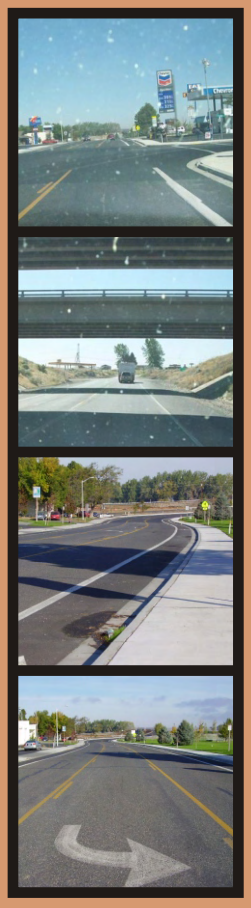
Final Report for

Boardman Interchange Area Management Plans and Transportation System Plan Update



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Chapter 1. Executive Summary

This report presents the Interchange Area Management Plans for the two interstate highway connections in the City of Boardman at Main Street and at Laurel Lane. The city relies on these two interchanges for access to Interstate 84 for nearly all of its regional trips, and uses them for intra-city travel between the north and south areas of the community. The Interchange Area Management Plans (IAMP) were developed to assure that, as the city continues to develop, these facilities will provide safe and convenient access to Boardman and the surrounding area.

This report also presents key findings that update the City of Boardman's adopted Transportation System Plan. The Transportation System Plan (TSP) updates focus on new street connectivity recommendations developed through the IAMP process, several additions to the long-term pedestrian and bicycle system to better serve the community, and development code amendments to implement new community transportation standards. The TSP updates will require a separate approval by city council to be implemented.

Plan Goals and Objectives

The primary goal of this project was to develop an IAMP for the interchanges of I-84 at Main Street (Exit 164) and Laurel Lane (Exit 165), also referred to as the Port of Morrow interchange, to keep them operating safely and efficiently as the community grows. The IAMP describes the overall study process, identifies expected safety and traffic congestion issues and alternative solutions, and lays out the implementation steps.

Objectives were identified to achieve the project goal:

1. The IAMP shall include a thorough analysis of the issues for each interchange.
2. The IAMP shall identify and assess the needs and opportunities to improve access and circulation for all modes of transportation.
3. The preparation of the IAMP and TSP update shall utilize public involvement and technical methods to develop and refine improvement options.
4. The TSP update shall update the street standards and functional classifications.
5. The IAMP and TSP update shall prioritize improvement projects.
6. The TSP Update shall develop Comprehensive Plan goals, policies, and recommendation for amending the City of Boardman's Land Use code to implement the plan.
7. The TSP update shall be forwarded through the adoption process.

The IAMP was 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. The public-at-large and any interested local business operations within the study area were notified of public meeting related to this project, and they were provided opportunities to participate outside of the formal project committee process.

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 two interchanges, and the second is the management area, which are the land uses and circulation systems immediately adjacent to interchanges.

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 realm will be considered in assessing the long-range needs and solutions within the two interchanges.

The management areas are more narrowly focused on the land uses that have more immediate impacts on roadway access, operations and safety of the interchange. The management area is reviewed in detail to develop appropriate access management and circulation improvements that can be implemented over time. The boundaries for these areas were developed based on Oregon Department of Transportation (ODOT) standards and guidelines, and then adjusted to reflect the built environment in the City of Boardman. The selected geographic boundaries for the each IAMP study areas are as discussed below and shown in Figure 1.1.

I-84 / Main Street Interchange

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.

I-84 / Laurel Lane (Port of Morrow) Interchange

The 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 Avenue (both limits are 1,000 feet from Laurel Lane). The south boundary is the southern city limit line, about 1,200 feet south of I-84.

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 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.

NO SCALE

DKS Associates
TRANSPORTATION SOLUTIONS

City of Boardman IAMP
April 2007

Figure 1.1

STUDY AREA

Transportation Issues

Roadway Access and Local Connectivity

The existing public and private access approaches to Main Street and Laurel Lane within the study area were mapped and compared to applicable standards. A total of 28 approaches to Main Street were identified, including both sides of the roadway. Refer to Figure 3.3 for more details. A total of 15 approaches to Laurel Lane were identified. Refer to Figure 3.4 for more details.

A few changes to the current access and local circulation system would be required to work towards compliance with standards. It is not expected that full compliance can be achieved, given the built environment and prevailing development pattern. Changes to access will only be initiated if the property develops (or re-develops) and there is a reasonable alternate access available.

An access management plan must be implemented to help work towards better compliance for accesses onto Main Street and Laurel Lane, 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 recommendations 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.

Safety Analysis

State, county and city streets within the study area were evaluated to identify locations where reported vehicle crashes are excessive compared to statewide averages. 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 crash data is shown in Table 3.7. 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. The crash rate at all of the intersections examined did not exceed 0.55 crashes per million entering vehicles. 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.

Roadway Performance

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 operated within the acceptable performance range. The highest traffic volumes and longest delays were observed at the Main Street interchange. Refer to Table 3.3 and 3.4 for more details.

Growth projections for 2026 were based on the current land use zoning, expected residential growth rates made by Morrow County and input from the City of Boardman staff to include local expertise and knowledge of known developments. By 2026, the city population is estimated to grow by at least 1,800 persons, which would top 5,000 total 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 20,000 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 increase by two times 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. Traffic volume growth at the Laurel Lane interchange is similar on the north side of the freeway, growing from 350 vehicles per hour to about 800 vehicles per hour by build-out. However, south of the freeway, the growth will be more modest, increasing from 100 to 270 vehicles per hour. The expected volumes and percent change over current conditions is summarized in Table 1.1 below.

Table 1.1 : Traffic Volume Growth at Boardman 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%
Laurel Lane north of I-84	350	830	137%
Laurel Lane south of I-84	100	270	170%

These future traffic volumes were evaluated to show if there would be potential roadway deficiencies, and provide a basis for evaluating alternative circulation improvements.

By 2026, two intersections are expected to exceed the applicable performance standards:

- Main Street at I-84 Westbound Ramp;
- Laurel Lane at Columbia Avenue

Alternatives were tested that could improve performance to meet minimum accepted levels, and these are presented in the next section. There are five additional intersections where the worst-movement Level of Service exceeds the city standards in the PM peak hour, including:

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

These deficiencies at these locations can be addressed through alternative traffic controls solutions in addition to enhanced street connectivity.

The Interchange Area Management Plan

The recommended IAMP is presented to address the needs and issues identified in Chapter 4. The full plan is presented in Chapter 5 of this report. The elements of the IAMP are dividing into the following sections:

- Transportation alternatives – these evaluations consider the proper improvements to the two locations identified as falling below the desired mobility standard by the horizon year (2026).
- Local Connectivity Plan – this plan (illustrated in Figure 5.4) is a conceptual plan that would be implemented by the City of Boardman as land develops, to provide alternative circulation patterns and access routes for lands within the influence area of the interchange.
- Access Management Plan – the access management strategy formed in Chapter 4 was defined for implementation. The plan provides priorities about when access changes are made, and which agency (or party) would be responsible for the improvements.
- Land Use Alternatives – One primary land use alternative was evaluated, for the purposes of this study. The aggressive non-residential growth assumed by 2026 presents a worst-case condition for Boardman traffic volumes. A sensitivity test was made for the 37-acre site east of South Main Street to investigate the net change in traffic expected with a pending rezone action. The impacts of full build-out of assumed land uses is documented in this report.
- Implementing Code Amendments – As land develops to urban levels within the IAMP areas, a system of circulation elements and access measures need to be implemented to realize the vision of this plan. The necessary amendments to the city development code are attached in the Appendix.
- Cost Estimates – The preliminary cost estimates for improvement recommended by the IAMP are presented.

Transportation Alternatives

A series of possible improvements for each of the interchanges were investigated, and recommendation made for the preferred solution based on the goals and objectives of this study. The alternatives consideration and the final recommendations are summarized below:

Main Street Interchange (Exit 164)

A variety of alternatives were investigated that could meet mobility standards, and minimize impacts to existing commercial development along Front Street and South Main Street. The alternatives considered included:

1. Expanding the existing diamond interchange

2. Constructing new ramps with direct connections to North Front Street and South Front Street.

3. Combining ramp terminals and Front Street intersection by way of a new roundabout design.

The preferred alternative selected was Alternative 1: Expanding the existing diamond interchange. Specifically, this would include construction of traffic and pedestrian signal controls at the westbound off-ramp to Main Street. Also, the westbound off-ramp would be widened to provide for two lanes on the approach: one for left-turns, and one shared lane for through and right-turns. These improvements would mitigate 2026 conditions to acceptable performance levels. Preliminary signal warrants are met for Case A in the future year.

The Main Street highway overpass bridge should be widened to accommodate the left-turn lanes, and standard width bike lanes and wider sidewalks, which would in turn improve the sight

distance for drivers on the exit ramp approaches. The eastbound and westbound I-84 exit ramps should also be widened to accommodate separate left- and right turning vehicles. A wider sidewalk and separate bike lanes on the Main Street bridge across I-84 will also provide a safer facility for the pedestrians and bring the overpass up to current ODOT bridge standards.

South Main Street between I-84 and Wilson Avenue should be reconstructed to the Arterial Street standard, including turn lanes, bike lanes and sidewalks.

Laurel Lane Interchange (Exit 165)

The key bottleneck at this interchange is the intersection of Columbia Avenue and Laurel Lane, which is about 200 feet north of the westbound ramp terminals. The close spacing and high truck volumes through this intersection significantly limit the carrying capacity of the interchange. Options considered for this location included traffic control changes, a roundabout, traffic signal installation, and reconstruction and relocation of the entire intersection. Considering all the improvement alternatives, it is recommended that this intersection be reconstructed to more clearly define the turning movements at the intersection. This would include more permanent lane striping, street lighting, and expanding the approaches to make right-turn movements less restricted.

As volumes reach the levels forecasted for 2026, a more substantial improvement would be needed. The ultimate plan at this location would be to relocate the intersection approximately 300 feet north of the current intersection. This concept had significant impacts on Port of Morrow property, and was not supported by the Port management. The current location of the intersection does not meet access spacing standards with respect to the I-84 westbound ramp terminal. The land north of Columbia Avenue has been designated as one of the state's "shovel ready" industrial sites, and relocation of the roadway would alter the way the Port of Morrow intends to use this property.

En lieu of this major improvement and associated impacts, other management solutions could be considered, but were not explicitly pursued in the IAMP. Travel demand through the Laurel Lane interchange could be monitored up to the limit than can be supported by the current configuration, with reasonable short-term and medium-term improvements outlined herein. Once the threshold required for the ultimate solution is reached, further development could be restricted until a suitable alternative is developed.

Local Connectivity Plan

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 and Laurel Lane 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 was developed that builds on existing and planned streets in the two IAMP areas. These plans not only improve overall connectivity throughout the City, but provide the ability to consolidate approaches to Main Street and Laurel Lane, while maintaining accessibility to individual properties in the corridors.

Access Management Plan

A key element of the IAMP related to the long-range preservation of operational efficiency and safety of the proposed interchange is the management of access to the interchange crossroads (Main Street and Laurel Lane). 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 can not be constructed until funds are made available. Therefore, the recommendations 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.

To provide a basis for decision-making during the development of the access management plan, an access management strategy was established. The objectives of this plan are listed below.

1. Restrict all access from abutting properties to the interchange and interchange ramps.
2. Meet, or move in the direction of meeting, ODOT's adopted access management spacing standards for access to interchange crossroads.
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. Align approaches on opposite sides of roadways where feasible to reduce turning conflicts.
7. Short-range actions shall accommodate existing development needs.

Using this strategy, an action plan for each approach to Main Street and Laurel Lane/Columbia Avenue was developed, as shown in Table 5.1 and 5.2, respectively in Chapter 5. Short-range actions shall accommodate existing development needs .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 or as opportunities arise through property development. The long-range action plan has also been illustrated in Figure 5.2 and 5.3 to aid in the interpretation of the actions in Table 5.1 and 5.2. Prior to adopting or implementing the recommendations in this plan regarding access management, input from affected property owners and tenants should be obtained to validate assumptions made regarding property ownerships and the ability of short-range actions to accommodate existing development needs.

Implementing Ordinances

As land develops to urban densities within the interchange areas, compliance will be required with the access management and circulation plans conceived through this study. As part of the adoption of the IAMP, two articles of the City of Boardman development codes should modified to reflect the standards and plans contained in the Appendix. In brief, the code amendments implement:

- Access spacing requirements
- Local Street connectivity and access closures

In addition, the Local Connectivity Plan (Figure 5.1) should be incorporated as part of the Transportation System Plan.

Cost Estimate

Planning-level cost estimates for all recommended 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, right of way, pavement removal, and traffic signals. They are divided into three categories; Main Street IAMP, Laurel Lane IAMP and TSP improvements. The estimated costs are shown below in Tables 1.2, 1.3 and 1.4.

All costs are in 2007 dollars and do not reflect the added cost of inflation. When considering needed funding to construct the identified improvements below, it should be recognized that landowners typically construct local streets as development occurs.

Table 1.2: Main Street IAMP Improvement Cost Estimates

Alternative	Estimated Cost
Main Street at I-84	
Additional approach lane on exit ramp	$150,000
Traffic Signal at I-84 Westbound Ramp	$300,000
Reconstruct overpass	$10-15 million
Reconstruct South Main Street*	$3 million
* Does not include Right of Way acquisition.	

Table 1.3: Laurel Lane IAMP Improvement Cost Estimates

Alternative	Estimated Cost
Signing and Striping Improvements at Laurel Lane & Columbia Avenue	$25,000
New Laurel Lane & Columbia Avenue Intersection*	
Alternative 1 – Relocate Intersection	$1.5 million
Alternative 2 – Modify Intersection	$600,000
* Does not include Right of Way acquisition.	

Table 1.4: TSP Recommended Improvements

Improvements		Estimated Cost
Expanded Public Street Network*		
	City collectors	$11.8 million
	City local streets	$650,000
Expanded Pedestrian & Bicycle Network*		$750,000
* Does not include Right of Way acquisition.		

Prioritization of Improvements

The improvement alternatives recommended as part of the IAMP and TSP update have been prioritized into short, medium, and long-range actions, as shown in Table 1.4, to provide guidance for future implementation and funding. Short-range actions represent immediate needs. 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. The improvements listed in Table 1.5 have also been illustrated in Figures 4.5, 4.6 and 4.9.

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 1.5: Transportation Improvement Prioritization

Short-Range Improvements
• ·Signing and Striping Improvements at Laurel Lane & Columbia Boulevard
• Short-range actions from access management plan.
Medium-Range Improvements
• Reconstruct South Main Street.
• Construct pedestrian and bicycle facilities to fill in gaps.
• Medium-range actions from access management plan.
Long-Range Improvements
· Construct new public streets according to adopted Local Connectivity Plan.
• Install traffic signal at Main Street & I-84 Westbound Ramp
· Reconstruct Main Street bridge over I-84 – including wider sidewalk, bike lanes and turn lanes.
• Reconstruct intersection of Laurel Lane & Columbia Avenue
• Long-range actions from access management plan.
Note: Medium and long-range improvements could be constructed sooner than anticipated as opportunities arise through private property development or other means.

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 proposed 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.

Recommended Goals & Objectives

Project Goals

The goals of this project are to develop an Interchange Access Management Plan (IAMP) for the two interchanges in Boardman and to update the Transportation System Plan (TSP). The project will result in an access management plan for the Main Street and Laurel Road interchanges, traffic analysis and planning for improvements to existing roads and intersections and a master plan for the local street network and an updated TSP. The project will identify potential safety and traffic congestion issues, and proposed policies and implementing measures that will insure safe and efficient operation of the interchange over the 20-year planning horizon. The IAMP will be developed in partnership with affected property owners in the interchange area, the City of Boardman, Morrow County, and the Oregon Department of Transportation (ODOT), and other stakeholders, including interchange users.

Objectives and Evaluation Criteria

The Project Goals will be 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 each interchange.
    - The IAMP identifies and addresses existing and foreseeable issues related to land use, mobility, accessibility, and safety within the analysis area of the planned interchange.
    - The IAMP meets 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.
    - The IAMP includes inventory maps 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.
    - The IAMP describes 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.
    - The IAMP shall identify development patterns which reduce the reliance on the interchanges while increasing efficiency of the use of land within the urban growth boundary.

- The IAMP satisfies the requirements for interchange area management plans in OAR 734-051-0155 and other state rules, including OHP policies and standards, ODOT Division 51 interchange spacing standards, the Oregon Transportation Commission's OTIA conditions for interchanges, and the 2003 Highway Design Manual.

3. The preparation of the IAMP and TSP update shall utilize public involvement and technical methods to develop and refine improvement options.
    - The IAMP and TSP update shall involve affect property owners in the interchange area, the City of Boardman, Morrow County, Port of Morrow, The Oregon Department of Transportation (ODOT), and other stakeholders, including interchange users.
    - The IAMP and TSP update incorporate input and guidance from the Project Management Team (PMT).
    - The IAMP and TSP update reflect, to the extent possible, the input of local property owners, interchange users, and other stakeholders, as gathered through public comments.
4. The TSP update shall update the street standards and functional classifications.
    - The City shall adopt a street classification system that is compatible with the Morrow County 2020 Transportation Plan.
    - The City shall adopt access management guidelines and standards for the Interchange Study Areas.
    - The TSP update shall incorporate typical street cross section guidelines in the City's public works design standards that address vehicular, bicycle, pedestrian, and transit needs.
    - The City shall adopt roadway design guidelines and standards that ensure sufficient right-of-way is provided for necessary roadway, bikeway, and pedestrian improvements.
5. IAMP and TSP update shall prioritize improvement projects.
    - The IAMP shall identify and prioritize the transportation improvements, land use, and access management plans needed to maintain acceptable traffic operations in the Interchange Study Areas.
    - The TSP update shall identify needed transportation improvements in the City of Boardman and propose alternatives that conform to current design standards and accommodate the long-term capacity needs of the local transportation system.
    - The IAMP shall include short, medium and long-range actions to improve and maintain roadway operations and safety in the Interchange Study Areas. These actions may include local street network improvements, driveways consolidations, shared roadways, access management, traffic control devices, and / or local land use actions.
    - The IAMP includes a Transportation Improvements Map showing the opportunities to improve operations and safety within the City of Boardman and specifically in the Interchange Study Areas.
6. The TSP update shall develop Comprehensive Plan goals, policies, and recommendation for amending the City of Boardman's Land Use code to implement the plan.
    - The IAMP identifies and either complies with or amends the policy direction from the City and County comprehensive plans, zoning codes, Transportation System Plans, and any relevant corridor plans.

- The IAMP implements 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.
- The IAMP shall include policies and implementing measures that preserve the functionality of the interchange areas.

7. The TSP update shall be forwarded through the adoption process.
    - A draft version of the IAMP and TSP update shall be reviewed by the Boardman and Morrow County Planning Commissions, as well as the Boardman City Council and the Morrow County Board of Commissioners. A final draft of the IAMP and TSP shall adopted by the City Council and Board of Commissioners.
    - The IAMP includes amendments to Boardman's Comprehensive Plans, Zoning Ordinances, Transportation System Plans, and other official documents as necessary to implement the recommended alternative for the Interchange Study Areas.
    - The IAMP identifies likely funding sources and requirements for the construction of the infrastructure and facility improvements as new development is approved.
    - The IAMP identifies partnerships for the cooperative management of future projects and establishes a process for coordinated review of land use decisions affecting transportation facilities.

Proposed New Policy

In addition, a new policy was recommended for the IAMP to ensure that the key assumptions in the development of the plan are still applicable as land develops. The following is suggested as a new policy, to be incorporated into the IAMP.

> "It is the policy of the City of Boardman to plan for land uses within the interchange areas consistent with the IAMP adopted by the city and ODOT. The city shall review proposed plan and land use regulation amendments within the Interchange Management Areas for consistency with the IAMP. Where a proposed plan or land use regulation amendment would result in a property generating more traffic than previously estimated in the IAMP, the city will coordinate with ODOT to amend the IAMP as necessary, to accommodate the proposed use prior to approval of the proposed amendment."

Chapter 3. Existing Land Use and Transportation Conditions

This chapter 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 more 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 1.1.

I-84 / Main Street Interchange

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.

I-84 / Laurel Lane (Port of Morrow) Interchange

The 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 Avenue (both limits are 1,000 feet from Laurel Lane). The south boundary is the southern city limit line, about 1,200 feet south of I-84.

