	NB Thru	cl3_four_tire_s	cl2_passenger_	3	13:36:25	09/07/2024	South West

Site Name:	N Main St - Front St NW	
Total Conflicts:		70
Total Hours Studied:		28

Site Code	Starting Time	Ending Time	Starting Date
23	06:00:00	20:00:00	09/04/2024

24 06:00:00 20:00:00 09/07/2024

Near Miss Summary	Veh-Veh	Veh-Ped	Veh-Bike	Total	Video Links
0.0 - 1.5s	1	1	0	2	Link
1.5 - 2.0s	3	0	0	3	Link
2.0 - 3.0s	57	1	7	65	Link

Near Misses by Movement Type		0.0 - 3.0s	Total Lefts	Conflict Rate
WB Left	NB Thru	29	1226	2.4%
NB Left	SB Thru	15	1124	1.3%
EB Left	SB Thru	6	167	3.6%
EB Thru	NB Thru	4		
NB Thru	NL Bicycle	4		
NB Thru	EB Thru	2		
WB Thru	NB Thru	2		
WB Left	EB Thru	1	1226	0.1%
EB Thru	SB Thru	1		
SB Thru	NL Bicycle	1		
SB Left	NB Thru	1	213	0.5%
NB Left	WL Bicycle	1		
NB Right	SL Ped	1		
EL N to S Ped	WB Left	1		
NB Right	SL Bicycle	1		

PEDESTRIANS

Movement 1	Movement 2	Ped Leg	Vehicle class	PET (sec)	Event time	Date	Camera Facing Direction
NB Right	Ped	SL	cl2_passenger_	1.2	06:46:34	09/05/2024	North West
N to S Ped	WB Left	EL	cl2_passenger_	2.8	15:19:35	09/05/2024	North West

BICYCLES

Movement 1	Movement 2	Movement 1 C	Movement 2 Cl	PET (sec)	Event time	Date	Camera Facing Direction
NB Thru	NL Bicycle	cl3_four_tire_s	bicycle	2.15	17:43:29	09/04/2024	North West
NB Left	WL Bicycle	cl3_four_tire_s	bicycle	2.86	17:53:52	09/04/2024	North West
NB Thru	NL Bicycle	cl2_passenger_	bicycle	2.29	16:38:41	09/05/2024	North West
NB Thru	NL Bicycle	cl4_bus	bicycle	2.88	15:59:39	09/07/2024	North East
SB Thru	NL Bicycle	cl2_passenger_	bicycle	3	17:29:52	09/07/2024	North East
NB Thru	NL Bicycle	cl2_passenger_	bicycle	2.39	18:16:24	09/07/2024	North East
NB Right	SL Bicycle	cl2_passenger_	bicycle	2.3	19:28:15	09/07/2024	North West

VEHICLES

Movement 1	Movement 2	Movement 1 C	Movement 2 Cl	PET (sec)	Event time	Date	Camera Facing Direction
SB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.24	06:43:08	09/04/2024	North West
NB Left	SB Thru	cl2_passenger_	cl5_two_axle_s	2.55	10:40:51	09/04/2024	North East
WB Left	EB Thru	cl2_passenger_	cl2_passenger_	2.97	11:08:47	09/04/2024	North West
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.56	12:43:42	09/04/2024	North West
NB Left	SB Thru	cl3_four_tire_s	cl2_passenger_	2.52	14:17:53	09/04/2024	North East
EB Left	SB Thru	cl2_passenger_	cl3_four_tire_s	2.76	14:45:42	09/04/2024	North East
WB Thru	NB Thru	cl2_passenger_	cl2_passenger_	2.48	14:50:04	09/04/2024	North West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.96	15:28:00	09/04/2024	North West
EB Thru	NB Thru	cl5_two_axle_	cl2_passenger_	1.48	15:36:07	09/04/2024	North East
EB Thru	NB Thru	cl5_two_axle_	cl2_passenger_	1.58	15:36:20	09/04/2024	North West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.59	15:41:24	09/04/2024	North West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.25	16:19:51	09/04/2024	North West
WB Left	NB Thru	cl3_four_tire_s	cl3_four_tire_s	2.67	16:24:22	09/04/2024	North West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.44	16:40:46	09/04/2024	North West
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.8	16:50:17	09/04/2024	North West
EB Left	SB Thru	cl2_passenger_	cl3_four_tire_s	2.2	16:56:47	09/04/2024	North East
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.61	17:53:25	09/04/2024	North East
NB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.91	18:02:00	09/04/2024	North East
WB Thru	NB Thru	cl2_passenger_	cl2_passenger_	2.48	06:38:24	09/05/2024	North East
WB Left	NB Thru	cl3_four_tire_s	cl2_passenger_	2.72	07:14:10	09/05/2024	North East
EB Thru	SB Thru	cl3_four_tire_s	cl2_passenger_	2.68	09:30:05	09/05/2024	North East
EB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.94	11:13:16	09/05/2024	North West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.88	11:33:51	09/05/2024	North West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.75	11:55:03	09/05/2024	North West
WB Left	NB Thru	cl3_four_tire_s	cl2_passenger_	3	11:55:28	09/05/2024	North East
NB Left	SB Thru	cl2_passenger_	cl3_four_tire_s	2.95	12:06:03	09/05/2024	North West
NB Left	SB Thru	cl3_four_tire_s	cl2_passenger_	2.84	12:06:53	09/05/2024	North East
EB Left	SB Thru	cl2_passenger_	cl3_four_tire_s	2.81	12:19:52	09/05/2024	North East
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.97	13:09:22	09/05/2024	North West
NB Left	SB Thru	cl1_motorcycle	cl4_bus	2.86	15:08:38	09/05/2024	North East

NB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.92	15:29:55	09/05/2024	North West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.7	15:59:17	09/05/2024	North West
WB Left	NB Thru	cl3_four_tire_s	cl2_passenger_	2.95	16:11:41	09/05/2024	North West
EB Thru	NB Thru	cl2_passenger_	cl2_passenger_	2.99	16:31:16	09/05/2024	North East
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.58	16:41:20	09/05/2024	North West
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.87	16:41:32	09/05/2024	North West
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.57	16:54:02	09/05/2024	North West
NB Left	SB Thru	cl2_passenger_	cl3_four_tire_s	2.15	17:22:50	09/05/2024	North East
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.98	17:25:18	09/05/2024	North West
WB Left	NB Thru	cl3_four_tire_s	cl3_four_tire_s	2.43	17:26:55	09/05/2024	North East
NB Thru	EB Thru	cl2_passenger_	cl1_motorcycle	1.8	17:52:59	09/05/2024	North East
NB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.84	18:11:29	09/05/2024	North East
EB Thru	NB Thru	cl2_passenger_	cl2_passenger_	2.35	18:36:12	09/05/2024	North West
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.32	18:44:33	09/05/2024	North East
NB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.89	19:23:17	09/05/2024	North East
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.22	19:48:51	09/05/2024	North East
NB Left	SB Thru	cl3_four_tire_s	cl2_passenger_	1.88	19:49:20	09/05/2024	North East
EB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.26	07:23:13	09/07/2024	North East
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.73	10:03:34	09/07/2024	North West
WB Left	NB Thru	cl3_four_tire_s	cl2_passenger_	2.5	11:07:58	09/07/2024	North East
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.59	12:45:29	09/07/2024	North West
EB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.71	13:02:16	09/07/2024	North East
WB Left	NB Thru	passenger_car	cl3_four_tire_s	2.76	13:56:37	09/07/2024	North West
NB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.84	15:27:06	09/07/2024	North West
NB Left	SB Thru	cl3_four_tire_s	cl2_passenger_	2.48	16:15:13	09/07/2024	North West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.63	16:41:50	09/07/2024	North West
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.72	16:54:32	09/07/2024	North West
NB Thru	EB Thru	cl3_four_tire_s	cl2_passenger_	2.65	17:03:44	09/07/2024	North West
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.56	17:45:25	09/07/2024	North West
NB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.64	18:04:43	09/07/2024	North West
NB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.73	18:17:14	09/07/2024	North West

Site Name:	N Main St - I-84 WB Ramps
Total Conflicts:	41
Total Hours Studied:	28

Site Code	Starting Time	Ending Time	Starting Date
25	06:00:00	20:00:00	09/04/2024
26	06:00:00	20:00:00	09/07/2024

Near Miss Summary	Veh-Veh	Veh-Ped	Veh-Bike	Total	Video Links
0.0 - 1.5s	0	0	0	0	--
1.5 - 2.0s	0	0	0	0	--
2.0 - 3.0s	36	2	3	41	Link

Near Misses by Movement Type		0.0 - 3.0s	Total Lefts	Conflict Rate
WB Left	NB Thru	32	2346	1.4%
NB Left	SB Thru	4	331	1.2%
SB Right	WL Ped	1		
SB Right	WL Bicycle	1		
EL Bicycle	WB Left	1		
NB Left	WL Bicycle	1		
WL Ped	SB Right	1		

PEDESTRIANS

Movement 1	Movement 2	Ped Leg	Vehicle class	PET (sec)	Event time	Date	Camera Facing Direction
SB Right	Ped	WL	cl2_passenger_	2.6	11:16:02	09/04/2024	North East
Ped	SB Right	WL	cl3_four_tire_s	2.98	14:45:20	09/07/2024	North East

BICYCLES

Movement 1	Movement 2	Movement 1 C	Movement 2 Cl	PET (sec)	Event time	Date	Camera Facing Direction
SB Right	WL Bicycle	cl8-10_truck_s	bicycle	2.52	13:55:33	09/04/2024	South West
EL Bicycle	WB Left	bicycle	cl2_passenger_	2.87	06:49:30	09/07/2024	South West
NB Left	WL Bicycle	cl8-10_truck_s	bicycle	2.54	14:05:05	09/07/2024	South West

VEHICLES

Movement 1	Movement 2	Movement 1 C	Movement 2 Cl	PET (sec)	Event time	Date	Camera Facing Direction
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.4	07:15:01	09/04/2024	South West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.64	07:18:18	09/04/2024	South West
WB Left	NB Thru	cl3_four_tire_s	cl2_passenger_	2.82	11:17:08	09/04/2024	North East
WB Left	NB Thru	cl3_four_tire_s	cl2_passenger_	2.93	11:26:15	09/04/2024	South West

WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.63	12:14:56	09/04/2024 North East
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.46	13:37:14	09/04/2024 North East
WB Left	NB Thru	cl5_two_axle_	cl5_two_axle_s	2.3	14:57:17	09/04/2024 South West
NB Left	SB Thru	cl3_four_tire_s	cl2_passenger_	2.7	15:05:25	09/04/2024 North East
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.38	15:19:14	09/04/2024 South West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.97	15:25:08	09/04/2024 South West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.57	15:29:43	09/04/2024 South West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.42	15:38:18	09/04/2024 South West
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.46	15:41:37	09/04/2024 North East
WB Left	NB Thru	cl3_four_tire_s	cl2_passenger_	2.82	15:41:46	09/04/2024 South West
WB Left	NB Thru	cl3_four_tire_s	cl2_passenger_	2.66	15:51:24	09/04/2024 South West
WB Left	NB Thru	cl11-13_truck_	cl2_passenger_	2.83	16:19:46	09/04/2024 South West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.77	16:27:15	09/04/2024 South West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.91	16:33:30	09/04/2024 South West
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.73	17:13:47	09/04/2024 South West
WB Left	NB Thru	cl3_four_tire_s	cl1_motorcycle	2.89	17:24:18	09/04/2024 North East
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.57	17:25:13	09/04/2024 North East
NB Left	SB Thru	cl2_passenger_	cl2_passenger_	2.79	17:27:50	09/04/2024 North East
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.96	17:34:00	09/04/2024 South West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.95	17:37:18	09/04/2024 South West
NB Left	SB Thru	passenger_car_	cl2_passenger_	2.56	17:39:29	09/04/2024 North East
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.35	17:46:32	09/04/2024 South West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.96	17:50:27	09/04/2024 South West
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.83	18:27:23	09/04/2024 South West
WB Left	NB Thru	cl3_four_tire_s	cl2_passenger_	2.27	07:48:40	09/07/2024 South West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.95	10:15:57	09/07/2024 South West
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.95	10:16:12	09/07/2024 South West
WB Left	NB Thru	cl2_passenger_	cl1_motorcycle	2.89	11:03:34	09/07/2024 South West
WB Left	NB Thru	cl3_four_tire_s	cl2_passenger_	2.84	11:19:17	09/07/2024 South West
NB Left	SB Thru	cl3_four_tire_s	cl2_passenger_	2.81	14:07:09	09/07/2024 South West
WB Left	NB Thru	cl2_passenger_	cl3_four_tire_s	2.88	15:00:52	09/07/2024 North East
WB Left	NB Thru	cl2_passenger_	cl2_passenger_	2.6	16:18:11	09/07/2024 South West

QC's Near Miss User Guide

- In the Project Summary tab, the Site Names are links. When you click the link the report will bring you the full

- The near miss reports are location specific. All time periods studied across all days are combined.

- In the Near Miss Summary chart, you will see links to videos showing 1.5 second, 2.0 second, and 3.0 second

- For each near miss conflict, the object in Column A crossed in front of the object in Column B.

- Our near miss prioritizes conflicting movements that lead to serious injury or fatal crashes. For vehicle-to-vehicle near misses, this includes left turns crossing before the through and intersecting through movements. For bikes and pedestrians, we include any and all conflicts involving bikes or pedestrians. This means you will often see bike/ped conflicts that are not near misses, but our philosophy is to include them still because we

- While we do extensive QA/QC on our Turning Movement Count data, the near miss reports are auto-generated by DataLens, our AI platform and we do not QA/QC the near miss files and videos. This means you may see a misclassification from time to time or a mistake in the tracking function of DataLens. You should always review

- Depending on the camera angles, some near miss reports have more errors than others. For future projects, please let us know if any locations have specific regions of interest or movements of concern, and we will pay

- Lastly, this is a new service by QC and we welcome your feedback on how these reports could be more useful.

RIVERSIDE JR/SR HIGH SCHOOL

210 Boardman Ave.
Boardman, OR 97818
Telephone (541) 481-2525
Fax (541) 481-2047

John Christy, Principal
Karen Shelton, Vice Principal
David Boor, Athletic Director
Elizabeth Rosen, Counselor
Matt Combe, Superintendent

To whom it may concern:

My name is John Christy, Principal at Riverside Jr/Sr High School. I am writing in support of fixing some of the conflicts we have with traffic on Boardman Ave and Main Street. Before school, lunch time, and after school seem to be the biggest conflicts with many students/parents and community members accessing this area. I am not 100% sure what needs to happen but know that something should be looked at for the safety of our students and community. There are a lot of students who walk to and from school. There are already flashing crosswalks which are helpful but still dangerous as there are no stop lights or stop signs to have vehicles stop.

Again, I am not sure exactly what needs to happen, but I would be in support of having this looked at coming up with solutions during school's hours as well before and after for the safety of our students and really the rest of the community. It is important to think about what the future might look like here at Boardman as we are growing in student populations.

Regards,

John Christy

Principal Riverside Jr/Sr High School

541-481-2525

John.christy@morrowsd.org

TBD
TOMASI BRAGAR DUBAY

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November 4, 2024

BY OVERNIGHT DELIVERY

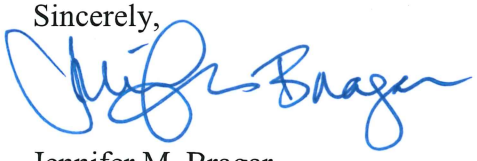
City Council of the City of Boardman
c/o Carla McLane
200 City Center Circle
Boardman, OR 97818

Re: Hattenhauer Open Record Submittal for Appeal of Planning Commission's Decision on File Number CUP24-000001 – Traffic Footage

Dear Mayor Keefer and Council Members:

As you know, this office represents Hattenhauer Distributing Co. ("Appellant" or "Hattenhauer"), the owner of the Sinclair gas station located at 100 North Main Street, Boardman, Oregon 97818. Please find enclosed a flash drive containing traffic footage for intersections on North Main Street near the I-84 WB ramp, Front Street NW, and Business Driveways prepared by the City of Boardman. As the City has been unclear about which video it intends to include in the record, this thumb drive is submitted to include the video provided only with website links in the City's Exhibit 19. Please include this video footage in the record. Appellant will provide additional written comments about the video footage under separate cover. Thank you for your attention to this matter.

Sincerely,



Jennifer M. Bragar

Enclosure

cc: (by e-mail)
client

TBD
TOMASI BRAGAR DUBAY

Jennifer M. Bragar
Attorney
Admitted in Oregon, Washington, and California
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November 5, 2024

BY EMAIL

City Council of the City of Boardman
c/o Carla McLane
200 City Center Circle
P.O. Box 229
Boardman, OR 97818

Re: Hattenhauer Open Record Submittal for Appeal of Planning Commission's Decision on File Number CUP24-000001 – Technical Memoranda and Transportation Impacts Report

Dear Mayor Keefer and Council Members:

As you know, this office represents Hattenhauer Distributing Co. ("Appellant" or "Hattenhauer"), the owner of the Sinclair gas station located at 100 North Main Street, Boardman, Oregon 97818. This letter is submitted in further support of Hattenhauer's appeal application for the above-referenced file and the Planning Commission decision dated May 16, 2024 ("Decision").[1] Please include this letter in the record for the above referenced file.

I. About-face to traffic signal installation is being proposed at the final hour without adequate vetting or analysis.

First, as a procedural matter, Appellant is disappointed and substantially prejudiced by the fact that, after a two month open record period since the September 3, 2024, City Council Hearing, the City's updated Findings of Fact were distributed less than one week before the upcoming November 5, 2024, hearing. The updated Findings of Fact were circulated by email after regular business hours on October 30, 2024, ostensibly acting as a staff report because for the first time, the findings announce that the applicant intends to install a traffic signal that will cut off all left-turn access off Main Street into Appellant's property (the "Modified Project"). This timing violates BDC 4.1.500(C)(2)(h) and the Notice of Hearing. Further, the City made no attempt to contact affected local businesses such as Sinclair, Café Cultura, and Sunrise Cafe, to inform them of the this significant and sudden change. This belated announcement substantially prejudices Appellant's ability to review the proposal, and the decision should be further delayed, the application denied, or the entire proposal sent back to the Planning Commission to restart the review. The best approach is to have the City withdraw this application and vet the proposal through the full transportation update that has just begun, and is discussed further below.

[1] Capitalized terms not defined in this letter have the same definition as used in our August 6, 2024 letter.

Mr. Hattenhauer and I also received a cryptic email at 4:51 p.m. on Friday, November 1, 2024 where Ms. McLane wrote:

> "Good afternoon.
> I am sending this to you all because we did identify a couple of minor mistakes or items to clarify in the findings. A new version is attached.
> Have a great weekend.
> Carla"

Nothing was attached to the email, and at 5:00 p.m., I sent a response stating the same. On Monday, November 4, 2024, I also followed-up with Ms. McLane to find out whether the packet currently on the City Council's website is the current version of the proposed findings. I have not did not received a response until 1:33 p.m. today. To the extent that we have not had the opportunity to review or comment on the Friday, November 1, 2024, version of the findings, which were only confirmed as available on the City's website on the same day as this hearing. Appellant requests additional time to respond, such as through the application of the seven-seven-seven rule for open record, rebuttal, and final written argument.

Second, no details for such traffic signal are included in the record and it is nearly impossible for Appellant to respond to site review standards related to this belated announcement. The only new information is the schematic layout, Exhibit 18 in the record. It appears that the City is penalizing my client for appealing the City's decision by proposing a signal and removing all left-turn access off of Main Street into the Sinclair station. But, this about-face is unjustified under the IAMP as readily explained by Hattenhauer's traffic expert, Rick Nys. See Attachment 1. While the City's Exhibit 2 suggests that a signal may be warranted at the time of installing a median, the applicant and City's record make no effort to respond to the IAMP requirements that trigger the need for a median in the first instance.

As discussed at length in Attachment 1, the record to date contains no engineering study in compliance with the Manual on Uniform Traffic Control Devices (MUTCD) that supports installation of a traffic signal at this time. In fact, a traffic signal is not anticipated to be needed until 2042. Lack of compliance with the MUTCD cannot be overcome because as presented in the Technical Memorandum, the minimum traffic volumes at the intersection of N. Main Street/Boardman Avenue NE are not even met during the existing weekday PM peak hour, and the volumes are not even close to meeting the warrants during the peak hour. Attachment 1. Attachment 1. Therefore, the next engineering step is not triggered by the low traffic volume.

Additionally, the City's assertions that back-ups/stacking at the intersection and pedestrian volumes justify the traffic signal are not supported by evidence in the record. Attachment 1. The Technical Memorandum itself illustrates a very small amount of pedestrian crossing, which is supported by the video data the City gathered since the September 3, 2024, hearing. Attachment 1. Further, crash data at this intersection does not justify the installation a traffic signal at the intersection. Attachment 1. In fact, since the IAMP was adopted the Technical Memorandum

shows that crashes have decreased. Attachment 1. Nowhere in the current proposal has an analysis been done to ensure current accesses are maintained or improved. Attachment 1.

As to restricting access at North Main and Front Street, the Technical Memorandum states that the intersection currently operates at LOS C and that no action is triggered under the IAMP until the intersection operates at LOS E. Attachment 1. The City has not met its burden to limit the intersection at this time and fails to analyze installation of the Median against adopted IAMP triggers. The City's Exhibit 18 illustrates that a median would be installed on N. Main Street between Front Street and Boardman Avenue NE, turning the Appellant's N. Main Street driveway into a right-in/right-out driveway, which directly contradicts the City's finding that Main Street access will be maintained to the three businesses, including appellant's property.

Finally, queuing as a result of installation of a premature traffic signal has not been assessed. Attachment 1. The impacts of the traffic signal to nearby residential neighborhoods has not been evaluated, despite testimony raising these concerns at the September 3, 2024, public hearing. This proposal is being unnecessarily rushed and should be denied.

For all these reasons, prior analysis by the Mr. Nys' that the IAMP triggers have not been assessed, and the additional information in Mr. Nys' report in Attachment 1, the current iteration of the proposal does not meet BDC 4.4.400(D)(1)(a), or the other conditional use approval criteria.

Additionally, the "Conflict Report," City Exhibit 19 (a spreadsheet with scant explanation and without any accompanying analysis), which the City now relies on *post-facto* in support of claimed safety issues, is intentionally and plainly inflated. The "QC's Near Miss User Guide" that follows the spreadsheet states:

> "For bikes and pedestrians, we include any and all conflicts involving bikes or pedestrians. *This means you will often see bike/ped conflicts that are not near misses, but our philosophy is to include them still* because we [sic]." [2] (Emphasis added.)

As shown by Attachment 1, Mr. Nys' new report, the incidents the spreadsheet identified as "near misses" are subjectively determined with no definition or standard anywhere in the material, and there is certainly not any "near miss" standard adopted in Oregon or the City of Boardman.

In Mr. Nys' expert opinion only two incidents, of the sixty "near misses" identified in the spreadsheet, may qualify as near misses where a vehicle slightly swerved to avoid an approaching vehicle. The rest of the videos show normal interactions between multiple modes of transportation on Main Street. In some instances, drivers may not be very good at driving, or may not be observing traffic laws, but this is not a traffic *volume* problem. Finally, none of the videos show a large amount of students crossing the street in unsafe conditions – the purported purpose underlying this application. While it is important that the City address safety concerns, the safety concerns raised thus far are without foundation, and crashes have decreased since the IAMP was adopted. Attachment 1.

[2] The explanation cuts off here.

Further, Appellant previously criticized the inadequacy of the findings under BDC 4.4.400(D)(1), 4.4.400(B), 4.4.300, and 4.2.500(B)(2). These concerns are not addressed by mere replacement of the words "HAWK signal" with "traffic signal" in the Findings. Once more, the design of the median is not included in final form. See BDC 4.4.300 and 4.2.500(B)(2). Instead, only a schematic is provided. This schematic is not binding because the design of the N. Main and Front Street Median is not included in its final form, and keeps changing at every hearing. As a result, Appellant has no design for which to base its comments and protect its interests. However, based on what has been submitted, the design of the Median will interfere with access to the Sinclair property and have a high likelihood of interference with existing traffic patterns. The decision on this Project should be reversed and denied unless the Median and full traffic signal are removed, or the design is refined on the public record so as to not interfere with access to the Sinclair property. No approval findings under BDC 4.2.600 are included in the decision as required under BDC 4.4.400(B). All of these problems must be rectified before the City can make a decision on the application. Appellant reiterates once again, this application is premature.

Other deficiencies continue from a failure to provide an adequate site plan for the Modified Project. As we stated previously, and as shown as unresolved on the City's Exhibit 18, the right-of-way and roadway widths do not appear to be at least 68 feet and 47 feet, respectively, as required by BDC Table 3.4.100. There does not seem to be adequate room as presented in the schematic layout to accommodate the required roadway width. Further, maintenance of the north side of Boardman Avenue is not addressed in the decision. However, under BDC 3.4.100(J), maintenance of sidewalks, curbs, and planter strips is the continuing obligation of the adjacent property owner. No portion of the decision addresses maintenance of these same sidewalks, curbs, and planter strips by any of the adjacent owners of property along NE Boardman Avenue.

Appellant's previously discussed concerns about the school dedication and ADA-accessible parking space design remain, as well as failure to address stormwater infrastructure concerns. BDC 3.3.300(D) and (E).

As with the previously contemplated HAWK signal, the findings continue to fail to address the applicable general conditional criteria. Under BDC 4.4.400(D)(1), the Project may be allowed "[s]ubject to a Conditional Use Permit *and* satisfaction of all of the following criteria…" Thereafter the provision lists criteria in BDC 4.4.400(D)(1)(a-e). However, the first requirement making the Project subject to a Conditional Use Permit means that the general conditional use criteria under BDC 4.4.400(A) also apply. The City must make findings under BDC 4.4.400(A)(1) that the size, dimensions, location, and access are adequate for the proposed use, considering the traffic impacts. As stated in Hattenhauer's appeal letter and above, the size of the contemplated Median at N. Main and Front Streets is not defined. Now, with the proposed traffic signal, the negative impact to Appellant's property and other surrounding properties which rely on left-turn access from Main Street has not been address under BDC 4.4.400(A)(3). Also, building on the discussion above, it is unclear whether there is adequate roadway width as a public facility to meet the proposal under BDC 4.4.400(A)(3).

