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Memorandum

TO:	Cheryl Jarvis-Smith (ODOT), Barry Beyeler (City of Boardman)		
FROM:	Carl Springer, Pam O'Brien – DKS Associates		
DATE:	October 17, 2006		
SUBJECT:	Task 2a – Existing Conditions Analysis for Boardman IAMPs and TSP Update	P/A No.	06097-005-001

Inventory

This technical memorandum provides an inventory and evaluation of transportation facilities within the IAMP study areas, 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

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 Interchange Area Management Plans (IAMPs) focus on the land uses and circulation patterns that affect operations and safety at the two interchanges with I-84. An 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 two interchanges, and the second is the *management area*, which are the adjoining land uses and circulation systems within the immediate area of the interchange. For the two Boardman IAMPs, the influence area includes the entire city of Boardman and the Port of Morrow. Future development in either of these realms will be considered in assessing the long-range needs and solutions within the two interchanges. The management areas are

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more narrowly focused on the land uses in close proximity, as defined by Oregon Department of Transportation (ODOT) standards and guidelines. The selected geographic boundaries for the each IAMP study areas are as discussed below and shown in Figure 1.

I-84/Main Street Interchange

The interchange management study area limits generally extend one-quarter mile north and one-quarter mile south of I-84 along Main Street, and include all the properties fronting onto Main Street, plus other properties that take access onto side streets to Main Street within one block. The north management area boundary is the railroad tracks north of Marine Drive and the south boundary is SW City Center Drive.

Within the I-84/Main Street IAMP study area, most lands are zoned for commercial uses. Some parcels are fully developed, but a considerable portion are either vacant or could be redeveloped. North of I-84 along the west side of Main Street, there is a section of residential units that take direct access onto Main Street. The local high school is located on the east side of the street.

I-84/Laurel Lane Interchange

The interchange management study area limits are one-quarter mile north and one-quarter mile south of I-84 along Laurel Lane. Directly north of I-84, Laurel Lane intersects Columbia Avenue, roughly 200 feet from the freeway ramp terminals. Therefore the management area was extended to form two north boundaries, one to the west along Columbia Avenue and one to the east on Columbia Avneue. The south boundary is one-quarter mile south of I-84, just south of the city limit line.

Lands within the I-84/Laurel Lane IAMP study area, are zoned Service Center (Commercial) or Industrial.The character of this interchange differs significantly from Main Street for several reasons. The size of the parcels are much larger, and the spacing of existing driveway and roadway connection is much greater when compared to the current access schemes along Main Street. At the very southern end of the Laurel Lane study area, where the boundary extends into rural Morrow County, the land is zoned Small Farm.

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 1 and 2. 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.

Table 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

Table 2: Study Area Roadways for Laurel Lane IAMP

ODOT Jurisdiction		
Roadway	**Limits**	**Functional Classification**
I-84	Laurel Lane Interchange	Interstate highway on National Highway System and Freight Route
City of Boardman Jurisdiction		
Roadway	**Limits**	**Functional Classification**
Laurel Lane	City Limits - Columbia Avenue	Minor collector
Columbia Avenue	Ullman Boulevard – RR tracks	Arterial

NO SCALE

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Figure 1

STUDY AREA

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 nine intersections within the City in the fall of 2006.

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

- I-84 EB Ramp at Main Street
- I-84 WB Ramp at Main Street
- I-84 EB Ramp at Laurel Lane
- I-84 WB Ramp at Laurel Lane.