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 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 3.1 and 3.2. 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 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

Table 3.2: 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

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 3.1. 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 on September 19, 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

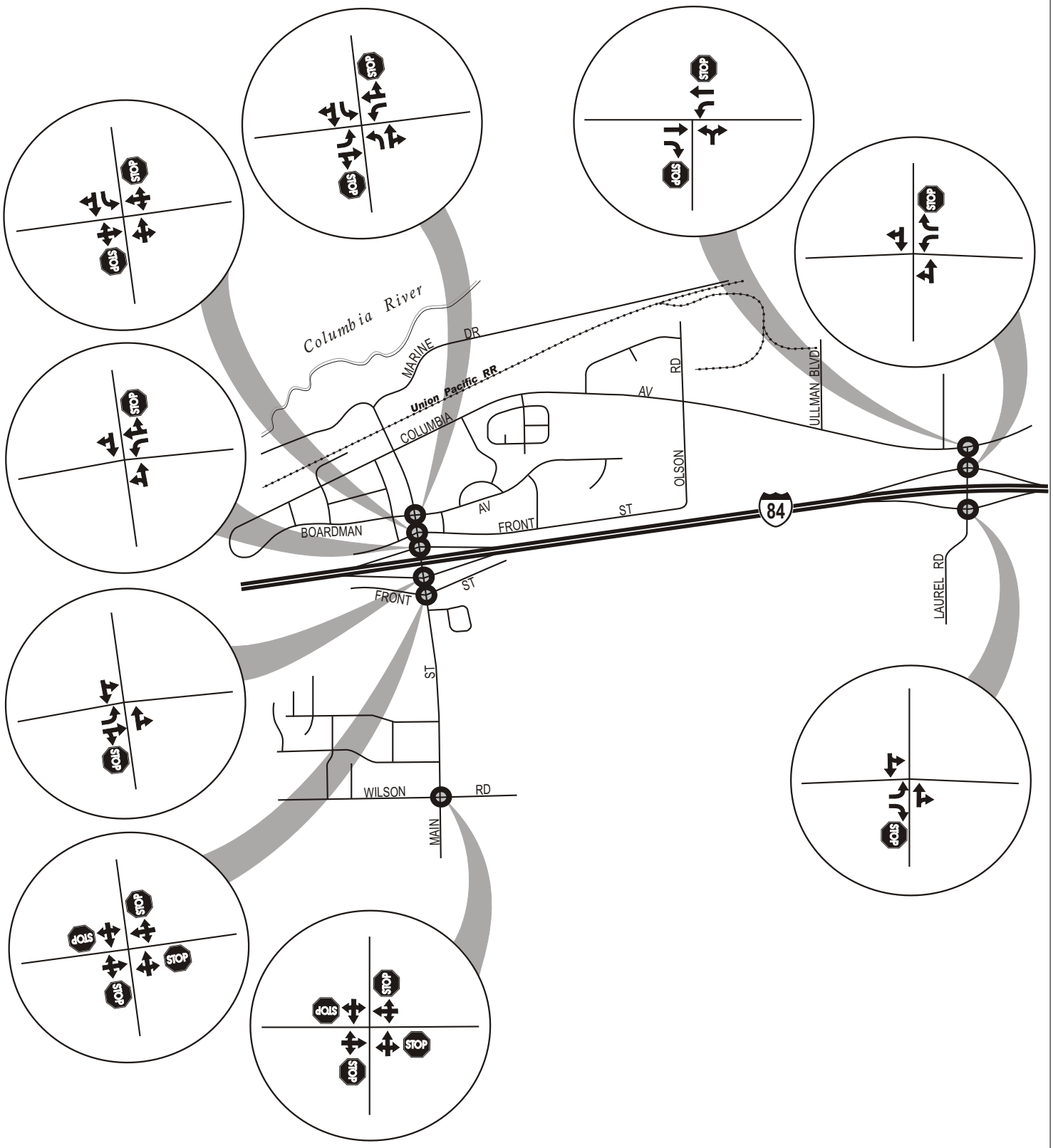
PM Peak Hour turning movement counts were collected at five additional intersections within the City:

- 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, 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 3.2.



LEGEND

- Study Intersection
- Lane Configuration
- STOP - Stop Sign

City of Boardman IAMP
April 2007

NO SCALE

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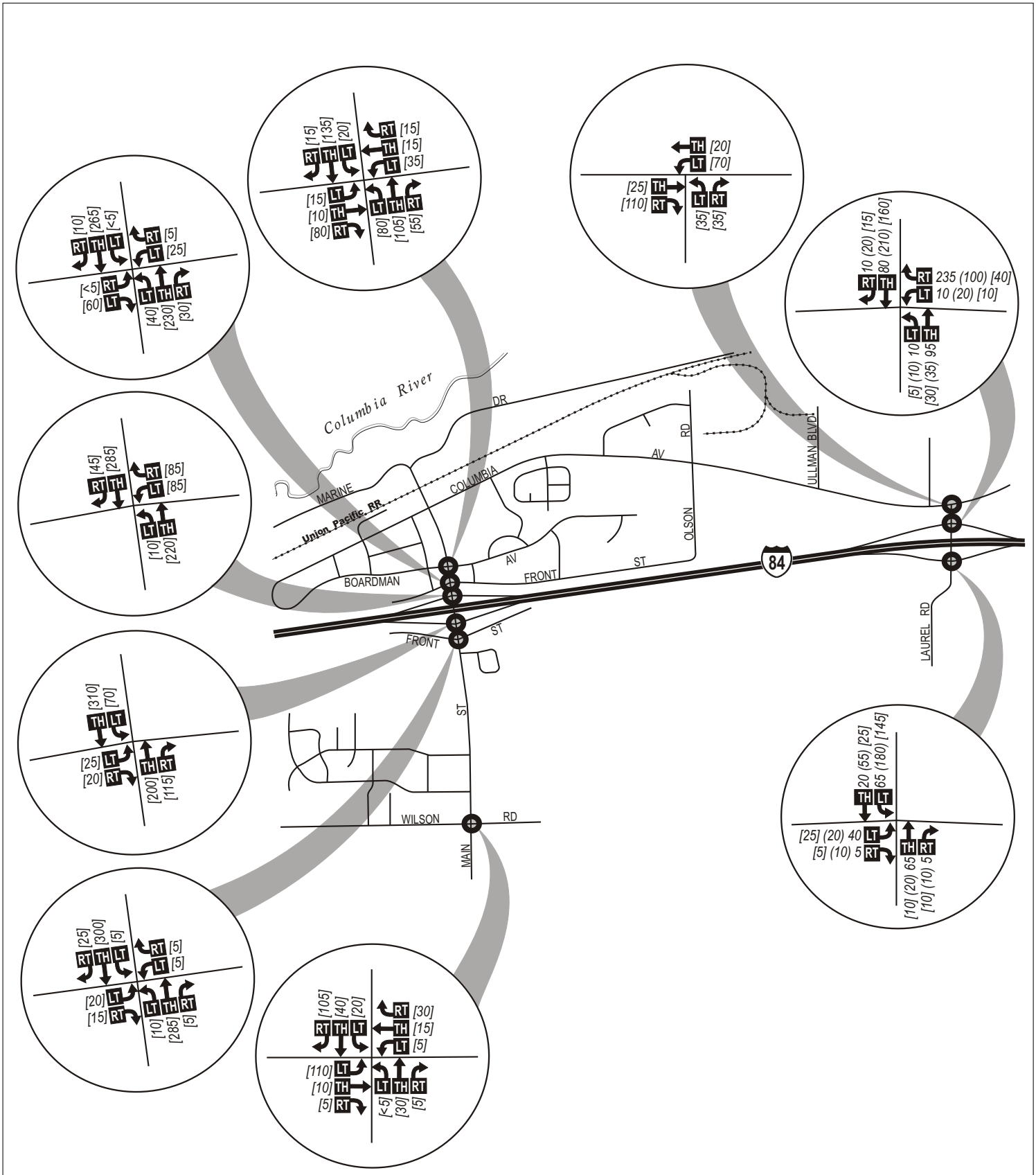
Figure 3.1

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
Left • Thru • Right - Volume Turn Movement

City of Boardman IAMP
April 2007

NO SCALE

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Figure 3.2

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.

Level of service 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. Levels of Service A, B and C indicate conditions where traffic moves without significant delays over periods of peak travel demand. Levels of service 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 level of service D as the minimum acceptable level of service for peak hour operation and plan for level of service C or better for all other times of the day. The *Highway Capacity Manual* provides level of service calculation methodology for both intersections and arterials.

The traffic volume data shown in Figure 3.2 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 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 hour of the average weekday.

Table 3.3 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 3.3: 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 3.4 shows the existing operational analysis for the unsignalized intersections within the Laurel Lane IAMP study area. Note that the results shown represent the critical movement at each intersection (usually

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

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 3.4: 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 3.5 shows the PM Peak hour heavy vehicle percentages at the Main Street IAMP study area intersections. Table 3.6 shows the heavy vehicle percentages for the AM, Midday and PM Peak hours at the Laurel Lane IAMP study area intersections.

Table 3.5: Weekday PM Peak Hour Volumes Within Main Street IAMP Study Area

Intersection	Total Vehicles	Heavy Vehicle	Heavy Vehicle %
I-84 EB Ramp/Main Street			
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%
Main Street/Wilson Road			
North/Southbound	192	5	2.6%
East/Westbound	166	9	5.4%

Table 3.6: 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			
Northbound	65	6	9.2%
Southbound	79	18	22.8%
Eastbound	37	10	27.0%
I-84 WB Ramp/Laurel Road			
Northbound	95	13	13.7%
Southbound	83	21	25.3%
Westbound	224	27	12.1%
Midday Peak Hour			
I-84 EB Ramp/Laurel Road			
Northbound	27	10	37.0%
Southbound	212	25	11.8%
Eastbound	28	14	50.0%
I-84 WB Ramp/Laurel Road			
Northbound	41	19	46.3%
Southbound	213	21	9.9%
Westbound	108	30	27.8%

Table 3.5: Weekday PM Peak Hour Volumes Within Main Street IAMP Study Area

Intersection	Total Vehicles	Heavy Vehicle	Heavy Vehicle %
I-84 EB Ramp/Main Street			
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%
Main Street/Wilson Road			
North/Southbound	192	5	2.6%
East/Westbound	166	9	5.4%

Table 3.6: 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			
Northbound	65	6	9.2%
Southbound	79	18	22.8%
Eastbound	37	10	27.0%
I-84 WB Ramp/Laurel Road			
Northbound	95	13	13.7%
Southbound	83	21	25.3%
Westbound	224	27	12.1%
Midday Peak Hour			
I-84 EB Ramp/Laurel Road			
Northbound	27	10	37.0%
Southbound	212	25	11.8%
Eastbound	28	14	50.0%
I-84 WB Ramp/Laurel Road			
Northbound	41	19	46.3%
Southbound	213	21	9.9%
Westbound	108	30	27.8%

Intersection	Total Vehicles	Heavy Vehicle	Heavy Vehicle %
PM Peak Hour			
I-84 EB Ramp/Laurel Road			
Northbound	20	6	30.0%
Southbound	159	23	14.5%
Eastbound	30	6	20.0%
I-84 WB Ramp/Laurel Road			
Northbound	33	5	15.2%
Southbound	161	25	15.5%
Westbound	46	16	34.8%
Laurel Road/Columbia Avenue			
Northbound	67	21	31.3%
Eastbound	123	19	15.4%
Westbound	83	7	8.4%

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. 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 (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 interchange study areas for Main Street and Laurel Lane were analyzed and are listed in Table 3.7.

Table 3.7: 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. Non 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 recommended.

Local Circulation

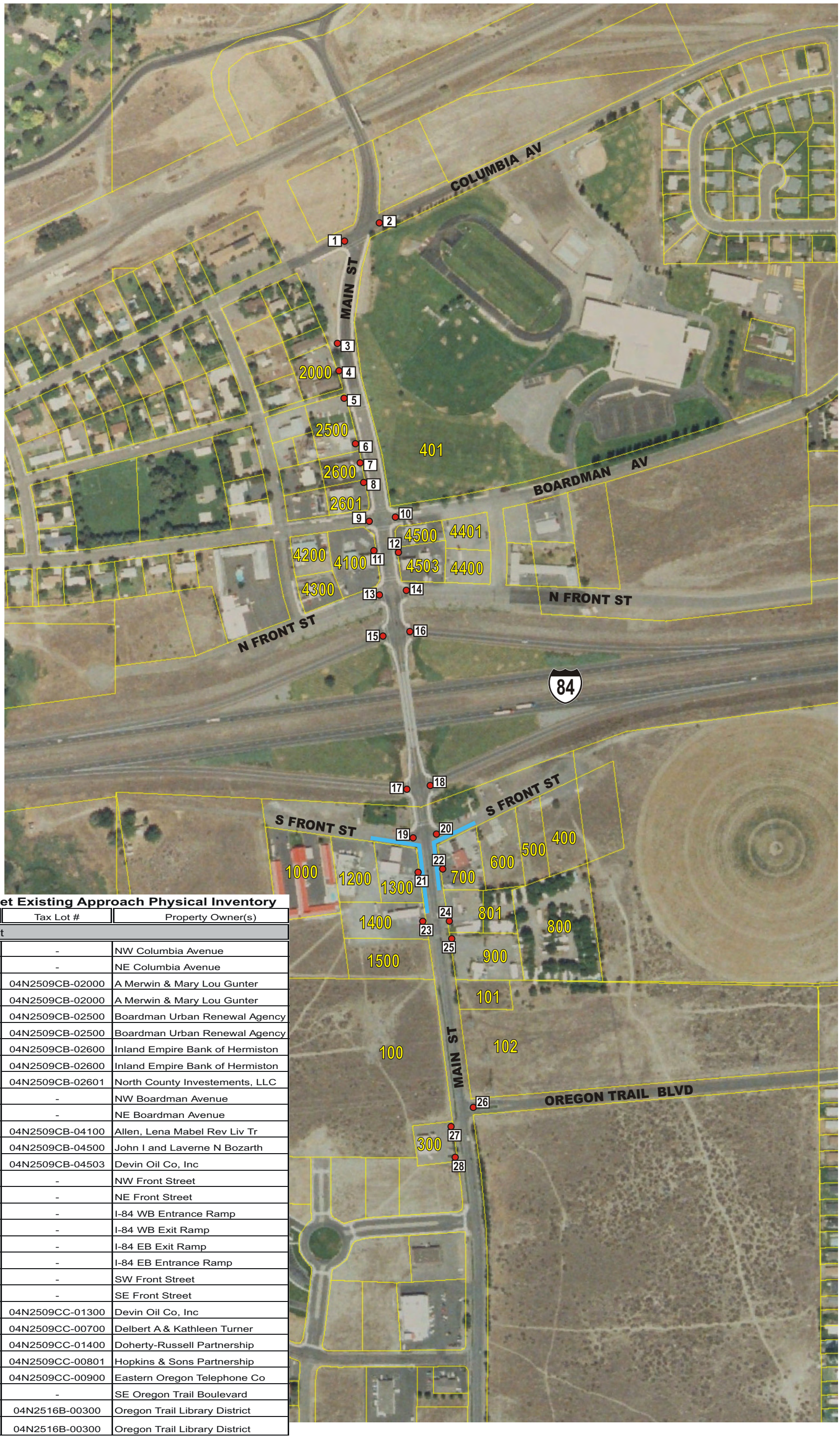
An inventory of the existing access points along Main Street and Laurel Lane/Columbia Avenue was compiled for the management areas. Access to these roadways is in the form of private driveways, public easements, and public roadways.

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 3.3 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 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.



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
April 2007

Figure 3.3

Main Street IAMP

Laurel Lane IAMP Study Area

Figure 3.4 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.

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 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 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. 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.

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.

Intersection	Total Vehicles	Heavy Vehicle	Heavy Vehicle %
PM Peak Hour			
I-84 EB Ramp/Laurel Road			
Northbound	20	6	30.0%
Southbound	159	23	14.5%
Eastbound	30	6	20.0%
I-84 WB Ramp/Laurel Road			
Northbound	33	5	15.2%
Southbound	161	25	15.5%
Westbound	46	16	34.8%
Laurel Road/Columbia Avenue			
Northbound	67	21	31.3%
Eastbound	123	19	15.4%
Westbound	83	7	8.4%

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. 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 (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 interchange study areas for Main Street and Laurel Lane were analyzed and are listed in Table 3.7.

Table 3.7: 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. Non 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 recommended.

Local Circulation

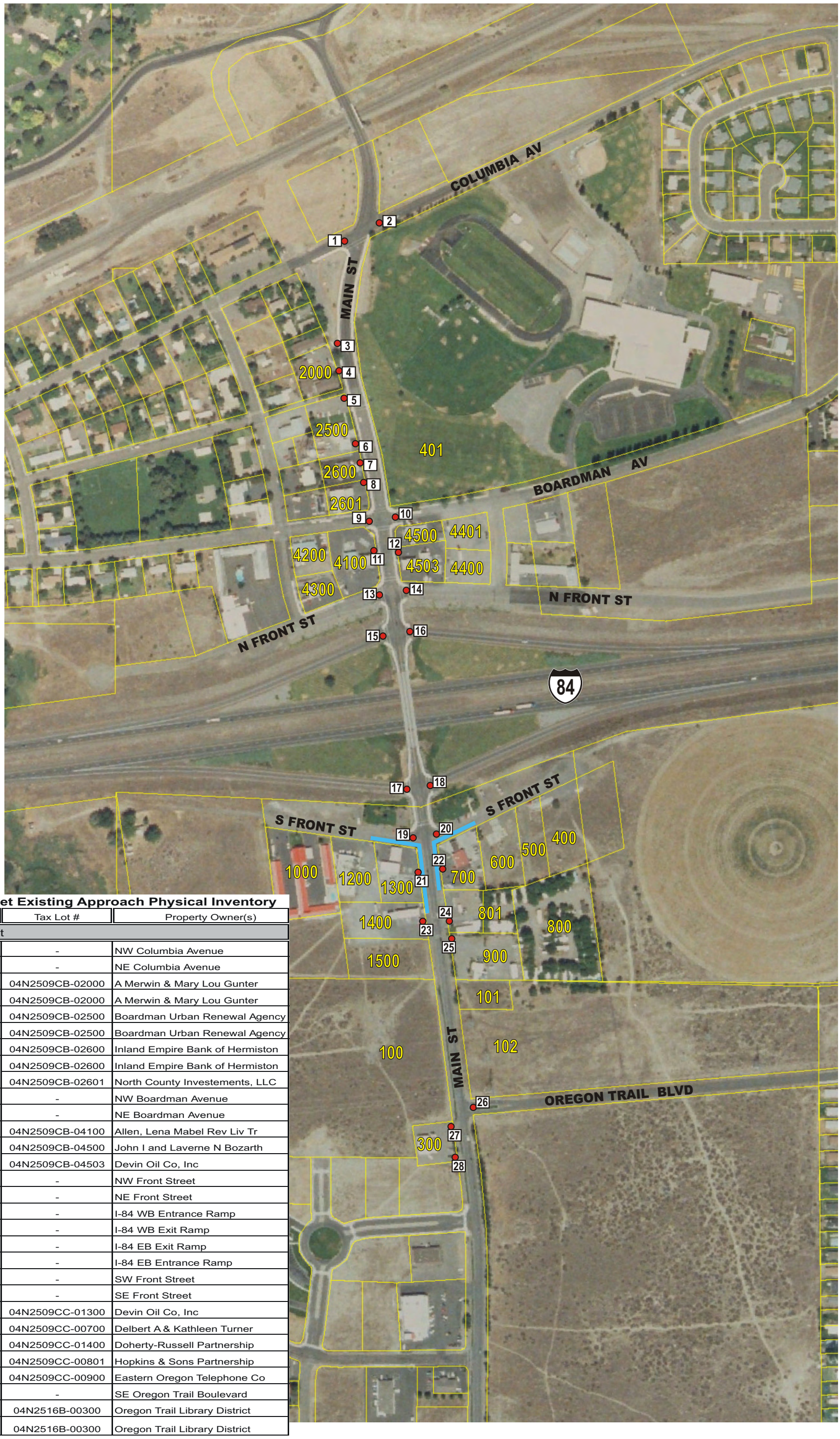
An inventory of the existing access points along Main Street and Laurel Lane/Columbia Avenue was compiled for the management areas. Access to these roadways is in the form of private driveways, public easements, and public roadways.

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 3.3 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 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.



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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Figure 3.3

Main Street IAMP

Laurel Lane IAMP Study Area

Figure 3.4 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.

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 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 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. 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.

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.

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, and alternative projects are presented that will be screened and reviewed by the community before selected to preferred plan elements.

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 future 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[2], 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[3] 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

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

available lands for commercial and office development. Most of the future residential growth is expected to occur south of I-84.

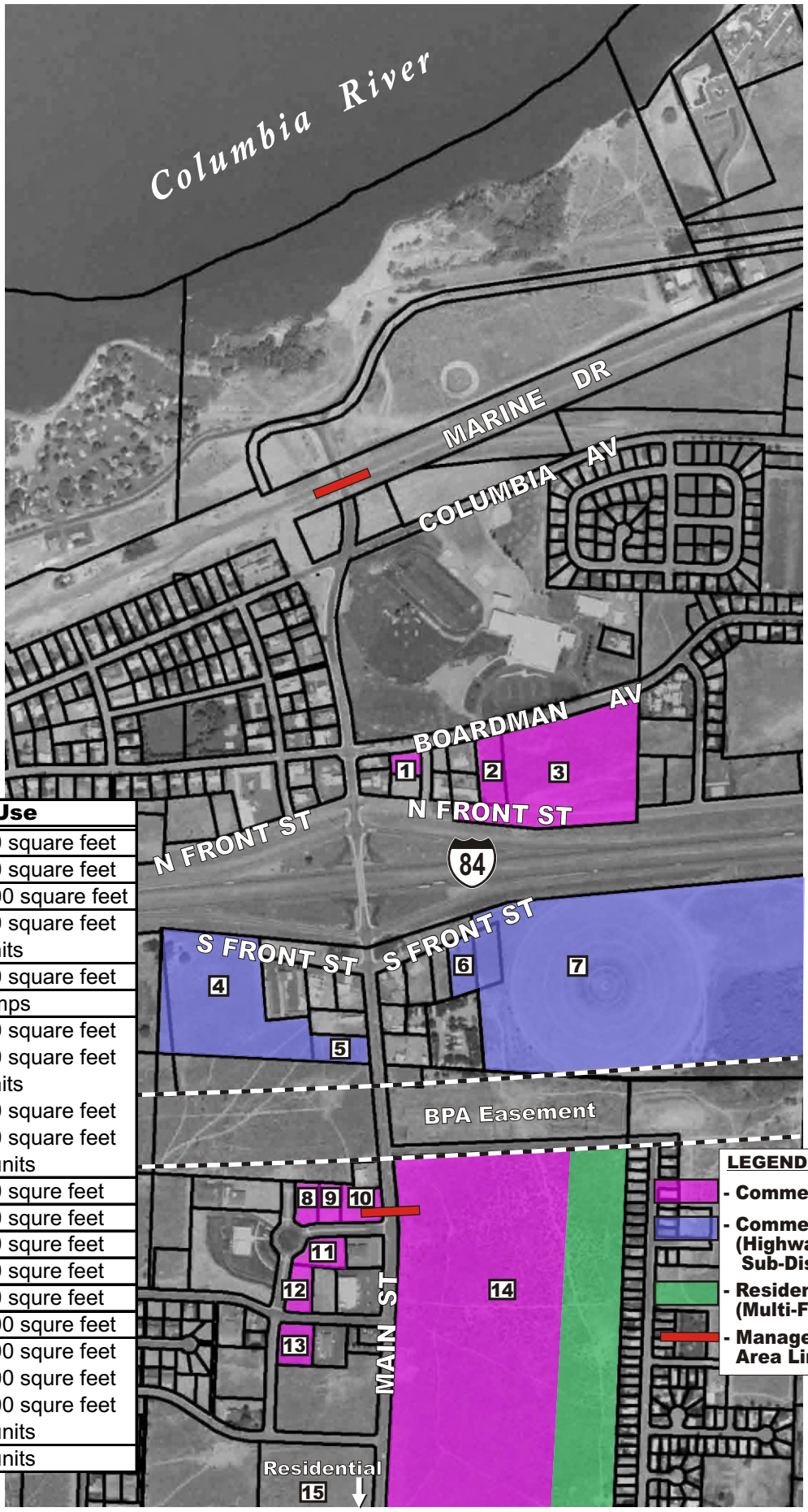
The following section summarizes the forecasted growth that will influence future travel within the two IAMP study areas in Boardman. Future development was based on the current land use zoning, expected growth by the forecast year and input from the City of Boardman staff to include local expertise and knowledge of known developments.