///

II. The City's Transportation System Plan Update process is the correct forum to fully vet any proposed signalization at the intersection of Boardman and N. Main Street, or a median at N. Main and Front Street.

The City's decision is being fast-tracked in order to ignore or neglect other important considerations that are required in a TSP update, including equity. The attached Technical Memoranda, produced by Kittleson & Associates to help inform the City's Transportation System Plan ("TSP") update, support a holistic look at the City's transportation system, instead of consideration of this one-off project outside of the TSP update. The following Technical Memoranda are attached hereto, as referenced by the attachment numbers designated in this list:

Technical Memorandum 3.1: Boardman Community Profile and Trends, Attachment 2;
Technical Memorandum 3.2: Plans and Policy Review, Attachment 3; and
Technical Memorandum 3.3: Goals, Objectives, and Evaluation Criteria, Attachment 4.
In Appellant's August 14, 2024, letter, Appellant cautioned the City:

"The Median portion of the Project should not be included at this time. The unintended consequences of the Median have not been fully thought out or assessed. *** [T]he impacts to adjacent properties, including Appellant's Sinclair property have not been considered, assessed or acknowledged. Further, other adjacent and nearby properties will be adversely impacted. For example, Hattenhauer was contacted by the owner of Café Cultura, another local business that operates on the west side of N. Main Street near Sinclair that will be adversely affected by installation of the Median. The Café Cultura owner had never been contacted by the City with notice of this Project, yet her drive-through traffic will be limited by the proposal. She is exactly the type of business owner, one that opened well after preparation of the IAMP, whose voice should have been heard with advance notice of this Project and whose voice should be heard during the TSP update. Significantly, the Café Cultura website notes that the business is Hispanic and woman owned, and the Transportation Planning Rule (OAR Ch. 660-012) now specifically speaks to considering equitable outcomes for such business owners."

Oregon Administrative Rule ("OAR") 660-012-0125 requires that, in transportation planning, cities and counties must prioritize community-led engagement and decision-making, with specific attention to underserved populations. This is in recognition that underserved populations deserve prioritized attention regarding transportation and land use planning due to historic and current marginalization.

As highlighted in Attachment 2, Boardman consists of "underserved populations" as defined by OAR 660-012-0125, in particular low-income and low-wealth community members and Hispanic and Latina/o/x populations. When compared to the State of Oregon and Morrow County, Boardman has a higher percentage of people living below the 1.00 income to poverty ratio, at 21% of the population. Attachment 2, p. 7. Further, more than half of Boardman's population is living below 200% poverty—also a greater percentage than both the state and the county, *and this number is nearly 4% higher than it was in 2020*. Attachment 2, p. 7. Additionally, Boardman has a larger representation of people that identify as Hispanic or Latino, at 73.5% of the

total population. Attachment 2, p. 5. Consistent with OAR 660-012-0125, the City must consider the impact of its transportation planning choices on these underserved communities, which it has not adequately done in this circumstance, and is wholly avoiding by separating this application from the TSP update.

The City has as of yet failed to account for potential unintended consequences of the Modified Project to Sinclair's and Café Cultura's prosperity and the livelihood of their employees. Where poverty in Boardman is so high, the loss of any business or any job is too great a risk. This is especially so because the businesses to be impacted are owned, operated, or staffed by members of the Hispanic community; Café Cultura is Hispanic-owned, and the majority of Sinclair's employees are also Hispanic. Fast-tracking this application places these businesses and their employees at risk based on subjective safety concerns that are not supported by evidence on this record. This is instead of timing the installation of a traffic signal and median on based on increased traffic volumes at some future date as is rationally contemplated by the IAMP.

Even Police Chief Stokes recommends conducting a "comprehensive traffic study to identify the root causes of the safety issues and develop targeted solutions." City Exhibit 17. Moreover, the City now fast-tracks the application after blindsiding affected businesses with an eleventh hour about-face, hobbling their ability to assess and raise concerns as to how they might be impacted. Given the high levels of poverty in the City limits, the reduction in customer traffic to any of these businesses that results in job loss will have significant detrimental impacts on the community. Under the Transportation Planning Rule, and in the interest of equity, potential unintended consequences of the Modified Project to these businesses must be addressed before a decision is made on this application.

Based on the foregoing, any decision as to the Modified Project at this time will be too hasty. Rather, the Modified Project should be considered as a part of the TSP update. This is because, as is demonstrated in Attachment 4, equity is baked into the TSP update process, which incorporates public engagement activities that focus on underserved communities and is guided by goals and objectives which are meant to ensure that the updated TSP reflects the needs of the community. Attachment 4, pp. 2-3. Notably, "Goal #4: Community & Equity is to "Provide an equitable multimodal transportation system for all users to promote a livable and fully connected community," and Objective #4b is to "Strengthen economic opportunities through the development of new transportation infrastructure." Attachment 4, pp. 3-4. If the Modified Project is considered as a part of the TSP update, it will be evaluated, as a matter of process, based on its potential impacts to underserved communities, including their economic interests, and the appropriate timing for its installation will also be considered. Further, the TSP update process will deliberately engage members of underserved communities who may be impacted and whose voices have been omitted with regard to the present Project, such as the owner of Café Cultura.

The Modified Project is also more appropriately considered as a part of the TSP update because, as evidenced by Attachment 3, Boardman's transportation system, including Main Street, should and will be analyzed holistically. The Technical Memorandum 3.2 recommendations as to Main Street include "a focused look at land use and transportation needs near the west-side of the I-84 interchange, at Main Street, and along the streets in the interchange’s vicinity" and

consistency and integration with other adopted plans, including the updated TSP. Attachment 4, pp. 4, 6. To consider the Modified Project now, in isolation, runs counter to the Transportation Planning Rule structure for transportation planning in Boardman, which requires an integrated, holistic approach.

Appellant's position that the TSP update is the correct avenue for planning for the Modified Project is not merely a policy argument, but is required since the only data in the current record is an unstamped, Technical Memorandum prepared as a planning level document. This document does not support the engineering study required under the MUTCD to justify installation of a traffic signal ore median. Attachment 1.

The City should withdraw this application until the Modified Project is considered holistically and equitably, with a full traffic study to identify an overall safety improvement for the overpass and Main Street corridor thought the TSP update. In the alternative, the application should be denied for failure to satisfy the IAMP and thus, failure to establish consistency with the TSP, as well as all of the other reasons raised by Appellant.

Sincerely,

Jennifer M. Bragar

Enclosures

cc: (by e-mail)
client

Technical Memorandum #1

Date:	October 25, 2024	Kittelson Project No: 30287
To:	Project Management Team (PMT)	
From:	Matt Hughart, AICP – Kittelson & Associates Eza Gaigalas – Kittelson & Associates Shayna Rehberg, AICP – MIG Meg Grzybowski - MIG	
Subject:	Boardman Community Profile and Trends DRAFT	

Introduction

The Community Profile and Trends memorandum is a high-level summary of the City of Boardman's demographic, workforce/jobs, and travel/commuting profile. The profile and trends will help inform and update the goals and objectives for the development of a new Transportation System Plan (TSP), achieve statewide goals toward reducing transportation-related climate pollution, and incorporating a broader range of constituents in the overall planning process.

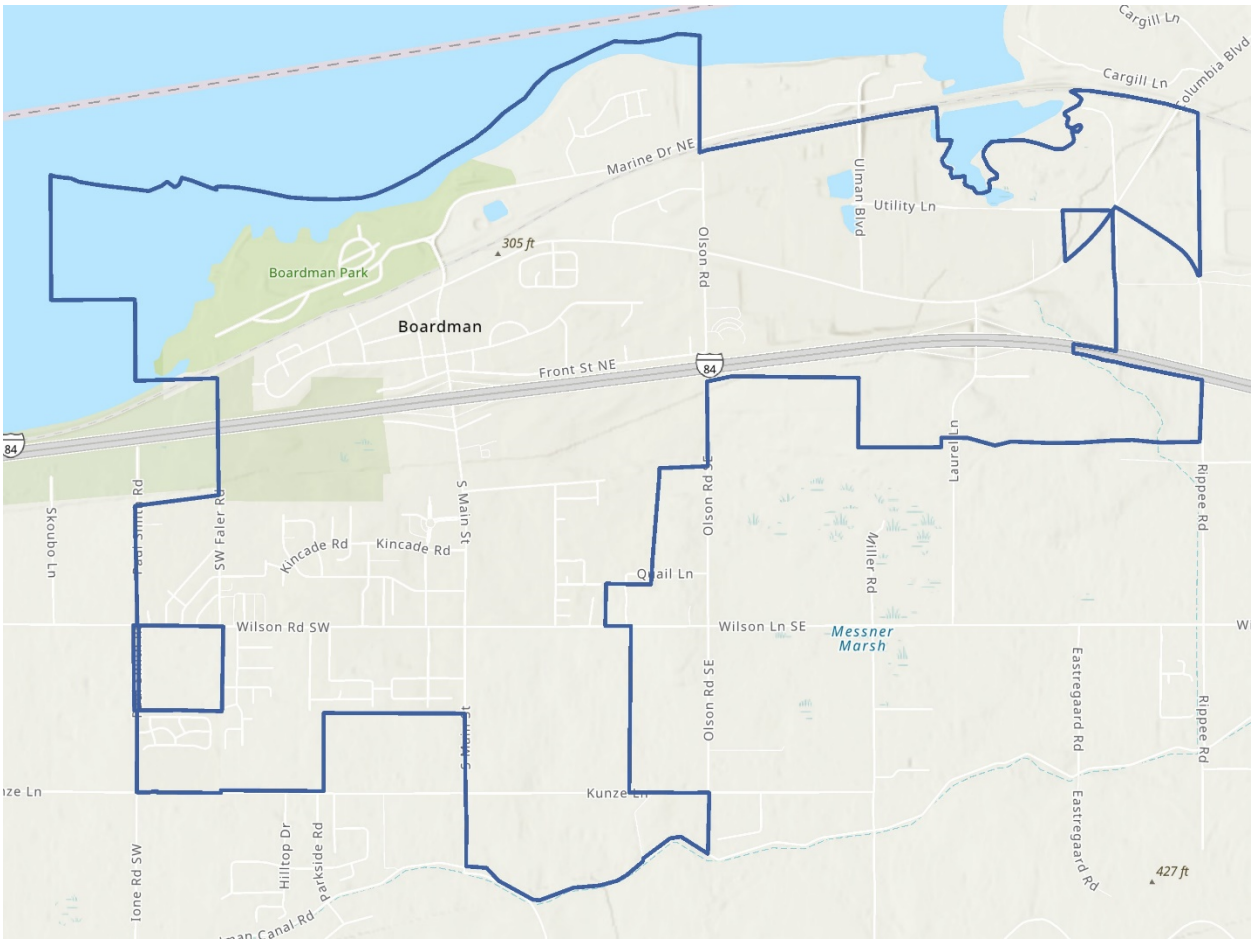
The community profile is divided into four sections:

1. Study Area
2. Residential Demographic Profile
3. Workforce/Jobs Profile
4. Travel/Commuting Profile

Study Area

The City of Boardman is located in Morrow County, Oregon. For the purposes of this assessment, the study area incorporates the City of Boardman city limits and Urban Growth Boundary (UGB) shown in **Figure 1**.

Figure 1. Project Study Area



Blue = Site project area and City of Boardman

Demographic Profile

Title VI and Underserved Communities

Title VI of the Civil Rights Act of 1964 (Section 601) prevents any person from discrimination on the bases of race, color, or national origin.[1] As it relates to Title VI and Environmental Justice, all programs and activities conducted or completed with the assistance of federal funding must ensure that they are not preventing participation of affected communities or conducting efforts through discriminatory practices based on race, color, or national origin that may lead to

[1] *Civil Rights Act of 1964*, HR 7152, 88th Cong., Public Law 88-352 (July 2, 1964).

environmental and human health impacts.[2] As the TSP update is funded in part through federal funds administered by the Oregon Department of Transportation (ODOT), it is necessary to identify specific communities and affected populations within Boardman. This section includes data from the 2020 Decennial Census and 2022 American Community Survey (ACS) 5-Year Estimates to identify these populations.

Population Profile

According to American Community Survey (ACS), the Boardman city limits are home to approximately 3,828 residents, with the UGB hosting slightly more residents, at 4,160. The Portland State University Population Research Center (PRC) anticipates that the population within the Boardman UGB will continue to grow steadily, increasing by more than 1,200 residents by the year 2045 as shown in **Table 1**.

Table 1. Population Growth Forecast

Historical Population			*Population Forecast*			
	2010	**2020**	***2030***	***2035***	***2040***	***2045***
Morrow County	**11,187**	**12,186**	***12,846***	***13,103***	***13,317***	***13,497***
Percent Change		8.9%	*5.4%*	*2.0%*	*1.6%*	*1.4%*
Boardman UGB	**3,530**	**4,160**	***4,828***	***5,046***	***5,246***	***5,429***
Percent Change		17.8%	*16.5%*	*4.5%*	*4.0%*	*3.5%*
City of Boardman	**3,149**	**3,529**	*N/A*	*N/A*	*N/A*	*N/A*
Percent Change		12.0%				

Source: PSU Population Research Center (PRC), 2024 and ACS 5-year estimates, 2010 and 2022 (Table DP05).

Age

Within its UGB, the City of Boardman has a younger population overall as compared to that of the broader Morrow County and the State of Oregon. The median age sits below 30 years, while the County and State are closer to 40 years as shown in **Table 2**. While the percentage of residents under the age of 18 years is relatively similar across all geographies, the representation of residents over 65 years is significantly smaller in Boardman which results in its comparatively lower median age of 27.6 years.

[2] United States Environmental Protection Agency, *Title VI and Environmental Justice*, accessed September 25, 2024, https://www.epa.gov/environmentaljustice/title-vi-and-environmental-justice.

Table 2. Age Demographics

	Population	Median Age (years)	Youth (< 18 years)		Seniors (> 65 years)	
			Total	Percent	Total	Percent
State of Oregon	4,237,256	39.9	867,076	20.8%	734,932	17.6%
Morrow County	12,186	36.9	3,159	27.6%	1,715	15.0%
Boardman UGB*	4,160	29.5	1,355	32.6%	347	8.4%
City of Boardman	3,828	27.6	1,189	33.7%	169	4.8%

Source: PSU Population Research Center (PRC) (2024)
**Source for City UGB is the US Census Decennial 2020*

Racial and Ethnic Minority Groups

Census data was used to collect information on race and ethnicity. The US Census utilizes the 1997 Office of Management and Budget (OMB) definitions, referencing "White," "Black or African American," "American Indian or Alaska Native," "Asian," or Native Hawai'ian or Other Pacific Islander" though participants can self-report as more than one race or a race/ethnicity outside of these identifiers.[3] The race and ethnicity groups represented in **Table 3** are as follows:

- Not Hispanic or Latino: American Indian or Alaska Native alone
- Not Hispanic or Latino: Asian alone
- Not Hispanic or Latino: Black or African American alone
- Hispanic or Latino (of any race)
- Not Hispanic or Latino: Native Hawai'ian or Other Pacific Islander
- Not Hispanic or Latino: Some Other Race
- Not Hispanic or Latino: Two or More Races
- Not Hispanic or Latino: White alone

[3] U.S. Census Bureau, *About the Topic of Race,* accessed September 19, 2024, http://doi.org/10.3886/ICPSR07552.v1.https://www.census.gov/topics/population/race/about.html.

Table 3. Race and Ethnicity

	Diversity Index	American Indian or Alaska Native	Asian	Black	Hispanic/ Latino	Native Hawaiian or Other Pacific Islander	Some Other Race	Two or More	White
State of Oregon	56.1	42,042 (1.0%)	191,797 (4.5%)	78,658 (1.9%)	588,757 (13.9%)	18,197 (0.4%)	22,962 (0.5%)	258,685 (6.1%)	3,036,158 (71.7%)
Morrow County	76.9	82 (0.7%)	29 (0.2%)	37 (0.3%)	4,988 (40.9%)	5 (0.0%)	44 (0.4%)	401 (3.3%)	6,600 (54.2%)
Boardman UGB	80.6	20 (0.5%)	4 (0.0%)	17 (0.4%)	2,802 (67.4%)	1 (0.0%)	18 (0.4%)	89 (2.1%)	1,211 (29.1%)
City of Boardman	79.1	17 (0.4%)	4 (0.0%)	15 (0.4%)	2,813 (73.5%)	0 (0.0%)	17 (0.4%)	58 (1.5%)	904 (23.6%)

Source: US Census Decennial Census estimates (2020), Table P2
**Source for City UGB is the US Census Decennial 2020*

Table 3 includes a Diversity Index, defined as the likelihood that when two persons are chosen at random from the same area they will belong to different race or ethnic groups. The number represents the percentage of possibility, with an index of 0 indicating no diversity and 100 indicating complete diversity.[4] Compared to the State of Oregon and Morrow County, Boardman has a higher diversity index overall. Boardman also has a larger representation of people that identify as Hispanic or Latino. Though the larger Boardman UGB has a slightly higher diversity index compared to the city boundary, the city has a higher percentage of households in non-white racial groups compared to the UGB as well as the highest representation of Hispanic or Latino communities.

Limited English Proficiency (LEP)

When looking at the prominent language spoken within the household (for people 5 years and older), two-thirds of the population within Boardman spoke Spanish as the predominant language within the home, while only one-third spoke English as the primary language (**Table 4**).

[4] ArcGIS Community Analyst, *Essential* Vocabulary, accessed September 19, 2024, https://doc.arcgis.com/en/community-analyst/help/essential-vocabulary.htm.

Table 4. Language Spoken at Home

	Population 5 Years and Over	English Only	Language Other than English	
			Spanish	Other Language
Morrow County	10,589	**67%**	32%	1%
City of Boardman	3,120	35%	**63%**	1%

Source: ACS 5-year estimates (2016-2020), Table S1601

Low Income and Poverty Levels

In 2022, the federally set poverty threshold for an individual was determined as annual earnings of $13,590, with $27,750 being the threshold for a four-person household.[5] The U.S. Census Bureau translates this measure of need into a ratio, calculated by the dividing the family's income by their poverty threshold number. A ratio of 1.00 would imply that the family income matches the measure of need that the family has.[6] Any number below 1.00 qualifies for varying levels of federal assistance programs.

The City of Boardman has a higher proportion of the population that falls below the 1.00 ratio of income to poverty, at approximately 21% (versus 17% and 12% in Morrow County and the State of Oregon respectively) (**Table 5**). While the unemployment rate in the City of Boardman is similar to that of the county (around 1%) and lower than the state (around 3%), residents are either not earning enough income to meet their means, or expenses are higher than they can meet.

[5] Office of the Assistant Secretary for Planning and Evaluation (ASPE), *Prior HHS Poverty Guidelines and Federal Register References,* accessed September 19, 2024, https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines/prior-hhs-poverty-guidelines-federal-register-references.

[6] U.S. Census Bureau, *How the Census Bureau Measures Poverty*, June 15, 2023, https://www.census.gov/topics/income-poverty/poverty/guidance/poverty-measures.html.

Table 5. Ratio of Income to Poverty

	State of Oregon		Morrow County		City of Boardman	
	Total	Percent	Total	Percent	Total	Percent
Population	4,149,034	-	12,095	-	3,829	-
Under 0.50	230,483	5.6%	586	4.8%	180	4.7%
0.50 – 0.99	263,675	6.3%	1,434	11.8%	619	16.1%
1.00 – 1.24	159,051	3.8%	953	7.9%	594	15.5%
1.25 – 1.49	171,293	4.1%	725	6.0%	226	6.0%
1.50 – 1.84	236,823	5.7%	1,061	8.8%	312	8.1%
1.85 – 1.99	104,576	2.5%	433	3.6%	188	4.9%
2.00 and Over	2,983,133	71.9%	6,903	57.1%	1,710	44.7%

Source: ACS 5-year estimates (2018-2022), Table C17002

Another way to demonstrate disparities in income is to look at what percentage of the population is living below certain poverty thresholds. As shown in **Table 6,** the City of Boardman had more than half of its population living below 200% poverty, which was greater than both the state and the county. This number is also nearly 4% higher than it was in 2020.[7] Median household income in the City of Boardman is higher than that in the county but is less than in the state (**Table 7**).

Table 6. Population Below 200% Poverty Level

Poverty Level	State of Oregon		Morrow County		City of Boardman	
	Total	Percent	Total	Percent	Total	Percent
Populations	4,149,034	-	12,095	-	3,829	-
Below 200%	1,165,901	28.1%	5,192	42.9%	2,119	55.3%

Source: ACS 5-year estimates (2018-2022), Table S1701

[7] ACS 2016-2020 5-year estimates, Table S1701

Table 7. Median Household Income

	Median Household Income
State of Oregon	$65,667
Morrow County	$56,572
City of Boardman	$59,390

Source: ACS 5-year estimates (2016-2020), Table S1901

Households with Disabilities

Boardman has reportedly less households with one or more people with a disability compared to Morrow County (**Table 8**). Morrow County actually has the highest percentage at nearly 38%, compared to the State of Oregon, which is at 28%.

Table 8. Households with One or More People with a Disability

	Number of Households	With Disability	
		Total	Percent
Morrow County	4,201	1,581	37.6%
Boardman UGB	1,313	414	31.5%
City of Boardman	1,119	307	27.4%

Source: ACS 5-year estimates, 2018-2022
*** Source: US Census 2020*

Internet Access

The City of Boardman has nearly twice the percentage of households without internet access as the state of Oregon (**Table 9**). This has implications for accessing planning sessions and services and may mean that these communities will not have as many opportunities to participate in processes that shape the city.

Table 9. Households with Internet Subscription

	Number of Households	With Internet		Without Internet	
		Total	Percent	Total	Percent
State of Oregon	1,680,800	1,526,087	90.8%	154,713	9.2%
Morrow County	4,201	3,655	87.0%	546	13.0%
City of Boardman	1,119	920	82.2%	199	17.8%

Source: ACS 5-year estimates (2018-2022), Table S2801

Key Findings

Analysis of the population demographics revealed key findings as they relate to Title VI and Environmental Justice. They are summarized in **Table 10.**

Table 10. Summary of Population Demographics

Underserved Population Type	City of Boardman	Boardman UGB	Morrow County
65 Years and Over	5%	8%	**15%**
Non-Majority White	**24%**	29%	54%
Limited English Proficiency (LEP) Households	**64%**	N/A	33%
Below 200% Poverty	**55%**	N/A	43%
Disability	27%	32%	**38%**
Internet Access	**18%**	N/A	13%

Boardman consists of communities that are considered "underserved populations," as defined by the Oregon Administrative Rule (OAR 660-012-0125). Notably for Boardman, the demographic populations that fall into this category pertain mainly to:

- Limited English Proficiency (LEP): Boardman has nearly double the county average for residents that speak a language other than English inside the household.
- Minoritized Majority Race: More than three-fourths of Boardman's population is of a minority race or ethnicity (which is 30% more than the county population).
- Income to Poverty Ratio: The City of Boardman has a higher percentage of people living below the 1.00 income to poverty ratio; at nearly ¼ of the population.
- Internet Access: Compared to the county, the City of Boardman has 6% more households without internet access (that's twice the percentage households in the state of Oregon).

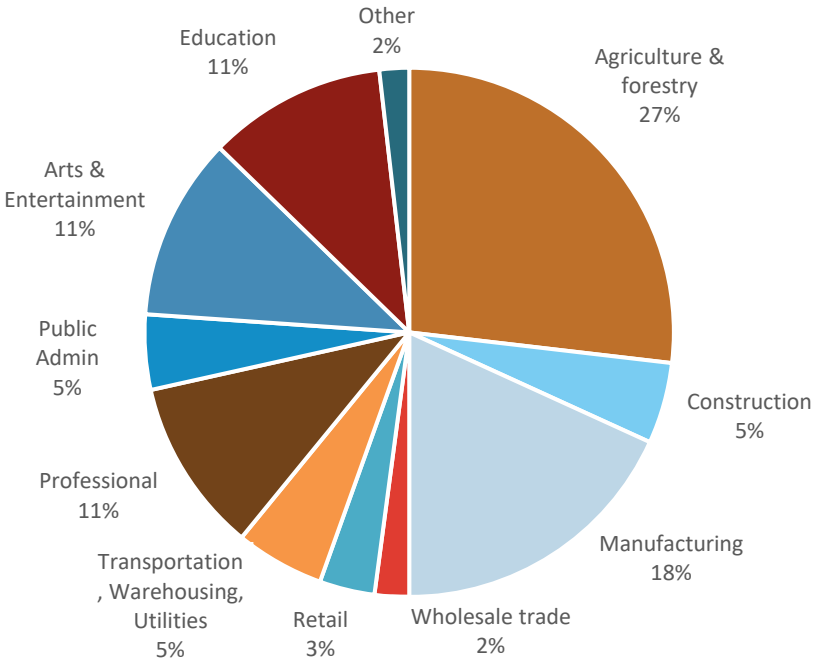
Workforce/Jobs Profile

Employment Industries of Boardman

There are 2,727 residents in Boardman who are 16 years and older and 1,803 of them are in the labor force (66%). The largest industry employers are in Agriculture, Forestry, Fishing, and Mining (27%), Manufacturing (18%), Education (11%), Arts & Entertainment (11%) and Professional Services (11%) (in Figure 2. Employment Industries in Boardman**Figure 2**). These five sectors alone account for 1,376 jobs (78%).

The majority of workers are employed through private sector positions (86%), though some also work for the government (10%) or are self-employed (3%).

Figure 2. Employment Industries in Boardman



Employment Centers

In a 2021 regional travel assessment released by the Confederated Tribes of the Umatilla Indian Reservation's (CTUIR's) public transportation team, Morrow County, Umatilla County, and the Port of Morrow, major employment areas were analyzed to determine their importance to the area and employees' access to them through current infrastructure. There were many key employment centers identified as employment opportunities in Boardman that are made accessible by the Hermiston-Boardman Connector, in particular.[8] These key employment centers include:

- Lamb-Weston West
- Lamb-Weston East
- Oregon Potato Company
- Port of Morrow Warehouse Dry Storage
- Port of Morrow Warehousing

[8] Kittleson & Associates, Inc., Hermiston-Boardman Connector – Port of Morrow Circular, 2021, p. 15.