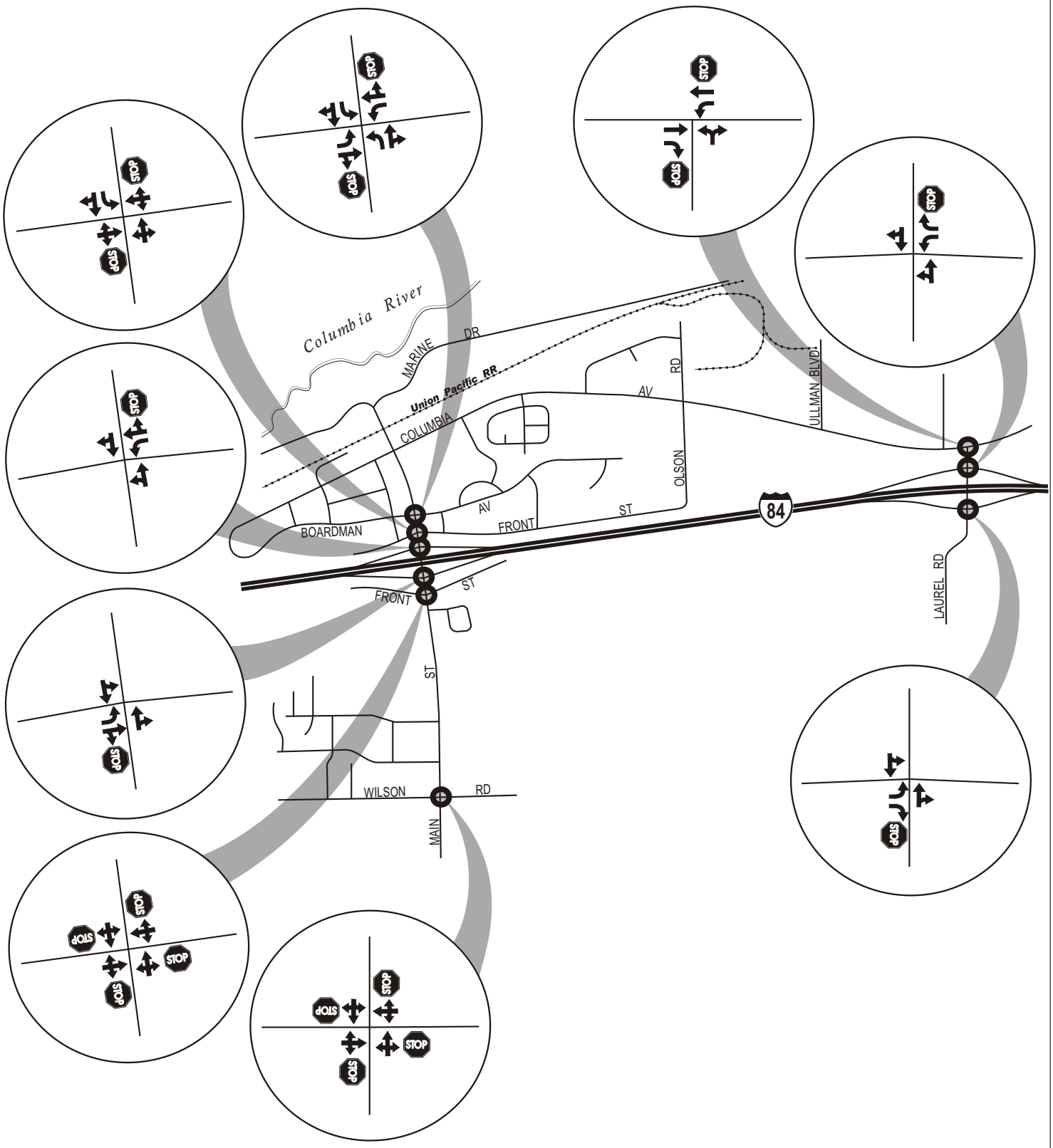
PM Peak Hour turning movement counts were collected at five additional intersections within the City:

- Main Street at Boardman Avenue
- Main Street at Front Street (north)
- Main Street at Front Street (south)
- Laurel Lane at Columbia Avenue
- Main Street at Wilson Road

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.

It should be noted that the overall peak hour for the two intersections at the Laurel Lane interchange ramps did not occur during the conventional PM Peak. The peak hour at the I-84 EB Ramp at Laurel Lane occurred from 2:45 to 3:45 PM and the peak hour at the I-84 WB Ramp at Laurel Lane occurred from 6:30 to 7:30 AM. The most likely reason the traffic volume peak is earlier than other intersections is that the Laurel Lane interchange is used to access the industrial land north of I-84. Workers use the I-84 WB Ramp to go to work in the morning and use the I-84 EB ramp when leaving work at the end of the day.

The existing peak hour volumes were adjusted using the ODOT seasonal trend table. There are no automatic traffic recorders with similar characteristics nearby. A combination of Interstate and Agriculture trends was used to determine the seasonal factor. The adjusted PM Peak hour volume data is shown in Figure 3.