Travel Demand

As part of the City of Boardman Interchange Access Management Plan (IAMP) and Transportation System Plan (TSP) Update, an analysis was performed of 2026 future travel demand, deficiencies and needs for the Boardman transportation system. 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 two IAMP study area interchanges. 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 existing traffic counts can be seen in Figure 3.2.

The following section summarizes the forecasted growth that will influence future travel within each of the IAMP study areas in Boardman. Figures 4.1 and 4.2 show the parcels that are expected to develop by the year 2026 in the Main Street IAMP study area and the Laurel Lane IAMP study area, respectively.

A travel demand method was developed and used to determine future traffic volumes in Boardman for the forecast year 2026. This method translates projected land use growth into motor vehicle trips and assigns them to the roadway network. The resulting traffic volume projections form the basis for identifying potential roadway deficiencies and for evaluating alternative circulation improvements.



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 squre feet
9	Office	5,000 squre feet
10	Bank	4,000 squre feet
11	Office	5,000 squre feet
12	Office	5,000 squre feet
13	Medical/Dental	10,000 squre feet
14	Specialty Retail Drug Store Hardware/Paint Store Housing	10,000 squre feet 20,000 squre feet 10,000 squre feet 120 units
15	Housing	100 units

NO SCALE

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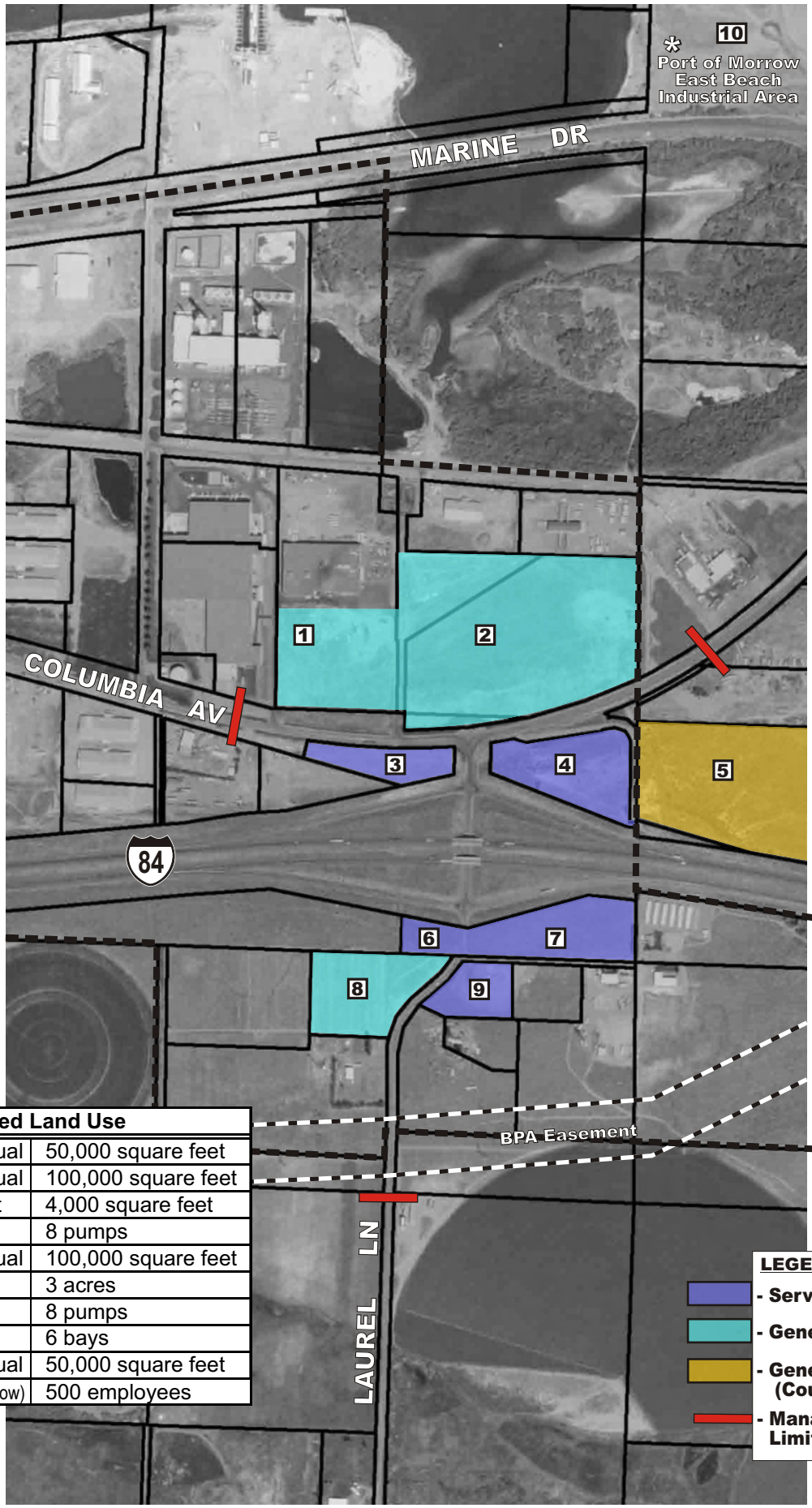
Figure 4.1

MAIN STREET 2026 BUILD-OUT SCENARIO



Laurel Lane

Parcel#	Assumed Land Use	
1	General Light Industrial	50,000 square feet
2	General Light Industrial	100,000 square feet
3	Fast Food Restaurant	4,000 square feet
4	Gas Station with Mart	8 pumps
5	General Light Industrial	100,000 square feet
6	RV Park	3 acres
7	Gas Station with Mart	8 pumps
8	Truck Stop	6 bays
9	General Light Industrial	50,000 square feet
10	East Beach (Port of Morrow)	500 employees

NO SCALE

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Figure 4.2

LAUREL LANE 2026 BUILD-OUT SCENARIO

Main Street IAMP Study Area

Trip Generation

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[4]. Table 4.2 provides a listing of the weekday PM peak hour trip rates used in this analysis.

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	20
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	2

Based on the assumed land uses for the build out 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.

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

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 Powers Road, which is about five miles to the west of the Main Street interchange in Boardman. The 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.).

Traffic Assignment

In this step of the analysis, trips from the new development are assigned to specific travel routes in the network, and resulting trip volumes are 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.

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

The projected PM peak hour traffic volumes due to the build out scenario are shown in Figure 4.3. The cumulative PM Peak hour volume data for the Main Street IAMP study area is shown in Figure 4.4.

Volume Comparisons to Past Studies

The Transportation System Plan[5] 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 forecasted volumes at the intersection of Main Street and Wilson Road are within 1% of each other.

[5] Transportation System Plan, City of Boardman, Oregon 1999

The Main Street Development Plan[6] 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[6] and this IAMP.

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

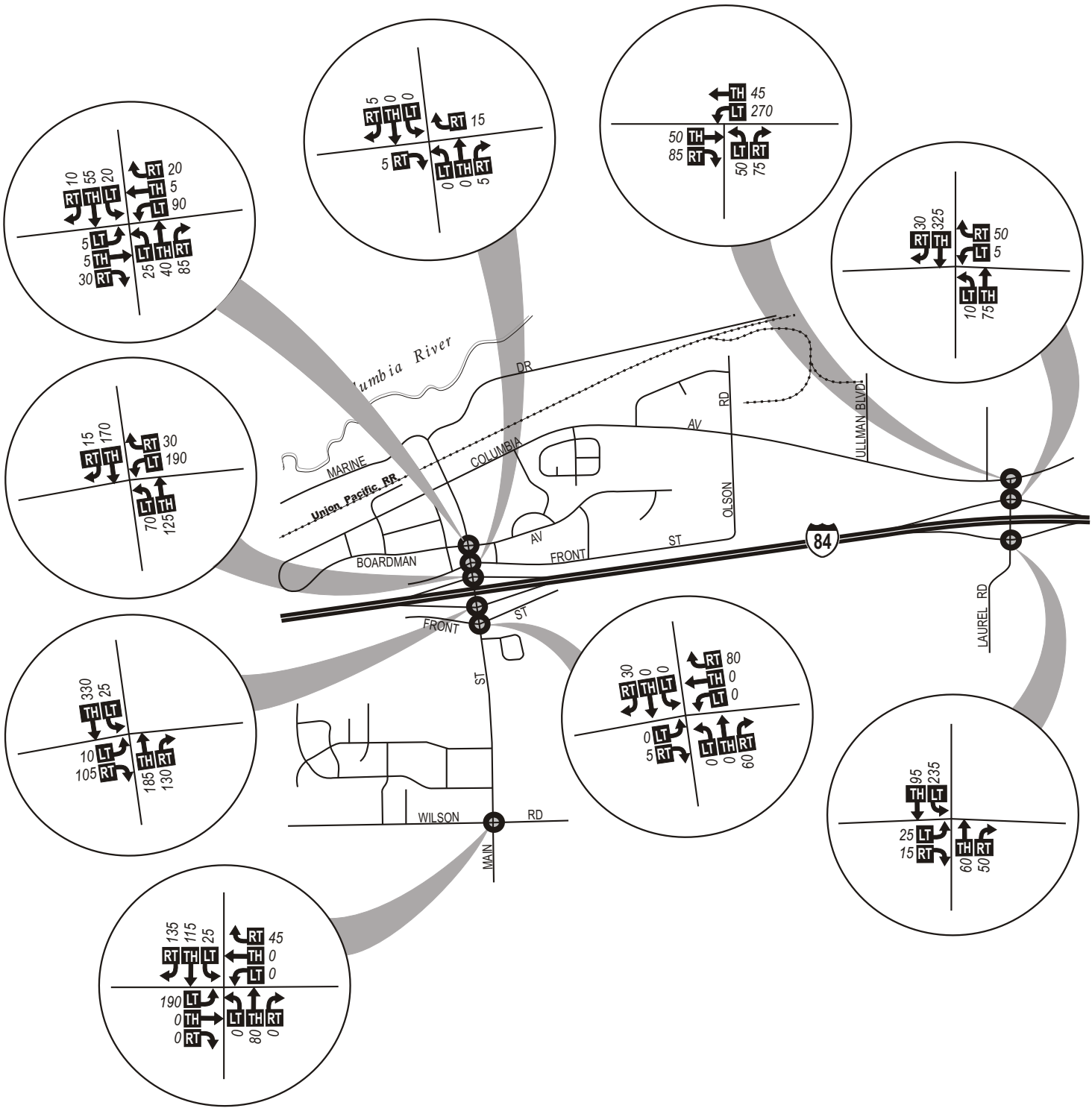
Location	**Two-way PM Peak Hour Volume**		**Volume Difference**
	Downtown Plan	IAMP	
Main Street North of I-84	1080	975	-105
Main Street on I-84 Overpass	1420	1100	-320
Main Street South of I-84	1830	1400	-430

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. We understand that the proposed rezone would change the background residential zoning to allow for other more commercial uses, in some part. We estimate 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.

[6] City of Boardman Main Street "Downtown" Development Plan, 2000-2001



LEGEND

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

City of Boardman IAMP
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Figure 4.3

NO SCALE

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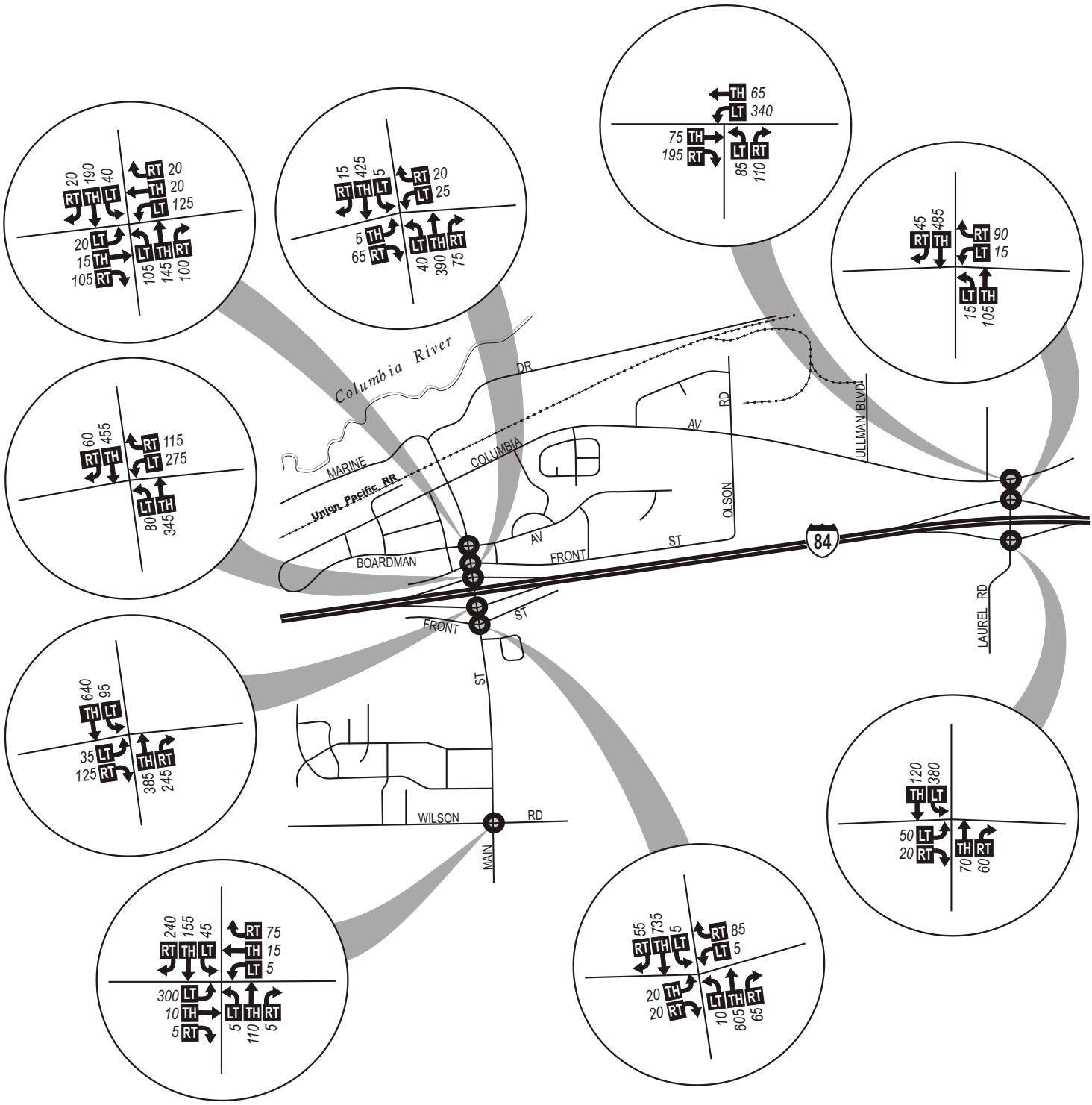
PM PEAK TRIPS GENERATED BY BUILD OUT DEVELOPMENT TRAFFIC VOLUMES



LEGEND

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

City of Boardman IAMP
April 2007

NO SCALE

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Figure 4.4

2026 PM PEAK HOUR TRAFFIC VOLUMES

Study Area Roadway Capacity & Level of Service

Study intersections were analyzed using *Highway Capacity Manual*[7] 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. Level of service can be measured at intersections and along key roadway segments. The appendix includes a more detailed description of Level of Service analysis.

The traffic volume data shown in Figure 4.4 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 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 hour of the average weekday.

Table 4.5 shows the cumulative 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).

Table 4.5: Cumulative Weekday AM and PM Peak Hour Intersection Level of Service

Intersection	V/C Ratio	Major Street LOS	Critical Movement	Critical Movement LOS	Performance Standard Met?
AM Peak Hour					
I-84 WB Ramp/Main Street	0.42	A	Westbound	C	Yes
I-84 EB Ramp/Main Street	0.10	A	Eastbound	C	Yes
PM Peak Hour					
Main Street/Boardman Ave	0.70	C	**Westbound**	**E**	Yes
Main Street/Front Street (North)	0.22	B	**Westbound**	**D**	Yes
Main Street/ I-84 WB Ramp	**1.37**	**F**	**Westbound**	**F**	**No**
Main Street/I-84 EB Ramp	0.33	A	**Eastbound**	**D**	Yes
Main Street/Front Street (South)	0.46	A	**Eastbound**	**F**	Yes
Main Street/Wilson Road	0.74	C	Southbound	C	Yes

The intersection of Main Street & I-84 Westbound Ramp is expected to exceed the City standard Level of Service in the PM peak hour. There are five intersections where the worst-movement Level of Service exceeds the city standards in the PM peak hour, including Main Street & Boardman Avenue, Main Street & Front Street (North), Main Street & I-84 Westbound Ramp, Main Street & I-84 Eastbound Ramps and Main Street & Front Street (South).

The intersection of Main Street & I-84 WB ramp is expected to operate within the current City Level of Service standards until approximately half of the future development is complete.

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

Operational and Safety Issues

Based on the Existing Conditions Analysis and stakeholder interviews, current system deficiencies and/or safety issues are listed below:

- Access to businesses south of Front Street (South) is difficult due to the lack of access control and conflicting turning movements.
- The access spacing along North and South Main Street does not meet the Interchange Access Management standard spacing.
- The westbound approach at the I-84 Westbound ramp has poor sight distance due to the guard rail and fencing on the overpass bridge.
- Pedestrian access across the I-84 bridge and on/across South Main Street is limited.
- The main street interchange is one of two in Boardman that provide access to I-84. The combination of vehicles and pedestrians along this narrow section of roadway create conflicts between pedestrians and autos. The Main Street bridge across I-84 has very narrow sidewalks and no bike lanes.
- Bicycle system facilities are not continuous between neighborhoods south of I-84 and major destinations, such as schools. The existing multi-purpose path that runs along Wilson Road ends at Faler Road. Between Faler Road and Paul Smith Road, pedestrians and bicyclists must share the roadway with autos.
- There are no left-turn lanes on South Main Street.
- There are limited parallel routes to South Main Street for local trips to use away from the arterial.
- The roundabout at City Center Drive & Tatone Street is too tight for emergency vehicles to maneuver.

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

- The following intersection is expected to exceed the City standard Level of Service in the PM Peak Hour of the forecast year:
- Main Street & I-84 Westbound Ramp
- The existing intersections of Main Street & Front Street (North), Main Street & I-84 Westbound Ramp, Main Street & I-84 Eastbound Ramp and Main Street & Front Street (South) are too closely spaced and will not function efficiently as traffic volumes grow.
- There are five intersections where the side-street Level of Service exceeds the city standards in the PM peak hour:
    - Main Street & Boardman Avenue
    - Main Street & Front Street (North)
    - Main Street & I-84 Westbound Ramp
    - Main Street & I-84 Eastbound Ramps
    - Main Street & Front Street (South)

System Alternatives

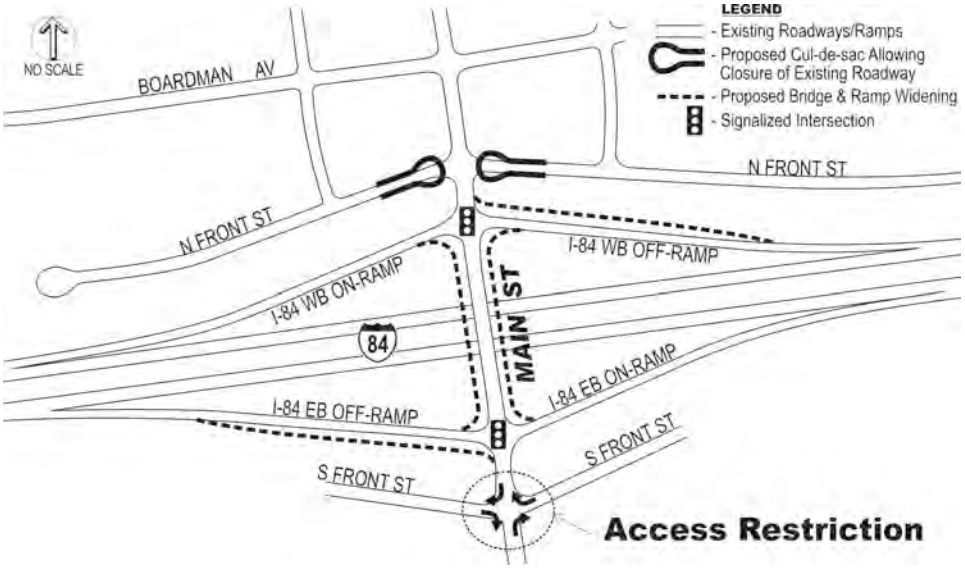
Three alternative concepts were developed to address the mobility and circulation issues identified within the Main Street IAMP area. The following sections highlight the benefits and impacts associated with each of the alternatives for the Main Street interchange.

Main Street Alt. 1: Expanded Diamond Interchange

As traffic volumes on Main Street double over current levels, 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 first alternative would expand the current freeway interchange by widening the two off-ramps, and constructing traffic signals at the ramp terminals.

The introduction of traffic signals and the traffic growth on Main Street will substantially increase conflicts at the existing Main Street intersections with North Front Street and South Front Street, which are about 150 feet away from the ramp terminals. For example, it will be much more common during peak hours for queues of vehicles on Main Street to temporarily block the Front Street intersections and nearby driveways from businesses. By build-out, the vehicle queues on Main Street approaching the off-ramp traffic signals will be 10 to 13 vehicles, and will frequently block the 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.

To reduce the conflicts and potential safety concerns, these full-access intersections at Front Street will gradually need to be more restricted, which could include limiting to right-turn movements only or full closure. On South Front Street, full closure would not be practical until alternative routes were constructed for access onto Front Street. North Front Street businesses have alternative access onto Boardman Avenue. 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.