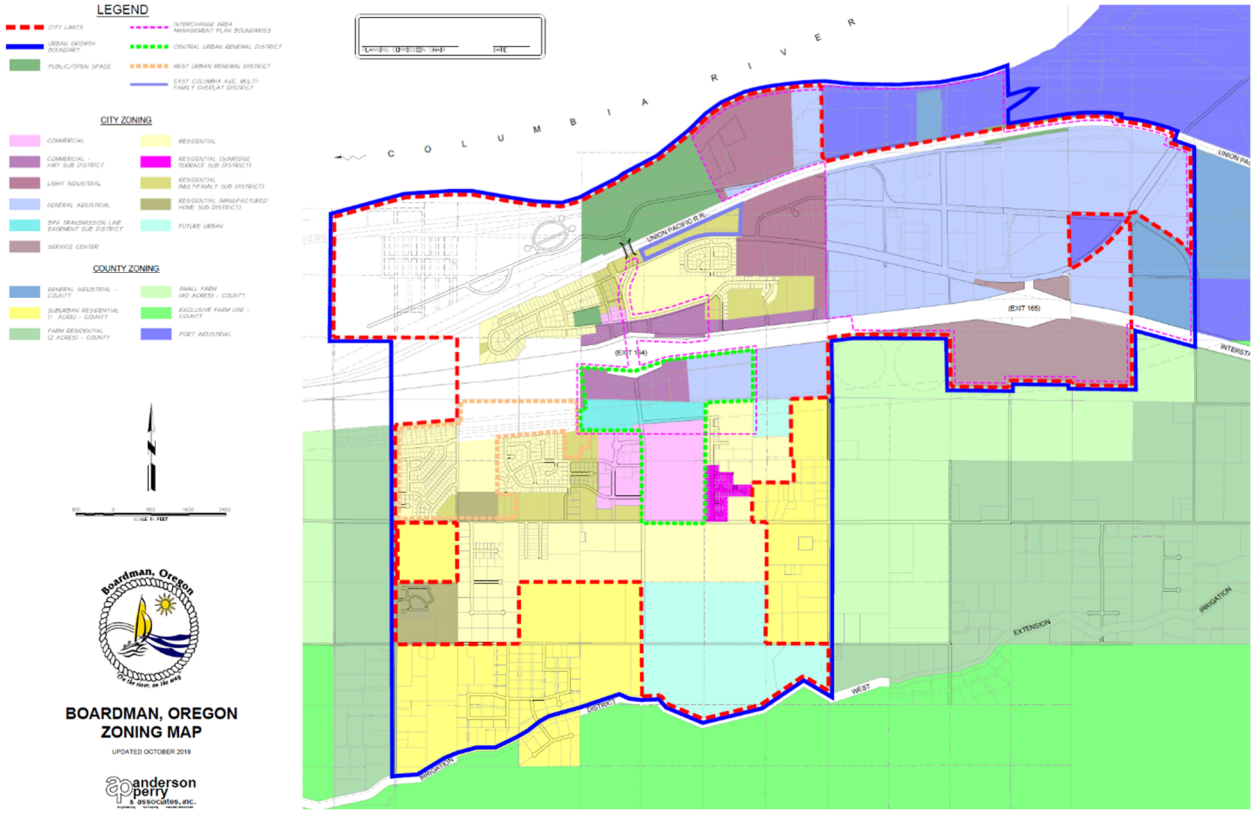
- Port of Morrow
- Boardman Foods
- Zeachem
- Pacific Ethanol Columbia, LLC
- Cascades Specialties Inc.
- Amazon
- Oregon Hay Company
- American Rock Company
- Cadman, Inc.
- Tillamook Cheese/Columbia River Processing
- Columbia River Health
- Central Business District
- Independent Transport, Inc.

Employment Land

Employment areas in Boardman are zoned as Commercial, Commercial Highway Sub-District, Commercial – Service Center, Light Industrial, General Industrial (City and County), and Port Industrial (County).

Commercially zoned areas, as well as some industrial land, are mainly located south of Interstate 84 and north of Wilson Ln SE. The majority of the industrial and port-specific zones abut the Columbia River and north of Highway 84 and are largely associated with the Port of Morrow.

Figure 3. City of Boardman Zoning Map



Travel/Commuting Profile

In addition to the demographic and employment profiles, it is also important to look at the travel characteristics within, to, and from Boardman. The identification of travel patterns can be useful in the development of new transportation-based goals/objectives and prioritizing local and regional infrastructure projects. Sources used in this section include:

- Historical traffic counts
- US Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) program which provides job flow data that can be used to determine employment-based commuting profiles.
- Morrow County Coordinated Transportation Plan

Historical Traffic Counts

Over the last 15 years, there have been several transportation planning assessments that have involved the collection of traffic counts along key intersections in Boardman. These include the 2009 Boardman Main Street Interchange Area Management Plan and the 2023 Main Street Circulation Assessment. While these two assessments had different study areas, there were multiple common intersections along the Main Street corridor including the two I-84 ramp terminals, Boardman Avenue, and Front Street (north and south). **Exhibit 1** and **Exhibit 2** show the respective weekday PM peak hour traffic volumes from these two studies and **Table 10** summarizes comparable corridor segments. As shown in the Table, volumes along Main Street have increased upwards of 24%.

Table 10 – Traffic Count Comparison

Corridor Segment	Weekday PM Peak Hour Volumes		
	Year 2006	Year 2022	% Increase
Main Street (north of Boardman Avenue)	305	368	21%
Main Street (I-84 WB Ramp Terminal to Boardman Avenue)	635	774	22%
Main Street (I-84 EB Ramp Terminal to S Front Street)	645	803	24%
Main Street (South of S Front Street)	620	754	22%

Exhibit 1 – 2006 Boardman Main Street Weekday PM Peak Hour Traffic Volumes (Source: 2009 *Boardman Main Street IAMP*, DKS Associates)

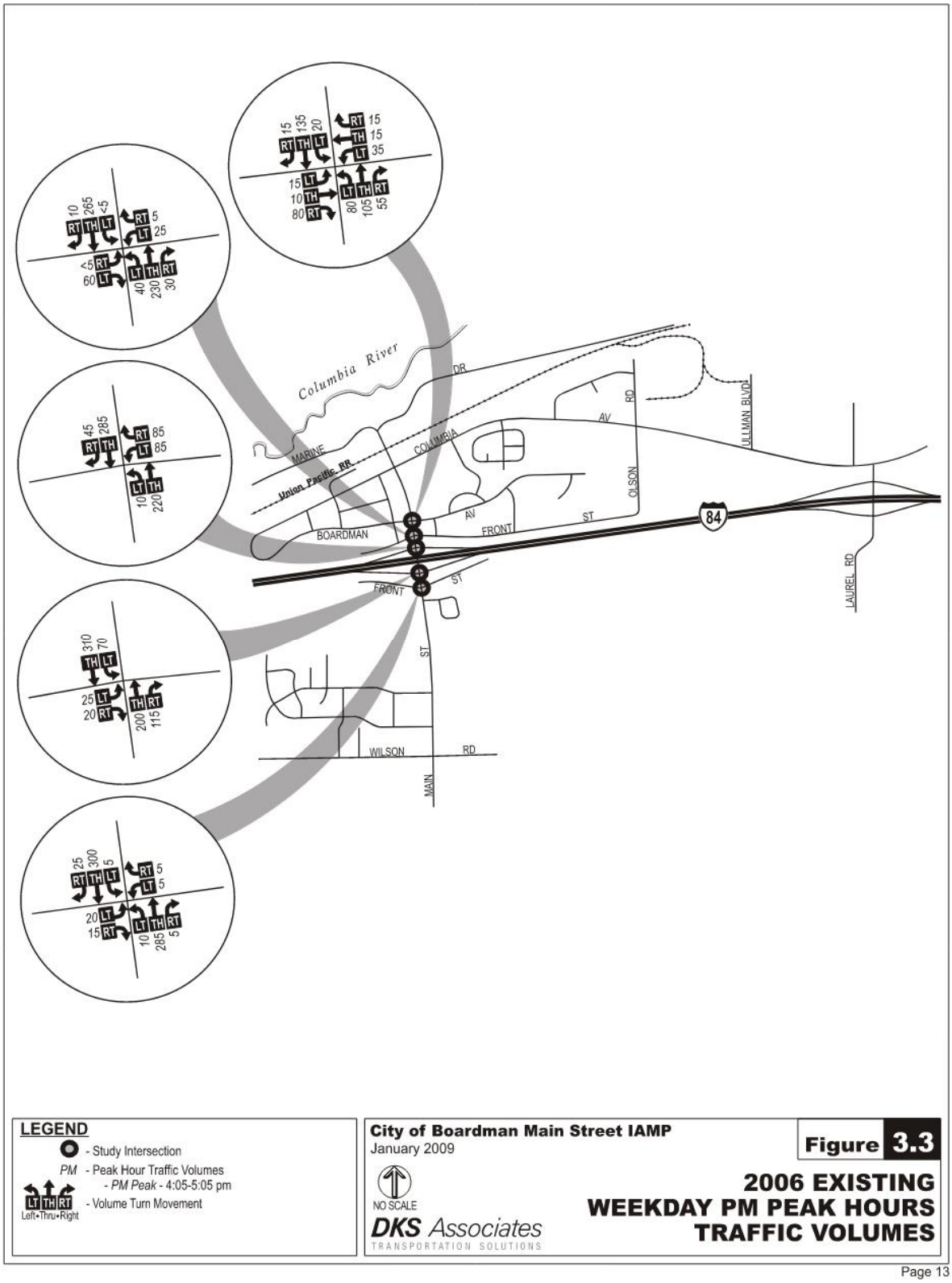


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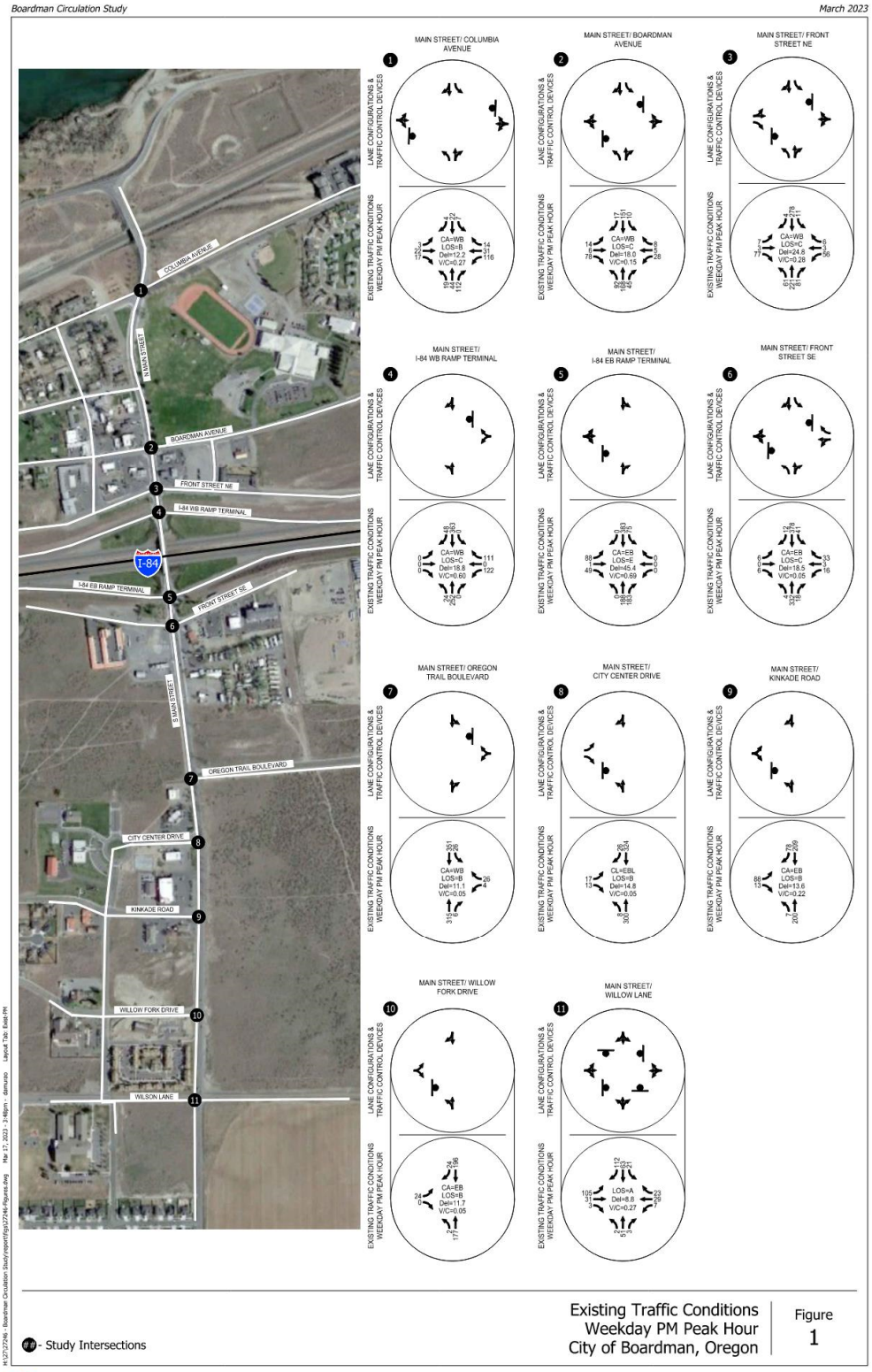
Exhibit 2 – 2022 Main Street Traffic Counts, Weekday PM Peak Hour (Source: 2023 *Main Street Circulation Assessment*, Kittelson & Associates)



Employment-Based Commuting Profile

This section provides an overview of the employment-based commuting profiles to/from Boardman based on data from the US Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) program.

Where Boardman Residents Are Employed

Table 11 summarizes the locations where residents of Boardman have been employed on a percentage basis over the most recent five years of available data. As shown, the LEHD data indicates a general upward trend in the percentage of Boardman residents who are working in the City. In 2021, this percentage was approximately 32.8%, up from 20.7% in 2017. While this increase is likely due to several factors (a five-year population increase of approximately 20%, additional local employment opportunities, and a greater variety of local jobs), it does indicate that fewer Boardman residents are having to regionally commute outside of the city to their places of employment. Despite this general upward trend, 67% of Boardman residents are still commuting to regional destinations such as Hermiston, Irrigon, and Umatilla. This is significant as it indicates a continued need for regional transportation infrastructure.

Table 11 – Where Boardman Residents Are Employed

City of Employment	Percentage of Boardman Residents Employed in the Selected City				
	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021
Boardman	20.7%	23.5%	20.5%	29.0%	32.8%
Hermiston	9.3%	9.3%	9.2%	3.5%	5.1%
Portland	4.9%	4.7%	4.1%	4.9%	4.5%
Irrigon	3.7%	2.4%	2.2%	2.0%	1.9%
Umatilla	2.8%	3.5%	3.0%	2.7%	1.8%
Heppner	1.5%	2.0%	2.2%	1.5%	1.7%
Salem	1.0%	1.1%	1.8%	1.3%	1.6%
Pendleton	1.6%	1.2%	1.8%	2.0%	1.1%
Pasco/Richland	1.8%	2.3%	0.8%	0.8%	0.8%
All Other Locations	52.7%	50%	54.4%	52.3%	48.7%

Source: US Census Bureau. 2024. LEHD Origin-Destination Employment Statistics (2002-2021), Longitudinal Household Dynamics Program, accessed on 9/9/24 at https://onthemap.ces.census.gov.

Where Workers Live Who Are Employed in Boardman

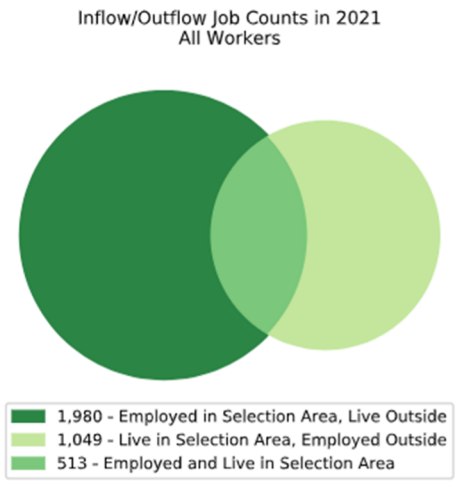
Table 12 summarizes the home city of the workers that are employed at a job located within Boardman on a percentage basis over the most recent five years of available data. As shown, the LEHD data indicates another general upward trend in the percentage of Boardman jobs that are occupied by Boardman residents. In 2021, this percentage was approximately 20%, up from15.7% in 2017. Despite this increasing trend, nearly 80% of the jobs located in Boardman are still held by non-Boardman residents indicating that there are more jobs available in the city than there are local workers. This can also be represented graphically in **Exhibit 3** which shows the Boardman Inflow/Outflow Job Counts in 2021.

Table 12 – Where Workers Live Who are Employed in Boardman (Year 2017 vs Year 2021)

City of Residence	Percentage of the Boardman Workforce Residing in the Selected City				
	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021
Boardman	15.7%	16.2%	14.3%	20.1%	20.6%
Hermiston	17.7%	16.1%	16.7%	16.1%	15.2%
Kennewick/Pasco/Richland	4.5%	7.3%	8.9%	5.3%	8.1%
Umatilla	6.3%	6.9%	6.5%	8.9%	7.0%
Irrigon	7.4%	8.0%	8.2%	5.0%	3.7%
Pendleton	1.7%	2.0%	2.6%	2.2%	3.0%
Stanfield	1.1%	1.2%	1.1%	1.2%	0.9%
All Other Locations	45.6%	42.3%	41.7%	41.2%	41.5%

Source: US Census Bureau. 2024. LEHD Origin-Destination Employment Statistics (2002-2021), Longitudinal Household Dynamics Program, accessed on 9/9/24 at https://onthemap.ces.census.gov.

Exhibit 3 – Boardman Inflow/Outflow Job Counts (2021)



Inflow/Outflow Job Counts (All Jobs)

	2021 Count	2021 Share
Employed in the Selection Area	2,493	100.0%
Employed in the Selection Area but Living Outside	1,980	79.4%
Employed and Living in the Selection Area	513	20.6%
Living in the Selection Area	1,562	100.0%
Living in the Selection Area but Employed Outside	1,049	67.2%
Living and Employed in the Selection Area	513	32.8%

Transit Supportive Demographic Profile

This section provides an overview of the transit supportive demographic characteristics of Boardman. This data is useful to illustrate a geographic area's concentrations of population groups that face particular mobility challenges. **Table 13** provides a "snapshot" of these demographic characteristics.

Table 13 – Title IV and Underrepresented Populations

	Total Population (ACS)	Total Households (AS)	Below 100% Poverty	Below 200% Poverty	Households with Disability	Youth (Under 18)	Older Adults (65 and older)	Racial Ethnic Minority	Zero Vehicle Households	Low English Proficiency Households	Veterans
Boardman	3,828	1,119	20.8%	55.3%	27.4%	33.7%	4.8%	76.4%	2.5%	20.3%	4.2%

PSU Population Research Center (PRC), 2024 and ACS 5-year estimates, 2010 and 2022

References

1. United States Environmental Protection Agency. Title VI and Environmental Justice, n.d.
2. Portland State University Population Research Center. Oregon Population Forecast Program, 2022-2025.
3. American Community Survey 5-Year Estimates, Table DP05, 2010.
4. American Community Survey 5-Year Estimates, Table S1601, 2020.
5. American Community Survey 5-Year Estimates, Table DP05, 2022.
6. United States Census Bureau, Decennial Census, 2020.
7. United States Census Bureau, About the Topic of Race, n.d.
8. ArcGIS Community Analyst. Essential Vocabulary, n.d.
9. Office of the Assistant Secretary for Planning and Evaluation. Prior HHS Poverty Guidelines and Federal Register References, n.d.
10. United States Census Bureau. How the Census Bureau Measures Poverty, 2023.
11. American Community Survey 5-Year Estimates, Table C17002, 2022
12. American Community Survey 5-Year Estimates, Table S1701, 2022
13. American Community Survey 5-Year Estimates, Table S1901, 2020
14. American Community Survey 5-Year Estimates, Table S2801, 2022
15. Kittleson & Associates, Inc. Hermiston – Boardman Connector / Boardman – Port of Morrow Circular, 2021.

Technical Memorandum #2

Date:	October 25, 2024	Kittelson Project No: 30287
To:	Project Advisory Committee (PAC)	
From:	Shayna Rehberg, AICP – MIG Meg Grzybowski – MIG	
Subject:	Plans and Policy Review DRAFT	

Introduction

The City of Boardman adopted its Transportation System Plan (TSP) in 1999, and the document was last in 2001. This TSP Update will address transportation facility and service updates that align with planned land use and existing and future development. It will integrate regional and statewide network connections that impact local circulation and accommodate the significant growth that occurred in the City of Boardman and the Urban Growth Boundary (UGB) since its last TSP Update. As part of this project, there will be extensive community engagement to better understand the challenges and infrastructure improvement ideas of the community.

This memorandum summarizes local, regional, and state planning documents applicable to the TSP, as outlined by the Oregon Department of Transportation (ODOT) Transportation System Plan Guidelines. Some of the documents and plans reviewed consist of circulation standards, infrastructure improvements, and demographic targets that must be in compliance with the TSP Guidelines and the forecasted 20-year growth allocations for Boardman. This memorandum serves as the groundwork for the proposed policy and development code amendments scoped as part of the implementation work for the project (Task 6). As a note, evaluation of the City's *Development Code* for its consistency with relevant policies – namely, Transportation Planning Rule requirements – will be presented as part of Task 6 implementation work.

Plan and Policy Review

This section highlights the plans, policies, and regulations that have an impact on Boardman's transportation system. The review is organized into a table and separated into local (i.e., City and County) documents in Table 1 and State documents in Table 2. The tables are comprised of a summary of each document, how they relate to the TSP, and suggested recommendations for consistency with the document. The following documents are included in the review.

Local Plans, Policies, and Ordinances

- Boardman Transportation System Plan (TSP), 2001
- Boardman Development Code
- Main Street Downtown Development Plan, 2001
- Boardman Comprehensive Plan, 2003
- Boardman Main Street Interchange Area Management Plan, 2009
- Boardman Central Urban Renewal Plan, 2008
- Boardman West Urban Renewal Plan, 2013
- Boardman North Urban Renewal Plan, 2023
- Port of Morrow Interchange Area Management Plan, 2011
- Morrow County Transportation System Plan (TSP), Effective 2012, Updated 2022
- Morrow County/Umatilla County Transit Development Strategy, 2018
- Port of Morrow Strategic Business Plan, 2020
- Hermiston-Boardman Connector/Boardman-Port of Morrow Circular, 2021
- Morrow County Coordinated Human Services Transportation Plan, 2022

Statewide Plans and Policies

- ODOT and Department of Land Conservation and Development (DLCD) Transportation and Growth Management Program (TGM) mission, goals, and objectives
- Oregon Statewide Planning Goals
- Oregon Administrative Rules (OAR) Chapter 660, Division 12 (Transportation Planning Rule)
- OAR Chapter 734, Division 51 (ODOT – Highway Division – Highway Approaches, Access Control, Spacing Standards, and Medians)
- OAR Chapter 731, Division 12 (Reduction of Vehicle – Carrying Capacity)
- Oregon Transportation Plan (2023) and its modal and topic plans
- Oregon Pedestrian and Bicycle Safety Implementation Plan, 2020
- Statewide Transportation Improvement Program (STIP), 2024-2027
- ODOT Highway Design Manual, 2022
- ODOT Blueprint for Urban Design, 2019

Table 1. Local Plans, Policies, and Ordinances

Document	Overview	TSP Relevance and Recommendations
Boardman Transportation System Plan (TSP), 2001	The 2001 TSP documents Boardman's transportation infrastructure and plans for the needed transportation improvements that align with the anticipated 20-year growth in the city. The Plan consists of goals and associated planning process objectives; a description of existing land use and transportation system conditions; forecasted future conditions (horizon year 2020); and a description of needs for each mode of transportation. Section 7 includes the recommended City transportation policies.	***Relevance:*** The TSP Update process will also include an existing conditions review and an assessment of transportation facilities, connectivity, and services. The planning process is expected to revisit existing and identify new community goals and needs through public engagement activities that focus, in particular, on underserved communities. ***Recommendations:*** - Consider and update the following to reflect current and forecasted conditions: 2001 TSP's Goals, Improvement Needs, Development Code Revisions, and Preferred Land Use Plan/Alternative. - Consider modal inventories from the existing TSP when planning for an integrated, multimodal system. - Ensure consistency between updated TSP and Public Works standards.
City of Boardman Development Code	The City of Boardman Development Code governs land use and development throughout the city. The Development Code regulates standards for development such as access and circulation for pedestrians, bicycles, and vehicles; parking; and public facilities (Chapter 3). The Development Code employs review and permitting processes that align with the TSP.	***Relevance:*** The TSP will include land use objectives and considerations for access, circulation, and transportation facilities. ***Recommendations:*** - Review land use districts in Chapter 2 to assess whether or not transportation facilities and improvements in each land use district are consistent with TSP Update. - Revisit access and spacing standards (Chapter 3) to ensure compliance with TSP Update recommendations.

Document	Overview	TSP Relevance and Recommendations
		- As needed, amend transportation standards and variances within Section 3.4.100 in order to align with the updated TSP. - Identify other code changes necessary for consistency with TSP Update recommendations and regulations such as the Transportation Planning Rule.

Main Street Downtown Development Plan, 2001	The Main Street Downtown Development Plan identifies needed improvements to support existing businesses and future development at the I-84/Main Street interchange.
	
	The Plan includes designs for grid system patterns that consist of blocks and streets with sidewalks and multi-use paths.
		Relevance: The Plan is a focused look at land use and transportation needs near the west-side of the I-84 interchange, at Main Street, and along the streets in the interchange's vicinity. Recommendations related to circulation, connections to existing streets, and pedestrian and bicycle networks will need to be made consistent with other adopted plans, and updated and integrated into the updated TSP.
		