LEGEND

- Study Intersection
- Lane Configuration
- Stop Sign

City of Boardman IAMP
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NO SCALE

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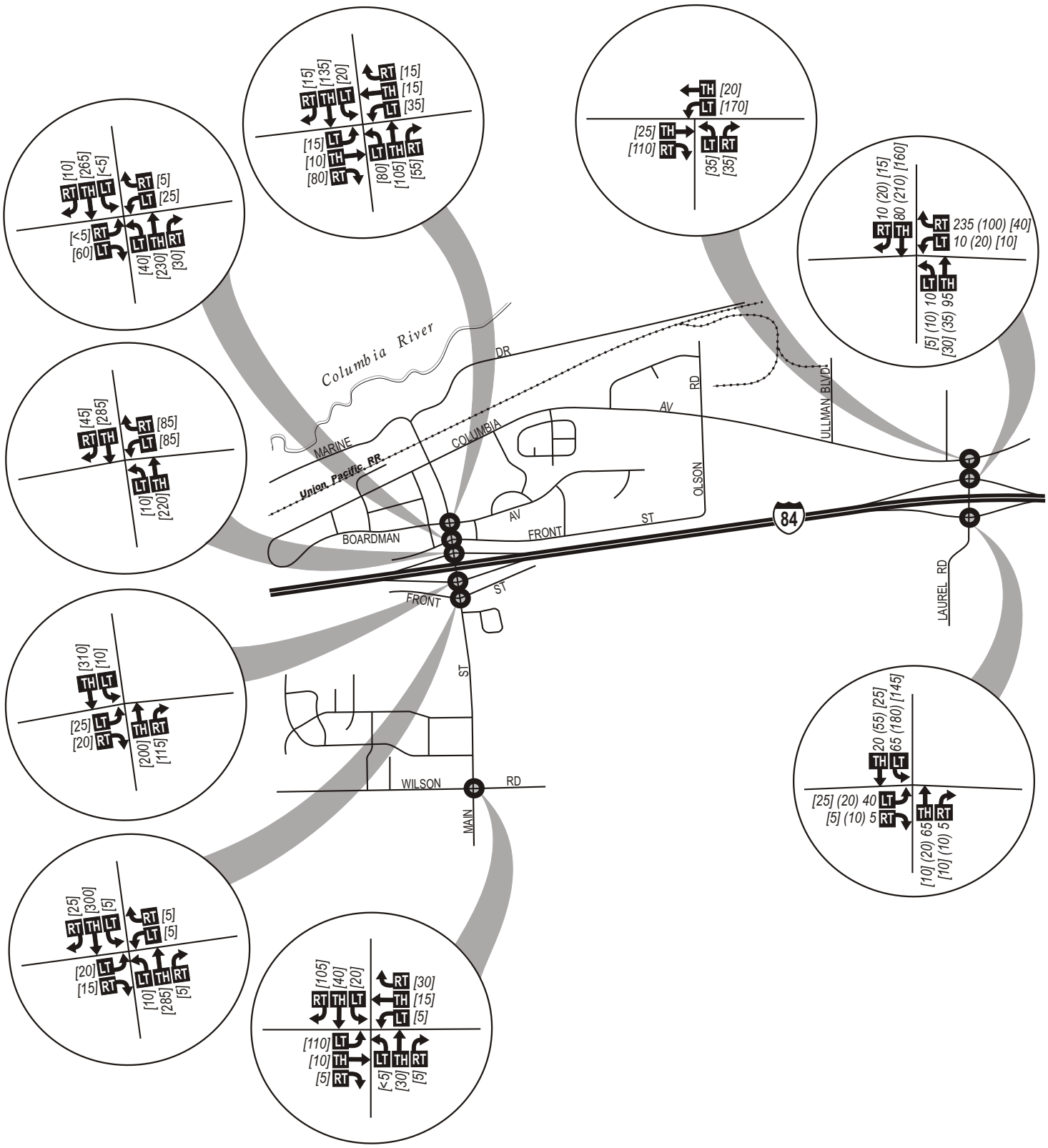
Figure 2

EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROL DEVICES



LEGEND

- Study Intersection

AM (Midday) [PM] - Peak Hour Traffic Volumes
- *AM Peak* - 6:30-7:30 am
- (*Midday*) *Peak* - 2:45-3:45 pm
- [*PM*] *Peak* - 4:05-5:05 pm

LT TH RT - Volume Turn Movement
Left•Thru•Right

City of Boardman IAMP
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NO SCALE

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Figure 3

2006 EXISTING WEEKDAY PEAK HOURS TRAFFIC VOLUMES

Study Area Roadway Capacity & Level of Service

Study intersections within the IAMP areas were analyzed using *Highway Capacity Manual*[1] methodologies for unsignalized intersections for comparison with the applicable jurisdiction's adopted performance standards identified in Technical Memorandum #1.