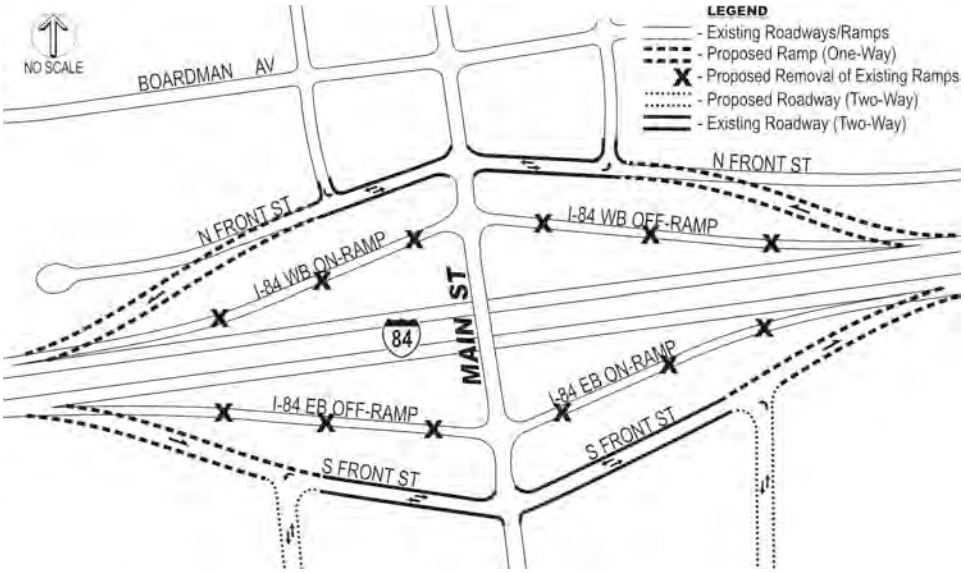


The other component of this alternative would be the widening of the existing overpass to match up to current standards for sidewalks, bike lanes, and provide a center turn lane area for left-turning vehicles onto the freeway ramps. The widening of the bridge would eliminate the existing sight distance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

If this alternative is selected, it would be important to establish thresholds for limiting the 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.

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.

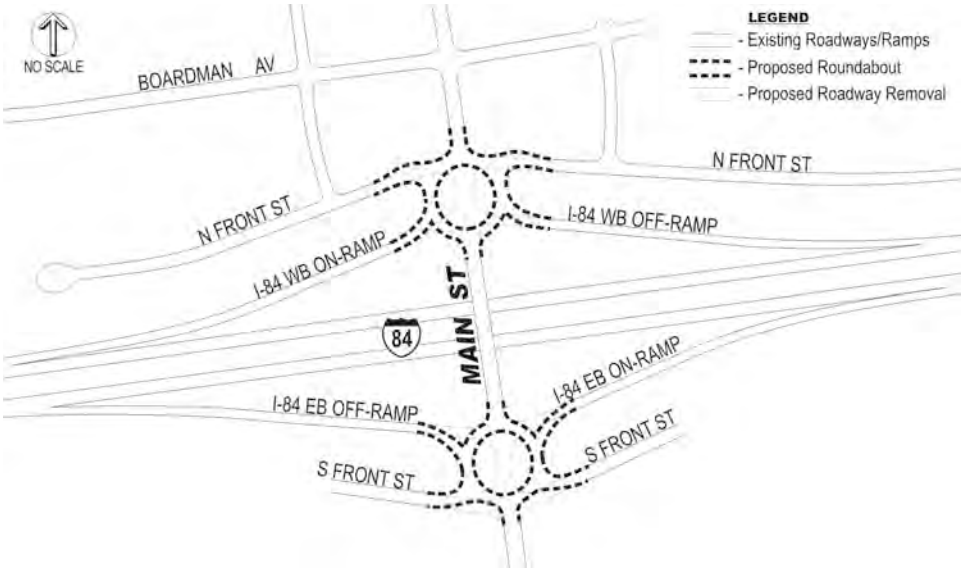
Because of these and other issues not listed, this concept was rejected from further consideration for this interchange.

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.

Preferred Alternative

The preferred Main Street improvements are shown in Figures 4.5 and 4.6. 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 follows these steps: 1) the freeway off-ramps would be widened to provide for separate turning lanes on the approaches to Main Street, 2) the traffic signals would be installed once traffic volumes grew enough to meet ODOT standards for traffic signal controls, and 3) the Main Street overpass would be expanded to current standards. More details about the elements of the Main Street IAMP improvements are summarized below.

Main Street & I-84 Westbound Ramp

The intersection of Main Street & I-84 Westbound Ramp meets the preliminary signal warrants under Case A (Minimum Vehicular Traffic).. It is likely to therefore warrant a traffic signal under cumulative conditions. For good signal operations, a northbound left turn lane and storage space on the southbound approach would be recommended. The intersection of Front Street (North) is too close to the intersection for efficient signal operations. Front Street would most likely need to be terminated at 1st Street NE and 1st Street NW. As development occurs, the City should monitor the traffic volumes at the I-84 Ramp intersections to determine if the volumes would warrant a traffic signal. Depending on the rate of development, this most likely will be a long term (15 - 20 year) system improvement. The Main Street bridge across I-84 does not currently have room for turn lanes at the ramp intersections, which would be desirable if the intersections were signalized.

Main Street & I-84 Eastbound Ramp

The intersection of Main Street & I-84 Eastbound Ramps does not currently meet the preliminary traffic signal warrants, but a small amount of development beyond what was forecast 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. A signal at this location would need a southbound left turn lane and northbound storage space. It would therefore be recommended that access to Front Street (South) be relocated.

Main Street Overpass Bridge

The Main Street Bridge over I-84 has two travel lanes and narrow sidewalks. This bridge is one of two places where drivers can cross I-84 to complete local trips and also serves as access to I-84. 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. The bridge should be widened to accommodate the turn lanes, bike lanes and wider sidewalks, which would in turn improve the sight distance for drivers on the exit ramp approaches. The eastbound and westbound I-84 exit ramps should also be widened to accommodate separate left- and right turning vehicles. A wider sidewalk and separate bike lanes on the Main Street bridge across I-84 will provide a safer facility for the pedestrians and bring the overpass up to current ODOT bridge standards.

The City's Transportation System Plan envisions a new I-84 crossing at Olson Road, which is shown in Figure 5.1, later in this report. This new freeway overcrossing would not connect to Interstate 84, but it would provide alternative 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 transportation state and local 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.

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 also be monitored as development occurs to determine if certain turning movements should be prohibited. 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 should be in place before restricting access to Front Street South from Main Street.

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

- Side street level of service drops below LOS D
- Traffic signal installed at I-84 ramp(s)
- Bridge improvement project constructed
- Recurring public complaints about conflicts and safety at these locations

The city's land development review process should incorporate these thresholds for development applications within the Main Street IAMP management area. Changes to the current full access to Front Street should be implemented only when substantial degradation is expected to the current condition.

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. As development occurs, the City should monitor the traffic volumes at the intersection of Main Street & Boardman Avenue to determine if the volumes would warrant a traffic signal. 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.

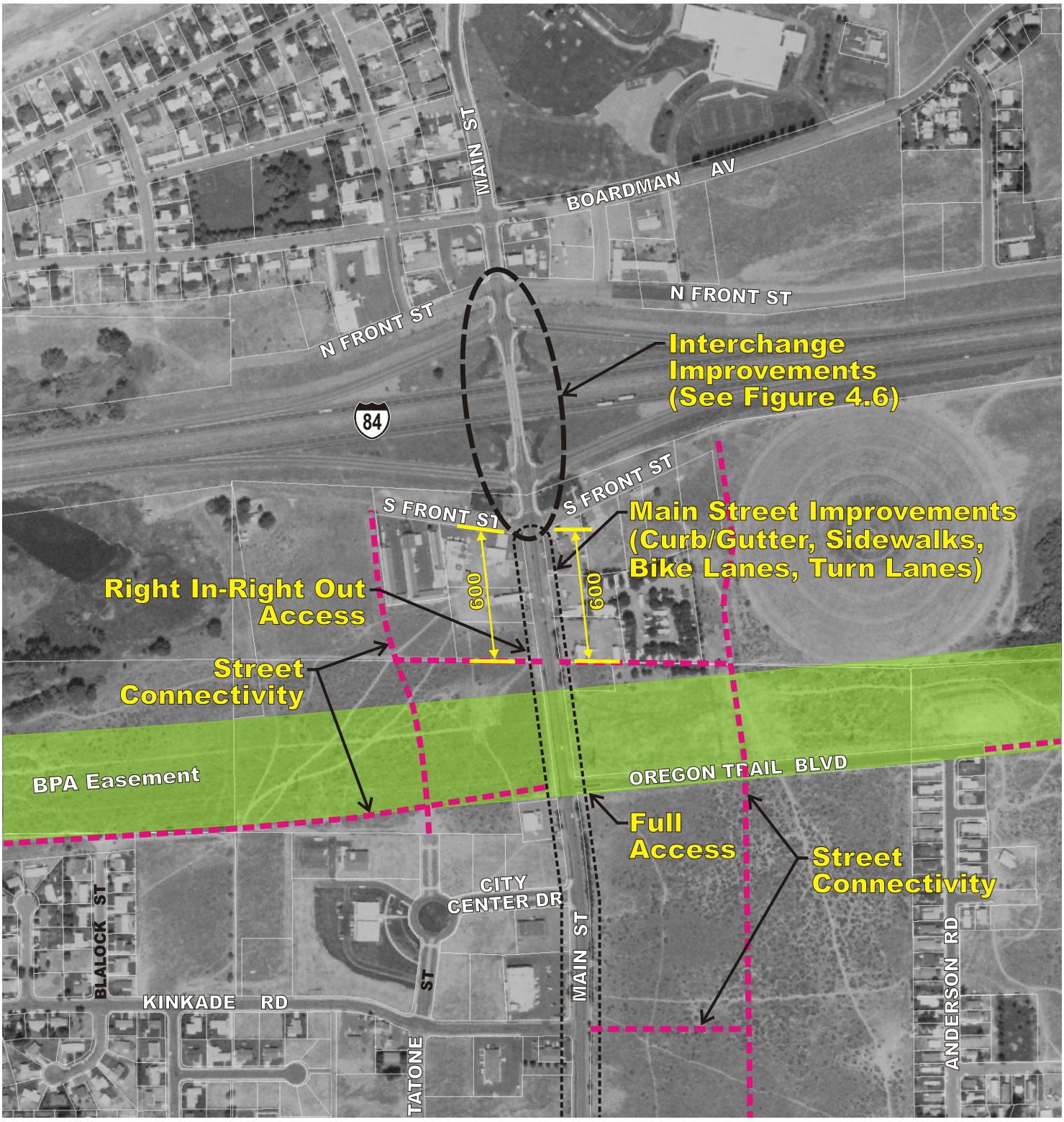


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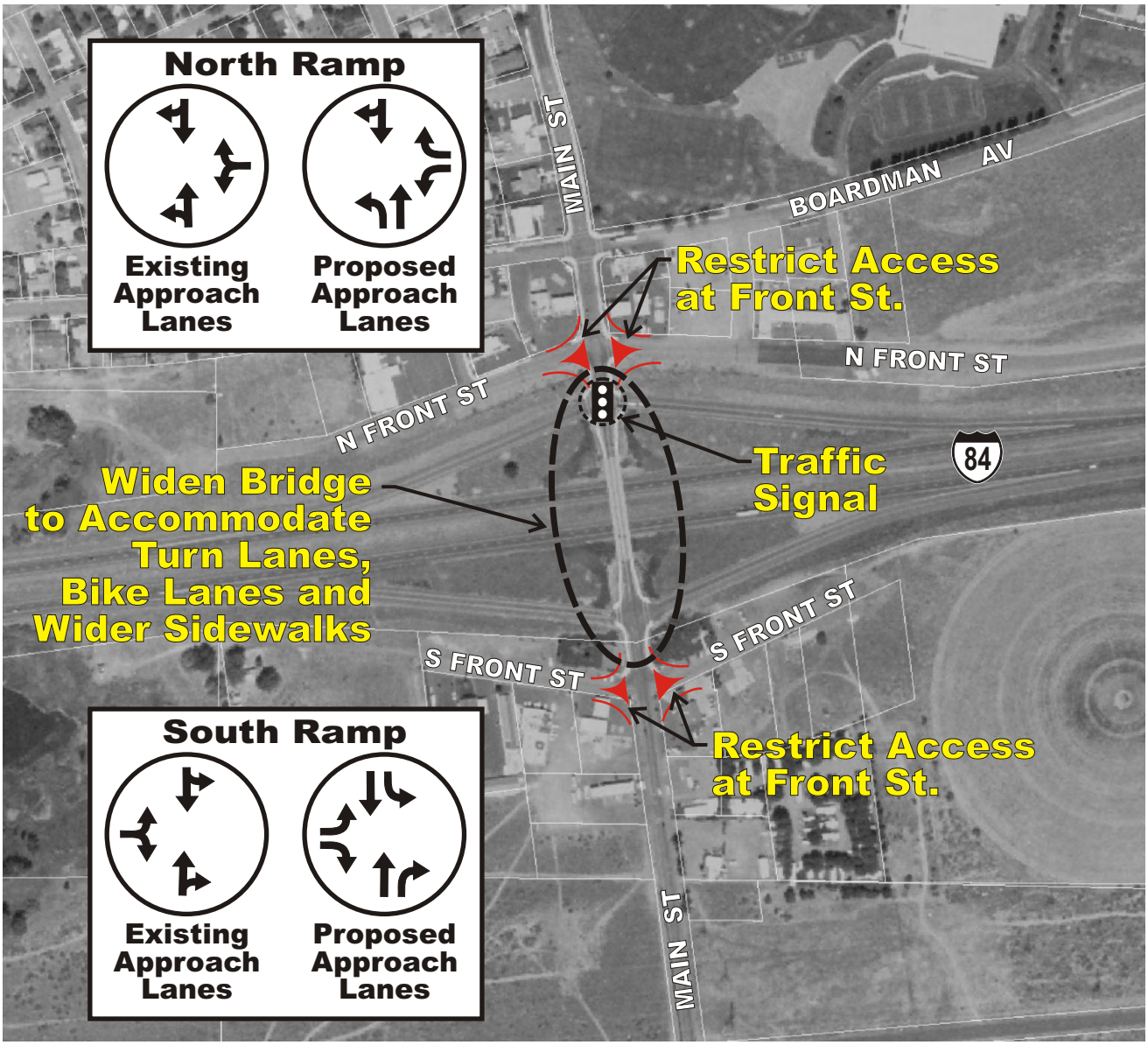
Figure 4.5

MAIN STREET IAMP IMPROVEMENTS



Triggers for Access Changes to Front Street:

1. *Side Street Level of Service Drops Below LOS E*
2. *Traffic Signal Installed at I-84 Ramps*
3. *Bridge Improvement Project Constructed*

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April 2007

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Figure 4.6

MAIN STREET INTERCHANGE IMPROVEMENTS
20-Year Build Out Scenario

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 would reduce the conflict between the left turning and through traffic. Bike lanes and sidewalks along South Main Street would increase the safety and mobility of pedestrians using Main Street. An illustration of South Main Street improvements is shown in Figure 4.7.

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:

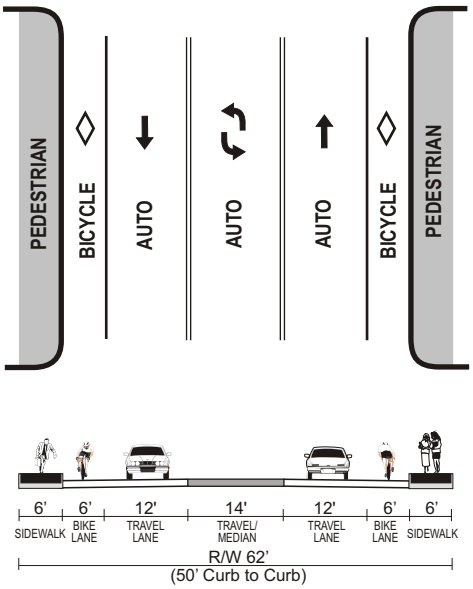
- Extend Tatone Street from City Center Boulevard to Front Street, which would provide alternate access for the businesses along West Front Street. Tatone Street could also be extended south to intersect with Wilson Lane. The roundabout at the intersection of Tatone Street and City Center Boulevard will need to be evaluated to determine if the existing geometrics will accommodate a larger emergency vehicle.
- Extend Tatone Street from Willow Fork Drive to Wilson Road.

Construct a new north-south roadway at a minimum of 600 feet east of Main Street, intersecting Oregon Trail Boulevard. This roadway will provide access to new development along the south side of I-84 and the commercial property south of Oregon Trail Boulevard.

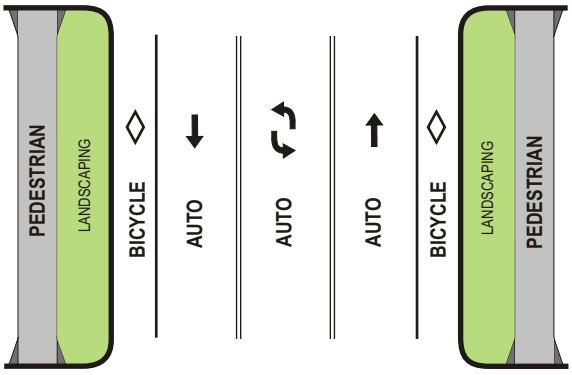
Creating a network of streets that parallel I-84 and Wilson Lane that provide access to future development can strengthen east-west connectivity. These new roadways provide access for local trips and can be constructed as development occurs. Some examples of street extensions that would strengthen east-west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

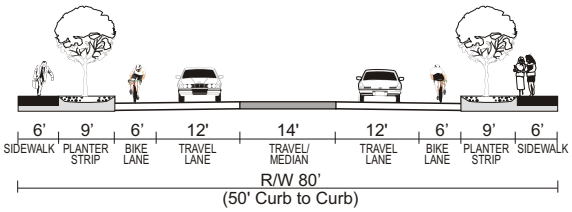
- Extend Kinkade Road east from Main Street when land east of Main Street develops.
- Extend Oregon Trail to the east to connect to Olson Road and west to connect to Smith Road, with intersections at Faler Road, Willow Fork Drive, Blalock Street and City Center Drive.
- Construct new connections parallel 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 can be constructed 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 dependant on using Main Street for local trips south of I-84. Once again, depending on the rate of development, the street connectivity will be a long term (and ongoing) system improvement.

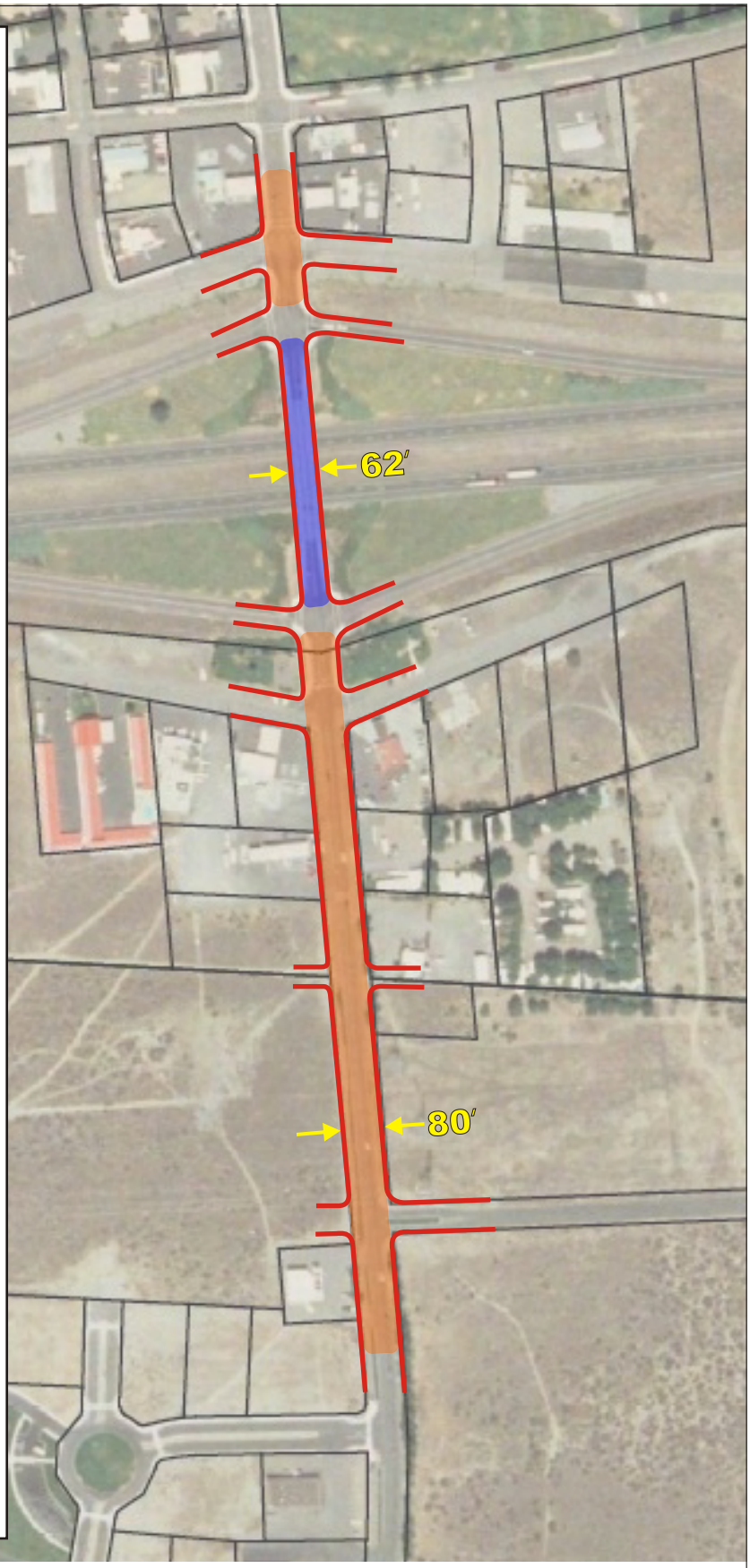
Typical 62 foot cross-section



Typical 80 foot cross-section







LEGEND

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

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Figure 4.7

SOUTH MAIN STREET IMPROVEMENTS

Access

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 interchange access management standards adopted by ODOT should be addressed when land is redeveloped within the Main Street interchange area.

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.
- 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 should be addressed with any new roadway connectivity and new development or as an interim measure before roadway connections are complete. 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.