		Recommendations:
		- Revisit Plan recommendations, as compared to the 2009 Boardman Main Street Interchange Area Management Plan (IAMP) that encompassed the same area, to ensure concurrency for improvements in the I-84 interchange area and Main Street.
		- Identify the Conceptual Design and Key Plan Components or Elements when developing TSP projects that affect Downtown Boardman, particularly the:
		  ○ Land Use Plan
		  ○ Street Design Standards
		  ○ Streetscape Elements
		  ○ Traffic Projections and Analysis
		  ○ Cost Estimates
		  ○ Project Objectives and Transportation Benefits

Document	Overview	TSP Relevance and Recommendations
Boardman Comprehensive Plan, 2003	The Comprehensive Plan provides the policy framework for long-range planning pertaining to land use, housing, employment, and transportation over a 20-year growth period. Chapter 12 – Transportation includes 1 overarching goal and 5 policies, one of which references the entirety of the 2001 TSP.	***Relevance:*** The Comprehensive Plan documents the City's land use and transportation needs, infrastructure, services, and facilities based on the projected 20-year population growth. The TSP and Comprehensive Plan will need to align. ***Recommendations:*** - Ensure adopted goal(s) and policies are consistent with the updated TSP objectives. - Retain the current reference to the TSP and Technical Appendix in Chapter 12.

Boardman Main Street Interchange Area Management Plan 2009	The 2009 Boardman Main Street Interchange Area Management Plan (IAMP) assesses the Interstate 84 (I-84) interchange at Main Street. Within the study area, the IAMP identifies issues, needs, circulation, improvements, and updates to street standards.	***Relevance:*** The IAMP focuses on safety issues and traffic efficiency to decrease congestion at major intersections in the city. Chapter 5 includes proposed transportation alternatives – including cost estimates and prioritization for timing – for improvements on Main Street in the vicinity of the interchange. Recommendations include a local street connectivity plan, pedestrian and bicycle network improvements, and an access management plan outlining access restrictions.
		
		Recommendations:
		- Review the list of identified alternatives, suggested improvements, management strategies, and improvement timing considering existing and projected transportation conditions. Note projects in the City's CIP that are to be concluded in 2024-2025 FY, including:
		  - Main Street & I-84 Westbound Ramp
		  - Main Street & I-84 Eastbound Ramp
		  - Main Street & Front Avenue (North and South)
		  - Main Street and Boardman Avenue
		  - Main Street Overpass Bridge

Document	Overview	TSP Relevance and Recommendations
		- Integrate the elements of the Roadway Network and Classification Plan (Figure 5.1) into the updated TSP as appropriate. - Review, update as necessary, and integrate the access management actions for local roadways (Tables 5.1, 5.2). - Evaluate Development Code amendments related to access spacing and local street connectivity requirements; incorporate and update, as necessary. - Ensure that identified IAMP policies are reflected in updated City transportation policy statements.
Boardman Central Urban Renewal Plan, 2008	The Plan provides goals, objectives, tools, and projects to help optimize development and urban renewal in the Central Boardman Urban Renewal Area. The area is roughly 164 acres between SE Front Street to Wilson Lane along the east side of Main Street. It serves as the main connector between north and south Boardman and divides east and west. Plan goals include: - Improve access and connectivity throughout the area - Improve and extend utilities to commercial properties - Increase employment and business activity in the area - Enhance the pedestrian environment on streets throughout the area	***Relevance:*** The Plan looks at the Central Boardman Urban Renewal Area (URA), particularly south of I-84 and along Main Street. Goals 1 and 4 focus on strengthening connections and pedestrian orientation throughout the Central URA through increased traffic circulation and improving access between sidewalks and buildings. ***Recommendations:*** - Review the list of projects and public improvements for alignment with the updated TSP objectives and recommendations. The priority projects identified in the Plan include: o Access between the Oregon Trail Boulevard Extension and SW Front Street o Main Street Improvements o Interim East West Connector - Integrate the adopted Roadway Network and Classification Plan (Figure 5.1) into the TSP and update, as necessary.

Document	Overview	TSP Relevance and Recommendations
		- Review Plan financing in Section V and identify what level of potential funding sources remain for the priority transportation projects and improvements through the year 2030.

Boardman West Urban Renewal Plan and Report, 2013	The Plan provides background information on how to optimize development and determine feasibility in an area on the western side of the city, south of I-84. The area is roughly 170 acres and bordered by SW Wilson Road to the south, Paul Smith Road, and Faler Road to the west, and S Main Street to the east.
	
	The Plan includes goals and objectives for improving economic health, residential character, transportation, and aesthetic appearance within the defined area. Preliminary assessment of the area revealed inadequate street connections and other rights-of-way (particularly in the northern portion of the URA).
		Relevance: The Plan's purpose includes creating public improvements, addressing blighting conditions, and increasing utilization of vacant or underutilized parcels.
		
		Recommendations:
		- Review the list of recommended projects and public improvements for alignment with the TSP Update, pertaining to:
		  o Road improvements (SW Faler Road, SW Wilson Road, and Oregon Trail Boulevard)
		  o Connector street extensions
		  o Land use changes and acquisition for parks, walking trails, and open space
		- Identify which projects have since been completed and which should be reflected in the updated TSP.
		  o The extension of Oregon Trail Boulevard, estimated to be completed in 2024.
		  o Improvements to SW Faler Road through street construction, widening, paving, and additional improvements are not anticipated until 2034.
		  o Extensions of local streets through the URA are not anticipated to be completed until 2034.
		  o Functionality increases, multimodal access, parking, and other road improvements to SW Wilson Road are not anticipated until 2034.

Document	Overview	TSP Relevance and Recommendations
		- Review the Summary of Estimated Project Costs (Figure 6.1) to determine how much of the project budgets have been spent and identify the level of funding for existing transportation priority projects that remain through 2034.

Boardman North Urban Renewal Plan and Report, 2023	The Plan provides background information on how to optimize development and urban renewal in an approximately 181-acre area between I-84 and the Columbia River. The stated purpose of the Plan includes addressing infrastructure deficiencies; goals and objectives will guide tax increment financing investment within the area.
	
	It includes three main goals for improving infrastructure and distributing resources to the area, focusing on: 1) eliminating blight, 2) facilitating economic development and job creation, and 3) providing resources to administer the Plan.
		Relevance: The Plan includes infrastructure improvements along major roadways and will need to be assessed to determine which projects have been completed and which ones are still remaining and a priority of the City.
		
		Recommendations:
		- Review the list of recommended projects and public improvements for alignment with the TSP Update, pertaining to:
		  o Infrastructure improvements and connecting NE Boardman Avenue to Olson Road
		  o NE Front Street improvements and sidewalk additions (2026-2027 FY timeline)
		  o Alley improvements from 2nd Ave NE to 3rd Street NE
		  o New road connection between 2nd Ave NE to Columbia Ave NE
		  o Columbia Ave NE to Boardman Avenue NE
		  o Main Street intersection improvements and roadwork
		- Identify which projects have been completed and which remain and integrate remaining projects into the TSP Update as needed.
		- Update the estimated total cost project costs as needed.

Document	Overview	TSP Relevance and Recommendations
		- Refer to Tax Increment Financing (Sections VI and IX) and revenues that will be generated through 2044 for the North URA priority projects in the TSP Update. - Integrate Relationship to Local Objectives elements from Plan into TSP Update objectives and policies as appropriate.

Port of Morrow Interchange Area Management Plan, 2011 (Amended 2022)	The 2011 Port of Morrow (POM) IAMP (amended 2022) looks at the short- and long-term transportation improvements, access management goals, land use management, and funding strategies to preserve capacity at the POM interchange and to align with ODOT's mobility standards that are set through 2030. The primary roadways in the POM interchange include I-84, Laurel Lane, and Columbia Avenue.
	
	Identified objectives include:
	- Consider surrounding land use in relation to the roadway network
	- Provide connectivity, right-of-way, and access control in the area that leads to more efficiency
	- Prioritize improvements to maintain traffic operations
	- Create improved local street connectivity, while limiting cul-de-sacs or other non-connected streets
	- Align with the TSP and other local plans and ordinances
		Relevance: The IAMP focuses on safety issues and traffic efficiency to decrease congestion at the POM interchange. It also addresses the alignment of local circulation and access spacing standards for the major interchange ramp terminals in the vicinity of the POM.
		
		Recommendations:
		- Consider relevance of IAMP evaluation criteria to TSP evaluation criteria, namely:
		  o Transportation Options
		  o Land Use
		  o Cost
		  o Environmental, Social, and Equity Factors
		  o Accessibility
		- Consider Section 1 and the IAMP objectives for alignment with the TSP.
		- Review Section 5 (Future Conditions set through 2030) for consistency of the 2030 No Build traffic forecasts with TSP assumptions, in order to align priority projects and accurately assess growth.
		- Integrate traffic improvements from Table 7-1 of Section 7 into the TSP project list as appropriate:
		  o I-84/Laurel Lane interchange improvements
		  o I-84 ramp improvements

Document	Overview	TSP Relevance and Recommendations
		○ Laurel Lane sight distance improvements ○ Yates Lane access connection ○ Laurel Lane realignment ○ SW quadrant access - Review proposed policy and zoning changes for private approaches. - Ensure that the IAMP Overlay District and related recommendations are reflected in the City's Comprehensive Plan and updated TSP. - Include the statements about the interchange's functions in updated TSP policies.
Morrow County Transportation System Plan (TSP), 2012 (Amended 2022)	The 2012 Countywide TSP documents Morrow County's transportation infrastructure and plans for transportation services that will align with the anticipated 20-year growth within the county. The Plan consists of 10 goals pertaining to coordination, land use, economic development, quality of life, roadway systems, transit, air transportation, freight and goods, finance, and the Oregon Motor Speedway.	***Relevance:*** County and City long-range transportation plans need to be in alignment, specifically where recommended improvements have policy, right-of-way, and/or funding implications for both jurisdictions. ***Recommendations:*** - At a minimum, ensure that updated Boardman TSP goals and policies do not conflict with goals and policies in the County TSP. - Consider needs identified in the County TSP such as an alternative to US 730 between Irrigon and Boardman in the event of an emergency and traffic for the Oregon National Guard's Boardman Bombing Range in developing the Boardman TSP Update. - Assess I-84-related improvements within the County that transect Boardman and reflect relevant projects in the TSP project list update (e.g., overpass near Olson Road in Table 5-2), as appropriate.

Document	Overview	TSP Relevance and Recommendations
		- Review County access standards (Table 4-3 and Table 6-1) and mobility standards for where they may apply to County roads in Boardman. - Review Chapter 7 for funding sources to potentially incorporate into the TSP Update.

Morrow County / Umatilla County Transit Development Strategy, 2018	Both Morrow County and Umatilla County prepared Coordinated Human Services Transportation Plans.
	
	This strategy is intended to identify, coordinate, enhance, and improve transportation programs and services for key populations across the counties.
		Relevance: The strategy focuses on enhancing the coordination and availability of transit for key underserved populations – for example, older adults, people with disabilities, and people with low incomes – in both Morrow and Umatilla Counties. The counties serve a wide area and multiple incorporated cities, so coordination is critical. These key demographic groups are also being considered in developing the Boardman TSP Update.
		
		Recommendations:
		- Review the Transit Solutions Assessment and identified transit needs, particularly as they pertain to increasing the geographic scope of transit service in the City of Boardman and identifying park-and-ride facility locations along the I-84 corridor.
		- Assess Table 21 and the Transit Development Strategy Summary to identify priority projects and if they have been moved from the long-term to near-term.
		  o Arlington-Boardman-Port of Morrow Connector (medium priority)
		  o Heppner-Boardman Connector (high priority)
		  o Hermiston-Boardman Connector (high priority)
		- Reflect regional transit priorities and strategies in City transportation policy.

Document	Overview	TSP Relevance and Recommendations

Port of Morrow Strategic Business Plan, 2020	The Plan guides the policies and projects of the Port for the next 20 years. Plan objectives include helping the Port secure funding opportunities for infrastructure improvements.	***Relevance:*** The Port of Morrow is one of the largest employers for residents of Boardman. As a regional, multi-modal transportation hub with growing facilities and infrastructure needs, it will be important to align growth projections and improvement plans with the TSP Update.
		The Port owns and manages Light Industrial- and General Industrial-zoned property within the city (Table 5). As stated in the Plan, job growth at the Port leads to urbanization and service delivery in Boardman and increases the demand for housing in the area.
		
		Recommendations:
		- Review the list of goals and determine which ones should be incorporated or reflected in the update TSP, e.g., Goal 1 and Goal 6.
		  ○ Goal 1: Expand the Port's role as the regional transportation hub by providing superior facilities and services.
		  ○ Goal 6: Increase agency coordination and communication for greater transparency between parties and to help streamline permitting processes and approvals.
		- Consider how the City's transportation system facilitates access to the Port and supports port and rail activities.
		- Ensure Port growth projections are evaluated and reflected in the future forecasting and transportation needs.

Hermiston-Boardman	This Plan is a coordinated effort between the Confederated Tribes of the Umatilla Indian Reservation's (CTUIR's) public transportation	***Relevance:*** Regional and local transit connections in this Plan will be considered as part of the TSP Update.

Document	Overview	TSP Relevance and Recommendations

Connector / Boardman-Port of Morrow Circular, 2021	branch, Kayak Public Transit, and Morrow County's transit service, The Loop. It also brings in partnerships from Morrow and Umatilla Counties and the Port of Morrow.
	
	The Plan articulates a strategic approach to providing expanded transit services to meet the needs of the community and provide alternative routing options for enhanced service.
	
	It identifies two main corridors; the (1) Hermiston-Boardman Connector between Umatilla and Morrow County; and (2) Boardman-Port of Morrow Circular between the Port of Morrow and the Hermiston-Boardman Connector.
		Recommendations:
		- Identify stops in Boardman in Table 8 that still are considered 'fair' or 'poor' and consider including them in the TSP Update as infrastructure projects.
		- Update the TSPs transit element to include information from this Plan related to proposed changes to transit routes and stops within the City.
		- Review federal, state, and local funding sources and opportunities identified in the Plan and determine which ones apply to the TSP updated projects.
		  ○ Section 5310
		  ○ Section 5339
		  ○ Surface Transportation Block Grant (STBG)
		  ○ Special Transportation Fund (STF)
		- Assess the Capital Needs Plan and Table 22 to identify costs of updating transit stops, such as Employment stops, the SAGE Center, and Boardman Ave/Main St. facilities.
		- Table 23 looks at previous pedestrian and bicycle facilities identified in the Boardman TSP that are priorities of the City. Identify if these still are priority projects.
		  ○ Extending NE Boardman Avenue to Olson Road
		  ○ Extending Third Street, Second Street, Chaperell Drive, Kinkade Road, and Anderson Road
		  ○ Footbridge crossing the railroad near the Port Offices
		  ○ New multi-use path on Columbia Avenue between Main Street and Olson Road and to the

Document	Overview	TSP Relevance and Recommendations
		south of Wilson Lane, as an extension of Faler Road. - Consider the inclusion of Park N Ride properties for the SAGE Center in Boardman. - Consider partners and management strategies to determine how they should/if they should be incorporated in the TSP Update, such as: o Creating a Transportation Management Association (TMA) between the local government and businesses o Creating performance measures to monitor transit service performance
Morrow County Coordinated Human Services Transportation Plan, 2022	This type of plan is required in order to be eligible for funding from the Federal Transit Administrations (FTA's) Section 5310 program and the Oregon's Special transportation Fund (STF). The Plan assesses the: - current services and the transportation providers - transportation services and mobility opportunities for seniors, people with low income, and people with disabilities. The Plan also guides future investment by identifying strategies and projects to mitigate gaps between current services and community needs.	***Relevance:*** Regional and local connections will need to be considered in the TSP Update. ***Recommendations:*** - Consider reflecting goals in updated strengthen City policies . o Goal 1. Provide improved service to meet the needs of all community members, with a focus on those reliant on public transportation. o Goal 2. Provide reliable transportation options for health-supporting destinations. o Goal 3. Provide reliable transportation options for economic opportunities. o Goal 4. Improve marketing of services and education across transportation service areas. o Goal 5. Pursue stable funding sources to maintain and lower transportation costs for the public.

Document	Overview	TSP Relevance and Recommendations

		- Consider including suggested strategies when evaluating transportation solutions and update transportation policy to support the following:
		  o Implement and continue to monitor the Boardman – Port of Morrow Circular and Hermiston – Boardman Connector
		  o Enhance service hours and number of vehicles operating at a time
		  o Expand bilingual information
		  o Promote rideshares
		- Review Table 4 in the Plan to reassess Cost, Benefit, and Difficulty of Implementation for these strategies.
		- Table 6 targets funding sources and determines eligibility; the priorities and funding opportunities should be assessed to determine relevancy to the TSP Update.

Table 2. Statewide Plans and Policies

Document	Overview	TSP Relevance and Recommendations
ODOT and DLCD Transportation and Growth Management Program (TGM), pertaining to mission, goals, and objectives	The TGM Program addresses the integration of land use and transportation decisions throughout the state. There are 5 main goals, with supporting objectives. The goals include: - Providing transportation choices; - Creating communities; - Supporting economic vitality and growth;	***Relevance and Recommendations:*** Consistent with TGM goals and objectives, the TSP Update will focus on providing transportation opportunities to communities that support mobility and equity, promoting energy efficiency transportation systems and land use patterns, and maximizing the functionality of current facilities to support local networks in Boardman.

Document	Overview	TSP Relevance and Recommendations
	- Saving public and private costs; and - Promoting environmental stewardship.	
Oregon Statewide Planning Goals	Oregon has a total of 19 statewide planning goals that pertain to land use and other related topics. The Transportation Planning Rule (TPR) (OAR 660-012) implements Statewide Planning Goal 12 – Transportation and is discussed below.	***Relevance:*** The TPR requires aligning the City's Comprehensive Plan, Development Code, and TSP. The TPR is discussed in further detail in the section below. ***Recommendations:*** The TSP will need to consider the integration of supporting and other pertinent statewide planning goals, such as, Land Use Planning (Goal 2), Natural Resources (Goal 5), Air and Water Quality (Goal 6), Economic Development (Goal 9), Housing (Goal 10), Public Facilities and Services (Goal 11), Energy Conservation (Goal 13), and Urbanization (Goal 14).
Oregon Administrative Rules (OAR) Chapter 660, Division 12 (Transportation Planning Rule – TPR)	The TPR implements Statewide Planning Goal 12 – Transportation. There is extensive guidance for implementation of the goal. TPR Section -0020 outlines the require elements of the TSP. TPR Section -0045 details how jurisdictions need to amend land use regulations to implement and support the TSP. TPR Section -0060 ensures that land uses are consistent across development code, TSP, and Comprehensive Plans.	***Relevance and Recommendations:*** TPR 0020 outlines the required elements of the TSP that are necessary for the TSP Update process. The TSP Update process will need to review changes that have occurred that pertain to Sections -0020 or -0150, and that were not included in the current TSP, such as transportation needs within the community, transportation services provided, roadway or infrastructure or circulation, and transportation facility inventories or providers. Development Code amendments will be developed as part of the TSP Update process to ensure consistency with requirements in TPR Sections -0045 and -0060, as

Document	Overview	TSP Relevance and Recommendations
	TPR Section -0150 ensures the coordination of transportation and facility and service providers.	well as TSP recommendations. These amendments will be prepared as part of Task 6 TSP implementation work.
OAR Chapter 734, Division 51 (Highway Approaches, Access Control, Spacing Standards, and Medians)	OAR 734-051 establishes procedures, standards, and approval criteria for governing highway approach permitting and access management. The City of Boardman has interchange facilities on I-84 and will need to comply with OAR 734-051. Th regulation also includes standards related to spacing distance, sight distance, permitting for approaches, and additional considerations.	***Relevance and Recommendations:*** Any changes to interchanges along I-84 or surrounding the Port of Morrow in the Boardman UGB proposed as part of the TSP Update will need to comply with this rule. Any modifications to a public approach (City or County streets) to a State facility will need to comply with this rule – in particular, Section -1050. Private approaches must align with Section -3010 and include the public in the planning process.
OAR Chapter 731, Division 12 (Reduction of Vehicle – Carrying Capacity)	OAR 731-012 establishes Reduction Review Routes across the state, in accordance with Oregon Revised Statute (ORS) 366.215. A Reduction Review Route is any section of state highway that connects a travelled route to other state highways, including interchanges. The rule is intended to define terminology surrounding this ruling, outline a review process, and initiate communication for consensus during that process.	***Relevance and Recommendations:*** Any proposed changes or priority projects that includes an obstruction, reduction in clearance, or changes to the right-of-way for vehicles and their carrying capacity along a state highway need to comply with the procedures in OAR 731-012 and ORS 366.215. Consideration for proposed access and safety actions (Sections 012-0080 and 012-0090) will need to be integrated into the TSP Update.

Document	Overview	TSP Relevance and Recommendations
Oregon Transportation Plan (OTP) (2023), and its modal and topic plans	The OTP is a statewide, long-range transportation systems plan that looks to guide transportation policy, frameworks, and strategies through 2050. The Plans look at transportation networks for different modes and elements – aviation, bicycle and pedestrian infrastructure, freight, public transportation, state and local roadways, rail, safety, options, and funding. The OTP and its modal and topic plans have been updated since the last Boardman TSP update.	***Relevance:*** The TSP Update will build upon the OTP Vision and Values, especially as they pertain to safety, equity, and climate impacts – with a focus on meeting the transportation needs of underserved communities. In accordance with the OTP, the TSP Update will address building up a resilient transportation system that integrates context-sensitive solutions through public participation and involvement. ***Recommendations:*** – Review OTP and modal/topic plan goals and objectives for potential incorporation into the TSP goals or policies. – Integrate roadway and bicycle/pedestrian design guidance from the modal plans into TSP recommendations as appropriate.
Oregon Pedestrian and Bicycle Safety Implementation Plan (2020)	The Safety Implementation Plan (National Cooperative Highway Research Program (NCHRP) Research Report 893) provides a systemic 7-step pedestrian and bicycle safety analysis of ODOT's highway network. Based on crash data, 25 pedestrian sites and 25 bicycle sites on state highways were identified as high-risk locations for pedestrian and bicycle crashes. These sites are not itemized in the Plan, but the Plan outlines a	***Relevance and Recommendations:*** The Plan's intention is to provide guidance for ODOT and other jurisdictions and roadway authorities to implement countermeasures outlined in the Plan. These countermeasures in the Plan can be consulted for bicycle and pedestrian safety needs identified through the TSP Update process.

Document	Overview	TSP Relevance and Recommendations
	countermeasure process to address high-risk sites.	
Statewide Transportation Improvement Program (STIP), 2024-2027	It is a short-term capital improvement program for regional and statewide transportation improvements and networks. It includes budgeting and financials for the upcoming four-year period.	***Relevance and Recommendations:*** Review projects in the STIP that are not already integrated into the TSP, and determine which ones need to be accounted for during the update process. The I-84 Interchange pavement project (key 22893), curb cuts (key 22561), and National Electric Vehicle Infrastructure (NEVI, Key 22740) are included in the STIP and should be considered for implementation in the TSP Update. Consider funding gaps and how they can be addressed through the TSP Update process.
ODOT Highway Design Manual (HDM), 2024	The HDM provides uniform standards and procedures for ODOT, and all of their projects related to State highways. The BUD is a Design Concurrence Document that was once a standalone document but has since been integrated into the HDM. This section defines design criteria and is intended to offer more flexibility for the urban context.	***Relevance and Recommendations:*** The TSP Update will need to assess highway facilities that serve Boardman, including I-84, Main Street, and Columbia Avenue. Where needed improvements or projects include or affect state highway facilities, the HDM will provide the guidance for determining which design standards and practical design concepts need to be integrated into the TSP Update. The BUD will provide transportation design guidance that is more sensitive to and flexible for urban contexts.

Technical Memorandum#3

Date:	October 25, 2024	Kittelson Project No: 30287
To:	Project Management Team (PMT)	
From:	Matt Hughart, AICP; Eza Gaigalas	
Subject:	Goals, Objectives, and Evaluation Criteria DRAFT	

Introduction

This memorandum presents the goals, objectives, and evaluation criteria that will be used to develop and evaluate potential transportation improvements generated as part of the City of Boardman Transportation System Plan (TSP) update.

Project Background

The City of Boardman completed and adopted a Transportation System Plan (TSP) in 2001. The Transportation System Plan is an element of the Boardman Comprehensive Plan (incorporated by reference and as a Technical Appendix to the Comprehensive Plan). The TSP provides guidance for the planning, management, funding, and implementation of transportation facilities, policies, and programs within the Boardman Urban Growth Boundary (UGB).

Since the adoption of the 2001 TSP, the City of Boardman has seen significant levels of population growth, new residential and commercial development (in the form of infill development on undeveloped parcels), and continues to see the adjacent Port of Morrow grow as a major regional employment center. In addition to the TSP, there have been other planning efforts completed within this time frame that have helped shape and influence growth, development, and the transportation system including:

- Main Street Downtown Development Plan (2001)
- Comprehensive Plan (2003)
- Boardman Main Street Interchange Area Management Plan (2009)
- Port of Morrow Interchange Area Management Plan (2011)
- Central, North, and West Urban Renewal Plans

- Morrow County TSP (2012)
- Port of Morrow 2020 Strategic Business Plan
- Hermiston-Boardman Connector/Boardman – Port of Morrow Circular (2021)
- Morrow County/Umatilla County Transit Development Strategy (2018)
- Morrow County Coordinated Humans Services Transportation Plan (2022)

Accounting for the goals and objectives that drove these past planning efforts and taking into consideration the current and forward-focused needs of the city, a preliminary list of updated goals and objectives has been prepared to help formulate the basis for advancing Boardman's transportation system for the next 20 years.

Goals & Objectives

Goals and objectives are defined as follows:

- **Goals** are broad statements that reflect the community's desires and vision for the entire transportation system. The goals are purposefully visionary and may not be fully attained within the 20-year planning horizon. The goals are supported by the objectives.
- **Objectives** are specific, measurable statements that provide a way for the community to measure progress toward achieving its goals.

The goals and objectives of a modern TSP should reflect the anticipated needs of the multimodal transportation system based on existing and upcoming land uses for the next 20 years, and define a framework for providing safe, reliable, interconnected, and efficient transportation services for all system users. The goals and objectives should also be in fundamental alignment with partnering agencies such as Morrow County and the Oregon Department of Transportation (ODOT).

With these fundamental aspects in mind, the following proposed goals and objectives have been developed to guide the development of the Boardman TSP. These goals and objectives are rooted in, and build upon, the various goals and objectives developed in the existing TSP and other transportation-related planning documents previously outlined. Additional goals and objectives have been proposed to ensure that the updated TSP is forward-focused, reflects the needs of the community, and supports the development of a safe, efficient, and reliable transportation system for all users.