The traffic volume data shown in Figure 3 was used in the analysis. The percentage of heavy vehicles at each intersection was calculated and used in the analysis. From this analysis, intersection levels of service and volume to capacity ratios were obtained.

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 level of service "C" or better during the peak 15 minutes of the peak hour of the average weekday. (City please verify this standard)

Table 3 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). As can be seen from this table, none of the intersections fail to operate within acceptable standards.

Table 3: Weekday PM Peak Hour Intersection Level of Service Main Street IAMP Area

Intersection	Critical Movement	Volume / Capacity	Critical Movement Level of Service	Major Street Level of Service
I-84 EB Ramp/Main Street	Eastbound	0.09	B	A
I-84 WB Ramp/Main Street	Westbound	0.21	B	A
Main Street/Boardman Ave	Westbound	0.12	C	A
Main Street/Front Street (north)	Westbound	0.11	C	A
Main Street/Front Street (south)	Eastbound	0.08	B	B

The intersections of Laurel Lane & I-84 EB Ramps and Laurel Lane & I-84 WB Ramps had a peak hour outside of the PM Peak hour observed at the Main Street intersections. The peak hour at Laurel Lane & I-84 EB Ramp was from 2:45 pm – 3:45 pm and the peak hour at Laurel Lane & I-84 WB Ramp was from 6:30 am – 7:30 am. Both of these intersections were analyzed using AM, Midday and PM peak hour volumes. From this analysis, intersection levels of service and volume to capacity ratios were evaluated.

Table 4 shows the existing operational analysis for the unsignalized intersections within the Laurel Lane IAMP study area. Note that the results shown represent the critical

[1] *Highway Capacity Manual*, Transportation Research Board, Washington, D.C., 2000.

movement at each intersection (usually a stop-controlled movement, such as a side-street left turn or crossing movement). As can be seen from this table, none of the intersections fail to operate within acceptable standards.

Table 4: Weekday Peak Hour Intersection Level of Service Laurel Lane IAMP

Intersection / (Peak Period)	Critical Movement	Volume / Capacity	Critical Movement LOS	Major Street LOS
I-84 EB Ramp/Laurel Road (6:30 – 7:30 am)	Eastbound	0.08	B	A
I-84 WB Ramp/Laurel Road (6:30 – 7:30 am)	Westbound	0.38	B	A
I-84 EB Ramp/Laurel Road (2:45 – 3:45 pm)	Eastbound	0.10	B	A
I-84 WB Ramp/Laurel Road (2:45 – 3:45 pm)	Westbound	0.12	A	A
I-84 EB Ramp/Laurel Lane (4:05 – 5:05 pm)	Eastbound	0.06	B	A
I-84 WB Ramp/Laurel Lane (4:05 – 5:05 pm)	Westbound	0.06	B	A
Laurel Road/Columbia Ave	Westbound	0.15	B	A

Heavy Vehicles

The percentage of heavy truck vehicles observed at local intersections was much 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 observed 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 percentage of heavy vehicles at the study intersections along Main Street was a bit higher than average, between 4 and 9 percent of total traffic. The actual number of heavy vehicles entering the intersections was not above average, but compared to the total number of vehicles at the intersections, the percentage is higher than average. The Laurel Lane interchange had roughly half the hourly traffic, compared to the Main Street interchange, but roughly the same volume of large trucks. On a percentage basis, the percent of large trucks at Laurel Lane was double that observed along Main Street.

On the next page, Table 5 shows the PM Peak hour heavy vehicle percentages at the Main Street IAMP study area intersections. Table 6 shows the heavy vehicle percentages for the AM, Midday and PM Peak hours at the Laurel Lane IAMP study area intersections.