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 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 Front Street and the BPA easement. Alternatively, the roadway could be built within the BPA easement, if permission is granted by the BPA. 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.

Laurel Lane IAMP Study Area

Trip Generation

The trip generation process translates land use quantities (number of households, square footage or employees) into vehicle trip ends (number of vehicles entering or leaving a particular zone) using established trip generation rates based on the Institute of Transportation Engineers (ITE) Trip Generation Manual[8]. Table 4.6 provides a listing of the weekday PM peak hour trip rates used in this analysis.

Table 4.6: ITE PM Peak Hour Trip Rates for Laurel Lane IAMP Study Area

Land Use Description	ITE Code	Land Use Unit	Vehicle Trips Per Land Use Unit	Assumed Size of Land Use
General Light Industrial	110	1,000 sq. ft. building area	0.98	200
Warehouse	150	employees	0.59	250
Fast Food with Drive In	934	1,000 sq. ft. building area	34.64	4
Gas Station with Mart	945	Fueling Position	13.38	16
Truck Stop	[9]	Fueling Position	135	6

Based on the assumed land uses for the build out development scenario, it is estimated that there will be an additional 7,500 new trips per day added to the system. During the PM peak hour, it is estimated that there will be an additional 900 trips generated by the future development, while an additional 850 new trips will be generated in the AM Peak hour. Tables A2 and A2a 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.

Traffic Assignment

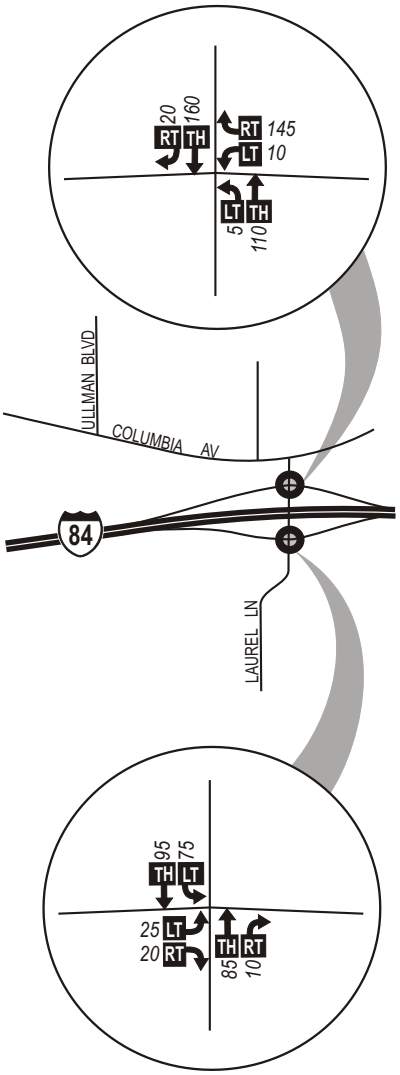
In this process, trips from the projected development are assigned to specific travel routes in the network, and resulting trip volumes are accumulated on links of the network until all trips are assigned. The trips were distributed toward the freeway ramps using similar turning movement percentages as the current counts, with most of the trips oriented to/from the east on I-84. The trip assignment assumes that a connection between the Port of Morrow East Beach area and US Highway 730 is in place, based on the Morrow County TSP. It was assumed that one-third of the new trips would use the US Highway 730 connection.

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

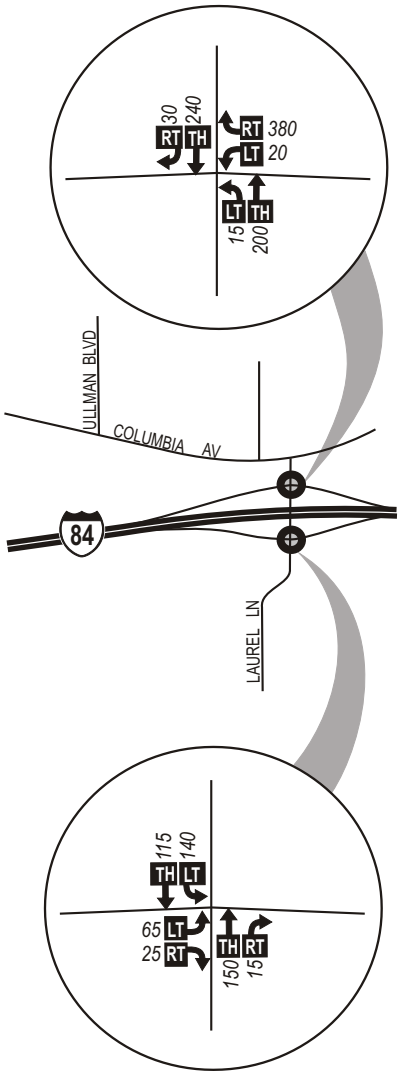
The projected PM Peak hour traffic volumes due to the build out scenario are shown in Figure 4.3. The cumulative PM Peak hour volume data for the Laurel Lane IAMP study area is shown in Figure 4.4. The projected AM Peak hour traffic volumes due to the build out scenario and the cumulative AM Peak hour traffic volumes are shown in Figure 4.8.

[8] *Trip Generation Manual*, 7th Edition, Institute of Transportation Engineers, 2003.
[9] *Trip rate based on field data used for the Westland Road Petro Travel Center in Umatilla County, OR – study completed by Kittelson and Associates (December 2003).*

AM TRIPS GENERATED BY BUILD OUT DEVELOPMENT



2026 AM PEAK HOUR TRAFFIC VOLUMES



LEGEND

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

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Figure 4.8

AM PEAK HOUR LAUREL LANE TRAFFIC VOLUMES

Volume Comparisons to Past Studies

The Transportation System Plan[10] documents the 20 year forecasted traffic volumes in Boardman. The 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 4.7 shows the comparison between the volumes forecasted by the TSP[3] and this IAMP.

Table 4.7: PM Peak Hour Volume Comparison between TSP and IAMP (2026)

Location	**Traffic Entering Intersection**		**Volume Difference**
	TSP	IAMP	
Laurel Lane & Columbia Avenue	490	970	480

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 development near the Laurel Lane interchange is expected to happen on the Port of Morrow property north and east of Boardman and most of the traffic will use the I-84 interchange at Laurel Lane.

The traffic forecasts for this intersection are significantly affected by expected growth on the Port of Morrow properties. The specific land uses and operations may be more refined through the development of their Master Plan for the East Beach area, and the traffic forecasted revised, accordingly.

Study Area Roadway Capacity & Level of Service

Study intersections within the IAMP area were analyzed using *Highway Capacity Manual*[11] methodologies for unsignalized intersections for comparison with the applicable jurisdiction's adopted performance standards.

The traffic volume data shown in Figure 4.4 was used in the analysis. The percentage of heavy vehicles at each intersection was based on the traffic counts and used in the analysis. From this analysis, intersection levels of service 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 hour of the average weekday.

Table 4.8 shows the cumulative operational analysis for the unsignalized intersections within the Laurel Lane 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).

[10] Transportation System Plan, City of Boardman, Oregon 1999
[11] *Highway Capacity Manual*, Transportation Research Board, Washington, D.C., 2000.

Table 4.8: Cumulative Weekday PM Peak Hour Intersection Level of Service

Intersection	V/C Ratio	Major Street LOS	Critical Movement	Critical Movement LOS	Performance Standard Met?
AM Peak Hour					
I-84 WB Ramp/Laurel Road	0.05	A	Westbound	B	Yes
I-84 EB Ramp/Laurel Road	0.19	A	Eastbound	B	Yes
PM Peak Hour					
Laurel Lane / Columbia Avenue	**0.96**	**D**	**Westbound**	**F**	**No**
I-84 WB Ramp/Laurel Lane	0.05	A	Westbound	B	Yes
I-84 EB Ramp/Laurel Lane	0.39	A	**Eastbound**	**D**	Yes

The intersection of Laurel Lane & Columbia Avenue is expected to exceed the City standard Level of Service in the PM peak hour. There are two intersections where the worst-movement Level of Service exceeds the city standards in the PM peak hour; Laurel Lane & Columbia Avenue and Laurel Lane & the I-84 Eastbound ramps.

Operational and Safety Issues

Based on the Existing Conditions Analysis and stakeholder interviews, current system deficiencies or safety issues are listed below:

- The traffic control between the intersections of Laurel Lane & I-84 Eastbound Ramps and Laurel Lane & Columbia Avenue is confusing to drivers not familiar with the area. Since the Port of Morrow generates a lot of truck traffic, there are many non-local drivers using this intersection.
- Intersections are not large enough to accommodate the turning radii of trucks.
- There are no pedestrian or bicycle facilities in the Laurel Lane interchange area, which happens to have a larger that average percentage of heavy vehicles due to the industrial land uses in the area. Pedestrians and bicyclists must use the roadway shoulders along Laurel Lane and Columbia Avenue, which is not desirable due to the large percentage of truck in the area.

Additional system operational and/or safety issues that were identified from the Future Conditions Analysis are listed in the following sections. The following intersection is expected to exceed the City standard Level of Service in the PM Peak Hour of the forecast year:

Laurel Lane & Columbia Avenue

The future Port of Morrow development is expected to occur east of Laurel Lane, which would increase the truck traffic going to and coming from the east on Columbia Boulevard. This will increase the number of conflicting vehicles at the intersection of Laurel Lane & Columbia Boulevard. Total volume at this location is forecast to increase from 350 to 830 vehicles during peak hours, with approximately 20 to 25 percent of those vehicles being heavy trucks.

Alternatives

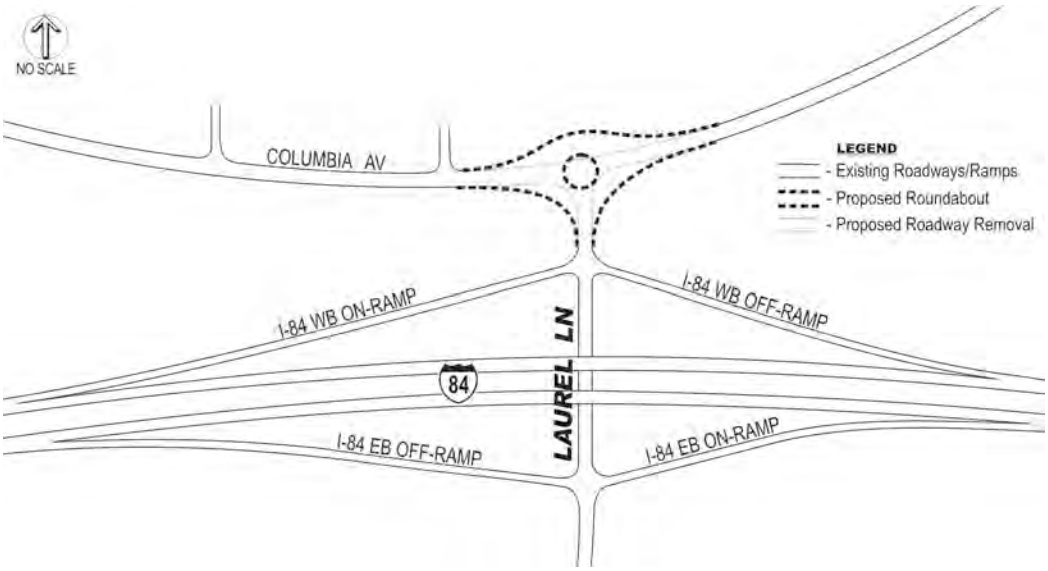
Following is a list of improvement alternatives that could be implemented to mitigate existing and anticipated transportation system deficiencies. The system alternatives are shown in Figure 4.9.

Traffic Control, Signing & Striping Improvements

- Modify the traffic control at the intersection of Laurel Lane & Columbia Avenue so that the current eastbound "free" right turning traffic would have a stop sign or alter the traffic control so that all movements must stop. This will increase the average delay for the intersection and require more trucks to have to start from a stop condition.
- Install traffic signals at the intersections of Laurel Lane & Columbia Avenue and Laurel Lane & I-84 EB Ramp. Both intersections would need to be signalized and interconnected together in order to provide flow between the two intersections. This would allow smooth flow for the traffic with the green light, but will increase the delay for the vehicles waiting at the red light. Preliminary signal warrants are not met at either of the intersections, but the volumes should be monitored in the future to determine if a signal is warranted.
- Provide better signing and striping (e.g., more durable material striping) for the interchange area to accommodate non-local drivers.

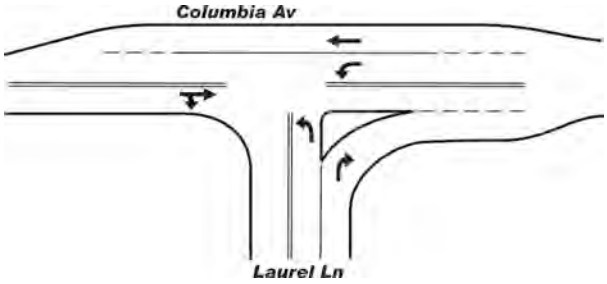
Roadway Widening or other Capacity Improvements

- Reconfigure the intersection of Laurel Lane & Columbia Avenue to be a truck sized roundabout. This would likely require shifting the intersection further away from I-84, and providing a roundabout area that is approximately 250 feet in diameter.

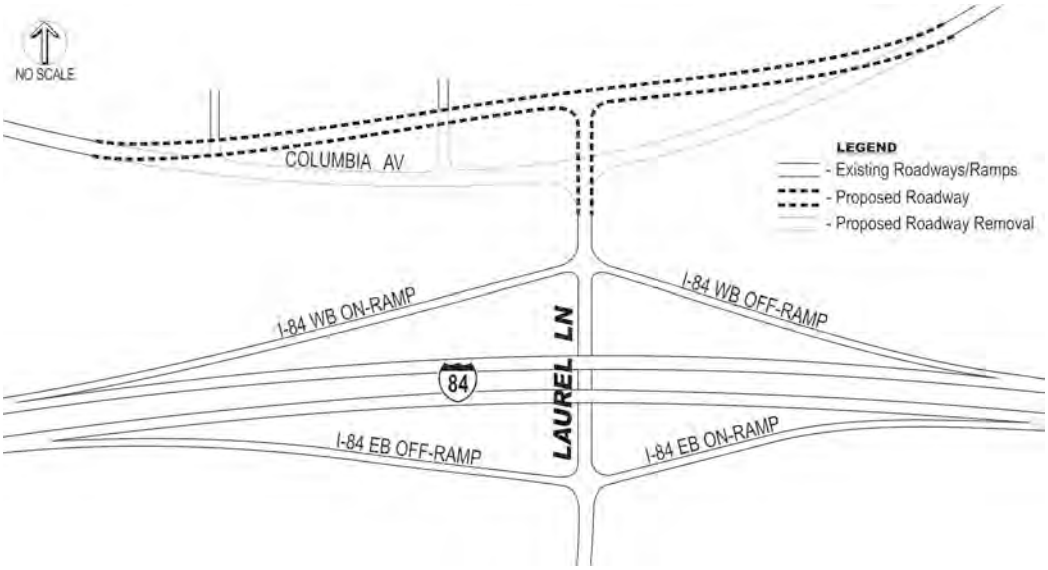


This concept would reduce truck stops and queues on all approaches. This option was not popular among truck drivers and freight operators, due to the increased wear on tires and truck suspension from turning required with a roundabout configuration.

- Reconstruct the intersection of Laurel Lane & Columbia Avenue to add a northbound free right turn (providing merge downstream for eastbound traffic) and a free through lane for westbound traffic. The westbound through traffic would be separated by a barrier and would not need to stop at the intersection. A merge would be provided downstream for westbound traffic (westbound through and northbound left). The northbound left and right turners and the eastbound right turning traffic would not have to stop. The westbound left turn would still experience a large delay, since they would need to wait for a gap in the northbound and eastbound traffic, but the traffic control would be much clearer so that non-local drivers wouldn't be confused when they drove through the intersection.



- A dedicated bike lane and sidewalks along Laurel Lane and Columbia Avenue would provide pedestrian connectivity and a safer facility for the pedestrian and cyclists. Sidewalks could be deferred until urban development occurs, as long as suitable pedestrian facilities were provided by other means.
- The ultimate alternative for this intersection would re-align Columbia Avenue further north, about 300 feet, to improve separation from the freeway terminal, and improve vehicle queue storage area between the westbound ramp terminal and Columbia Avenue.



Even with this relocation, the general standard for separation would not be met (500 feet instead of 1,300 feet), but traffic operations would be significantly improved. The parcel immediately north of Columbia Avenue is a designated 'shovel-ready' industrial site, which is owned by the Port of Morrow. This site would be impacted significantly by such a realignment.

Access

The long term goal is to reduce or minimize the number of access points along Columbia Avenue and Laurel Lane. 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. The interchange access management standards adopted by ODOT, as modified in this IAMP, should be addressed when land is developed (or redeveloped) within the Laurel Lane interchange area.

The number of access points should be reduced and/or combined on Columbia Avenue. 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.

The existing access from Laurel Lane into a private easement south of I-84 is approximately 300 feet from the ramp terminal. This is far below the standard, but given the terrain further south on Laurel Lane, and the high level of truck usage expected for development of this site, it is not feasible to relocate the access further south. The long-term solution can be implement as development occurs within the site east of Laurel Lane, which would construct the new connection near the BPA right-of-way, and provide a new access onto either side of Laurel Lane. Furthermore, the existing and forecasted traffic volumes on Laurel Lane south of I-84 are very low (less than 300 vehicles per hour at buildout), compared to any other area within the Boardman IAMP study. This suggests that the probability of conflicts would be low. Therefore, the existing access should remain at its present location, until a full access point is constructed as shown on Figure 4.9. At that time, auto traffic can be directed to the new access point, but truck traffic should continue to use the existing access point.

Sensitivity Analysis

The future distribution patterns have an impact on the forecasted turning movement volumes at study area intersections. If the connection between the Port of Morrow and US Highway 730 is not constructed, more traffic will use the Laurel Lane interchange. If 100 percent of the future Port of Morrow East Beach traffic were to use the I-84 & Laurel Lane interchange, the resulting LOS at the three intersections will be slightly worse than if the assumed 30 percent of new trips were to use a US Highway 730 connection. The additional traffic would not require any additional system alternatives to what are listed above.

Major Constraints

The following section identifies transportation, environmental, socio-economic, multi-modal and right of way constraints and/or issues associated with the Laurel Lane transportation deficiencies.

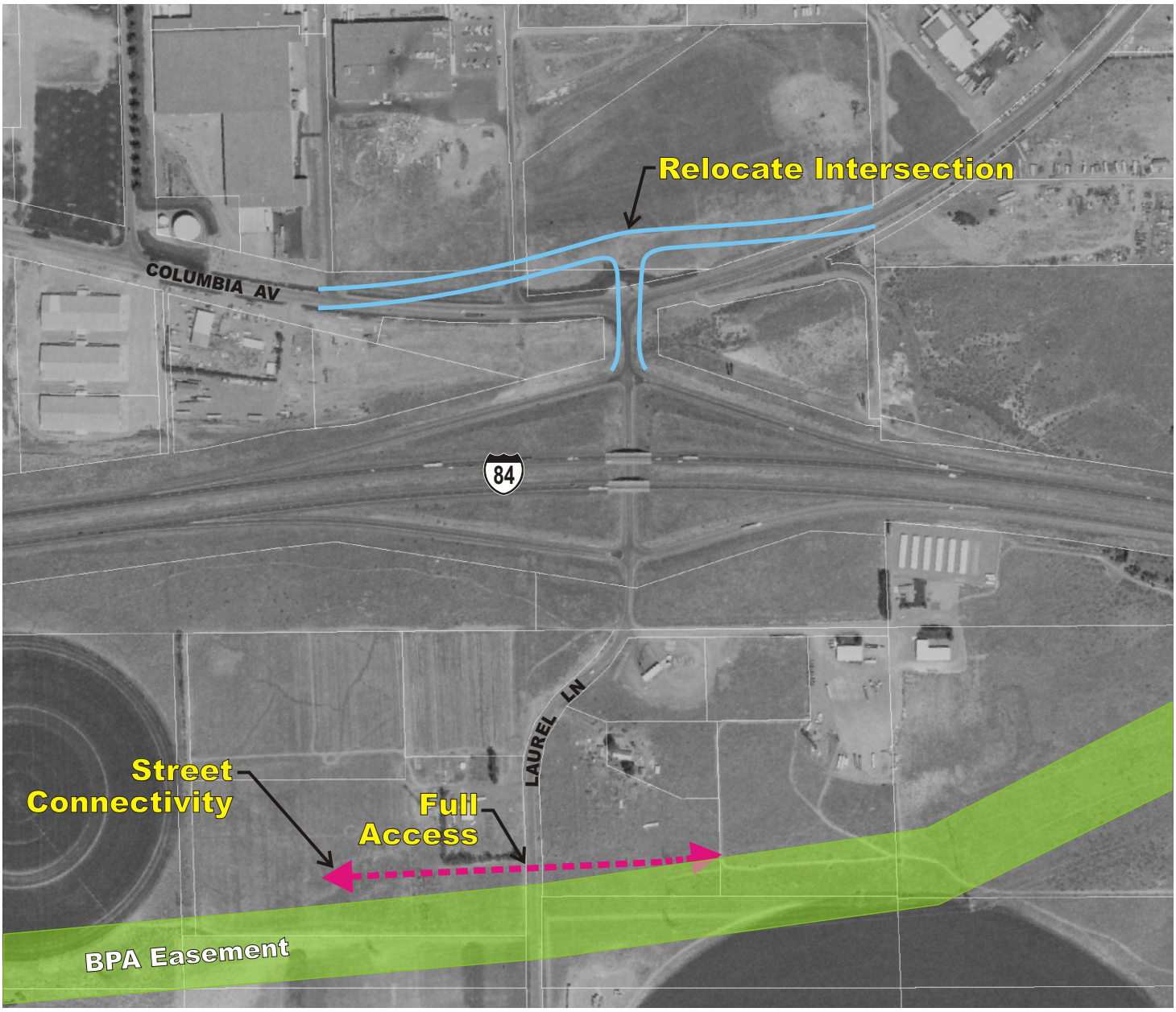
- The Bonneville Power Administration (BPA) has a major electrical transmission line that cuts across the city. The BPA easement is 395 feet wide and is about one quarter mile south and parallel to I-84. Any new roadways within the BPA easement would need to comply with regulations set forth by BPA.
- 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. There are no identified wetland areas within the Laurel Lane IAMP area.
- 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.