Goal #1: Safety

Improve the safety and comfort of the multimodal transportation network.

- Objective #1a: Address known safety issues at locations with a history of fatal and/or severe injury crashes.
- Objective #1b: Identify and prioritize transportation improvements that provide safe access for all users, regardless of age, ability, or mode of transportation.
- Objective #1c: Manage vehicular access to key transportation corridors consistent with engineering standards and access management principles, while maintaining reasonable access to adjacent land uses.

Goal #2: Mobility

Provide an efficient multimodal transportation system.

- Objective #2a: Identify capacity constraints and develop projects and strategies to address those constraints, including intersection improvements, new crossings of I-84, and alternative multimodal connections.
- Objective #2b: Preserve and maintain the existing transportation system.
- Objective #2c: Support local and regional transit services through the advancement of stop amenities, service hubs, etc.

Goal #3: Accessibility & Connectivity

Provide an interconnected, multimodal transportation network that connects all members of the community to key destinations.

- Objective #3a: Provide new connections to/from Boardman's neighborhoods, schools, parks, transit stops, employment centers, and other key destinations.
- Objective #3b: Address existing walking, biking, and rolling gaps in Boardman's multimodal network.
- Objective #3c: Increase multimodal connectivity across I-84.

Goal #4: Community & Equity

Provide an equitable multimodal transportation system for all users to promote a livable and fully connected community.

- Objective #4a: Ensure that the transportation system provides equitable multimodal access for underserved and vulnerable populations to schools, parks, employment centers, commercial centers, health and social services, and other essential destinations.

- Objective #4b: Strengthen economic opportunities through the development of new transportation infrastructure.

Goal #5: Sustainability

Provide a sustainable transportation system by promoting transportation choices and preserving environmental resources.

- Objective #5a: Consider alternative transportation facility designs in constrained areas to avoid or minimize impacts to natural resources.
- Objective #5b: Avoid or minimize transportation impacts to natural and cultural resources in the city.

Goal #6: Strategic Investment

Make the most of transportation resources by leveraging available funding opportunities, preserve existing infrastructure, and reduce system maintenance costs.

- Objective #6a: Preserve and maintain the existing transportation system assets to extend their useful life.
- Objective #6b: Pursue grants and collaborate with partnering agencies to efficiently fund transportation improvements and supporting programs.
- Objective #6c: Identify and maintain stable and diverse revenue sources to address transportation needs.

Evaluation Criteria

The evaluation criteria will be used throughout the TSP update process for two key purposes:

1. Evaluating the existing and future transportation system and identifying needs (gaps and deficiencies) and potential mitigation treatments; and
2. Comparing and selecting preferred elements to be included in the City of Boardman TSP Update.

The following table outlines a broad set of evaluation criteria that were developed based on the Boardman TSP Goals and Objectives proposed above and the new prioritization factors included in Oregon's Transportation Planning Rule (TPR). Each criterion will be used to assess how the individual transportation projects support the overall goals/objectives statements and prioritization criteria. Each transportation improvement project will be assessed according to the various evaluation criterion.

Goal Statement	Evaluation Criteria[1]	Scoring Key		Score?	Comments
Safety - Improve the safety and comfort of the multimodal transportation network.	Improve vehicular safety issues on Boardman's roadway network	+2	The project is expected to have a positive safety impact and is at a location with a history of serious injury crashes and fatalities.		
		+1	The project is expected to have a positive safety impact.		
		0	The project is expected to have no impact or measurable safety benefit.		
	Improve non-motorized safety issues on Boardman's multimodal network	+2	The project is expected to have a positive multimodal safety impact and will directly benefit vulnerable system users.		
		+1	The project is expected to have a positive multimodal safety impact.		
		0	The project is expected to have no impact or measurable multimodal safety benefit.		
	Improve access management on key transportation corridors	+2	The access management project will address operational or safety issues while maintaining reasonable access to adjacent land uses.		
		+1	The access management project will address operational or safety issues but have some impact on access to adjacent land uses.		
		0	The access management project will address operational or safety issues with significant access and circulation impacts to adjacent land uses.		
Mobility - Provide an efficient multimodal transportation system.	Identify capacity constraints and develop projects and strategies to address those constraints, including intersection improvements, new crossings of I-84, and alternative multimodal connections.	+2	The project will address a significant mobility or capacity constraint.		
		+1	The project will generally improve overall mobility.		
		0	The project is expected to have no impact on overall mobility.		
Accessibility and Connectivity - Provide an interconnected, multimodal transportation network that connects all members of the community to key destinations.	Improve connections to/from Boardman's neighborhoods, schools, parks, transit stops, employment centers, and other key destinations.	+2	The project will improve connections to/from multiple key destinations, and/or serves destinations with limited or no multimodal infrastructure.		
		+1	The project will generally improve connections to/from key destinations.		
		0	The project does not involve or improve connections to/from key destinations.		

Goal Statement	Evaluation Criteria[1]	Scoring Key		Score?	Comments
	Address existing gaps in Boardman's multimodal network.	+2	The project will fully complete an existing multimodal network gap.		
		+1	The project will partially fill an existing multimodal network gap.		
		0	The project is does not address an existing multimodal network gap.		
	Improve connectivity between the north and south sides of Boardman.	+2	The project will provide a new multimodal connection across I-84.		
		+1	The project will improve multimodal connections on existing corridors that span I-84.		
		0	The project is does not address connectivity between the north and south sides of Boardman.		
Community and Equity - Provide an equitable multimodal transportation system for all users to promote a livable and fully connected community.	Improve multimodal access and connections to/from Boardman's underserved population groups, lower-income neighborhoods, and/or transportation disadvantaged groups.	+2	The project improves access connections to/from underserved population groups, lower-income neighborhoods, and/or transportation disadvantaged groups; and serves areas that have limited or no multimodal infrastructure.		
		+1	The project improves access and connections to/from underserved population groups, lower-income neighborhoods, and/or transportation disadvantaged groups.		
		0	The project does not involve or impact underserved population groups, lower-income neighborhoods, and/or transportation disadvantaged groups.		
Sustainability - Provide a sustainable transportation system by promoting transportation choices and preserving environmental resources.	Avoid or minimize transportation impacts to natural and cultural resources in the city.	+1	The project can be expected to have a positive impact on natural resources.		
		0	The project has no measurable positive or negative impact on natural resources.		
		-1	The project can be expected to have a negative impact on natural resources.		
Strategic Investment - Make the most of transportation resources by leveraging available funding opportunities, preserve existing	Preserve the transportation network and system maintenance costs	+1	Project is expected to compliment the existing transportation network and/or reduce system maintenance costs.		
		0	Project has no positive or negative impact on system preservation and maintenance costs		

Goal Statement	Evaluation Criteria[1]	Scoring Key		Score?	Comments
infrastructure, and reduce system maintenance costs.		-1	Project can be expected to negatively impact the existing transportation network or lead to increased system maintenance costs		

[1]Evaluation Criteria written in overall tone of proposed Boardman TSP Goals and Objectives statements

GREENLIGHT ENGINEERING

November 4, 2024

City Council of the City of Boardman
200 City Center Circle
P.O. Box 229
Boardman, OR 97818

RE: CUP24-000001 Transportation Impacts

Dear Mayor Keefer and Council Members:

Greenlight Engineering has been asked by Hattenhauer Distributing Co. to evaluate the proposed conditional use transportation improvement to install a High-Intensity Activated CrossWalK ("HAWK") signal at the N. Main Street/Boardman Avenue NE and a median at N. Main Street/Front Avenue in Boardman, Oregon (collectively, the "Project"). At the last moment, according the City's Findings of Fact distributed late in the evening on October 30, 2024, the City of Boardman appears to have changed the approach away from a HAWK to instead install a traffic signal and to install a median between N. Main Street/Front Avenue and N. Main Street/Boardman Avenue NE (collectively, the "Modified Project").

Executive Summary

- There is no evidence that a traffic signal is warranted at the N. Main Street/Boardman Avenue NE intersection per the Manual on Uniform Traffic Control Devices (MUTCD) under existing conditions. The City is required to comply with the MUTCD. I have provided evidence that a traffic signal is not warranted under existing conditions based upon the traffic data presented in the City's Technical Memorandum. The City has provided evidence that a traffic signal may be warranted in the year 2042 based on a planning level analysis and their analysis is based on significantly different traffic volumes than exist today. Additionally, that analysis is not based on the actual MUTCD traffic signal warrants and the City has not conducted an engineering study based on those traffic signal warrants.
- The City continues to ignore the adopted IAMP triggers for making access modifications triggers at the N. Main Street/Front Avenue intersection. None of the triggers are met for restricting access at that intersection. In the absence of evaluating the actual criteria, the City has commissioned and relies heavily on a "near miss" study without reference to any industry standard or science that illustrates there are very few actual near misses.
- The evidence illustrates that reported crashes have dropped at the N. Main Street/Boardman Avenue NE intersection and the N. Main Street/Front Street intersections since the IAMP was adopted.
- The evidence illustrates that the N. Main Street/Boardman Avenue NE and N. Main Street/Front Street intersections and N. Main Street between Boardman Avenue NE and Front Street all operate with adequate capacity and safety.

Analysis of Findings of Fact

In addition to my August 6, 2024 comments on previous and similar Findings of Fact, I have the following comments on the revised Findings of Fact. Many of the purported facts are not actually facts and/or are statements made by the City not supported by evidence.

Analysis of Findings of Fact Regarding N. Main Street/Boardman Avenue NE Traffic Signal

The Findings of Fact state that "Kittleson (sic) conducted a corridor assessment and determined that signal warrants were justified and the streetlight was shown not to impact the interchange."

The City has flipped their proposal from a traffic signal to a HAWK and now back to a traffic signal at the N. Main Street/Boardman Avenue NE intersection. In my August 6, 2024 report, I noted "The City previously proposed a full traffic (not a HAWK signal) based on the Technical Memorandum. However, the Technical Memorandum fails to provide evidence of the traffic volumes that were used in the traffic signal warrant analysis to establish that a traffic signal is warranted. The traffic signal warrant analysis is also based upon a future 2042 year." At the time of my report, the City was not proposing a traffic signal and therefore, I provided very little evaluation of a traffic signal at the intersection.

In fact, Kittelson's Technical Memorandum found that preliminary signal warrants (which are not the same as MUTCD traffic signal warrants) may be met for the year 2042. Current traffic volumes are significantly lower than those projected in 2042. The preliminary traffic signal warrants are a starting point that should be not be used for determining whether a traffic signal is actually warranted, but to project whether a traffic signal may be warranted using very limited data. However, as the City proposes the installation of a traffic signal at this time, it appears the City believes a traffic signal is warranted today. In fact, there is no evidence that supports that implied conclusion. There is no engineering study that supports the installation of a traffic signal as is required by the MUTCD.

ODOT's "Preliminary Traffic Signal Warrant Analysis" form is just that, preliminary. The document itself makes this clear and notes that an engineering study is needed to determine whether a traffic signal is warranted. This planning level analysis falls well short of determining whether a traffic signal is actually warranted. The use of the Preliminary Traffic Signal Warrant Analysis is addressed in ODOT's Analysis Procedures Manual, which states "The preliminary warrants are generally not accepted as a basis for approving the installation of a traffic signal but are useful for projecting signalization needs for future years. Full warrants are evaluated later as part of the engineering study required by the MUTCD. Many other considerations go into determining whether a signal should be installed." It is clear that the City's analysis falls well short of justification for a traffic signal, but the City has used it as such. There is no engineering study or any study based on MUTCD warrants that support the installation of a traffic signal as is required by the MUTCD before a traffic signal is installed.

As noted in my August 6, 2024 report, "The Manual on Uniform Traffic Control Devices ("MUTCD") is the national standard for traffic control devices. The 2009 MUTCD is adopted in Oregon under OAR 734-020-0005. The City of Boardman is required to comply with the MUTCD." The analysis conducted does not comply with the requirements of the MUTCD.

The MUTCD states:

> "An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.
>
> The investigation of the need for a traffic control signal shall include an analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions, and the applicable factors contained in the following traffic signal warrants:
>
> Warrant 1, Eight-Hour Vehicular Volume
> Warrant 2, Four-Hour Vehicular Volume
> Warrant 3, Peak Hour
> Warrant 4, Pedestrian Volume

Warrant 5, School Crossing
Warrant 6, Coordinated Signal System
Warrant 7, Crash Experience
Warrant 8, Roadway Network
Warrant 9, Intersection Near a Grade Crossing

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal...

...A traffic control signal should not be installed unless one or more of the factors described in this Chapter are met.
A traffic control signal should not be installed unless an engineering study indicates that installing a traffic control signal will improve the overall safety and/or operation of the intersection..."

Per the Technical Memorandum, the memorandum itself is a "a planning-level update" and is not an engineering study as is required when evaluating traffic signal warrants. This is further evidenced by the fact that the Technical Memorandum is not stamped by an Engineer.

The Technical Memorandum doesn't present sufficient data to actually evaluate the MUTCD's traffic signal warrants as the warrants require hourly traffic count information throughout the day on N. Main Street and Boardman Avenue NE. That data has not been provided or evaluated. The typical traffic signal warrants that are considered when determining compliance with the MUTCD are based upon "Warrant 1, Eight-Hour Vehicular Volume" and "Warrant 2, Four-Hour Vehicular Volume." In order to meet Warrant 1, the warrant requires a certain level of traffic volumes to be sustained on the main street and minor street for at least eight hours of the day. Similarly, Warrant 2 requires certain volume thresholds to be met at least four hours of the day. Thus far, the City has only provided weekday PM peak hour volumes. Like the other signal warrants, there is no evidence that either Warrant 1 or Warrant 2 are met. **Based upon the existing traffic volumes presented in the Technical Memorandum, neither Warrant 1 or 2 are met at the N. Main Street/Boardman Avenue NE as the minimum traffic volumes are not even met during the existing weekday PM peak hour, and the volumes are not even close to meeting these warrants during the peak hour.** Given that PM peak hour typically experiences the highest hourly volume of the day, it is likely that no hours meet the minimum volume threshold to justify installation of a traffic signal at this time.

Relying on preliminary traffic signal warrants based on a future year of 2042 and without an engineering study that illustrates compliance with the MUTCD puts the City at legal risk if a traffic signal were to be approved and installed.

The Findings of Fact state:

"Staff have also determined that the traffic signal is warranted based on the following:

- While not within the standard time frame for consideration there has been a pedestrian loss of life at this intersection.
- This intersection is a primary school crossing area for Riverside High School during the arrival, lunch, and departure times. Use of the current RRFB creates backups along Main Street impacting the west bound off ramp queuing and can result in traffic backing up into the west bound Interstate 84 travel lane. This is further discussed on page 7 of the Kittelson & Associates analysis that is attached.
- Pedestrian volume outside of school pedestrian usage continues to increase along Main Street.
- Crash data from 2016 through 2020 identified in the Kittelson & Associates report shows that there are a variety of different types of crashes throughout the study corridor.
- The near miss video compilation confirms staffs concerns that current traffic volumes create limited spacing for turning maneuvers causing drivers to drive more aggressively creating

opportunities for accidents with other vehicles and pedestrians."

The Findings of Fact inexplicably attempt to replace the MUTCD traffic signal warrants with new set of crieteria to justify a traffic signal. The City of Boardman is required to comply with MUTCD warrants.

While there was an unfortunate loss of life at the intersection, the intersection has been mitigated with an RRFB. The Technical Memorandum illustrates that just one crash has occurred at the intersection from 2016-2020, so there is not apparently a significant safety issue. The MUTCD traffic signal warrants do include the consideration of intersection crashes, but there is no evidence that those traffic signal warrants were analyzed per the MUTCD.

While the intersection does serve students, the City has failed to quantify the "backups" created by the RRFB. Additionally, there is no traffic signals warrants based on backups. The video prepared by the City does not show backups at the intersection.

There is no evidence that "Pedestrian volumes outside of school pedestrian usage continues to increase along Main Street."

The crash data from 2016 through 2020 does illustrate that there are a variety of crash types in the study corridor, but the City fails to provide any explanation why that fact would warrant a traffic signal at the N. Main Street/Boardman Avenue NE intersection. In terms of signalization at the N. Main Street/Boardman Avenue NE intersection, only the crashes at the intersection itself should be considered as part of analyzing traffic signal warrants. Crash history can be considered as part of evaluating MUTCD traffic signal warrants although the Technical Memorandum reports that there was only one crash at the N. Main Street/Boardman Avenue NE intersection from 2016-2020. Thus, the traffic signal warrant based on crashes would not be met at the intersection.

The City has failed to provide any industry references regarding the science or methodology behind their near miss study as such a study is not industry standard. It is unclear how the near miss methodology was developed and whether this methodology was developed by the traffic counting company that provided the study or was developed based upon scientific research. The City has failed to provide reference to any connection from so-called near misses to actual safety. There is no engineering analysis that offers any conclusions about the near miss study. The Findings of Fact point to vague unnamed staff concerns with unknown expertise. Below, in the absence of any other engineering analysis, I analyzed the near miss study in detail. Near misses are not mentioned as part of evaluating traffic signal warrants per the MUTCD. The City has failed to provide an engineering study evaluating MUTCD warrants. It should be noted that an engineering study must be conducted by a licensed Professional Engineer. It is unclear whether City staff without the necessary expertise and licensure to comment on traffic control and safety are making complicated traffic engineering recommendations/decisions that should be made by Engineer.

The Findings of Fact state:

> "Safety is one of the primary reasons for pursuing the street light project based on the loss of life from some years ago along with the reporting of a significant number of near misses with both cars and pedestrians. Based on commentary within the community and staff concerns about near misses a near miss analysis has been completed with a surprising number of potential incidents called out in the video that has been delivered.
>
> Pedestrian, and by extension bicycle, movement and safety will be improved with the traffic signal allowing for protected crossing times and spacing those crossing times to reduce if not eliminate backups along Main Street that can currently affect the queuing of west bound travelers on the west bound Interstate 84 off ramp."

After the fatal crash, the City installed an RRFB. While the Technical Memorandum notes that the RRFB occasionally causes backups, there is not substantial evidence to support the claim of backups. The City has not quantified or provided analysis illustrating these backups nor quantified a large number of pedestrian crossings at the N. Main Street/Boardman Avenue NE. The traffic counts of the Technical Memorandum illustrate a very small amount of pedestrian crossings. While the City states that pedestrian volumes are increasing, there is no evidence to support that statement. The analysis of a potential traffic signal at the N. Main Street/Boardman Avenue NE is based on a very small amount of pedestrian crossings (per the City's traffic counts). If there are indeed, a great number of pedestrian crossings, the City's traffic analysis with the traffic signal in place fails to take into account the negative impacts of pedestrians being served regularly and what backups may occur as a result of this large number of pedestrians with a traffic signal in place.

The City reports there is a significant number of near misses although they provide no references linking any science to their near miss analysis. The Findings of Fact vaguely refer to "commentary within the community and staff concerns about near misses" without reference.

The Findings of Fact state:

> "Staff have determined that the traffic signal is consistent with the MS IAMP because it conforms to the Access Management Plan by:
>
> - Continuing to restrict access to the interchange and interchange ramps and is, in fact, working to eliminate impacts to the interchange ramps from traffic that currently backs up when continual use of the RRFB causes delays of northbound travelers on Main Street.
> - Improve safety factors not only within the interchange but also along Main Street and at this intersection in particular.
> - Eliminating or reducing turning conflicts along the Main Street corridor at the Front Street intersection.
> - Assuring that all current accesses are maintained to allow some level of ingress or egress and improving several accesses with improvements that also support pedestrian utilization."

In contrast to the findings, it is unclear how the traffic signal would "restrict access" although the Technical Memorandum references queuing impacts without quantifying them or providing substantial evidence of them. The Technical Memorandum fails to provide any analysis that establishes that a queuing issues exists. The Technical Memorandum fails to provide evidence of pedestrian counts that would result in queuing issues. The Technical Memorandum analyzes a traffic signal based on very low traffic counts and therefore fails to analyze how the traffic signal would operate under conditions of high pedestrian volumes. Additionally, there is no evidence a traffic signal is warranted at the intersection. The near miss video, collected over 28 hours, does not show any significant back-ups caused by the RRFB at the N. Main Street/Boardman Avenue NE intersection. The City has continually failed to provide quantifiable evidence of this queuing issue.

There is no evidence that a traffic signal would improve safety at the intersection. The Technical Memorandum illustrates that there is only one reported crash at the intersection from 2016 to 2020. There is also not substantial evidence that there is a safety issue at the interchange caused by the current operations at N. Main Street/Boardman Avenue NE intersection. Additionally, there is no evidence a traffic signal is warranted at the intersection based on current traffic volumes.

There is not substantial evidence that the traffic signal itself at N. Main Street/Boardman Avenue NE eliminates or reduces turning conflicts along the Main Street corridor or at the Front Street intersection. There is no evidence that supports the need to eliminate or restrict access along the Main Street corridor or at the Front Street intersection in order to install a traffic signal at the N. Main Street/Boardman Avenue NE intersection. The IAMP adopted triggers for the restriction of access at N. Main Street/Front Avenue that the City has thus far

ignored, although it is clear that the triggers are not met.

There is no apparent connection with the traffic signal in "assuring that all current accesses are maintained to allow some level of ingress or egress and improving several accesses with improvements that also support pedestrian utilization." There is no evidence that with or without a traffic signal that any of the triggers are met that would result in access restriction. Additionally, N. Main Street between Front Street and Boardman Avenue NE has a very good safety record and per the Technical Memorandum, crashes have decreased since the IAMP as evidenced by Table 3 of the Technical Memorandum and Table 3.4 of the IAMP.

The Findings of Fact state that "Replacing the RRFB with a traffic signal will allow for smoother interaction between vehicle travel and pedestrian crossing, particularly at the Boardman Avenue intersection." There isn't any evidence that a traffic signal will allow for smoother interaction between vehicle travel and pedestrian crossing and there is no definition of "smoother interaction." There is evidence that a traffic signal is not warranted at the N. Main Street/Boardman Avenue NE intersection under current traffic volumes. It appears the City believes that a traffic signal at N. Main Street/Boardman Avenue NE will allow for smoother interaction between vehicle travel and pedestrian crossing at other locations, but there is no evidence that supports this statement.

The Findings of Fact state that "As discussed previously in these Findings of Fact there is already a stacking issue on Main Street that the upgrade from the RRFB to the traffic signal should mitigate reducing the stacking that currently occurs. This will be achieved as the traffic signal uses more advanced logic to balance the needs of the pedestrian crossing with motor vehicle needs." The City has failed to quantify this stacking issue. The City speculates, but provides no evidence, that the upgrade from the RRFB to the traffic signal should mitigate the stacking issues. The traffic signal analysis is not based upon high pedestrian crossing volumes, so it is not based on the conditions that the City has alleged needs to be mitigated. Additionally, a traffic signal is not even warranted at this time.

The Findings of Fact state:

> "The appellant is apparently arguing that staff have not applied all the applicable Conditional Use Permit criteria...Staff evaluated the criteria and found that the section applied (4.4.400) is specifically for Transportation System Facilities and Improvements and is most applicable. Section A discusses the Use Criteria and evaluates the site, which is a road improvement, reviews negative impacts which was a part of the analysis that was accomplished, and addresses public facility capacity which gets to the primary reason that the streetlight is proposed – to address the capacity and safety issues at Boardman Avenue and North Main Street..."

The Findings of Fact note that the primary reason that the streetlight (traffic signal) is proposed is to address capacity and safety issues at Boardman Avenue and N. Main Street. As evidenced by the Technical Memorandum, crashes have decreased at the intersection between the IAMP and the Technical Memorandum with only one reported crash from 2016 to 2020. The Technical Memorandum establishes that the intersection currently operates at LOS C, and certainly is not experiencing capacity issues. Additionally, a traffic signal is not warranted at the intersection under current conditions.

Analysis of Findings of Fact Regarding Median Along N. Main Street

The Findings of Fact state that "Installation of the center median is also justified to convert NW and NE Front Street to right-in/right-out and for traffic queueing/staging at the signalized intersection." There is no evidence that supports the installation of a median that would convert Front Street to a right-in/right-out. The City has failed to provide substantial evidence of stacking. Stacking is not adopted as any IAMP trigger for modifying the intersection. The intersection crashes have only decreased since the IAMP per the Technical Memorandum. There is no evidence or evaluation that connects the installation of a traffic signal at N. Main Street/Boardman Avenue NE with the need to install a median along N. Main Street, and certainly not to restrict the N. Main Street/Front Avenue intersection.

The IAMP states "It is important to establish thresholds for limiting the North and South Front Street access at Main Street so that decisions can be made through the land use review process, and as various traffic issues arise or the community reports significant conflicts." The City Council Findings of Fact states that "This area is subject to the Boardman Main Street Interchange Area Management Plan (MS IAMP) and any development or street projects within the Management Area must conform to the requirements of the IAMP." The IAMP provides the criteria for access based decisions at the intersection. Thus far, the City has ignored these IAMP triggers and failed to provide any analysis of the adopted criteria under which the decision to restrict traffic is supposed to be made. Significantly, the IAMP makes no references to "near misses" as a trigger.

As established in my August 14, 2024, report:

> "In comparing previous crash data from the IAMP to the current crash data from the Technical Memorandum, the observed crash rates have actually decreased over time at N. Main Street/Front Avenue (from 0.17 crashes per million entering vehicles to 0.07) and N. Main Street/Boardman Avenue (from 0.20 to 0.09). All illustrate very low crash rates. As presented in my August 6, 2024 report, the number of crashes per year have decreased at the N. Main Street/Front Avenue intersection in the last 15 years."

As previously described, the IAMP clearly provides:

> "Below is a description of when the improvements would be expected to be needed...
>
> Main Street & Front Avenue (North and South)
>
> The traffic volumes at the intersections of Main Street & Front Avenue North and Main Street & Front Avenue South should be monitored as development occurs to determine if certain turning movements should be prohibited...
>
> Triggers for access changes at Front Street North and Front Street South include:
> - Side street level of service drops below LOS E (15-20 years from now)
> - Traffic signal installed at the I-84 westbound ramp (10-15 years from now)
> - Increase in crashes
> - Bridge improvement project constructed (15-20 years from now)
> - Recurring public complaints about conflicts and safety at these locations"

To date, the City has provided no evidence that any of these conditions exist. I have provided substantial evidence that these conditions do not exist. To recap, the evidence illustrates that the intersection operates at LOS C (although the City continues to erroneously state it operates at LOS D), there is no planned traffic signal at I-84 WB/N. Main Street, there has been no increase in crashes (but there has been a decrease since the IAMP), no bridge improvement project is planned for construction, and there have not been recurring public complaints about conflicts and safety at the intersection.