Table 5: Weekday PM Peak Hour Volumes Within Main Street IAMP Study Area

Intersection	Total Vehicles	Heavy Vehicle	Heavy Vehicle %
I-84 EB Ramp/Main Street	682	45	7 %
I-84 WB Ramp/Main Street	671	62	9 %
Main Street/Boardman Ave	541	36	7 %
Main Street/Front Street (north)	627	51	8 %
Main Street/Front Street (south)	617	37	6 %
Main Street/Wilson Road	358	14	4 %

Table 6: Weekday Peak Hour Volumes Within Laurel Lane IAMP Study Area

Intersection	Total Vehicles	Heavy Vehicle	Heavy Vehicle %
AM Peak Hour			
I-84 EB Ramp/Laurel Road	181	34	19 %
I-84 WB Ramp/Laurel Road	402	61	15 %
Midday Peak Hour			
I-84 EB Ramp/Laurel Road	267	49	18 %
I-84 WB Ramp/Laurel Road	362	70	19 %
PM Peak Hour			
I-84 EB Ramp/Laurel Road	209	35	17 %
I-84 WB Ramp/Laurel Road	240	46	19 %
Laurel Road/Columbia Avenue	273	47	17 %

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 effects 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. The spacing between the intersections of I-84 EB/Laurel Lane and Laurel Lane/Columbia Avenue is very short and may possibly create operational issues between the trucks going in different directions.

Crash Analysis

The last five years (2000 – 2004) of available crash data for the entire City of Boardman was obtained from the ODOT Crash Analysis and Reporting Unit. The crashes within the

interchange study areas for Main Street and Laurel Lane were analyzed and are listed in Table 5.

Table 5: Study Intersection Collision Data by Type

Intersection	Backing Parking Maneuver		Pedestrian/ Bicycle	Angle	Side-swipe/ Over-taking	Rear-End	Turning Movement	Fixed Object	Total	Fatality	Injury	Property Damage	Accident Rate*
Main Street IAMP Study Area													
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
Main Street/Kinkade Road	-	-	-	-	1	-	-	-	**1**	-	-	1	No volume
Laurel Lane IAMP Study Area													
I-84 EB Ramp/Laurel Road	-	-	-	-	-	-	-	-	-	-	-	-	0.0
I-84 WB Ramp/Laurel Road	-	-	-	-	-	1	-	-	-	-	-	1	0.30
Laurel Road/Columbia Avenue	-	-	-	-	-	-	-	-	**-**	-	-	-	0.0
Total Collisions	**2**	**1**	**1**	**6**	**1**	**6**	**1**	**2**	**20**	**0**	**5**	**15**	

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. Since the roadways within the study areas are not state highways, the SPIS listing does not apply to these roadways.

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 recommended.

The intersection of Main Street and Marine Drive is outside of the IAMP management study area, however, it was found that the accident rate was over 3.0. This rate was based on factoring up the PM peak hour volume to develop the ADT, since no recent daily volumes were available. The volumes at this intersection are extremely low and there were four accidents within the last five years. This intersection should be evaluated to determine if any safety measures can be implemented.