Potential Mode Conflicts

With the completion of the planned improvement projects in the City's Transportation CIP, most of the arterial and collector streets within the IAMP area will provide separate bicycle lanes and sidewalks to minimize motor vehicle, bicycle, and pedestrian conflicts.

Potential Right of Way Constraints

While much vacant or underdeveloped land remains in the IAMP area, there are a number of potential constraints to the purchase of additional right of way for future roadway alignments. In addition to existing developments, other features impacting potential roadway alignments include the BPA easement, I-84, and lands zoned for exclusive farm use outside of the urban growth boundary.



Alternate Traffic Control Options for Laurel Ln. & Columbia Ave.

1. *Relocate Intersection*
2. *Reconstruct Intersection*
3. *Traffic Signals at Laurel Ln. & I-84 WB Ramp and Laurel Ln. & Columbia Ave.*
4. *All-way Stop Control*

All Other Intersections will have Minor Street Stop Control

City of Boardman IAMP
April 2007

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Figure 4.9

LAUREL LANE IAMP IMPROVEMENTS

Chapter 5. Interchange Area Management Plan

Alternatives for providing adequate operation of the proposed interchange and 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 recommended short, medium, and long-range actions.

Transportation Alternatives

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

Traffic Controls & Geometric Improvements

In Chapter 4, a future deficiencies analysis identified two study area intersections that were projected to fail to meet adopted mobility standards, which for the City of Boardman is a Level of Service "C".

The intersections of Main Street & I-84 Westbound Ramp and Laurel Lane & Columbia Avenue are expected to exceed the City standard Level of Service in the PM peak hour. There are five additional intersections where the worst-movement Level of Service exceeds the city standards in the PM peak hour, including Main Street & Boardman Avenue, Main Street & Front Street (North), Main Street & I-84 Eastbound Ramps and Main Street & Front Street (South) and Laurel Lane & I-84 Eastbound Ramps.

Recommended improvements to restore operations in accordance with mobility standards at each location are described below.

Main Street & I-84 Westbound Ramp

This intersection was shown to fail to meet performance standards under future conditions with the stop-controlled approach operating at level of service F and volume-to-capacity ratios greater than 1.0. The exit ramp currently has one approach lane to serve both right-turning and left-turning vehicles. The existing heavy vehicle percentage is 10% and is expected to continue to be that in the future. There is a sight distance issue for the vehicles on the exit ramp. The guard rail and fencing on the east side of the bridge and the fact that the bridge is very narrow, forces drivers to creep into the intersection to see to the south.

The intersection of Main Street & I-84 Westbound Ramp will meet the traffic signal peak hour volume warrant in the PM peak hour in the forecast year. It is likely to therefore warrant a traffic signal under cumulative conditions. For good signal operations, a northbound left turn lane and storage space on the southbound approach would be recommended. The intersection of Front Street (North) is too close to the intersection for efficient signal operations. Front Street would most likely need to be terminated at 1st Street NE and 1st Street NW. As development occurs, the City should monitor the traffic volumes at the I-84 Ramp intersections to determine if the volumes would warrant a traffic signal. Depending on the rate of development, this most likely will be a long-range (15 - 20 year) system improvement. The Main Street bridge across I-84 does

not currently have room for turn lanes at the ramp intersections, which would be desirable if the intersections were signalized.

Because projected minor street volumes are relatively low, the timing of the need for this signal is uncertain and may depend on the actual pattern of development in the area of the intersection. Therefore, the construction of the separate left and right turn lane on the I-84 Eastbound ramp approach should be implemented in the mid-term, with signalization being considered as a long-range improvement that would be implemented when warranted.

Laurel Lane & Columbia Avenue

This intersection is a T-intersection and currently has stop control for both movements on the westbound approach and the eastbound through movement. The northbound approach and the eastbound right turns do not have to stop. This intersection was shown to fail to meet performance standards under future conditions with the stop-controlled westbound approach operating at level of service F. The current volumes are relatively low, total approach volume during the PM Peak hour is under 300, but the heavy vehicle percentage is relatively high, 20%. The intersection is less than 300 feet north of the intersection of Laurel Lane & I-84 Eastbound Ramp, which doesn't allow for a lot of queuing space for the large trucks that use the intersection.

Local drivers indicate the intersection at Laurel Lane & Columbia Avenue operates acceptably, if drivers drive according to the traffic control. Drivers unfamiliar with the way the intersection operates stop or slow down even though they have the right of way. This can disrupt the flow of vehicles by the drivers that are familiar with the intersection. Since a large percentage of the vehicles are trucks, which are longer and heavier than autos, it can take longer to get through the intersection and may cause backups. Under the current type of traffic control, the westbound left turning vehicles must wait for a gap in both the northbound and eastbound right turning traffic in order to proceed through the intersection. They must also yield to the eastbound through traffic (which has to wait for a gap in the northbound traffic).

The majority of the future development in the Laurel Lane interchange area is expected to happen north and east of the City at the Port of Morrow. As the land is developed, traffic to and from the east will increase, which increases the number of conflicting vehicles at the intersection. A modification to the traffic control will be needed as traffic volumes increase due to the new development.

- A short range alternative would be to upgrade the signing and striping at this intersection to reduce driver confusion, especially among from drivers outside of the area.
- A medium/long range alternative would be to reconstruct the intersection to better define the movements. This would include constructing a northbound right turn lane, which merges onto eastbound Columbia downstream of the intersection. A free westbound through lane could also be constructed, which would allow westbound through traffic to proceed through the intersection without stopping and merge with the northbound left turning traffic downstream of the intersection.
- A ultimate option would be to shift the existing Columbia Avenue 300 feet to the north, which would move the intersection farther away from the intersection of Laurel Lane & I-84 Eastbound Ramps and install all way stop control. The Level-of-Service at the intersection would be improved and the increased distance between the intersections would reduce the occurrences of trucks backing up into the intersection at the I-84 Eastbound Ramps.

Main Street Overpass

The Main Street bridge over I-84 is currently two lanes wide with very narrow sidewalks. This bridge is one of two places where drivers can cross I-84 to complete local trips and also serves as access to I-84. 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. The bridge should be widened to accommodate the turn lanes, bike lanes and wider sidewalks, which would in turn improve the sight distance for drivers on the exit ramp approaches. The eastbound and westbound I-84 exit ramps should also be widened to accommodate separate left- and right turning vehicles. A wider sidewalk and separate bike lanes on the Main Street bridge across I-84 will provide a safer facility for the pedestrians and bring the overpass up to current ODOT bridge standards.

Main Street & Boardman Avenue

The side street at this intersection was shown to fail to meet performance standards under future conditions with the stop-controlled approaches operating at level of service F. Modifying the stop control to be an all-way stop would improve the operation of this intersection to within the city performance standards. The forecast year traffic volumes are not high enough to warrant a traffic signal at this location.

In the forecast year, the side-street LOS at the intersection of Main Street & Boardman Avenue is expected 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. As development occurs, the City should monitor the traffic volumes at the intersection of Main Street & Boardman Avenue to determine if the volumes would warrant a traffic signal. 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 & Front Street (North)

The side street at this intersection was shown to fail to meet performance standards under future conditions with the stop-controlled approaches operating at level of service D. While the volumes of traffic attempting to leave the stop-controlled approaches are low, the volume of traffic on Main Street and the close proximity to the I-84 Westbound exit ramp do not provide enough gaps in traffic to serve them.

This intersection is within the minimum spacing standards applicable to freeway interchanges. According to the Oregon Department of Transportation (ODOT) spacing standards, the first right-in/right-out access should occur no closer than 900 feet of the interchange and the first full access intersection should occur not closer than 1,320 feet. The intersection is less than 200 feet north of the intersection of Main Street & I-84 Westbound Ramp and less than 300 feet south of the intersection of Main Street & Boardman Avenue. Front Street provides access to ten parcels, all of which have alternate access of other roads.

Converting this intersection to right-in/right-out only would mitigate the failing operations and improve highway safety by eliminating the minor street through and left turn movements, which will experience very high delays in 2026. The existence of the right-in/right-out approaches would still fail to meet the access management spacing standard given the proximity to the interchange, but would have a lesser degree of conflict with the interchange ramp movements than the existing configuration. It should be recognized that such an improvement would result in

a diversion of approximately 100 vehicles during the peak hour to other routes because several movements would no longer be available at this intersection. These trips would most likely use Boardman Avenue and 1st Street East and 1st Street West. It was found that the side street at Main Street & Boardman Avenue would fail to meet performance standards under future conditions with the stop-controlled approaches operating at level of service F, with and without the additional diverted traffic. See the recommended improvements in the previous section for the intersection of Main Street & Boardman Avenue.

The traffic volumes at this intersection should be monitored as development occurs to determine if certain turning movements should be prohibited. Boardman Avenue can be used as alternate access to the properties along Front Street North.

Triggers for access changes at Front Street North include:

- Side street level of service drops below LOS E
- Traffic signal installed at I-84 ramp(s)
- Bridge improvement project constructed
- Increase in number of crashes

It is recommended that the alternative to restrict turning movements to right-in and right-out only be implemented as an interim improvement after local connectivity has been enhanced to provide alternate access to Main Street, with the long-range improvement being to restrict access.

Main Street & I-84 Eastbound Ramps

This intersection was shown to fail to meet performance standards under future conditions with the stop-controlled approaches operating at level of service D. The intersection of Main Street & I-84 Eastbound Ramps does not currently meet the traffic signal peak hour warrant for the PM peak hour in 2026, but a small amount of development beyond what was forecast 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 EB Ramp are expected to be approximately 90% of the volumes needed to meet the Peak Hour traffic signal warrant. A signal at this location would need a southbound left turn lane and northbound storage space. It would therefore be recommended that access to Front Street (South) be relocated.

Main Street & Front Street (South)

This intersection was shown to fail to meet performance standards under future conditions with the stop-controlled approaches operating at level of service E. While the volumes of traffic attempting to leave the stop-controlled approaches are low, the volume of traffic on Main Street and the close proximity to the I-84 Eastbound exit ramp do not provide enough gaps in traffic to serve them.

This intersection is within the minimum spacing standards applicable to freeway interchanges. According to the Oregon Department of Transportation (ODOT) spacing standards, the first right-in/right-out access should occur no closer than 900 feet of the interchange and the first full access intersection should occur not closer than 1,320 feet. The intersection is less than 300 feet south of the intersection of Main Street & I-84 Eastbound Ramp. Front Street currently provides direct access to ten land parcels.

Converting this intersection to right-in/right-out only would mitigate the failing operations and improve highway safety by eliminating the minor street through and left turn movements, which will experience very high delays in 2026. The existence of the right-in/right-out approaches would still fail to meet the access management spacing standard given the proximity to the interchange, but would have a lesser degree of conflict with the interchange ramp movements

than the existing configuration. It should be recognized that such an improvement would result in a diversion of approximately 50 to 100 vehicles during the peak hour to other routes because several movements would no longer be available at this intersection. Until alternate access is created, these 50 to 100 vehicles would have to take a right turn and back track to get to or from the 10 parcels located on Main Street.

The traffic volumes at this intersection should be monitored as development occurs to determine if certain turning movements should be prohibited. There is currently no alternate access for the properties along Front Street South, therefore additional access should be in place (see Local Connectivity Plan) before restricting access to Front Street South from Main Street.

Triggers for access changes at Front Street South include:

- Side street level of service drops below LOS D
- Traffic signal installed at I-84 ramp(s)
- Bridge improvement project constructed
- Increase in number of crashes

Laurel Lane & I-84 Eastbound Ramp

This intersection was shown to fail to meet performance standards under future conditions with the stop-controlled approaches operating at level of service D. While the volumes of traffic attempting to leave the stop-controlled approaches are very low, the volume of traffic traveling southbound on Laurel Lane and turning onto eastbound I-84 is relatively high, which limits the number of adequate gaps in traffic to serve them.

Local Connectivity Plan

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;
- Providing access to lands surrounding the Main Street and Laurel Lane 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 was developed that builds on existing and planned streets in the two IAMP areas. These plans not only improve overall connectivity throughout the City, but provide the ability to consolidate approaches to Main Street and Laurel Lane, while maintaining accessibility to individual properties in the corridors. Figure 5.1 displays the proposed local connectivity plan, with key elements described below. The arrows shown in the figures represent potential connections and the general direction for the placement of the connection. In each case, the specific alignments and design will be better determined as part of development review.

South Main Street

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.
- Extend Tatone Street from Willow Fork Drive to Wilson Road.
- 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 can be constructed 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 dependant on using Main Street for local trips south of I-84. Once again, depending on the rate of development, the street connectivity will be a long term (and ongoing) system improvement.

Laurel Lane

There are limited opportunities to improve street connectivity near the Laurel Lane interchange, due to the large parcel sizes and the amount of developable land. The grade of Laurel Lane south of I-84 also constrains opportunities for new connections to adjoining parcels. Figure 5.1 displays the local connectivity plan near the Laurel Lane interchange.

Pedestrian/Bicycle Network

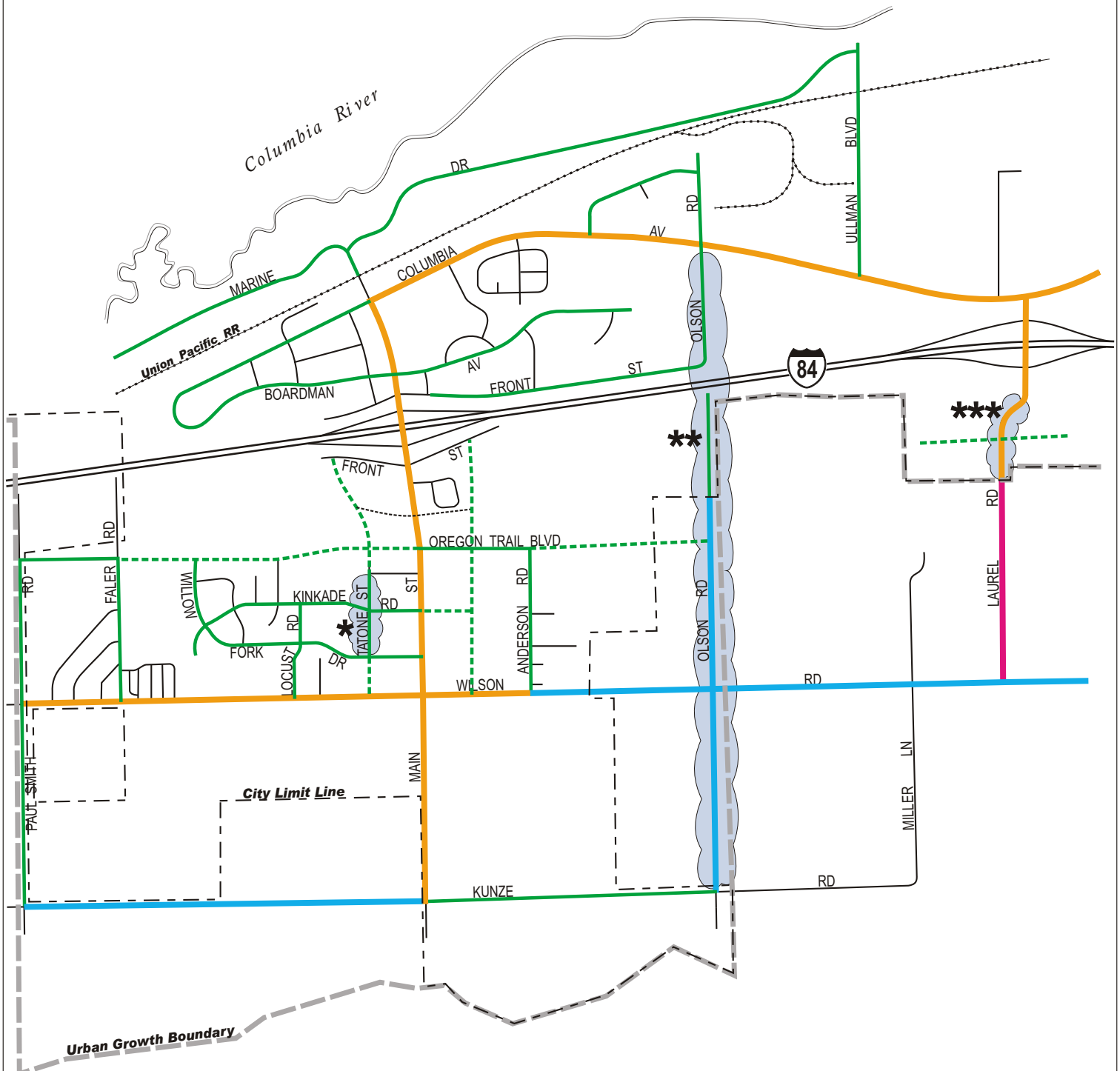
The pedestrian network should be addressed in parallel to the street network improvements. In general, curb and sidewalk similar to North Main Street will improve the safety of pedestrians along South Main Street. Pedestrian access across Main Street is also important. Pedestrian crossings should be 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. 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 should be addressed with any new roadway connectivity and new development or done as an interim measure prior to roadway connections. 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.



* - Tatone Street currently designated as Local. Proposed to re-designate Tatone Street as a Collector.

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

*** - Segment of Laurel Road currently designated as Collector. Proposed to re-designate as Arterial.

LEGEND

- Existing Arterial
- Existing Collector
- Proposed Collector
- Existing Local
- Proposed Local
- Minor Arterial (County)
- Major Collector (County)

City of Boardman IAMP
April 2007

NO SCALE

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Figure 5.1

ROADWAY NETWORK AND CLASSIFICATION PLAN

Access Management Plan

A key element of the IAMP related to the long-range preservation of operational efficiency and safety of the proposed interchange is the management of access to the interchange crossroads (Main Street and Laurel Lane). 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.

Further Public Coordination Recommended

It should be noted that the recommended 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. Additional access points should 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 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 recommendations 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.

To provide a basis for decision-making during the development of the access management plan, an access management strategy was established. The objectives of this plan are listed below.

1. Restrict all access from abutting properties to the interchange and interchange ramps.
2. Meet, or move in the direction of meeting, ODOT's adopted access management spacing standards for access to interchange crossroads.
    a. For Main Street from the eastbound interchange ramp terminal to a distance of 1,320 feet to the south, the spacing standards from OAR 734-051-0125(2), Table 7 and Figure 3 apply, which would restrict all access for the distance of 1,320 feet, with a right-in/right-out access allowed no closer than 990 feet from the interchange ramp terminal.
    b. For Laurel Lane from the eastbound interchange ramp terminal to a distance of 1,320 feet to the south, the spacing standards from OAR 734-051-0125(2), Table 7 and Figure 3 apply, which would restrict all access for the distance of 1,320 feet, with a right-in/right-out access allowed no closer than 990 feet from the interchange ramp terminal.
    c. For Laurel Lane/Columbia Avenue from the intersection of Laurel Lane & Columbia Avenue to a distance 1,000 feet to the east and west, the spacing standards from OAR 734-051-0125(2), Table 7 and Figure 3 apply, which would restrict all access for the distance of 1,320 feet (from interchange), with a right-in/right-out access allowed no closer than 990 feet from the interchange ramp terminal.

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. Align approaches on opposite sides of roadways where feasible to reduce turning conflicts.
7. Short-range actions shall accommodate existing development needs.

Using this strategy, an action plan for each approach to Main Street and Laurel Lane/Columbia Avenue was developed, as shown below in Table 5.1 and 5.2, respectively. Short-range actions shall accommodate existing development needs .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 or as opportunities arise through property development. The long-range action plan has also been illustrated in Figure 5.2 and 5.3 to aid in the interpretation of the actions in Table 5.1 and 5.2. Prior to adopting or implementing the recommendations in this plan regarding access management, input from affected property owners and tenants should be obtained to validate assumptions made regarding property ownerships and the ability of short-range actions to accommodate existing development needs.