The Findings of Fact state:

> "It should be noted that the MS IAMP says the following about access to Main Street in the vicinity of the Interchange: 'A key element of the IAMP is the long-range preservation of operational efficiency and safety of the interchange is the management of access to Main Street. Because access points introduce a number of potential vehicular conflicts on a roadway and are frequently the causes of slowing or stopping vehicles, they can significantly degrade the flow of traffic and reduce the efficiency of the transportation system. However, reducing the overall number of access points and providing greater separation between them can minimize the impacts of these conflicts.' The proposed center median and limiting left hand turns on North Main Street between Front Street and Boardman Avenue affectively (sic) achieves the intent of this statement without closing those accesses."

The Findings of Fact continue:

> "City staff have concluded that to implement the MS IAMP while maintaining public safety, a traffic signal is the best alternative for the intersection of Boardman Avenue and North Main Street. Additionally, the staff recommends converting the Front Street intersection to a right-in/right-out configuration for several reasons outlined here:
> 1. The City's Level of Service, or LOS, standard is C which is higher than ODOTs and allows for less congestion.
> 2. Access points introduce a number of potential vehicular conflicts on a roadway and are frequently the causes of slowing or stopping vehicles, they can significantly degrade the flow of traffic, and reduce the efficiency of the transportation types. Reducing the overall number of access points and providing greater separation between them can minimize the impacts of these conflicts. Reducing Front Street to a right-in/right-out configuration reduces a significant vehicular conflict adjacent to the west bound off-ramp.
> 3. At the time the MS IAMP was adopted the LOS for Main Street and North Front Street was C. Today it is D which, under the MS IAMP, does require action on the part of the city. It should be noted that the LOS for South Front Street is also at a LOS of D. Without action both of those intersections are identified to achieve a LOS of F by 2042.
> 4. The MS IAMP does provide that the City is to work towards two items, the first being development of the local street network both east and west of Main Street, and second to limit access at Main Street at both north and south Front Street. The first step of this is to limit those intersections to right turn only."

The IAMP provides certain triggers that should be met before access restrictions are implemented at N. Main Street/Boardman Avenue NE. None of those triggers are referenced the facts and findings and none of those triggers are met.

There is no evidence that the intersection of N. Main Street/Front Street is "frequently the cause[s] of slowing or stopping vehicles...significantly degrade(s) the flow of traffic and reduce(s) the efficiency of the transportation system" nor that any of the IAMP adopted triggers are met. The near miss videos provided by the City do not illustrate that interactions along N. Main Street negatively affect the interchange operations.

Notably, the Findings of Fact again fail to reference the adopted IAMP triggers for modifications to the N. Main Street/Front Street intersection. Additionally, there is no evidence there are significant safety issues at N. Main Street/Boardman Avenue NE with only one reported crash from 2016-2020 with decreasing crashes between the time of the IAMP and the Technical Memorandum.

The City's LOS standard is C and while the City has concluded that the intersection operates at LOS D, the Technical Memorandum is clear that the intersections operate at LOS C under existing conditions. Nonetheless, the trigger for conversion per the IAMP is LOS E and that trigger is clearly not met.

The Technical Memorandum provides no evidence that the operations at the N. Main Street/Front Street cause

slowing or stopping of vehicles, significantly degrades the flow of traffic or reduces the efficiency of the transportation types. Regardless, none of these situations are adopted as a trigger as part of the adopted IAMP. The near miss videos provided by the City illustrate very few actual near misses.

While the City has provided no evidence that there are safety issues along N. Main Street due to access issues, we have provided the reported crash history from 2013-2022. In that timeframe, there has been one reported property damage only crash on N. Main Street between Boardman Avenue NE and Front Street per Figure 1 below. This is not indicative that there is a safety issue along N. Main Street in this street section.

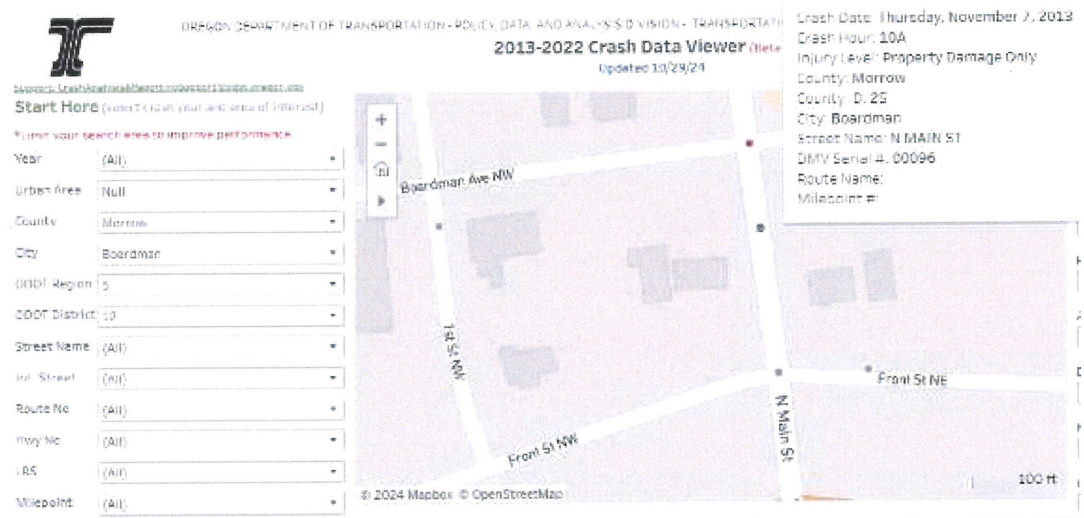


Figure 1: Crashes on N. Main Street between Front Street and Boardman Avenue from 2013-2022[1]

The Findings of Fact note that "At the time the MS IAMP was adopted the LOS for Main Street and North Front Street was C. Today it is D which, under the MS IAMP, does require action on the part of the city...Without action both of those intersections are identified to achieve a LOS of F by 2042."

However, the intersection continues to operate at LOS C per the Technical Memorandum. Per the IAMP, no action is triggered until the intersection operates at LOS E. There is no action required per the IAMP.

The Findings of Fact state that the City should be working to "limit those intersections to right turn only." However, none of the adopted triggers of the IAMP are met.

The Findings of Fact fail to conclude that the remainder of the proposed Modified Project is consistent with the IAMP, notably the restriction of the N. Main Street/Front Avenue intersection. It is clear based on the analysis above that the Modified Project is not consistent with the IAMP as the Findings of Fact ignore the adopted triggers for implementation of the access restrictions at N. Main Street/Front Avenue. There is no evidence that any of the adopted triggers have been met. The evidence illustrates that the triggers are not met. Logically, if the Modified Project is not consistent with the IAMP, then it is not consistent with the TSP. Therefore, the application cannot be approved.

The Findings of Fact state that "The City of Boardman secured the Kittelson Boardman Main Street Circulation Assessment to evaluate the various needs along Main Street and the current Level of Service (LOS) identified for the Front Streets is at D which based on the Main Street Interchange Area Management Plan (IAMP) requires action by the city once a LOS of C is reached." As previously noted, the Technical Memorandum illustrates that

1 https://www.oregon.gov/odot/data/pages/crash-data-viewer.aspx

the current level of service at N. Main Street/Boardman Avenue NE is LOS C. There is nothing in the IAMP that compels the City to take any action at LOS C or LOS D. The City continues to ignore the IAMP triggers for restricting access at N. Main Street/Front Street, which are not met.

The Findings of Fact state that "One of the primary reasons for evaluating these intersections is the conflict between pedestrians and vehicles at the Front Street intersection as well as the Boardman Avenue intersection." As already established, crashes along N. Main Street have decreased since the IAMP. The RRFB was installed after the pedestrian crash. There are no other reported pedestrian crashes. Based on the near miss videos provided by the City, there did not appear to be any near misses associated with pedestrians. None of the adopted triggers of the IAMP for restricting access are met and continue to be ignored by the City.

The Findings of Fact state "The median is defined in the MS IAMP as a solution to be implemented when certain conditions have been met, which is the case." The City recognizes that the median is a solution to be implemented when certain conditions have been met. However, the City continues to fail to recognize the conditions themselves as evidenced by the IAMP adopted triggers, which are not met. It is unclear what conditions the City is referring to as they have not recognized or analyzed the adopted triggers.

The Findings of Fact state that "The installation of the median along North Main will limit left turn movements which are identified within the near miss video to be a significant safety concern. Main Street accesses will be maintained to the three businesses, which includes the appellant's property, to allow left turns." City staff contends, possibly without engineering expertise and the necessary licensure, that a significant safety concern exists on N. Main Street. The crash history clearly provides evidence that there is not a significant safety issue along N. Main Street between Boardman Avenue NE and Front Street. The near miss video illustrates that there are very few near misses. The lack of a significant safety issue is further backed up by the fact that crashes have decreased in this street segment since the IAMP per the Technical Memorandum. The City's Exhibit 18 illustrates that a median would be installed on N. Main Street between Front Street and Boardman Avenue NE, turning the appellant's N. Main Street driveway into a right-in/right-out driveway, which directly contradicts the City's finding that Main Street access will be maintained to the three businesses, including appellant's property.

The Findings of Fact state:

> "The Kittelson Main Street Circulation study shows that when Boardman Avenue and Main Street is signalized installation of a raised median on Main Street should be included from the Boardman Avenue intersection along North Main Street to terminate near the I-84 West Bound Ramp Terminal intersection which would clearly include the North Front Streets. This would result in that section of Main Street and the North Front Streets all becoming configured to be right-in/right-out only. That same study shows that the existing conditions at Main Street and NE Front Street are operating at a LOC (sic) D which, according to the Main Street IAMP, does require action."

Again, the N. Main Street/Front Street intersection does not operate at LOS D, but LOS C. The IAMP triggers for restricting access at the intersection relies on the intersection operating at LOS E.

While the Technical Memorandum does illustrate an alternative for N. Main Street that includes a traffic signal at N. Main Street/Boardman Avenue NE along with a median on N. Main Street from Boardman Avenue NE to Front Street, the Technical Memorandum does not conclude that these two improvements are somehow linked and that if a traffic signal is installed that a median must be installed. There is no analysis or statement that suggests this. The Technical Memorandum also does not overwrite the adopted triggers of the IAMP, which have been wholly ignored by the City. The Technical Memorandum's analysis is also based on a future year of 2042 with significantly different traffic volumes than current conditions. As evidenced in this report, a traffic signal is not warranted at the N. Main Street/Boardman Avenue NE intersection at this time.

Analysis of Near Miss Study

The City provided Exhibit 19, a spreadsheet with a "project name" of "Boardman Near-Miss" that includes links to videos that were collected along portions of the N. Main Street corridor. The spreadsheet summarizes observations of gaps of between 0.0 to 3.0 seconds between autos, bicycles and pedestrians.

It appears that the City collected this information with the implied intent to make the connection that short gaps between various users of the transportation system indicates that there are safety issues along N. Main Street. The City provides no engineering analysis of these videos from any qualified experts yet still concludes that there is a significant safety issue along N. Main Street. This study was performed in the absence of a significant or increasing crash history at the N. Main Street/Front Avenue intersection, at N. Main Street/Boardman Avenue NE or N. Main Street from Front Street to Boardman Avenue NE. The evidence illustrates that crashes have decreased from when the IAMP was developed per the Technical Memorandum. The Technical Memorandum illustrates that both intersections and in between operate with adequate capacity and safety. It is telling that this study was also performed without the City providing response to the objective and measurable IAMP triggers for modifying the N. Main Street/Front Avenue against which this application should be reviewed.

In the absence of any explanation or engineering analysis of the City's study, I reviewed the City's study, conducted some research and observed the videos provided. I am not aware of any Oregon authority that defines a "near miss," and the City has not attempted a definition. The City has not provided any references for the use of this methodology, provided explanation about the implications of the results or provided any thresholds to which the City may deem an intersection to have an acceptable or unacceptable level of close interactions. The City provides no engineering analysis by a qualified individual with expertise in traffic engineering. In conducting my own research, I could not find any common industry sources or research that present this methodology. The City of Boardman's traffic impact study requirements, at Boardman City Code Ch. 4.10, make no reference to this methodology or any similar methodology. The City makes no reference to previous use of such methodology. It is unclear why the City is now apparently proposing to utilize this methodology to study N. Main Street when the methodology to review access restrictions at N. Main Street/Front Street have already been established as part of the IAMP.

The City's spreadsheet notes that "In the Near Miss Summary chart, you will see links to videos showing 1.5 second, 2.0 second, and 3.0 second near miss conflicts." As noted before, the spreadsheet does not provide any references in which the utilized methodology is adopted, evaluated or explained. There are no referenced resources that differentiate the meaning of the difference in gaps observed.

Table 1 below summarizes my observations of the data at N. Main Street/Front Street.

Table 1. "Near Miss" Analysis at N. Main Street/Front Avenue

No	Date	Start Time	Gap (s)	User & Movement 1	User & Movement 2	Analysis	Near Miss?
1	09/04/24	15:36	0 to 1.5	Truck EB Through	Car NB Through	No avoidance	No
2	09/05/24	17:52	0 to 1.5	Car NB Right	Motorcycle EB Through	No avoidance	No
3	09/05/24	19:49	0 to 1.5	Car NB Left	Car SB Through	No avoidance	No
4	09/04/24	15:36	1.5 to 2	Truck EB Through	Car NB Through	Erroneously Recorded, same as number 1	No
5	09/05/24	06:46	1.5 to 2	Car NB Right	Ped WB Through	Ped crossed behind car; No avoidance	No
6	09/04/24	06:43	2 to 3	Car EB Through	Car NB Through	No avoidance	No
7	09/04/24	10:40	2 to 3	Car NB Left	Truck SB Through	No avoidance	No
8	09/04/24	11:08	2 to 3	Car WB Left	Car EB Through	Minor slowing while yielding	No
9	09/04/24	11:28	2 to 3	Car WB Left	Car SB Through	No avoidance	No
10	09/04/24	12:43	2 to 3	Car WB Left	Car NB Through	No avoidance	No
11	09/04/24	14:18	2 to 3	Car NB Left	Car SB Through	Possible minor slowing	No
12	09/04/24	14:45	2 to 3	Car EB Left	Car SB Through	No avoidance	No
13	09/04/24	14:50	2 to 3	Car WB Through	Car NB Through	No avoidance	No
14	09/04/24	15:28	2 to 3	Car WB Left	Car NB Through	No avoidance	No
15	09/04/24	15:41	2 to 3	Car WB Left	Car NB Left	No avoidance	No
16	09/04/24	16:19	2 to 3	Car WB Left	Car NB Through	No avoidance	No
17	09/04/24	16:24	2 to 3	Car WB Left	Car NB Through	No avoidance	No
18	09/04/24	16:40	2 to 3	Car WB Left	Car NB Through	No avoidance	No
19	09/04/24	16:50	2 to 3	Car WB Left	Car NB Through	No avoidance	No
20	09/04/24	16:56	2 to 3	Car EB Left	Car SB Through	SB Vehicle turned from Chevron d/w and may not have accelerated as fast due to EB vehicle	No
21	09/04/24	17:43	2 to 3	Car NB Through	Scooter EB Through	Scooter crossed behind car; No avoidance	No
22	09/04/24	17:53	2 to 3	Car WB Left	Car NB Through	No avoidance	No
23		17:53	2 to 3	Car NB Left	Bike NB Through	Bike crossed in crosswalk behind car	No
24	09/04/24	18:02	2 to 3	Car NB Left	Car SB Through	No avoidance	No
25	09/05/24	06:38	2 to 3	Car WB Through	Car NB Through	No avoidance	No
26	09/05/24	07:14	2 to 3	Car WB Left	Car NB Through	No avoidance	No
27	09/05/24	09:30	2 to 3	Car EB Through	Car SB Through	No avoidance	No
28	09/05/24	11:13	2 to 3	Car EB Left	Car SB Through	Possible minor slowing	No
29	09/05/24	11:33	2 to 3	Car WB Left	Car NB Through	No avoidance	No
30	09/05/24	11:55	2 to 3	Car WB Left	Car NB Through	WB vehicle turned from Chevron d/w; NB vehicle slowed	**Yes**
31	09/05/24	11:55	2 to 3	Car WB Left	Car NB Through	No avoidance	No
32	09/05/24	12:06	2 to 3	Car NB Left	Car SB Through	No avoidance	No
33	09/05/24	12:06	2 to 3	Car NB Left	Car SB Through	No avoidance	No
34	09/05/24	12:19	2 to 3	Car EB Left	Car SB Through	No avoidance	No
35	09/05/24	13:09	2 to 3	Car WB Left	Car/Trailer NB Through	Possible minor slowing	No
36	09/05/24	15:08	2 to 3	Motorcycle NB Left	Bus SB Through	No avoidance	No
37	09/05/24	15:19	2 to 3	Ped SB Through	Car WB Left	Car turned behind ped; No avoidance	No
38	09/05/24	15:29	2 to 3	Car NB Left	Car SB Through	No avoidance	No
39	09/05/24	15:59	2 to 3	Car WB Left	Car NB Through	No avoidance	No
40	09/05/24	16:11	2 to 3	Car WB Left	Car NB Through	No avoidance	No
41	09/05/24	16:31	2 to 3	Car EB Through	Car NB Through	No avoidance	No
42	09/05/24	16:38	2 to 3	Car NB Through	Ped WB Through	Ped crossed behind car; No avoidance	No
43	09/05/24	16:41	2 to 3	Car WB Left	Car NB Left	No avoidance	No
44	09/05/24	16:41	2 to 3	Car WB Left	Car NB Through	No avoidance	No
45	09/05/24	16:54	2 to 3	Car WB Left	Car NB Through	WB vehicle turned from Chevron d/w; NB vehicle slowed	**Yes**
46	09/05/24	17:22	2 to 3	Car NB Left	Car SB Through	Possible minor slowing	No
47	09/05/24	17:25	2 to 3	Car WB Left	Car NB Through	No avoidance	No
48	09/05/24	17:26	2 to 3	Car WB Left	Car NB Through	No avoidance	No
49	09/05/24	18:11	2 to 3	Car NB Left	Car SB Through	No avoidance	No
50	09/05/24	18:36	2 to 3	Car EB Through	Car NB Through	No avoidance	No
51	09/05/24	18:44	2 to 3	Car WB Left	Car NB Through	No avoidance	No
52	09/05/24	19:23	2 to 3	Car NB Left	Car SB Through	No avoidance	No
53	09/05/24	19:48	2 to 3	Car WB Left	Car NB Through	No avoidance	No
54	09/07/24	07:23	2 to 3	Car EB Left	Car SB Through	Possible minor slowing	No
55	09/07/24	10:03	2 to 3	Car WB Left	Car NB Through	No avoidance	No
56	09/07/24	11:07	2 to 3	Car WB Left	Car NB Through	No avoidance	No
57	09/07/24	12:45	2 to 3	Car WB Left	Car NB Left	Possible minor slowing	No
58	09/07/24	13:02	2 to 3	Car EB Left	Car SB Through	No avoidance	No
59	09/07/24	13:56	2 to 3	Car/Trailer WB Left	Car NB Through	Possible minor slowing	No
60	09/07/24	15:27	2 to 3	Car NB Left	Car SB Through	No avoidance	No

Even if the City were to consider these videos and charts without any context or definitions, my view would be that a near miss could be described as a vehicle suddenly stopping, slowing or swerving to avoid a crash. Out of the 28 hours of data collected at the N. Main Street/Front Avenue intersection, I only observed two interactions in the videos provided, that I would arguably classify as near misses, where one of the participants had to suddenly stop, slow or swerve to avoid a crash. Both of those interactions occurred at N. Main Street/Chevron driveway. The average daily traffic on N. Main Street near Boardman Avenue appears to be approximately 7000 vehicles per day per the Technical Memorandum, which results in thousands of interactions between various travel modes per day. The overwhelming majority of the video data shows normal interactions and movements between multiple modes of transportation on N. Main Street that have been safely completed. The crash history of N. Main Street between Boardman Avenue NE and Front Street further illustrates that there are very few crashes that have occurred and the recent crash history has actually decreased since the IAMP per the Technical Memorandum in this street segment.

I also reviewed the N. Main Street/Business driveway videos. Of the 28 hours of data collected in this section, I observed no interactions that I would classify as near misses.

The City's videos very effectively illustrate that there are very few actual near misses at the N. Main Street/Front Street intersection nor along N. Main Street between Boardman Avenue NE and Front Street. As evidenced by the decreasing crashes at the N. Main Street/Front Street intersection, there is no evidence that this intersection should be restricted for safety reasons and certainly not according to the adopted criteria of the IAMP.

Ultimately, the study performed by the City is irrelevant, as the City has adopted criteria under which restrictions to the N. Main Street/Front Avenue intersection modifications are to be reviewed and these videos do not meet the criteria. The City has failed to provide evidence that the objective and measurable criteria of the IAMP is met. I have provided substantial evidence that the criteria is not met.

Queues Between N. Main Street/Boardman Avenue NE Intersection and N. Main Street/I-84 Offramp

The City has claimed that the RRFB causes significant backups toward the I-84 ramp intersections although staff has never provided quantifiable evidence of these backups. The City has never provided queue estimates under the existing operations with the RRFB. There is approximately 375 feet between the N. Main Street/Boardman Avenue NE and N. Main Street/I-84 WB offramp intersections. The near miss videos provide some evidence of the pedestrian interactions with vehicles. Those videos illustrates occasional groups of pedestrians crossing N. Main Street but those videos do not illustrate anything that remotely resembles queues that would extend to the I-84 ramps, but very short queues that are hundreds of feet short of interacting with the I-84 ramps.

The City provided a traffic analysis for the intersection of N. Main Street/Boardman Avenue NE, but it is based on the number of pedestrians that the City counted as part of their Technical Memorandum and not on the scenario where far more pedestrians are served. The proposed traffic signal will introduce significant, regular delay as it serves all the phases of the traffic signal including for every single pedestrian and vehicle crossing N. Main Street. It will introduce queues to N. Main Street that are not currently present as eastbound and westbound traffic from Boardman Avenue NE is served while northbound and southbound traffic is stopped. The traffic signal analysis fails to consider the scenario when the traffic signal is regularly served by heavy pedestrian demand. There is no evidence that indicates that a traffic signal will not introduce similar or even worse queues than the RRFB.

Boardman Police Department Letter

The City of Boardman Chief of Police provided a letter dated October 22, 2024. It is important to note that the police chief's letter addresses only the intersection of "Boardman Ave and Main Street" and makes no comment regarding the N. Main Street/Front Avenue intersection or points in between the two intersections.

The police chief astutely recommends a "comprehensive traffic study to identify the root causes of the safety issues and developed targeted solutions." There is no evidence that any engineering study has been performed that supports the City's proposed improvements at the intersection. This is a significant fault in the analysis as the City now proposes a traffic signal that is not warranted based on data from their own Technical Memorandum.

Conclusion

A traffic signal is not currently warranted at the N. Main Street/Boardman Avenue NE intersection based on the traffic data presented in the City's Technical Memorandum. The City has failed to conduct an engineering study of the intersection based on the MUTCD's traffic signal warrants, which the City is required to comply with.

There is no evidence that there are significant safety issues at N. Main Street/Boardman Avenue NE, N. Main Street/Front Street or along N. Main Street between those intersections with reported crashes decreasing from the IAMP to the Technical Memorandum. Both the intersections currently operate adequately per City standards. The near miss study establishes that there are very few near misses. The City has failed to make any connection between near misses and crashes, but based on the evidence, the intersections and in between operate adequately.

It is clear based on the analysis above that the Project is not consistent with the IAMP as the Findings of Fact ignores the adopted triggers for implementation of the access restrictions at N. Main Street/Front Avenue. There is no evidence that any of the adopted triggers have been met.

Therefore, the application cannot be approved.

Should you have any questions, feel free to contact me at rick@greenlightengineering.com or 503-317-4559.

Sincerely,

Rick Nys, P.E.
Principal Traffic Engineer

11/5/1024

To the Honorable Council of the City of Boardman,

I am writing to encourage you to place actual stop lights up at the intersection of Boardman Avenue and Main Street instead of the HAWK lighting system. As you know from personal experiences the traffic load is so heavy. The near misses of collisions between vehicles as well as vehicles to pedestrians is not reported as statistic. I am curious to know how well the videos show some real statistics. I started keeping my own stats since the last council meeting I attended. Between South Front Street and Boardman Avenue I have been in four near misses and have seen three other near misses. Mind you, I have been gone for the past two weeks for a conference and hunting season.

With the issue of the fencing on the overpass, I would like to remind the Council, when I was a patrolman for the City of Boardman, my patrol car was t-boned by a vehicle coming off the interstate. The out-of-state driver said she did not realize there was a stop sign there and she did not see my vehicle. I am lucky my patrol vehicle saved my life.

I can think of three other crashes which I assisted in that zone.

On mid-block left hand turns into Sinclair, Chevron/C&D, I would like to say that has caused more problems for drivers due to there not being enough space/ time to safely turn, whether turning out of Sinclair to head south or driving south and turning into Chevron/C&D, both have major safety concerns.

The idea of changing back to lined crosswalks on the north and south sides of Boardman Avenue on Main Street without a true stop light is not a good change. I would encourage the Council to not put in lined crosswalks with the Hawk Light System. The reason is again to keep people safe when crossing the road. I see plenty of people who choose to not walk around to use the crosswalks, and I also see those who cross in the middle of the street south of Boardman Avenue; traditional jay walking. Bad on their part for making a bad choice.

I am not a big fan of the Right-in/right out only option due to how congested Boardman Avenue is already but if this option helps to prevent a loss of life or helps the flow of traffic, then so be it, at least give it a try.