Local Circulation

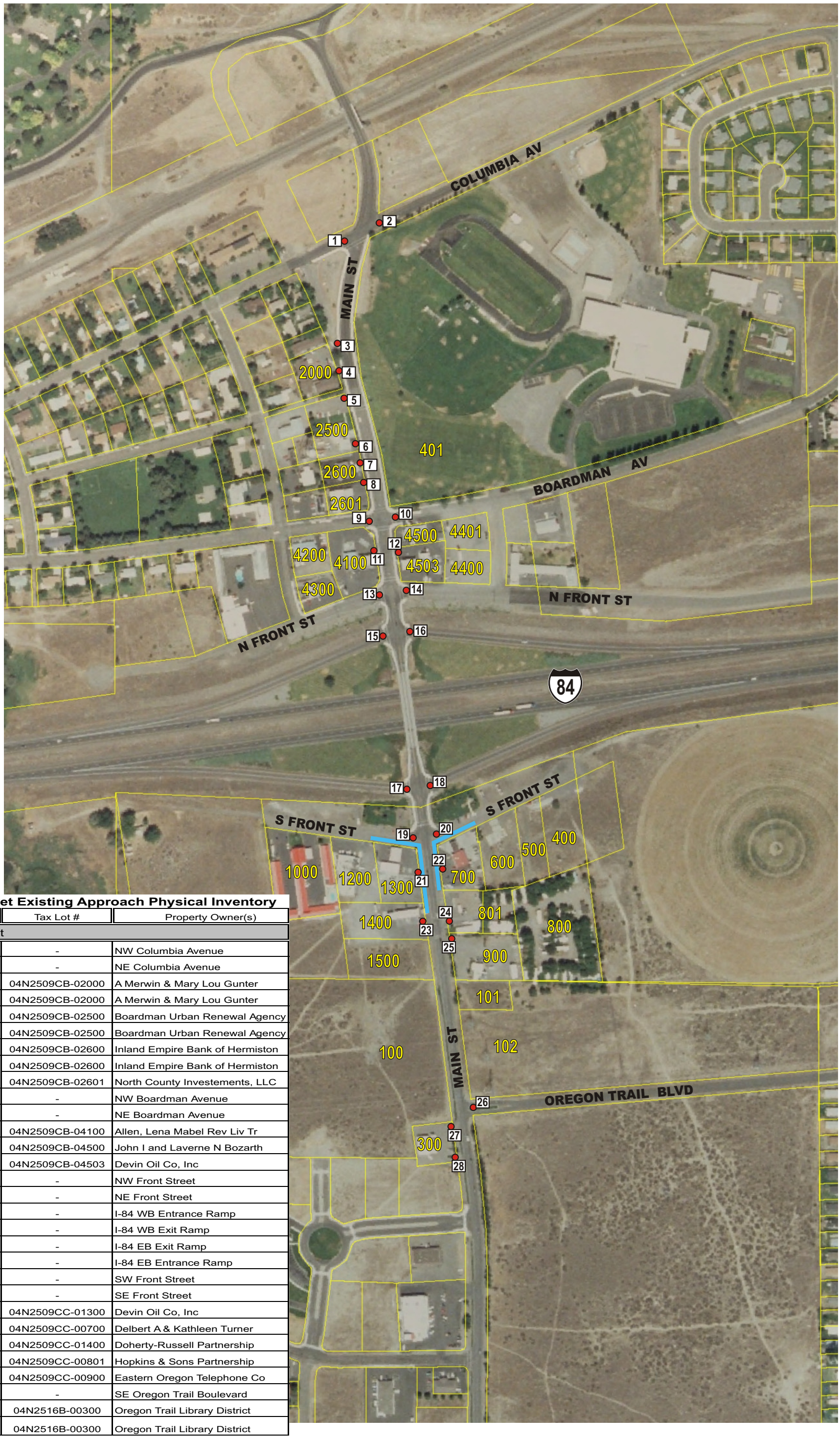
An inventory of the existing access points along Main Street and Laurel Lane/Columbia Avenue was compiled for the management areas. Access to these roadways is in the form of private driveways, public easements, and public roadways.

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. 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. The access spacing along Main Street and Laurel Lane do not meet the ODOT standards.

Main Street IAMP Study Area

Figure 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



Main Street Existing Approach Physical Inventory

Approach #	Tax Lot #	Property Owner(s)
Main Street		
1	-	NW Columbia Avenue
2	-	NE Columbia Avenue
3	04N2509CB-02000	A Merwin & Mary Lou Gunter
4	04N2509CB-02000	A Merwin & Mary Lou Gunter
5	04N2509CB-02500	Boardman Urban Renewal Agency
6	04N2509CB-02500	Boardman Urban Renewal Agency
7	04N2509CB-02600	Inland Empire Bank of Hermiston
8	04N2509CB-02600	Inland Empire Bank of Hermiston
	04N2509CB-02601	North County Investements, LLC
9	-	NW Boardman Avenue
10	-	NE Boardman Avenue
11	04N2509CB-04100	Allen, Lena Mabel Rev Liv Tr
12	04N2509CB-04500	John I and Laverne N Bozarth
	04N2509CB-04503	Devin Oil Co, Inc
13	-	NW Front Street
14	-	NE Front Street
15	-	I-84 WB Entrance Ramp
16	-	I-84 WB Exit Ramp
17	-	I-84 EB Exit Ramp
18	-	I-84 EB Entrance Ramp
19	-	SW Front Street
20	-	SE Front Street
21	04N2509CC-01300	Devin Oil Co, Inc
22	04N2509CC-00700	Delbert A & Kathleen Turner
23	04N2509CC-01400	Doherty-Russell Partnership
24	04N2509CC-00801	Hopkins & Sons Partnership
25	04N2509CC-00900	Eastern Oregon Telephone Co
26	-	SE Oregon Trail Boulevard
27	04N2516B-00300	Oregon Trail Library District
28	04N2516B-00300	Oregon Trail Library District

LEGEND

0 - Access Location & Number

- No Access Control

000 - Tax Lot ID#

SCALE: 1"=400' (Approx.)