Table 5.1: Main Street Access Actions

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

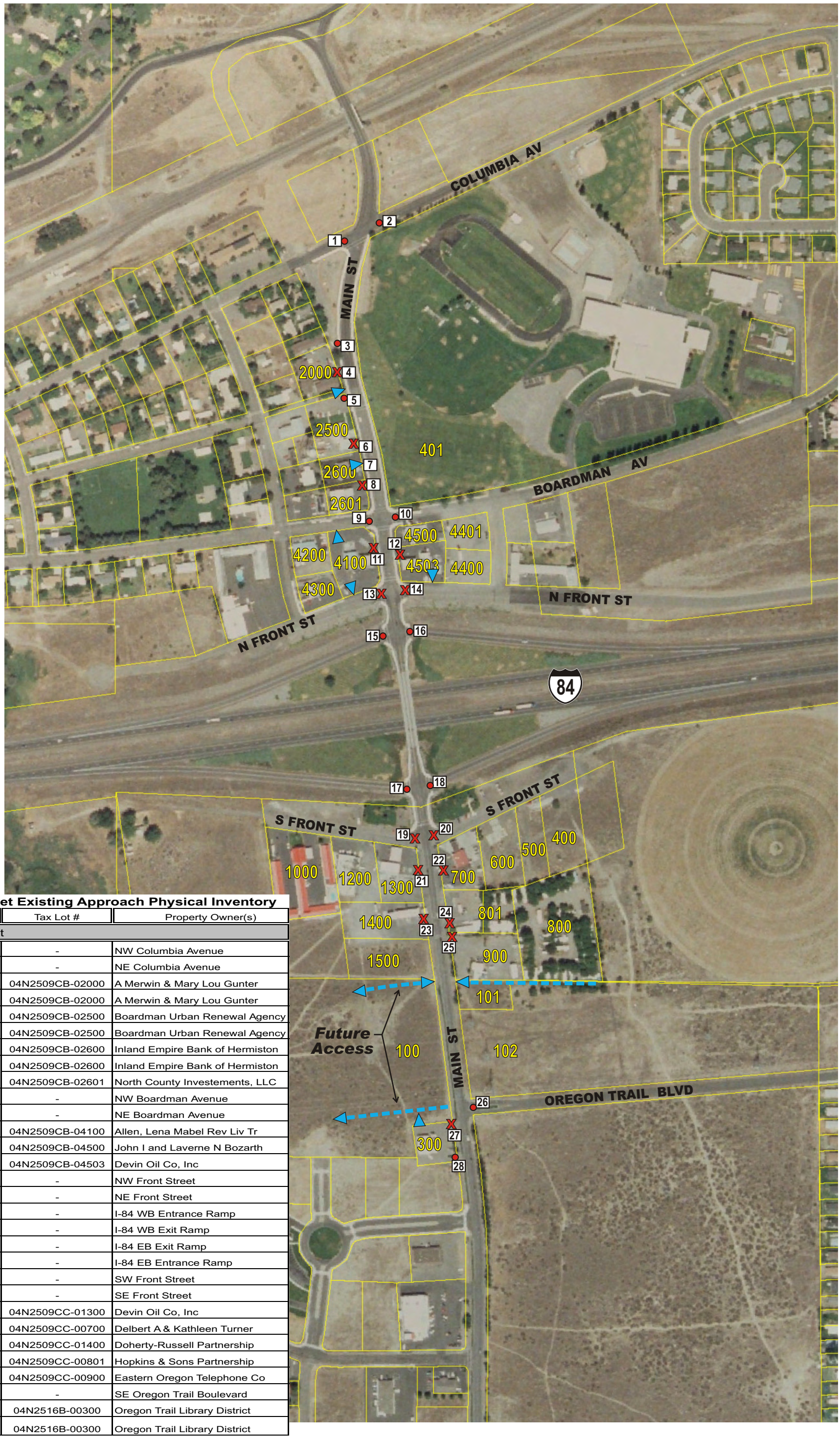
Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
15	(I-84 Westbound Ramp.) No action.	Same as Short Range.	Same as Short Range.
16	(I-84 Westbound Ramp.) No action.	Same as Short Range.	Same as Short Range.
17	(I-84 Eastbound Ramp.) No action.	Same as Short Range.	Same as Short Range.
18	(I-84 Eastbound Ramp.) No action.	Same as Short Range.	Same as Short Range.
19	(South Front St.) No action.	Restrict turning movements to allow only right-ins and right outs	Close approach at such time as reasonable access becomes available (e.g. through construction of public roads or establishment of easements). This will affect Lots 1000, 1200, 1300 – approach will not be closed until reasonable access becomes available.
20	(South Front St.) No action.	Restrict turning movements to allow only right-ins and right outs	Close approach at such time as reasonable access becomes available (e.g. through construction of public roads or establishment of easements). This will affect Lots 400, 500, 600, 700 – approach will not be closed until reasonable access becomes available.
21	No action.	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 or establishment of easements).
22	No action.	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 or establishment of easements). Approach will not be closed until reasonable access becomes available.
23	No action.	Same as Short Range.	Close approach at such time as reasonable access becomes available (e.g. through construction of public roads or establishment of easements). Approach will not be closed until reasonable access becomes available.
24	No action.	Same as Short Range.	Close approach at such time as reasonable access becomes available (e.g. through construction of public roads or establishment of easements). Approach will not be closed until reasonable access becomes available.
25	No action.	Same as Short Range.	Close approach at such time as reasonable access becomes available (e.g. through construction of public roads or establishment of easements). Approach will not be closed until reasonable access becomes available.
26	(Oregon Trail Blvd.) No action.	Same as Short Range.	Same as Short Range.
27	No action.	Same as Short Range.	Close approach upon property redevelopment. Future access to be taken from Approach 28 or future Oregon Trail Boulevard.
28	No action.	Same as Short Range.	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.

Table 5.2: Laurel Lane / Columbia Boulevard Access Actions

Approach #	Short-Range Action	Medium-Range Action	Long-Range Action
1	(I-84 Westbound Ramp) No action.	Same as Short Range.	Same as Short Range.
2	(I-84 Eastbound Ramp) No action.	Same as Short Range.	Same as Short Range.
3	(I-84 Eastbound Ramp) No action.	Same as Short Range.	Same as Short Range.
4	(I-84 Westbound Ramp) No action.	Same as Short Range.	Same as Short Range.
5	(Roadway Easement) No action.	Same as Short Range.	Same as Short Range.
6	No action.	Same as Short Range.	Upon property redevelopment, approach to be relocated approximately 1200 feet south of the I-84 eastbound ramp intersection – future roadway or easement. The current easement serves Lots 3201 and 3202. Approach will not be closed until reasonable and mutual access becomes available.
7	No action.	Same as Short Range.	Upon property redevelopment, approach to be relocated approximately 200 feet south – future roadway or easement.
8	No action.	Same as Short Range.	Approach to be relocated approximately 150 feet north – future roadway or easement.
9	No action.	Same as Short Range.	Approach to be relocated approximately 200 feet north - future roadway or easement.
10	No action.	Same as Short Range.	Same as Short Range.
11	No action.	Same as Short Range.	Upon property redevelopment, approach to be combined with Approach 10, with shared access.
12	No action.	Same as Short Range.	Upon property redevelopment, approach to be combined with Approach 14, with shared access.
13	No action.	Same as Short Range.	Upon property redevelopment, approach to be relocated so that it lines up across from Approach 14 with shared access with Approach 15.
14	No action.	Same as Short Range.	Same as Short Range.
15	No action.	Same as Short Range.	Upon property redevelopment, approach to be relocated so that it lines up across from Approach 14.

Notes: Refer to Figure 5.3 for location of state highway approaches cited in the above table.



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

X - Access Closed

- Proposed Access

000 - Tax Lot ID#

SCALE: 1"=400' (Approx.)

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City of Boardman IAMP
April 2007

Figure 5.2

Main Street IAMP

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

0 - Access Location & Number

X - Access Closed

- Proposed Access

000 - Tax Lot ID#

SCALE: 1"=400' (Approx.)

DKS Associates
TRANSPORTATION SOLUTIONS

City of Boardman IAMP
April 2007

Figure 5.3

Laurel Lane IAMP

Policies, Rules, & Ordinances

As land develops to urban densities within the interchange areas, compliance will be required with the access management and circulation plans conceived through this study. As part of the adoption of the IAMP, two articles of the City of Boardman development codes should modified to reflect the standards and plans contained in Appendix 7. In brief, the code amendments implement:

- Access spacing requirements
- Local Street connectivity and access closures

In addition, the Local Connectivity Plan (Figure 5.4) should be incorporated as part of the Transportation System Plan.

Cost Estimates

Planning-level cost estimates for all recommended 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, right of way, pavement removal, and traffic signals. The estimated costs are shown below in Tables 5.3, 5.4 and 5.5, with work sheets showing assumed unit costs for construction elements provided in the appendix. All costs are in 2007 dollars and do not reflect the added cost of inflation. When considering needed funding to construct the identified improvements below, it should be recognized that local streets are typically constructed by land owners as development occurs. Other suggestions for funding sources are indicated (State, City, Port of Morrow or Private), but they do not assure the availability or approval of such improvements.

Table 5.3: Cost estimates for Recommended 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 5.4: Cost estimates for Laurel Lane IAMP recommended improvements

Alternative	Potential Funding Source	Estimated Cost
Signing and Striping Improvements at Laurel Lane & Columbia Avenue	City / Port	$25,000
New Laurel Lane & Columbia Avenue Intersection*		
Alternative 1 – Relocate Intersection	City / Port	$1.5 million
Alternative 2 – Modify Intersection	City / Port	$600,000

* Does not include Right of Way acquisition.

Table 5.5: Cost Estimates for TSP recommended Improvements

Improvements (not including right-of-way)	Potential Funding Source	Estimated Cost
Main Street South	City / ODOT	$3 Million
Oregon Trail (east)	City	$2 Million
Oregon Trail (west)	City	$3.3 Million
Tatone St (north)	City	$1.3 Million
Tatone St (south)	City	$500,000
North/South Collector (east of Main Street)	City	$3 Million
East/West Local at Laurel Lane (south of I-84)	City / Private	$1.7 Million
East/West Local between Front Street and Oregon Trail	City / Private	$650,000
Expanded Pedestrian & Bicycle Network*	City / Private	$750,000

Alternative Evaluation and Prioritization

With improvement alternatives identified, an evaluation of their ability to achieve the project goals will be provided, followed by a prioritization of successful alternatives into short, medium, and long-range plans to guide implementation.

Alternative Evaluation

Using the objectives for the Main Street and Laurel Lane IAMPs and TSP Update outlined in Chapter 2, the alternatives proposed were evaluated to ensure the goals established at the outset of the project would be 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 recommended as part of the IAMP and TSP Update have been prioritized into short, medium, and long-range actions, as shown in Table 5.6, to provide guidance for future implementation and funding. Short-range actions represent immediate needs and are proposed to be implemented within a 5 year period. 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. The improvements listed in Table 5.6 have also been illustrated in Figures 4.5, 4.6 and 4.9.

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 5.6: Transportation Improvement Prioritization

Short-Range Improvements
• Signing and Striping Improvements at Laurel Lane & Columbia Boulevard
• Short-range actions from access management plan.
Medium-Range Improvements
• Reconstruct South Main Street
• Medium-range actions from access management plan.
Long-Range Improvements
• Construct new public streets according to adopted Local Connectivity Plan.
• Long-range actions from access management plan.
• Reconstruct Main Street bridge over I-84 – including wider sidewalk, bike lanes and turn lanes.
• Install traffic signal at Main Street & I-84 Eastbound Ramp
• Reconstruct intersection of Laurel Lane & Columbia Avenue
Note: Medium and long-range improvements could be constructed sooner than anticipated as opportunities arise through private property development or other means.

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Project Participants

Project Management Team

Cheryl Jarvis-Smith	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
Pamela O'Brien, PE	DKS Senior Engineer
Tom Armstrong	Winterbrook Planning

Project Sponsor

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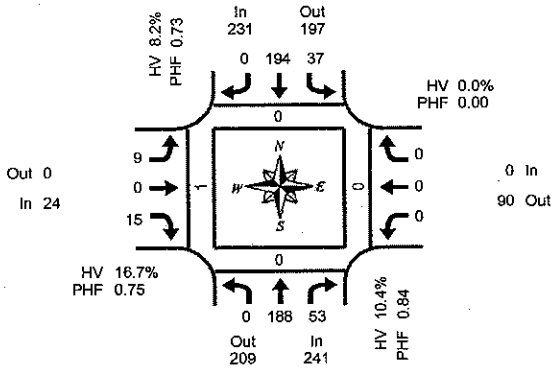
Traffic Counts

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

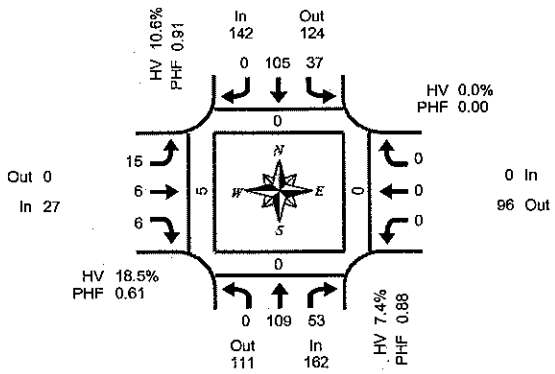
Rolling Hour Summary
6:00 AM to 8:00 AM

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				

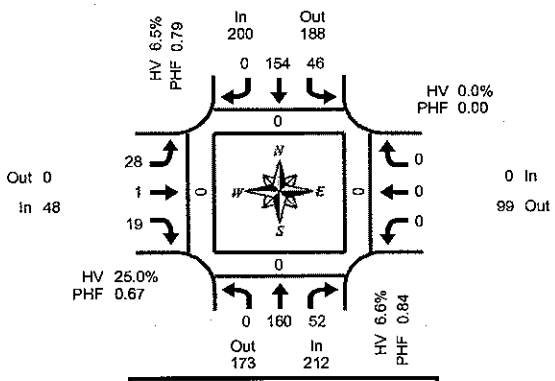
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	109	53	162	37	105	0	142	15	6	6	27	0	0	0	0	331
%HV	0.0%	6.4%	9.4%	7.4%	16.2%	8.6%	0.0%	10.6%	13.3%	50.0%	0.0%	18.5%	0.0%	0.0%	0.0%	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				

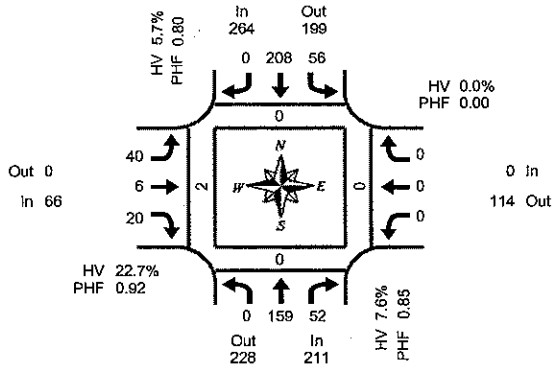
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	160	52	212	46	154	0	200	28	1	19	48	0	0	0	0	460
%HV	0.0%	5.6%	9.6%	6.6%	13.0%	4.5%	0.0%	6.5%	17.9%	#####	31.6%	25.0%	0.0%	0.0%	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				

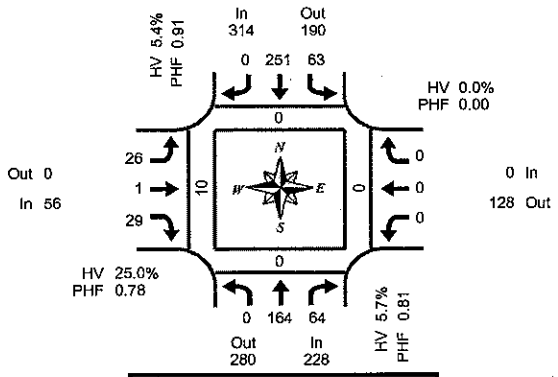
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	159	52	211	56	208	0	264	40	6	20	66	0	0	0	0	541
%HV	0.0%	5.7%	13.5%	7.6%	7.1%	5.3%	0.0%	5.7%	17.5%	66.7%	20.0%	22.7%	0.0%	0.0%	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	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	228	280	508	1	314	190	504	1	56	0	56	0	0	128	128	0	598	0	0	0	10
%HV	5.7%				5.4%				25.0%				0.0%				7.4%				
PHF	0.81				0.91				0.78				0.00				0.95				

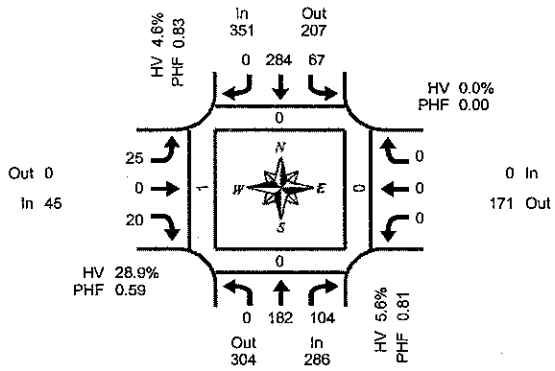
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	164	64	228	63	251	0	314	26	1	29	56	0	0	0	0	598
%HV	0.0%	5.5%	6.3%	5.7%	4.8%	5.6%	0.0%	5.4%	19.2%	#####	27.6%	25.0%	0.0%	0.0%	0.0%	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				

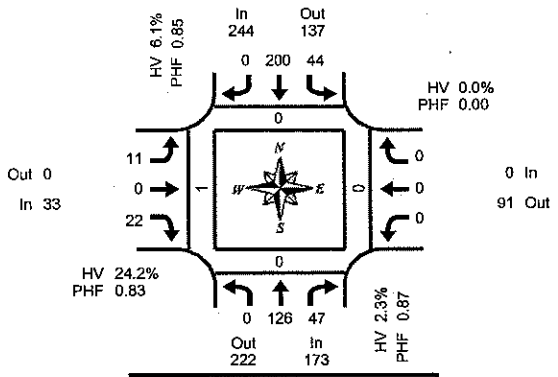
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	182	104	286	67	284	0	351	25	0	20	45	0	0	0	0	682
%HV	0.0%	3.3%	9.6%	5.6%	4.5%	4.6%	0.0%	4.6%	28.0%	0.0%	30.0%	28.9%	0.0%	0.0%	0.0%	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				

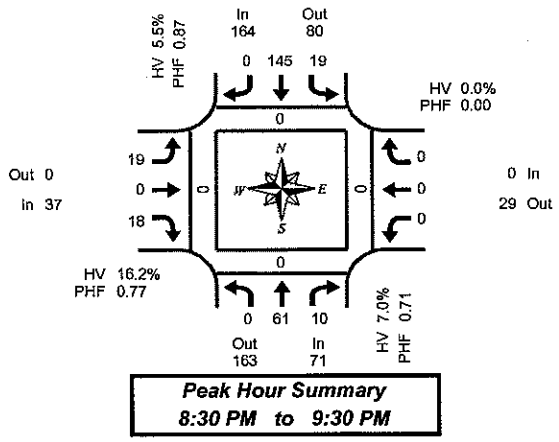
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	126	47	173	44	200	0	244	11	0	22	33	0	0	0	0	450
%HV	0.0%	2.4%	2.1%	2.3%	6.8%	6.0%	0.0%	6.1%	9.1%	0.0%	31.8%	24.2%	0.0%	0.0%	0.0%	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				

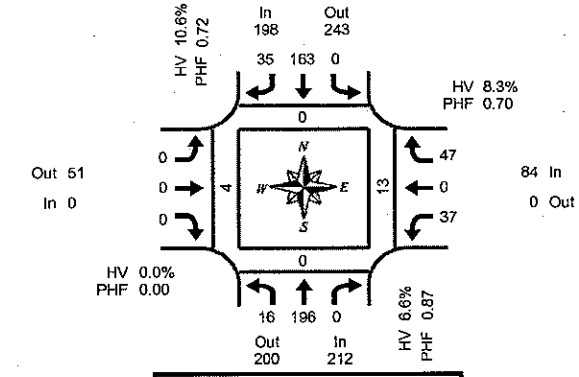
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	61	10	71	19	145	0	164	19	0	18	37	0	0	0	0	272
%HV	0.0%	4.9%	20.0%	7.0%	5.3%	5.5%	0.0%	5.5%	5.3%	0.0%	27.8%	16.2%	0.0%	0.0%	0.0%	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				

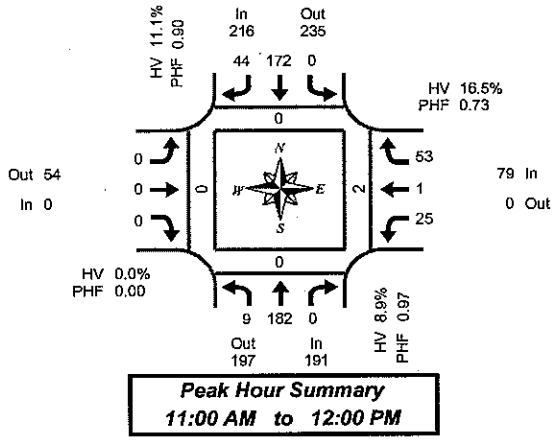
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	16	196	0	212	0	163	35	198	0	0	0	0	37	0	47	84	494
%HV	43.8%	3.6%	0.0%	6.6%	0.0%	5.5%	34.3%	10.6%	0.0%	0.0%	0.0%	0.0%	5.4%	0.0%	10.6%	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				

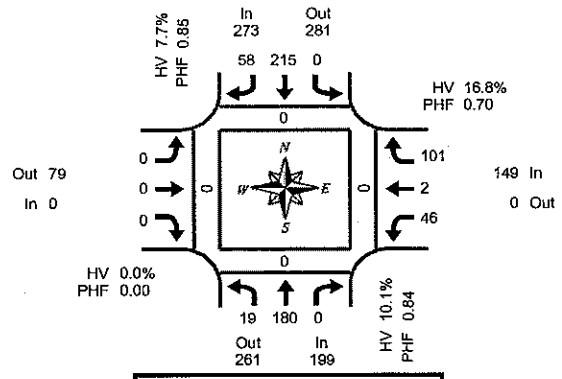
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	9	182	0	191	0	172	44	216	0	0	0	0	25	1	53	79	486
%HV	55.6%	6.6%	0.0%	8.9%	0.0%	5.8%	31.8%	11.1%	0.0%	0.0%	0.0%	0.0%	12.0%	#####	17.0%	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
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	
12:00 PM	5	38	0	0	0	66	14	0	0	0	0	0	18	2	33	0	176
12:15 PM	6	53	0	0	0	49	16	0	0	0	0	0	11	0	26	0	161
12:30 PM	1	44	0	0	0	47	10	0	0	0	0	0	8	0	16	0	126
12:45 PM	7	45	0	1	0	53	18	0	0	0	0	0	9	0	26	0	158
1:00 PM	4	51	0	0	0	60	10	0	0	0	0	0	8	0	14	0	147
1:15 PM	2	43	0	0	0	34	9	0	0	0	0	0	11	0	10	0	109
1:30 PM	2	27	0	0	0	42	15	0	0	0	0	0	10	0	10	0	106
1:45 PM	1	37	0	0	0	47	13	0	0	0	0	0	11	1	15	0	125
Total Survey	28	338	0	1	0	398	105	0	0	0	0	0	86	3	150	0	1,108

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	199	261	460	1	273	281	554	0	0	79	79	0	149	0	149	0	621
%HV	10.1%				7.7%				0.0%				16.8%				10.6%
PHF	0.84				0.85				0.00				0.70				0.88

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	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

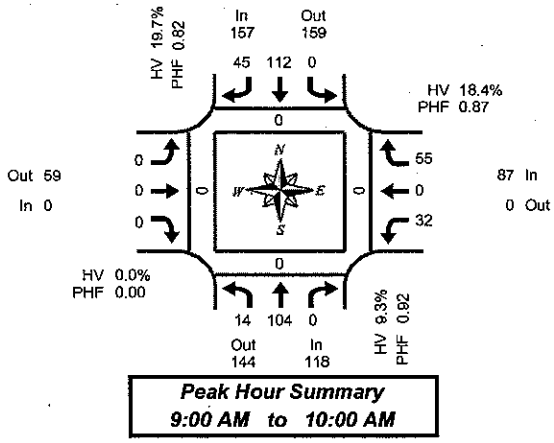
Rolling Hour Summary
12:00 PM to 2:00 PM