Thank you for your time and community service,

~George Shimer, 316 Boardman Ave NW, Boardman Or 97818

CITY OF BOARDMAN
ORDINANCE 6-2024

AN ORDINANCE TO APPROVE AN AMENDMENT TO THE BOARDMAN MUNICIPAL CODE CHAPTER 2.16 PLANNING COMMISSION

WHEREAS, the City of Boardman has an adopted Municipal Code; and,

WHEREAS, Chapter 2.16 Planning Commission regulates the appointment of members and provides guidance to how the Planning Commission functions; and,

WHEREAS, the most recent update to Chapter 2.16 Planning Commission was approved in 2004 through Ordinance Number 4-2004; and,

WHEREAS, the City of Boardman Planning staff have identified a number of inconsistencies with Oregon Revised Statute and common practice; and,

WHEREAS, the Boardman Planning Commission did discuss the proposed amendments to Chapter 2.16 Planning Commission at their regular meeting in April 2024 and support the proposed amendments; and

WHEREAS, the Boardman City Council did discuss the changes at the City Council meeting on September 6, 2024.

NOW THEREFORE BE IT ORDAINED that the City of Boardman approves the amended Chapter 2.16 Planning Commission of the Boardman Municipal Code attached as Exhibit A.

First Reading: October 1, 2024
Second Reading: November 5, 2024

Passed by the Council and approved by the Mayor on this 5th day of November 2024 with an effective date of January 1, 2025.

_____ _____

Paul Keefer – Mayor Amanda Mickles – City Clerk

Chapter 2.16 PLANNING COMMISSION

Sections:

2.16.010 Established.

There is reestablished a city planning commission for the city.

(Prior code § 1-3.1)

2.16.020 Members.

The commission shall consist of seven members to be appointed by the council. Commission members shall receive no compensation. Individual positions on the commission are not geographically designated. The members presently serving shall continue until the expiration of their regular term.

(Ord. 4-2004 § A: prior code § 1-3.2)

2.16.030 Terms of office.

A. The terms of the seven appointed members of the commission shall expire as follows:

1. Position 1 expires December 31, 2004;
2. Position 2 expires December 31, 2004;
3. Position 3 expires December 31, 2004;
4. Position 4 expires December 31, 2005;
5. Position 5 expires December 31, 2005;
6. Position 6 expires December 31, 2006;
7. Position 7 expires December 31, 2006.

B. Successors shall hold office for three years, commencing on January 1st following expiration of the previous term. Any vacancy shall be filled by the council for the unexpired portion of the term.

(Ord. 4-2004 § B: prior code § 1-3.3)

2.16.040 Election of officers.

The commission, at its first meeting each year, shall elect a chair and vice-chair, who shall be members appointed by the council and who shall hold office during that year at the pleasure of the commission.

(Prior code § 1-3.4)

2.16.060 Quorum—Rules and regulations—Meeting times.

A majority of the voting members of the commission shall constitute a quorum. The commission may make and alter rules and regulations for its governance and procedures consistent with laws of this state and with the city charter and ordinances. It shall meet at least once a month as needed, at such times and places as may be fixed by the commission.

(Prior code § 1-3.6)

2.16.070 Removal of members.

A commission member may be removed following a hearing before the city council for good cause. Good cause shall include absence from three (3) consecutive meetings or fifty percent (50%) of meetings in any six (6) month period, failure to divulge a conflict or bias or other action or deed not deemed to reflect the best interest of the community.

(Prior code § 1-3.7)

2.16.080 Membership restrictions.

Not fewer than six of the commission shall reside within the city limits of the city of Boardman. No more than two voting members shall be engaged in the buying, selling or developing of real estate for profit as individuals, or be members of any partnership, or officers or employees of any corporation, that is engaged principally therein. No more than two voting members shall be engaged in the same kind of business, trade, profession or occupation.

(Ord. 4-2004 § C: prior code § 1-3.8)

2.16.090 Employment of staff.

The commission may employ consulting advice on municipal problems, a planner or planning department as may be necessary, and pay for their services, and for such other expenses as the commission may lawfully incur, including the necessary disbursements incurred by its members in the performance of their duties as members of the commission, out of funds at the disposal of the commission, as authorized by the city council.

(Prior code § 1-3.9)

2.16.100 Powers of the commission.

The commission shall have all the powers which are now or hereafter granted to it by ordinances of this city or by general laws of the state of Oregon. The commission may make studies, hold hearings and prepare reports and recommendations on its own initiative or at the request of the city council. The commission may recommend the city council enter into planning agreements with other public planning authorities. The commission shall make, or cause to be made, all studies which may be necessary to determine the feasibility and costs for any land use program which may be proposed to the commission or for programs related to land use planning which the commission on its own motion may choose to study or participate in. Said programs are without limit as to their origin or nature, that is, they may arise locally, or they may be programs arising from county, state, or federal planning groups or from projects proposed to the city for its participation with county, state, or federal groups or authorities. It is expected that the commission's activities will involve the Comprehensive Plan, Development Code, Transportation System Plan, and other plans or programs related to land use planning.

(Prior code § 1-3.10)

2.16.110 Recommendations in writing.

All recommendations and suggestions made to the city council by the commission shall be in writing.

(Prior code § 1-3.11)

2.16.120 Expenditure restrictions.

The commission shall have no authority to make expenditures on behalf of the city, or to obligate the city for the payment of any sums of money, except as provided in this chapter, and then only after the city council shall have first authorized such expenditures by appropriate ordinance (or resolution), which ordinance (or resolution) shall provide the administrative method by which such funds shall be drawn and expended.

(Prior code § 1-3.12)

CITY OF BOARDMAN
RESOLUTION NO. 26-2024

A RESOLUTION TO ESTABLISH A NEW CONGRESSIONAL COMMUNITY PROJECT FUND, ADOPTING A SUPPLEMENTAL BUDGET FOR FISCAL YEAR 2024-2025, AND MAKING SUPPLEMENTAL APPROPRIATIONS

WHEREAS, the City applied for, and received, a grant from the FY 2024 Congressional Community Project Award from the U.S. Small Business Administration in the amount of $1,500,000; and

WHEREAS, this resolution proposes establishing a Congressional Community Project Fund, to financially administer and meet the federal guidelines of this grant, it is necessary that these funds and its future financial transactions be in a separately identified Fund of the City; and

WHEREAS, the City is the named recipient, and in the acceptance of the awarded grant, the City accepted all reporting and record keeping requirements, Cost Principles, and OMB Uniform Administrative Requirements, as noted on the Notice of Award, Grant Agreement No. SBAHQ24I0115; and

WHEREAS, the Boardman Community Development Association was named the sub-recipient, in the grant application, of the entirety of the grant, they will design and administer the construction of the project, with the City overseeing the grant allowable expenses and pass-through of the funds to BCDA, on a reimbursement basis; and

WHEREAS, in the current fiscal year's budget, this grant and the pertinent appropriations were incorporated into the General Fund. ORS 294.471 and ORS 294.473 allow the City to revise their original budget when there are changes in overall appropriation or contingency transfers which exceed ten (10%) percent of total fund appropriations. The governing body must adopt a resolution to adopt the supplemental budget and make necessary appropriations; and

WHEREAS, the City is reallocating the Interest Income of $45,000 that was budgeted in the General Fund to the Congressional Community Project Fund; and

WHEREAS, the City is reappropriating the expenses of $1,500,000 from General Fund-Materials & Services to Transfers. The grant was received by the General Fund and will need to be transferred to the Congressional Community Project Fund. The General Fund-Contingency will reappropriate $45,000 to the Congressional Community Project Fund-Contingency; and

WHEREAS, the supplemental budget for the Congressional Community Project Fund's expenditures are changed by more than ten (10%) percent, a public hearing is required. The hearing was noticed on October 30, 2024 and held on November 5, 2024.

THEREFORE, BE IT RESOLVED, that the Boardman City Council hereby authorizes the establishment of the Congressional Community Project Fund and that the following appropriations for the current fiscal year 2024-2025 be adopted, as follows:

GENERAL FUND (100)

RESOURCES	
OTHER INCOME	-45,000
Total Resources	-45,000
DISBURSEMENTS	
MATERIALS & SERVICES	-1,500,000
CONTINGENCY	-45,000
TRANSFERS	1,500,000
Total Disbursements	-45,000
FUND CHANGE	**-45,000**

CONGRESSIONAL COMMUNITY PROJECT FUND (415)

RESOURCES	
OTHER INCOME	45,000
TRANSFERS	1,500,000
Total Resources	1,545,000
DISBURSEMENTS	
MATERIALS & SERVICES	1,500,000
CONTINGENCY	45,000
Total Disbursements	1,545,000
FUND CHANGE	**1,545,000**

DATED this 5th day of November 2024.

CITY OF BOARDMAN

Mayor – Paul Keefer

Council President – Heather Baumgartner

Councilor – Karen Pettigrew

Councilor – Richard Rockwell

Councilor – Brenda Profitt

Councilor – Cristina Cuevas

Councilor – Ethan Salata

ATTEST:

City Clerk – Amanda Mickles

MEMORANDUM

To: City Council
From: Carla McLane, Planning Official
Date: October 29, 2024
RE: FEMA PICM

Pre-Implementation Compliance Measures (PICM) for the National Flood Insurance Program (NFIP): Pre-Implementation Compliance Measures, also known as PICMS, are short-term measures that communities must adopt to comply with Endangered Species Act (ESA) requirements under the NFIP. FEMA has developed these measures to address Reasonable and Prudent Alternative (RPA) Element 2 (Interim Measures) in the 2016 National Fisheries and Marine Services (NMFS) Biological Opinion (BiOp). These interim measures are intended to occur as the agency undertakes a National Environmental Policy Act (NEPA) review to assess the effects of FEMA's proposed NFIP-ESA integration efforts.
Under PICM, communities may select one of three compliance measures:

1. Prohibit all new development in the floodplain;
2. Incorporate the ESA performance standards into local floodplain ordinances through a model ordinance; or
3. Require permit applications to develop a Floodplain Habitat Assessment documenting that their proposed development in the Special Flood Hazard Area (SFHA) will achieve no net loss.

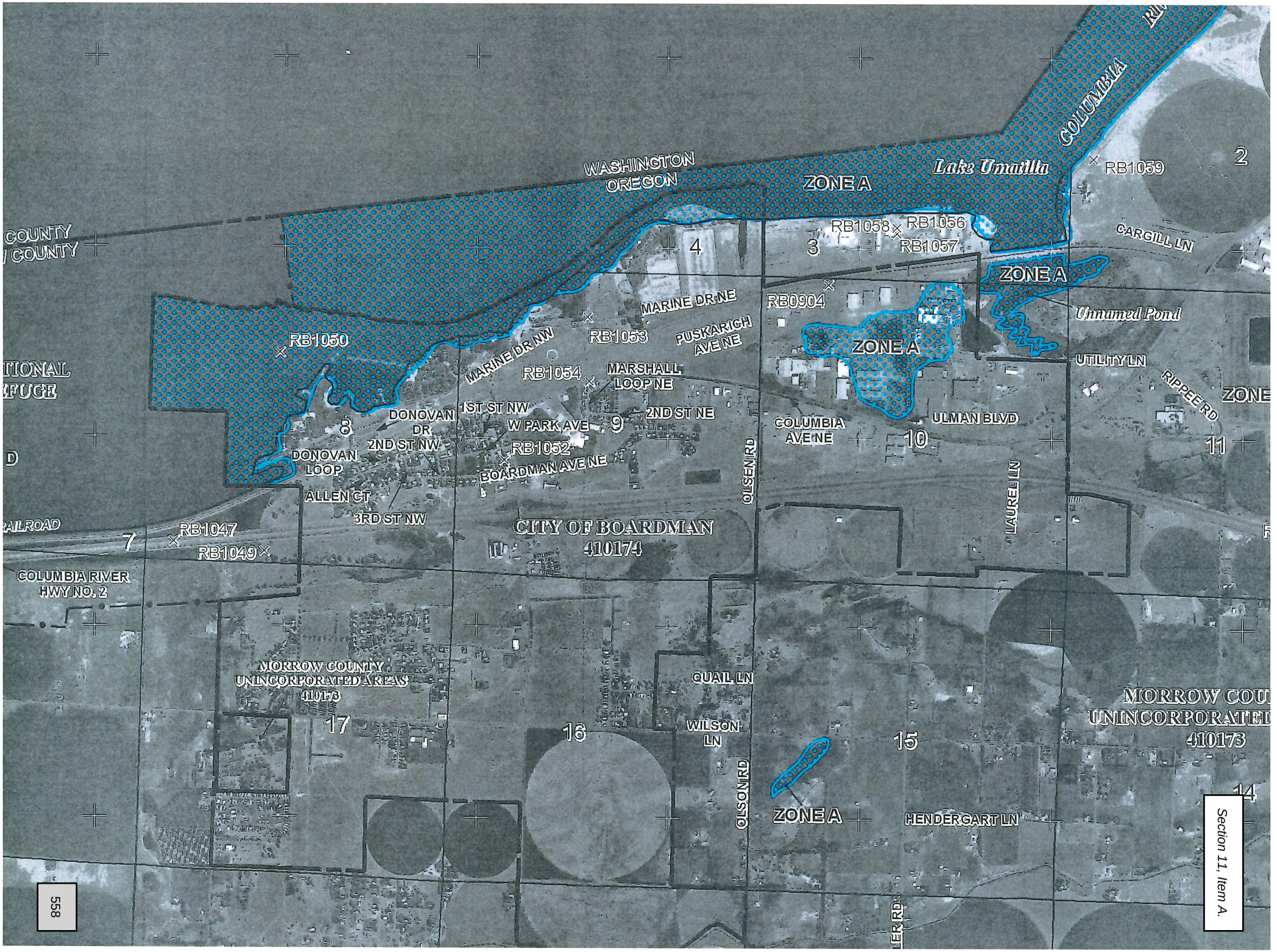
What? No doubt all those acronyms, particularly in the order they are presented, are making your head hurt. It hurts my head. This all started back in 2009 as outlined in the timeline below and it has still not been concluded.

- 2009 Federal Emergency Management Agency (FEMA) was sued for failure to implement the Endangered Species Act (ESA) in the Special Flood Hazard Area (SFHA).
- 2016 National Marine Fisheries Service (NMFS) issued the NFIP Biological Opinion (BiOp) with Reasonable and Prudent Alternatives (RPAs).
- 2018 Three-year extension from Disaster Recovery Reform Act.
- 2021 FEMA, DLCD, and partners developed "2021 Oregon NFIP-ESA Integration Implementation Plan."
- 2023 FEMA published a Notice of Intent to prepare an Environmental Impact Statement (EIS).
- July 2024 FEMA PICM Notification Letters were sent to affected jurisdictions.
- July – August 2024 PICM informational Webinars were held.
- August 2024 "Floodplain Habitat Assessment and Mitigation Regional Guidance for Oregon" published.
- August 14, 2024 "NFIP Oregon Implementation Program Guidance Model Floodplain Management Ordinance for Participating Communities in the Implementation Plan Area" made available from FEMA.

So, what now? FEMA is demanding that participating communities, including the City of Boardman, select a Pre-Implementation Compliance Measure (PICM) no later than December 1, 2024. If Boardman does not select one, then by default, we will be required to address issues within the Floodplain Permit-by-Permit. But it is important to note that the amount of Floodplain within Boardman is negligible (see included map). But the other component of this discussion is whether the community would also have floodplain that is within the Implementation Area under the 2016 NMFS BiOp. Boardman does not.

What to do to meet this FEMA requirement? Staff recommend nothing. Or choose the Permit-by-Permit option which is what the default is. Boardman has a Floodplain Ordinance that is out of date and will be updated as part of the current Strategic Planning work that is ongoing. At that time, we will determine which Model Code for floodplain management we will use and if we need to address the 'no net loss' standards that are now being deployed in Oregon based on the lawsuit and BiOp.

Glad to answer any questions you may have.


WASHINGTON
OREGON
ZONE A
Lake Umatilla
COLUMBIA
RB1059
RB1058
RB1056
RB1057
CARGILL LN
ZONE A
RB0904
Unnamed Pond
ZONE A
UTILITY LN
RIPPEE RD
ZONE
RB1050
MARINE DR NE
MARINE DR NW
RB1053
PUSKARICH AVE NE
RB1054
MARSHALL LOOP NE
DONOVAN DR
1ST ST NW
W PARK AVE
2ND ST NE
2ND ST NW
RB1052
DONOVAN LOOP
BOARDMAN AVE NE
COLUMBIA AVE NE
ULMAN BLVD
OLSEN RD
ALLEN CT
3RD ST NW
LAUREL LN
CITY OF BOARDMAN
410174
RB1047
RB1049
COLUMBIA RIVER HWY NO. 2
MORROW COUNTY UNINCORPORATED AREAS
410173
QUAIL LN
WILSON LN
OLSON RD
ZONE A
HENDERGART LN
MORROW COU
UNINCORPORATED
410173
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INTERGOVERNMENTAL AGREEMENT BETWEEN THE CITY OF BOARDMAN AND BOARDMAN PARK AND RECREATION DISTRICT FOR DEVELOPMENT AND ADOPTION OF A PARK MASTER PLAN TO SERVE BOTH

This Intergovernmental Agreement is made and entered into between the City of Boardman, hereinafter "City" and the Boardman Park and Recreation District, hereinafter "District."

RECITALS

WHEREAS, the District has a 2012 Parks Master Plan that is out of date and needs to be updated; and

WHEREAS, the City and District both need a Parks Master Plan to govern development of new park and recreation systems and facilities and to manage and maintain the current inventory; and

WHEREAS, the City needs a Park Master Plan to meet the needs of our System Development Charges program renewal; and

WHEREAS, pursuant to ORS 190.010, units of local governmental may enter into agreement with other units of local governmental for the performance of any or all functions and activities that the parties to the agreement, its officers and agents have the authority to perform; and

WHEREAS, each party is a unit of local government authorized to enter into this Agreement pursuant to ORS 190.010;

NOW, THEREFORE, the parties agree as follows:

1. Term

This Intergovernmental Agreement shall be effective upon date of execution by both parties and shall continue for a period of two (2) years unless terminated earlier as provided herein. The term is anticipated to provide the necessary time for the Scope of Work to be accomplished which is designed to conclude with both the City and District adopting a Parks Master Plan.

2. Scope of Work

City shall lead the process to develop a shared Parks Master Plan. That process has included drafting the Scope of Work and associated Request for Proposals, working with the District to choose a contractor, and will include managing the work of the consultant team in the development of the Parks Master Plan, and coordinate the adoption of the Park Master Plan by both the City and District.

3. Cost Sharing

The City will accept responsibility for the cost of the development and adoption of the Parks Master Plan with the following identified items to be shared: Task 8 Operations Assessment will be shared equally and Task 9 Market Assessment will be shared 1/3 by the City and 2/3 by the District.

4. Termination

This Intergovernmental Agreement may be terminated by either party giving ninety (90) days prior written notice to the other party.

5. Notice

Any notice required by or given in connection with this Agreement shall be given in writing and shall be delivered either by hand to the other party or by certified mail, return receipt requested, addressed to a party at the following addresses:

City of Boardman
Post Office Box 229
Boardman, Oregon 97818

Boardman Park and Recreation District
Post Office Box 8
Boardman, Oregon 97818

Either party may change its address provided herein by giving notice of the change in accordance with this paragraph.

6. Applicable Law

This Intergovernmental Agreement shall be governed by and construed in accordance with the laws of the State of Oregon.

7. Waiver

Waiver of either party of strict performance of any provision of this Intergovernmental Agreement shall not be a waiver of or prejudice the party's right to require strict performance of the same provision in the future or any other provision.

8. Modification

This Intergovernmental Agreement may not be amended or modified except by written agreement executed by the parties.

9. Entire Agreement and Amendment

This document is the entire, final and complete agreement between City and District regarding the subject matter contained in it and supersedes and replaces all prior or existing written and oral agreements between the City and District concerning the subject matter. No amendment to this Intergovernmental Agreement shall be effective unless first reduced to writing and signed by the parties.

10. Severability

The parties agree that if any term or provision of this Intergovernmental Agreement is declared by a court to be illegal or in conflict with any law, the validity of the remaining provisions shall not be affected.

11. Attorney Fees

If litigation between the parties is initiated arising directly or indirectly out of this Intergovernmental Agreement, the losing party shall pay to the prevailing party the prevailing party's attorney fees and court costs as determined by the court at trial, or any appeal therefrom.

12. Counterparts

This Agreement may be executed in several counterparts (electronic or otherwise), each of which shall be an original, all of which shall constitute the same instrument.

IN WITNESS WHEREOF, the parties to this Intergovernmental Agreement have caused it to be executed by their duly appointed officers as of the date of their signatures.

Boardman Park & Recreation District

By: _____ Date: _____
Chief Executive Officer

City of Boardman

By: _____ Date: _____
City Manager

MEMORANDUM

To: Mayor Keefer and Members of the City Council
From: Carla McLane, Planning Official
Date: November 1, 2024
RE: Agreement for Consulting Services – Comprehensive Plan and Development Code

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It has come to my attention that there are some new procurement rules that we must adhere to for this agreement specifically as it is over $250,000. Your involvement is required to grant approval and authorize the City Manager to sign the agreement. As way of background, I share the following:

Identifying Potential Consultants: Brandon initiated this project by reaching out to several potential consultants or groups to do the work. We eventually refined the list and engaged in conversations with AKS Engineering, Cascadia Partners, and Winter Brook Planning. A Scope of Work was drawn up to focus better on the conversation and identify the tasks deemed necessary for the project. The following is a summary of that Scope of Work:

Task 1: Project Management and Kick Off
Task 2: Develop and Implement a Public Involvement Strategy
Task 3: Audit of the Comprehensive Plan, Boardman Development Code, and Zoning Map and Comprehensive Plan Designations
Task 4: Evaluate Policy Issues
Task 5: Prepare Draft Comprehensive Plan and Boardman Development Code
Task 6: Prepare Final Document and Assist with Adoption

All three of the consultants listed above submitted proposals for consideration.

Consultant Selection: Brandon, Glenn, and Stephanie reviewed each of the proposals and using an internally created scoring guide provided comments and a score. Follow-up questions were posed to each of the proposers to gain additional insight into their proposal and to better understand their approach and components suggested. After eliminating the highest cost proposer the decision, based on the scoring and the follow-up questions, was to select Cascadia Partners LLC.

Request: The request is to approve the Agreement for Consulting Services between the City of Boardman and Cascadia Partners LLC for $288,420 and authorize the City Manager to sign. Your support in these processes is much appreciated.

Chamber / BCDA September 2024 Report

Boardman Chamber Membership Updates

- We currently have 254 members for August 2024 including 1 new member.
    - Lucky Star Mobile Bar – Mobile Bartending Service

Boardman Chamber of Commerce Events

- **Boardman Community Trunk-or-Treat will be on Thursday, October 31, 2024, at 5:30 pm:** Get Ready to Enjoy a FREE fun-filled evening of Trunk-or-Treating! Cars, Community booths, and Businesses will line up in the Sage Center parking lot handing out treats, candy, and prizes. Gather around the patio for a toasty cup of hot chocolate. Tillamook will be handing out Cheese and Lamb Weston will be serving French Fries. We look forward to this family fun night with you and your Trick-or-Treaters.

- **Our next 3rd Quarter Luncheon:** will be held on Wednesday, December 18, 2024. We are pleased to announce that Shari, the owner of Perfect Shade LLC, will be our title sponsor. After Shari's presentation, Collette Travel will share an exciting opportunity for travel from Boardman to the French Riviera, along with information about future travel options. Following the presentations, we will have a round table discussion. We look forward to seeing all of you at the luncheon and learning more about your businesses. Registration for the event is available on the Boardman Chamber of Commerce website.

Past Chamber Events:

- **Chamber talk with Torrie:** Thursday, September 5, 2024, we hosted Joe and Emily Taylor from Taylor Pumpkin Patch. They shared exciting insights about the 20 varieties of pumpkins available at their local patch, which is perfect for visitors of all ages! We can't wait to experience the fun activities they offer, including the corn pit, apple slingshots, fire

pits, straw pyramid, corn maze, thrilling new zip line, and of course, their legendary pumpkin cannon. We look forward to visiting the pumpkin patch this October!

- **The 3rd Quarter Luncheon was Wednesday, September 18, 2024:** We had a wonderful 3rd Quarter Luncheon this past Wednesday, where Express Employment Professionals our Title Sponsor provided valuable insights into how they help community members find work and assist businesses in finding the right employees. It's truly a great service for our community!

Member Events

- **Sage Center:**
  - **Harvest Festival at the SAGE Center:** The annual Morrow County Harvest Festival will be on Saturday, October 5, 2024. Come enjoy a day of FREE Family Fun, while we celebrate the end of the harvest with vendors, kids' activities, and entertainment.
  - **Winter Market (Ladies Night) – November 1, 2024:** The Sage Center is excited to host a two-day winter market! The first day is Ladies' Night on November 1, 2024, from 6:00 PM to 8:00 PM. Ladies are invited to enjoy shopping and socializing with friends while exploring an array of unique vendors offering everything from handcrafted jewelry and artisanal goods to chic winter fashion. Complimentary wine and hors d'oeuvres will be provided for the women, and kids are welcome too! We'll have cider and lemon water available for the little ones.
  - **Winter Market (Saturday Social) – November 2, 2024:** The second day of the winter market will be a Saturday Social on November 2, 2024, from 6:00 PM to 8:00 PM. Explore a variety of local vendors, get creative with holiday crafts, and enjoy delicious snacks. Kids will have plenty of fun activities to keep them entertained while parents shop for unique gifts and festive décor.
- **Families First Childcare:** They will have a bottle drive on Wednesday, October 2, 2024, from 12:00 PM to 6:00 PM
- **City of Boardman:** They are looking for interested businesses in coordinating a Business-led community clean-up. It will be during the 2nd week in October for the Community Cleanup.
- **Desert Lanes Family Fun Center:** Desert Lanes has their Fall & Winter League schedule for 2024 and 2025 on their Facebook page.
- **Café Cultura:** They have changed their winter hours. Check out their Facebook page to see the new winter hours.
- **Boardman Senior Center:** The Senior Center has posted their October Lunch menu. Drop by every Tuesday and Thursday for a wonderful meal cooked by the local seniors. Help support your local seniors.
- **Umatilla Electric Cooperative:** They are holding their Annual Member Appreciation luncheon in Boardman on October 23, 2024 down at the Boardman Marina Park from

11:00 AM to 1:00 PM. Drop by and enjoy food, ice cream, member gifts, and a ch
WIN an RTIC cooler.