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City of Boardman IAMP
October 2006

Figure 4

Main Street IAMP

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 also with pedestrians. The close spacing of N. Front Street and S. Front Street to the I-84 Ramp intersections also 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. There needs to be access to the line for maintenance purposes.

Laurel Lane IAMP Study Area

Figure 5 shows the access points in the Laurel Lane IAMP management study area. Laurel Lane tees into Columbia Avenue less than 200 feet north of the I-84 WB Ramp/Laurel Lane intersection. This short distance between the intersections and the geometry of the Laurel Lane/Columbia Avenue intersection can make it difficult for trucks to access the area. The land north of I-84 at the Laurel Lane interchange is zone Industrial and the percentage of heavy vehicles that use this interchange is higher than average, so the access spacing and intersection geometry must keep this in mind.

Laurel Lane south of I-84 has three private access points and two access points to the BPA power line. The first driveway south of I-84 provides access to a fueling station frequently used by the trucks that are also serving the land north of I-84. The driveway is located less than 300 feet south of the I-84 EB Ramp/Laurel Lane intersection. The BPA power line crosses Laurel Lane approximately one-quarter mile south of I-84. There needs to be access to the line for maintenance purposes.

Issues to be Addressed

- The intersections in the Laurel Lane IAMP study area need to be designed for heavy vehicles, due to the large number of trucks that use the interchange.
- Reduce number of conflict points on roadways. 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 need to evaluated.
- The interchange access management standards adopted by ODOT shall be addressed when land is redeveloped in the Main Street and Laurel Lane IAMP study areas.
- 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.

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 was conducted along the city streets. 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.

The City has applied for Transportation Enhancement Funding 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 proposed project will provide sidewalk and bike lanes and will improve the north-south connectivity for pedestrians and cyclists.

Figure 6 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. The identified pedestrian issues are summarized below.

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.

According to the 1995 Oregon Bicycle and Pedestrian Plan, streets with low vehicle volumes (under 3,000 average daily traffic) and slow speeds (25 miles per hour or less) do not require designated bike lanes, as right of way under these conditions can be shared between motor vehicles and bicyclists. The identified bicycle issues are summarized below.

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.
- Continuity and quality of sidewalks on Laurel Lane under I-84. There are no pedestrian facilities on Laurel Lane.

Continuity and quality of sidewalks for East-West movement. There are no pedestrian facilities on Columbia Avenue.

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.

Deficiencies in the existing bicycle facility network include:

The overall system of bike lanes provides poor connectivity between different areas of the city. It is desirable to provide between activity centers, such as the schools and the library, to provide safe and attractive non-motorized travel options.

East-west connectivity for bicycle traffic is poor.

Laurel Lane/Columbia Avenue Existing Approach Physical Inventory

Approach #	Tax Lot #	Property Owner(s)
Laurel Lane		
1	-	I-84 EB Entrance Ramp
2	-	I-84 EB Exit Ramp
3	-	I-84 WB Entrance Ramp
4	-	I-84 WB Exit Ramp
5	-	Roadway easement
6	04N2510-03201	Devineyards, Inc
7	04N2510-03205	Terry K & Cheryl Tallman
8	04N2510-03200	Hunter Farms, LLC
9	04N2510-03205	Terry K & Cheryl Tallman
	04N2510-03500	Alan G & Sheryl D Holmes
Columbia Avenue		
10	04N2510-01800	Oregon Potato Company
11	-	County Road Easement
12	04N2510-00200	Port of Morrow
13	-	Roadway easement
14	04N2511-00206	Port of Morrow
15	04N2511-00300	Kenn E & Mary B Evans

LEGEND

17 - Access Location & Number

000 - Tax Lot ID#

SCALE: 1"=400' (Approx.)

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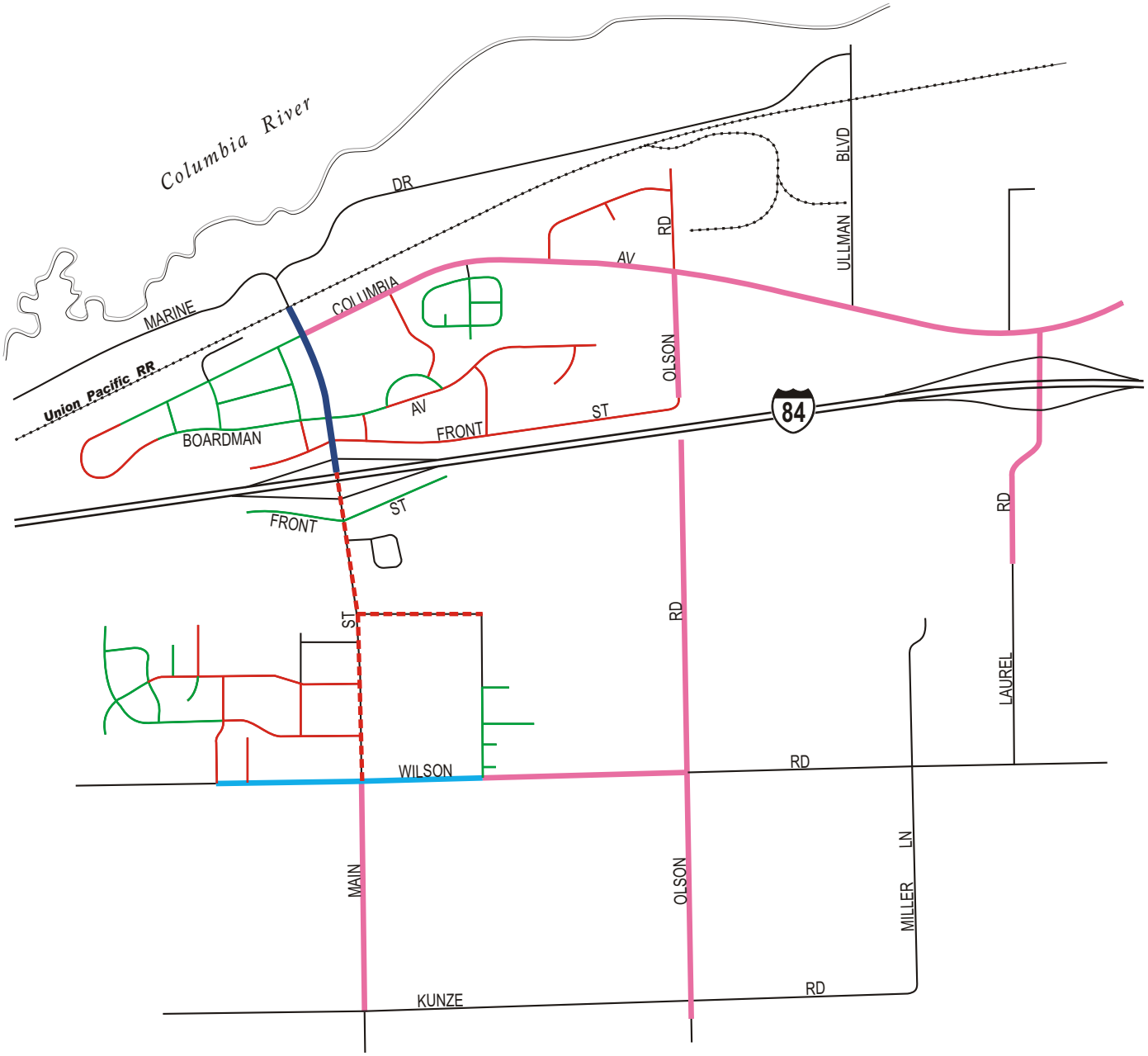
City of Boardman IAMP
October 2006

Figure 5

Laurel Lane IAMP



LEGEND

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

City of Boardman IAMP
October 2006

NO SCALE

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Figure 6

EXISTING PEDESTRIAN AND BICYCLE NETWORK

Freight

A large portion of the land north of I-84 in Boardman is zoned for Industrial. The freight transport serving this area consist 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.

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.

Based on the traffic volumes collected, the percentage of heavy vehicles at the Laurel Lane I-84 Interchange ramp intersections was much 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 5 and 6.

Issues to be Addressed

- Heavy vehicles are longer and heavier than automobiles, therefore the intersections in the Laurel Lane IAMP study area need to be designed for heavy vehicles, due to the large number of trucks that use the interchange. This includes larger radii and adequate spacing between intersections.
- The interchange access management standards adopted by ODOT shall be addressed when land is redeveloped in the Main Street and Laurel Lane IAMP study areas.