- **Taylor Pumpkin Patch:**
    - **Taylor Pumpkin Path Opening Weekend:** This will be from Friday, October 11 to Sunday, October 13. This will be the start of the fall season, including new fun activities at a new location off Root Lane, Boardman Oregon.
    - **Wine Night:** They will also be doing a Wine Night on Saturday, October 19 from 6:00 PM to 9:00 PM. This will be a fun night will cozy fire pits and s'mores kit. You can pre-order a charcuterie board snack for their wine night.
- **Riverside Baseball Team:** They are hosting a four-person golf scramble on November 16, 2024. They are still looking for teams and sponsors, call the chamber and sign up today. The proceeds will support our RHS Baseball team.

To find more information on events and information, please follow our social media platforms, website, and YouTube.

Boardman Community Development Association

The BCDA Board is pleased to continue supporting various initiatives in Recreation, Education, Beautification, and Community projects.

Our next major endeavor is the construction of a new play structure at the SAGE Center. With a $250,000 investment, this project will accommodate the increasing number of students participating in our year-round educational programs and benefit the wider community. We are excited to share the progress of this project with the community. We are thankful for the additional support from Threemile Canyon Farms in the value of $50,000 and AWS for their recent contribution of $50,000 to help support the overall cost of this project and the community. Estimated completion date is mid-October 2024.

Additionally, we are maintaining our Home Buyers Incentive program, with an investment of $250,000 to encourage new residents to settle in Boardman. We currently have spent $195,000 in housing grants for 2024.

We recently received $1.5 million dollars from the US Small Business Administration to build the Boardman Business Opportunity Incubator building that will be a dedicated space for small and medium sized businesses with a particular emphasis on supporting women and minority owned business enterprises and low-income populations.

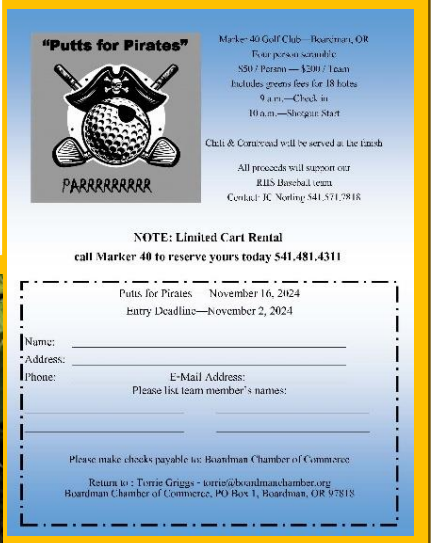
BCDA remains committed to making Boardman a wonderful place to live, work, and play.

Should you have any inquiries, please don't hesitate to reach out to me at 541-571-2394 or via email at torrie@boardmanchamber.org at your convenience.

For further details, please visit www.boardmanchamber.org or contact our office directly at 541-481-3014. We're here to assist you!

Upcoming Chamber Events

Upcoming Member Events



BOARDMAN POLICE DEPARTMENT

PATROL STATISTICS (UNAUDITED)
CALENDER YEAR 2024

Statistics	Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual Total
Total Incidents	339	345	312	409	443	516	492	457	507	460			4280
Calls for Service	182	180	160	211	225	287	222	242	262	207			2178
Officer Initiated Incidents	157	165	152	198	218	229	270	215	245	253			2102
Traffic stops	48	73	56	79	92	85	135	84	88	118			858
Other OIA Incidents	102	92	96	119	126	144	135	131	157	135			1237
Bus/Building Checks	0	3	2	3	14	7	3	7	4	9			52
Veh/Ped check	44	48	56	65	88	98	81	94	94	84			752
Total Officer Reports	42	43	43	52	55	44	45	58	62	56			500
CIS Converstion	0	0	0	0	0	0	0	0	0	0			0
Crash	2	0	1	1	1	0	3	2	2	1			13
Felony	7	6	5	7	7	2	2	5	9	6			56
Information Case	9	12	9	13	15	10	15	20	14	17			134
Misdemeanor	14	14	18	23	23	24	19	22	29	23			209
Violation	1	7	5	5	1	0	0	0	0	0			19
Voided	5	2	1	2	0	1	3	1	2	3			20
Unclaissified Reports	4	2	4	1	8	7	3	8	6	6			49
Total Misdemeanor & Felony Arrest	8	9	16	11	13	19	14	18	27	19			154
Misdemeanor Arrests	7	5	12	8	9	18	12	14	22	17			124
Felony Arrests	1	4	12	3	4	1	2	4	5	2			38
Total Citations	5	15	15	17	31	19	36	18	25	11			192
Code	0	0	0		0	0	0	0	0	0			0
Criminal	0	0	0		0	2	3	2	4	2			13
Violation	5	15	15	14	31	17	33	16	21	9			176
Unclassified													0
FI's	3	1	0	0	2	0	3	2	3	0			14

Note: Beginning in April stats are from the 23rd of prior month to 22nd of current month.
Note: March 2024 stats are as of 3/28/24 at 11:25 am.
Note: Calender year end summary report will project slight different totals due to RIMS variations,.

Building Department Report 2024

2024	Oct '23	Nov '23	Dec '23	Jan '24	Feb '24	Mar 1 to Mar 27	Mar 28 to Apr 22	Apr 23 to May 22	May 23 to June 22	June 23 to July 22	July 23 to Aug 22	Aug 23 to Sept 22	Sept 23 to Oct 22	Totals
Total Permits Sold	48	34	31	26	23	26	33	28	39	42	46	80	54	397
Boardman														
Permits Sold	14	11	10	6	8	4	7	14	21	26	23	36	28	173
Manufactured Placement Permit	0	0	0	0	0	0	0	1	1	0	1	0	0	3
New Home Construction	2	0	0	1	0	0	0	1	5	5	7	11	5	35
Multi Family Units	0	0	0	0	0	0	0	0	0	0	0	0	4	4
Morrow County (Excludes 97818)														
Permits Sold	19	16	12	10	8	10	8	0	10	7	10	33	10	106
Manufactured Placement Permit	0	0	1	1	1	0	0	0	0	0	0	0	1	3
New Home Construction	0	0	1	1	0	0	1	0	1	0	0	0	1	4
Multi - Family (units)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Morrow County - 97818														
Permits Sold	18	8	5	12	7	39	33	44	34	11	15	1	10	206
Manufactured Placement Permit	0	0	0	0	0	0	0	0	1	0	0	0	1	2
New Home Construction	0	1	0	0	0	0	0	0	1	0	0	0	0	1
Multi - Family (units)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Irrigon														
Permits Sold	2	2	2	3	2	5	2	3	4	0	1	7	2	29
Manufactured Placement Permit	0	0	0	0	0	0	0	0	1	0	0	0	0	1
New Home Construction	1	1	0	0	2	0	0	2	0	0	0	2	0	6
Multi - Family (units)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Electrical	0	0	0	1	1	4	4	1	0	0	3	4	3	21
Gilliam County														
Permits Sold	13	5	7	7	5	7	16	11	4	9	12	4	14	89
Manufactured Placement Permit	0	0	0	2	0	0	2	1	1	2	1	0		9
New Home Construction	2	0	0	0	0	0	2	0	0	0	0	0		2
Multi - Family (units)	0	0	0	0	0	0	0	6	0	0	0	0		6

Public Works Report
Oct-24

31 Locates to mark water and sewer lines for customers prior to digging
5 New Meter Installs
375 Meter Reads
43 New Radio Reads Installed

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	New Meters Installed
2023	0	2	2	1	3	3	3	14	3	8	0	0	39
2024	0	0	2	2	0	4	8	5	10	5			36

Besides daily work routines, Public Works also completed the following:

Winterize splash pad
Repair water leak at Main and Wilson
Shut Down Circle 52 for winter
Insulate and sheet hickory shed at PD
Started Lead and Copper inventory
Two dog calls from dispatch
Dog call Frontier Trailer Park
Water building Chlorine leak
Serviced two PD vehicles
Seviced Vac Truck
Serviced four PW vehicles
Training on Dog Calls for Code and PW
Installed CBU at Front Street South East
Restriped parking lots at City Hall, Field house, and Senior Center

MEMORANDUM

To: Mayor Keefer and members of the City Council
From: Carla McLane, Planning Official
Date: October 29, 2024
RE: Planning Department Monthly Update

My intent is that, over time, you will be able to string these Planning Department Monthly Updates together and get a story of the changes that are occurring. Guess that means this is Chapter 2. I did take some time in October to visit my grandkids in South Dakota, but things continue to move along. Here's a brief update of what has and is happening:

Strategic Planning Program: This section is designed to provide an overview of the work we are doing on the myriads of planning program documents and inputs.

- **Transportation System Plan (TSP):** The first Public Advisory Committee (PAC) meeting will occur between the writing of this memorandum and the City Council meeting on November 5 during the afternoon of November 4. Amanda and I (mostly Amanda) are developing a home on the City's website for housing the various Technical Memorandums and videos of the meetings. I may be able to provide clear directions of where to look next Tuesday, should time allow.

- **Economic Opportunity Analysis (EOA):** I was hoping to have the PAC for your appointment at this meeting but that has slipped and will occur in December. Background work by the consultant team is happening and Technical Memorandums will be coming soon.

- **Housing Needs Analysis (HNA):** This activity is on hold for a bit longer due to the rulemaking that is occurring through the Department of Land Conservation and Development. More to come over the next couple of months.

- **Parks Master Plan (PMP):** The PAC has been appointed and the first meeting is scheduled for November 21st. There will be several activities that day with the consultant team that are still being worked through and scheduled.

- **Boardman Development Code (BDC) and Comprehensive Plan (CP):** The consultant team has been selected and by the City Council meeting the agreement will have been signed. Their first visit is scheduled for November 7.

- **Strategic Planning:** The survey has been deployed with a postcard version about to be mailed. Responses are coming in. I am excited to see what we learn from this!

- **System Development Charge (SDC) Update:** This remains in a bit of a holding pattern as other projects are getting underway.

Other Programmatic work: Work is also progressing on other projects with a planning focus. Those include the:

- **Boardman Municipal Code (BMC):** We are still planning the December City Council Work Session as a time for discussion of this work.

- **Tower Road:** Several actions are being taken in and near the Tower Road Interchange. The City has applied for a land division of the property we own into three parcels. That should be concluded by the middle of December give or take. The Oregon Department of Transportation is also working on the development of an Interchange Area Management Plan while at the same time preparing to do maintenance of the bridge deck, both activities that Planning staff are participating in. Also underway is the Traffic Impact Analysis work to support our zone change request for the property in City ownership.

- **Park Blocks – East and West:** Work has started to further divide the property that the City recently acquired under the BPA lines both east and west of South Main Street. The land divisions will be completed by staff with notice to adjoining property owners. The change in zoning has been initiated with 35-day notice to the Department of Land Conservation and Development. That action will require two hearings, one before the Planning Commission and the final hearing before the City Council.

- **Code Enforcement and Animal Control Program:** An annual Code Enforcement Program is being developed that will see Planning and Code Enforcement staff focus on areas of concerns throughout the year. An example would be a focus on weed management in the month of April and June focused on registration of dogs to align with the annual rabies clinic. Also to be incorporated will be the regular solid waste voucher months.

Planning Reviews and Approvals: My intent here will be to add Planning Department actions that end in an approval for development. I will be cautious to protect the City Council's role as the appeal body for any local decisions. And if there haven't been any decisions this section may be blank.

- ✓ **Devin Replat:** A replat has recently been approved for the property at the corner of SW Front and South Main to allow for redevelopment of that property. We are anticipating an application for development, but nothing has been received as of this writing.

- ✓ **Homes, homes, and more homes:** Over the past several months upwards of 15 new homes have been permitted in both River Ridge and Tuscany. While development slowed for a while it never stopped and with the entry of Pro-Made Homes into the Boardman market building seems to have picked back up.

Oregon Department of Transportation Oct

Open House Invitation

Tower Road Interchange Bridge over I-84

The Oregon Department of Transportation is designing a project to replace the surface of the Tower Road bridge over Interstate 84.

PURPOSE:
In anticipation of construction activities in 2026, we will host an in-person open house with affected businesses to discuss project plans, schedules and impacts.

ODOT staff will be available to talk with you and answer your questions about the project and what it means for you and your business.

We will not hold a formal presentation, so feel free to join us anytime between 4 p.m. and 6 p.m.

DATE & TIME:

- Wednesday, Nov. 6, 2024
- 4 p.m. to 6 p.m.

LOCATION:

- Port of Morrow,
  Riverfront Center | Riverfront Room
  2 East Marine Drive, Boardman, OR 97818

FOR ACCESSIBILITY:
Meetings are open to everyone, and accommodations will be provided to people with disabilities. Meeting information is available in an alternate format upon request. Please make such requests at least 48 hours before meetings.

For more information contact Vicki Moles, ODOT Community Affairs Specialist
541-620-4527 | vicki.l.moles@odot.oregon.gov

City Manager October Report

The following October report will give an overview of the objectives accomplished this past month, as well as future plans:

1. The current strategic planning effort is going to be converted to a Master Plan. This Master Plan will define the city's goals for growth and development for the next five to twenty years. It will inform the Capital Improvement Plan (CIP), Economic Opportunity Analysis (EOA), Transportation System Plan (TSP), Housing Needs Analysis (HNA), Comprehensive Plan, Development Code and Parks Master Plan. This plan will also assist the council in establishing short- and long-term goals to inform the growth and development of the city.
2. Reminder City Hall will be closed for two days on November 14th and 15th to allow staff uninterrupted time to assess current and historical records.
3. The city's initiative, "Keep Boardman Clean", has allocated 66 vouchers. Boardman continues to work at collaborating with community member and various stake holders. Our plan utilizes three main clean-up periods spearheaded by different entities during Spring, Summer and Fall. We will continue to evaluate the best use of the city's resources in regards to our voucher program.
4. Safety Update:
    a. City staff held annual safety table top discussion- emergency response
    b. *During the LOC annual conference in Bend, The City of Boardman was awarded the **CIS LOC Excellent in Safety***.
    c. *City Manager and Public Works Director completed quarterly safety inspections*.
5. Community Outreach….(This will be a regular section that I will include with each report. This is a way for myself and the council to keep in mind the importance of ongoing outreach to our community and highlight what has been done and will be upcoming for the future.)
    A. Smith Security
    B. Blue Mountain Community College
    C. Morrow County Transportation
    D. Regional Manager Mtg
    E. Port of Morrow Commission Mtg
    F. Department of Environmental Quality Discussion
    G. BCDA
    H. Oregon City Managers Mtg
    I. FEMA Discussion
    J. Senior Center Visit
    K. BPA Discussion
    L. LOC Annual Conference
    M. Army Corp of Engineers
    N. LOC Small Cities Mtg
    O. North Morrow Times
    P. Cities-County-Port Mtg
    Q. CIS Supervisor Skills

CAPITAL IMPROVEMENT PROJECTS
2024-25

General	**PROGRESS**	**Cost Estimate**
BPA Greenspace	In Design	$440,000
Surplus Old City Shop	Complete	$75,000
Planning		
Strategic Planning	In Process	$50,000
Economic Opportunity Analysis	In Process	$60,000
Transportation System Plan	In Process	Grant Funded
Parks Master Plan	In Process	$40,000
Development Code	PAC Selection	$150,000
Municipal Code	In-House	---
Housing Need Analysis	Waiting for state final requirements	
Public Works		
Maintenance Shop	In Construction	$350,000
Streets/Sidewalk		
SE Front St	Complete	$1,500,000
Wilson & Faler Sidewalk	In construction	$400,000
S Main	Developing scope	$2,500,000
Boardman Ave & N Main	Approval process	$1,000,000
Water/Wastewater		
Bio Solids Removal	Summer 2025	$1,250,000
Headworks Screen & Septage Receiving Station	Ordered headworks	$1,050,000
NW Columbia Ave	In construction	$1,300,000

MORROW COUNTY STATEMENT OF TAXES 2023-24

Taxing District	Assessed Value	Permanent Rate	Billing Rate	Loss Due To Measure 5	Total Amount To Be Collected
101 Morrow County	3,951,991,119	4.1347	4.1347	-290,747.30	16,110,727.00
514 Ione School District Bonds	219,294,803		3.6478	0.00	800,276.31
515 Boardman Urban Renewal Agency	5,265,951			-7,446.81	78,930.08
516 Umatilla Morrow Radio & Data District	3,951,991,119	0.1700	0.1700	-11,960.65	660,404.12
519 West Boardman Urban Renewal Area	6,275,837			-8,877.62	94,093.37
617 Health District	3,951,991,119	0.6050	0.6050	-42,550.74	2,350,098.19
618 Health District Local Option	3,963,532,907	0.0000	0.3900	-239,000.95	1,307,806.18
621 City of Boardman Bonds	724,778,426		1.8885	0.00	1,369,195.42
623 City of Irrigon Bonds	79,956,590		1.7021	0.00	136,284.73
624 Town of Lexington Bonds	13,606,211		1.0289	0.00	14,030.16
625 Boardman Parks Bond	2,660,101,267		0.3460	0.00	920,760.08
630 Port of Morrow	3,951,991,119	0.0841	0.0841	-5,916.10	326,696.70
631 City of Boardman	713,236,638	4.2114	4.2114	-258,926.94	2,745,923.12
632 City of Heppner	66,559,509	10.6209	10.6209	-84,870.79	622,051.21
633 City of Ione	18,981,489	4.4288	4.4288	-1,712.84	82,756.09
634 City of Irrigon	79,956,590	3.6782	3.6782	-1,647.75	292,860.74
635 Town of Lexington	13,606,211	0.7289	0.7289	-0.30	9,939.06
636 Boardman RFD	3,238,495,115	0.7464	0.7464	-45,879.04	2,373,017.85
637 Town of Lexington Local Option	13,606,211		2.0000	-2.00	27,270.31
638 Heppner RFD	111,321,181	0.7906	0.7906	-2.47	88,008.23
639 Irrigon RFD	202,104,363	0.8389	0.8389	-381.56	169,478.20
640 Ione RFD	259,226,850	0.7385	0.7385	-286.33	191,232.82
641 South Gilliam County RFD	416,419	0.3332	0.3332	0.00	138.75
642 Boardman Cemetery	2,646,544,356	0.0284	0.0284	-1,749.27	73,480.01
643 Heppner Cemetery	135,453,054	0.5413	0.5413	-4,326.89	68,993.87
644 Ione-Lexington Cemetery	307,416,619	0.2401	0.2401	-93.14	73,750.80
645 Irrigon Cemetery	337,768,681	0.1022	0.1022	-46.49	34,541.15
646 Willow Creek Park	554,850,141	0.3813	0.3813	-3,196.00	208,420.93
647 Boardman Parks	2,648,559,479	0.2989	0.2989	-18,386.60	773,699.44
648 Irrigon Parks	337,768,681	0.4061	0.4061	-184.71	137,252.10
650 Morrow Unified Recreation District	3,951,991,119	0.4560	0.4560	-32,068.95	1,771,285.14
651 Heppner Water Control	90,939,582	0.1693	0.1693	-1,353.10	14,043.97
652 Mo. Co. School District #1	3,732,696,316	4.0342	4.0342	-507,919.79	14,560,825.98
654 Intermountain ESD	3,951,991,119	0.6156	0.6156	-82,269.85	2,352,274.38
658 Blue Mountain CC	3,951,991,119	0.6611	0.6611	-88,348.34	2,526,076.27
659 Blue Mountain CC Bonds	3,963,532,907		0.1862	0.00	738,501.92
660 N Morrow Vector Control	3,395,945,685	0.1899	0.1899	-11,769.23	633,685.61
661 N Morrow Vector Control Local Option	3,407,487,473		0.1000	-56,632.23	284,368.11
662 Ione Library District	217,663,616	0.2500	0.2500	-96.69	54,342.65
663 Oregon Trail Library	3,551,052,252	0.2536	0.2536	-17,742.54	883,539.24
683 Pilot Rock RFD	1,284,517	0.7807	0.7807	0.00	1,002.85
684 Pilot Rock RFD Local Option	1,284,517		0.8200	0.00	1,053.30
688 Ione School District	219,294,803	4.0342	4.0342	-31,204.03	853,842.75
689 Heppner Rural Fire District Bond	111,321,181		0.3054	0.00	33,997.55
690 City of Heppner Fire Bond	66,559,509		0.7491	0.00	49,859.91
691 Boardman RFD Bond	3,250,036,903		0.1498	0.00	487,173.34
				-1,857,598.04	57,387,989.99

I, Michael Gorman, Assessor/Tax Collector of Morrow County do hereby certify the assessed valuation, tax levies, and tax rates set forth in this summary are true and correct copies as they appear on file in the Office of the Morrow County Assessor & Tax Collector.

Dated this 20th day of October, 2023, in Heppner, Oregon.

Michael Gorman

State Fire Patrol	319,932.61
MH Ombudsman	6,590.00
MH Omb Compression Loss	-892.62
	57,713,619.98

Real Property	35,826,929.11
Personal Property	11,690,971.43
Manufactured Structures	375,159.75
Utilities	9,820,559.69
	57,713,6

MORROW COUNTY STATEMENT OF TAXES 2024-25

Taxing District	Assessed Value	Permanent Rate	Billing Rate	Loss Due To Measure 5	Total Amount To Be Collected
101 Morrow County	3,939,426,727	4.1347	4.1347	-296,272.11	16,066,442.66
514 Ione School District Bonds	218,119,264		3.7006	0.00	807,630.33
515 Boardman Urban Renewal Agency	10,481,639			-15,326.62	156,983.71
516 Umatilla Morrow Radio & Data District	3,669,426,727	0.1700	0.1700	-12,189.55	658,613.42
519 West Boardman Urban Renewal Area	8,224,659			-12,017.52	123,089.83
520 North Boardman Urban Renewal Area	5,784,041			-8,440.37	86,451.21
617 Health District	3,939,426,727	0.6050	0.6050	-43,354.86	2,343,626.38
618 Health District Local Option	3,693,917,066	0.0000	0.3900	-238,482.56	1,309,749.41
621 City of Boardman Bonds	753,256,282		1.3389	0.00	1,010,594.13
623 City of Irrigon Bonds	83,573,456		2.4503	0.00	204,779.94
624 Town of Lexington Bonds	13,506,458		1.0365	0.00	13,999.39
625 Boardman Parks Bond	2,622,366,838		0.3112	0.00	816,602.17
630 Port of Morrow	3,939,426,727	0.0841	0.0841	-6,035.13	325,868.33
631 City of Boardman	728,765,943	4.2114	4.2114	-272,950.84	2,802,742.41
632 City of Heppner	67,590,972	10.6209	10.6209	-64,104.03	656,688.04
633 City of Ione	20,037,468	4.4288	4.4288	-1,944.74	87,164.46
634 City of Irrigon	83,573,456	3.6782	3.6782	-1,309.72	306,090.23
635 Town of Lexington	13,509,458	0.7289	0.7289	-0.30	9,844.49
636 Boardman RFD	3,200,138,410	0.7464	0.7464	-48,359.04	2,344,024.56
637 Town of Lexington Local Option	13,506,458		2.0000	-2.00	27,010.92
638 Heppner RFD	113,786,932	0.7906	0.7906	-2.47	89,957.49
639 Irrigon RFD	209,832,614	0.8389	0.8389	-303.55	176,227.09
640 Ione RFD	267,547,970	0.7385	0.7385	-324.96	197,347.99
641 South Gilliam County RFD	428,480	0.3332	0.3332	0.00	142.78
642 Boardman Cemetery	2,595,770,384	0.0284	0.0284	-1,848.83	72,012.13
643 Heppner Cemetery	140,018,296	0.5413	0.5413	-3,268.47	72,672.08
644 Ione-Lexington Cemetery	313,572,249	0.2401	0.2401	-105.74	75,212.51
645 Irrigon Cemetery	351,841,111	0.1022	0.1022	-36.97	36,222.62
646 Willow Creek Park	564,438,455	0.3813	0.3813	-2,470.43	212,901.85
647 Boardman Parks	2,597,876,499	0.2989	0.2989	-19,386.75	757,783.05
648 Irrigon Parks	351,841,111	0.4061	0.4061	-147.08	143,933.59
650 Morrow Unified Recreation District	3,939,426,727	0.4560	0.4560	-32,682.24	1,766,485.50
651 Heppner Water Control	92,213,237	0.1693	0.1693	-1,022.00	14,637.43
652 Mo. Co. School District #1	3,721,307,463	4.0342	4.0342	-582,493.63	14,453,465.58
654 Intermountain ESD	3,939,426,727	0.6156	0.6156	-93,712.24	2,335,123.97
658 Blue Mountain CC	3,939,426,727	0.6611	0.6611	-100,639.35	2,507,769.32
659 Blue Mountain CC Bonds	3,963,917,066		0.1798	0.00	713,774.81
660 N Morrow Vector Control	3,371,529,064	0.1899	0.1899	-12,388.26	629,042.96
661 N Morrow Vector Control Local Option	3,396,019,403		0.1000	-57,433.28	282,721.81
662 Ione Library District	217,663,616	0.2500	0.2500	-109.76	54,035.96
663 Oregon Trail Library	3,534,659,502	0.2536	0.2536	-18,069.05	879,897.30
683 Pilot Rock RFD	3,779,986	0.7807	0.7807	0.00	2,951.07
684 Pilot Rock RFD Local Option	3,779,986		0.8200	0.00	3,099.60
688 Ione School District	218,119,264	4.0342	4.0342	-31,618.42	848,817.80
689 Heppner Rural Fire District Bond	113,786,932		0.2988	0.00	33,999.75
690 City of Heppner Fire Bond	67,590,972		0.7377	0.00	50,064.59
691 Boardman RFD Bond	3,224,628,749		0.2325	0.00	750,868.94
				-1,943,068.36	57,319,165.59

I, Michael Gorman, Assessor/Tax Collector of Morrow County do hereby certify the assessed valuation, tax levies, and tax rates set forth in this summary are true and correct copies as they appear on file in the Office of the Morrow County Assessor & Tax Collector.

Dated this 23th day of October, 2023, in Heppner, Oregon.

Michael Gorman

State Fire Patrol	310,574.55
MH Ombudsman	6,610.00
MH Omb Compression Loss	-222.71
	57,636,127.43
Real Property	39,360,723.98
Personal Property	8,189,094.83
Manufactured Structures	385,335.84
Utilities	9,700,972.78
	57,636,12