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

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



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				

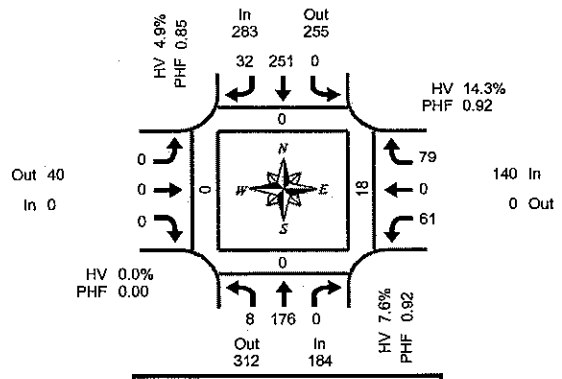
By Movement	Northbound Main St				Southbound Main St				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	14	104	0	118	0	112	45	157	0	0	0	0	32	0	55	87	362
%HV	42.9%	4.8%	0.0%	9.3%	0.0%	11.6%	40.0%	19.7%	0.0%	0.0%	0.0%	0.0%	9.4%	0.0%	23.6%	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



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

Main St & I-84 WB 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 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	
2:00 PM	2	38	0	0	0	62	11	0	0	0	0	0	14	0	11	0	138
2:15 PM	2	36	0	0	0	46	11	0	0	0	0	0	10	0	18	0	123
2:30 PM	1	51	0	0	0	39	8	0	0	0	0	0	16	0	13	0	128
2:45 PM	4	48	0	0	0	24	9	1	0	0	0	0	12	1	16	0	114
3:00 PM	3	42	0	0	0	73	10	0	0	0	0	0	13	0	19	0	160
3:15 PM	1	41	0	0	0	63	4	0	0	0	0	0	13	0	25	0	147
3:30 PM	1	49	0	0	0	61	10	1	0	0	0	0	16	0	19	0	156
3:45 PM	3	44	0	0	0	54	8	0	0	0	0	0	19	0	16	0	144
Total Survey	17	349	0	0	0	422	71	2	0	0	0	0	113	1	137	0	1,110

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	14	0
0	0	3	0
0	0	1	0
0	0	0	0
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

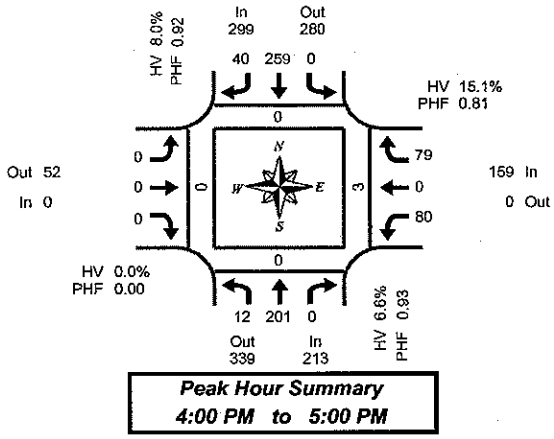
Rolling Hour Summary
2:00 PM to 4:00 PM

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

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

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0
0	0	3	0
0	0	0	0
0	0	0	0
0	0	4	0
0	0	2	0
0	0	4	0
0	0	4	0
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
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	213	339	552	0	299	280	579	1	0	52	52	0	159	0	159	0	671
%HV	6.6%				8.0%				0.0%				15.1%				9.2%
PHF	0.93				0.92				0.00				0.81				0.93

Pedestrians Crosswalk			
North	South	East	West
0	0	3	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	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

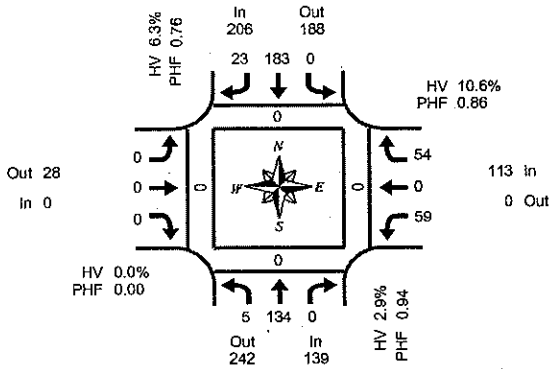
Rolling Hour Summary
4:00 PM to 6:00 PM

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

Pedestrians Crosswalk			
North	South	East	West
0	0	3	0
0	0	7	0
0	0	6	0
0	0	10	0
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
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	
6:00 PM	1	36	0	0	0	62	6	0	0	0	0	0	6	0	24	0	135
6:15 PM	1	30	0	0	0	31	6	0	0	0	0	0	15	0	13	0	96
6:30 PM	2	33	0	0	0	40	9	0	0	0	0	0	19	0	14	0	117
6:45 PM	1	36	0	0	0	50	2	0	0	0	0	0	19	0	3	0	110
7:00 PM	1	40	0	0	0	49	3	0	0	0	0	0	12	0	16	0	121
7:15 PM	0	39	0	0	0	45	1	0	0	0	0	0	12	0	4	0	101
7:30 PM	1	22	0	0	0	26	5	0	0	0	0	0	19	0	11	0	84
7:45 PM	2	17	0	0	0	24	2	0	0	0	0	0	12	0	7	0	64
Total Survey	9	252	0	0	0	327	34	0	0	0	0	0	114	0	92	0	828

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	139	242	381	0	206	188	394	0	0	28	28	0	113	0	113	0	458
%HV	2.9%				6.3%				0.0%				10.6%				6.3%
PHF	0.94				0.76				0.00				0.86				0.85

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	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

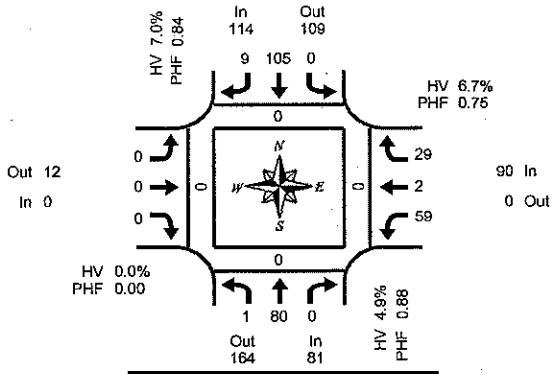
Rolling Hour Summary
6:00 PM to 8:00 PM

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

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



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

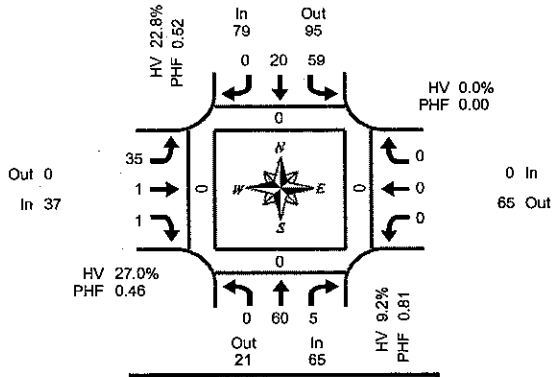
Rolling Hour Summary
8:00 PM to 10:00 PM

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



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

Laurel Ln & 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 Laurel Ln				Southbound Laurel Ln				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 AM	0	4	4	0	2	0	0	0	3	1	0	0	0	0	0	0	14	0	0	0	0
6:15 AM	0	7	2	0	3	2	0	0	1	0	2	0	0	0	0	0	17	0	0	0	0
6:30 AM	0	14	2	0	6	2	0	0	7	0	0	0	0	0	0	0	31	0	0	0	0
6:45 AM	0	18	1	0	0	7	0	0	20	0	0	0	0	0	0	0	46	0	0	0	0
7:00 AM	0	19	1	0	28	10	0	0	3	0	0	0	0	0	0	0	61	0	0	0	0
7:15 AM	0	9	1	0	25	1	0	0	5	1	1	0	0	0	0	0	43	0	0	0	0
7:30 AM	0	6	1	0	13	2	0	0	2	0	1	0	0	0	0	0	25	0	0	0	0
7:45 AM	0	8	1	0	11	6	0	0	1	0	1	0	0	0	0	0	28	0	0	0	0
Total Survey	0	85	13	0	88	30	0	0	42	2	5	0	0	0	0	0	265	0	0	0	0

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

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	65	21	86	0	79	95	174	0	37	0	37	0	0	65	65	0	181	0	0	0	0
%HV	9.2%				22.8%				27.0%				0.0%				18.8%				
PHF	0.81				0.52				0.46				0.00				0.74				

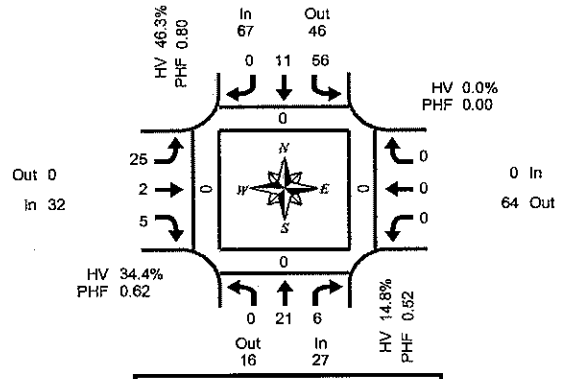
By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	60	5	65	59	20	0	79	35	1	1	37	0	0	0	0	181
%HV	0.0%	6.7%	40.0%	9.2%	23.7%	20.0%	0.0%	22.8%	22.9%	#####	#####	27.0%	0.0%	0.0%	0.0%	0.0%	18.8%
PHF	0.00	0.79	0.63	0.81	0.53	0.50	0.00	0.52	0.44	0.25	0.25	0.46	0.00	0.00	0.00	0.00	0.74

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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 AM	0	43	9	0	11	11	0	0	31	1	2	0	0	0	0	0	108	0	0	0	0
6:15 AM	0	58	6	0	37	21	0	0	31	0	2	0	0	0	0	0	155	0	0	0	0
6:30 AM	0	60	5	0	59	20	0	0	35	1	1	0	0	0	0	0	181	0	0	0	0
6:45 AM	0	52	4	0	66	20	0	0	30	1	2	0	0	0	0	0	175	0	0	0	0
7:00 AM	0	42	4	0	77	19	0	0	11	1	3	0	0	0	0	0	157	0	0	0	0

Total Vehicle Summary

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



Peak Hour Summary
10:45 AM to 11:45 AM

Laurel Ln & 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 Laurel Ln				Southbound Laurel Ln				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	3	1	0	15	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0
10:15 AM	0	2	2	0	7	1	0	0	3	0	0	0	0	0	0	0	15	0	0	0	0
10:30 AM	0	3	1	0	9	2	0	0	3	0	0	0	0	0	0	0	18	0	0	0	0
10:45 AM	0	2	1	0	17	4	0	0	4	1	1	0	0	0	0	0	30	0	0	0	0
11:00 AM	0	3	2	0	16	1	0	0	5	0	2	0	0	0	0	0	29	0	0	0	0
11:15 AM	0	12	1	0	12	3	0	0	11	1	1	0	0	0	0	0	41	0	0	0	0
11:30 AM	0	4	2	0	11	3	0	0	5	0	1	0	0	0	0	0	26	0	0	0	0
11:45 AM	0	3	1	0	10	4	0	0	6	1	0	0	0	0	0	0	25	0	0	0	0
Total Survey	0	32	11	0	97	18	0	0	37	3	5	0	0	0	0	0	203	0	0	0	0

Peak Hour Summary
10:45 AM to 11:45 AM

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	27	16	43	0	67	46	113	0	32	0	32	0	0	64	64	0	126
%HV	14.8%				46.3%				34.4%				0.0%				36.5%
PHF	0.52				0.80				0.62				0.00				0.77

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0

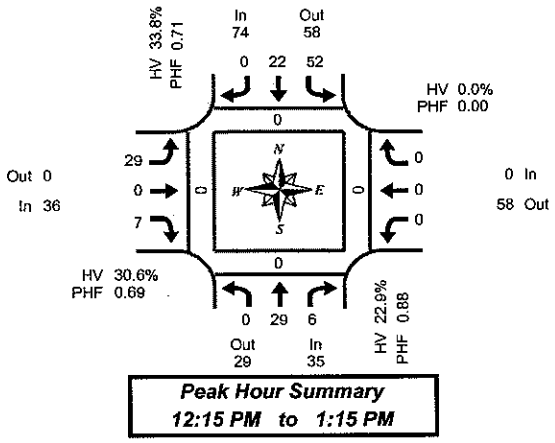
By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	21	6	27	56	11	0	67	25	2	5	32	0	0	0	0	126
%HV	0.0%	14.3%	16.7%	14.8%	48.2%	36.4%	0.0%	46.3%	32.0%	50.0%	40.0%	34.4%	0.0%	0.0%	0.0%	0.0%	36.5%
PHF	0.00	0.44	0.75	0.52	0.82	0.69	0.00	0.80	0.57	0.50	0.63	0.62	0.00	0.00	0.00	0.00	0.77

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	10	5	0	48	7	0	0	10	1	1	0	0	0	0	0	82	0	0	0	0
10:15 AM	0	10	6	0	49	8	0	0	15	1	3	0	0	0	0	0	92	0	0	0	0
10:30 AM	0	20	5	0	54	10	0	0	23	2	4	0	0	0	0	0	118	0	0	0	0
10:45 AM	0	21	6	0	56	11	0	0	25	2	5	0	0	0	0	0	126	0	0	0	0
11:00 AM	0	22	6	0	49	11	0	0	27	2	4	0	0	0	0	0	121	0	0	0	0

Total Vehicle Summary

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



Laurel Ln & 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 Laurel Ln				Southbound Laurel Ln				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	
12:00 PM	0	2	1	0	14	4	0	0	1	0	6	0	0	0	0	0	28
12:15 PM	0	8	0	0	18	8	0	0	3	0	2	0	0	0	0	0	39
12:30 PM	0	8	0	0	11	9	0	0	7	0	2	0	0	0	0	0	37
12:45 PM	0	7	2	0	8	2	0	0	8	0	1	0	0	0	0	0	28
1:00 PM	0	6	4	0	15	3	0	0	11	0	2	0	0	0	0	0	41
1:15 PM	0	5	2	0	12	2	0	0	0	0	2	0	0	0	0	0	23
1:30 PM	0	3	2	0	12	9	0	0	4	1	2	0	0	0	0	0	33
1:45 PM	0	2	2	0	13	6	0	0	3	0	2	0	0	0	0	0	28
Total Survey	0	41	13	0	103	43	0	0	37	1	19	0	0	0	0	0	257

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

Peak Hour Summary
12:15 PM to 1:15 PM

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	35	29	64	0	74	58	132	0	36	0	36	0	0	58	58	0	145
%HV	22.9%				33.8%				30.6%				0.0%				30.3%
PHF	0.88				0.71				0.69				0.00				0.88

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0

By Movement	Northbound Laurel Ln				Southbound Laurel Ln				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	29	6	35	52	22	0	74	29	0	7	36	0	0	0	0	145
%HV	0.0%	13.8%	66.7%	22.9%	36.5%	27.3%	0.0%	33.8%	34.5%	0.0%	14.3%	30.6%	0.0%	0.0%	0.0%	0.0%	30.3%
PHF	0.00	0.91	0.38	0.88	0.72	0.61	0.00	0.71	0.66	0.00	0.88	0.69	0.00	0.00	0.00	0.00	0.88

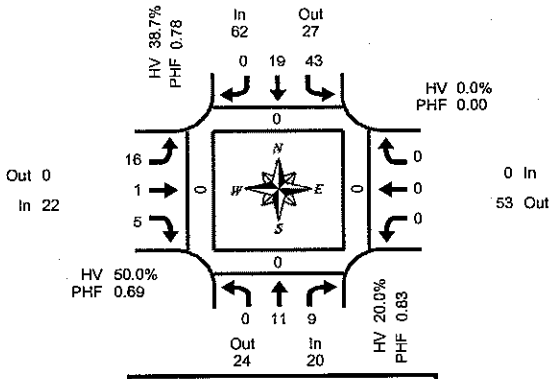
Rolling Hour Summary
12:00 PM to 2:00 PM

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	
12:00 PM	0	25	3	0	51	23	0	0	19	0	11	0	0	0	0	0	132
12:15 PM	0	29	6	0	52	22	0	0	29	0	7	0	0	0	0	0	145
12:30 PM	0	26	8	0	46	16	0	0	26	0	7	0	0	0	0	0	129
12:45 PM	0	21	10	0	47	16	0	0	23	1	7	0	0	0	0	0	125
1:00 PM	0	16	10	0	52	20	0	0	18	1	8	0	0	0	0	0	125

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



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

Laurel Ln & I-84 EB 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 Laurel Ln				Southbound Laurel Ln				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	3	2	0	12	5	0	0	5	0	0	0	0	0	0	0	27	0	0	0	0
8:15 AM	0	3	1	0	12	4	0	0	0	1	2	0	0	0	0	0	23	0	0	0	0
8:30 AM	0	2	1	0	11	9	0	0	4	0	0	0	0	0	0	0	27	0	0	0	0
8:45 AM	0	3	2	0	9	2	0	0	2	1	0	0	0	0	0	0	19	0	0	0	0
9:00 AM	0	2	4	0	13	6	0	0	4	0	4	0	0	0	0	0	33	0	0	0	0
9:15 AM	0	4	2	0	10	2	0	0	6	0	1	0	0	0	0	0	25	0	0	0	0
9:30 AM	0	2	0	0	12	5	0	0	5	0	0	0	0	0	0	0	24	0	0	0	0
9:45 AM	0	1	1	0	9	1	0	0	1	0	0	0	0	0	0	0	13	0	0	0	0
Total Survey	0	20	13	0	88	34	0	0	27	2	7	0	0	0	0	0	191	0	0	0	0

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

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	20	24	44	0	62	27	89	0	22	0	22	0	0	53	53	0	104
%HV	20.0%				38.7%				50.0%				0.0%				37.5%
PHF	0.83				0.78				0.69				0.00				0.79

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0

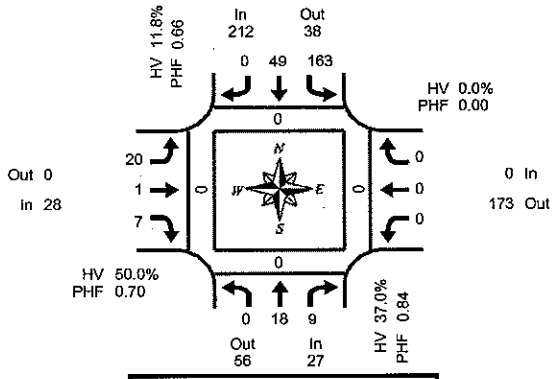
By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	11	9	20	43	19	0	62	16	1	5	22	0	0	0	0	104
%HV	0.0%	9.1%	33.3%	20.0%	44.2%	26.3%	0.0%	38.7%	50.0%	0.0%	60.0%	50.0%	0.0%	0.0%	0.0%	0.0%	37.5%
PHF	0.00	0.69	0.56	0.83	0.83	0.53	0.00	0.78	0.67	0.25	0.31	0.69	0.00	0.00	0.00	0.00	0.79

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	11	6	0	44	20	0	0	11	2	2	0	0	0	0	0	96	0	0	0	0
8:15 AM	0	10	8	0	45	21	0	0	10	2	6	0	0	0	0	0	102	0	0	0	0
8:30 AM	0	11	9	0	43	19	0	0	16	1	5	0	0	0	0	0	104	0	0	0	0
8:45 AM	0	11	8	0	44	15	0	0	17	1	5	0	0	0	0	0	101	0	0	0	0
9:00 AM	0	9	7	0	44	14	0	0	16	0	5	0	0	0	0	0	95	0	0	0	0

Total Vehicle Summary

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



Peak Hour Summary
2:45 PM to 3:45 PM

Laurel Ln & 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	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval
Time	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	Total
2:00 PM	0	6	1	0	14	4	0	0	2	0	2	0	0	0	0	0	29
2:15 PM	0	3	3	0	13	10	0	0	10	0	2	0	0	0	0	0	41
2:30 PM	0	10	1	0	13	8	0	0	3	0	3	0	0	0	0	0	38
2:45 PM	0	4	2	0	34	15	0	0	2	0	2	0	0	0	0	0	59
3:00 PM	0	3	3	0	63	17	0	0	6	1	3	0	0	0	0	0	96
3:15 PM	0	5	3	0	29	7	0	0	5	0	2	0	0	0	0	0	51
3:30 PM	0	6	1	0	37	10	0	0	7	0	0	0	0	0	0	0	61
3:45 PM	0	6	1	0	26	9	0	0	5	1	2	0	0	0	0	0	50
Total Survey	0	43	15	0	229	80	0	0	40	2	16	0	0	0	0	0	425

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

Peak Hour Summary
2:45 PM to 3:45 PM

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	27	56	83	0	212	38	250	0	28	0	28	0	0	173	173	0	267
%HV	37.0%				11.8%				50.0%				0.0%				18.4%
PHF	0.84				0.66				0.70				0.00				0.70

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0

By Movement	Northbound Laurel Ln				Southbound Laurel Ln				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	18	9	27	163	49	0	212	20	1	7	28	0	0	0	0	267
%HV	0.0%	33.3%	44.4%	37.0%	9.8%	18.4%	0.0%	11.8%	55.0%	#####	28.6%	50.0%	0.0%	0.0%	0.0%	0.0%	18.4%
PHF	0.00	0.75	0.75	0.84	0.65	0.72	0.00	0.66	0.71	0.25	0.58	0.70	0.00	0.00	0.00	0.00	0.70

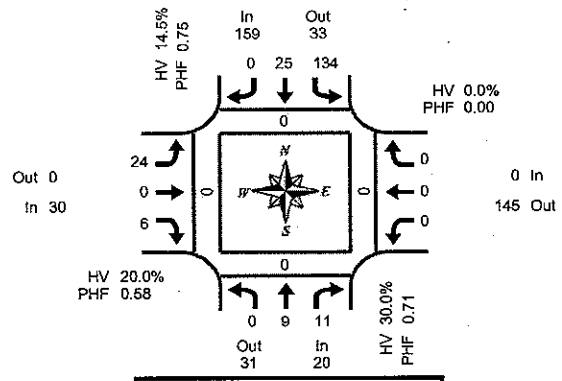
Rolling Hour Summary
2:00 PM to 4:00 PM

Interval Start	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Interval
Time	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	Total
2:00 PM	0	23	7	0	74	37	0	0	17	0	9	0	0	0	0	0	167
2:15 PM	0	20	9	0	123	50	0	0	21	1	10	0	0	0	0	0	234
2:30 PM	0	22	9	0	139	47	0	0	16	1	10	0	0	0	0	0	244
2:45 PM	0	18	9	0	163	49	0	0	20	1	7	0	0	0	0	0	267
3:00 PM	0	20	8	0	155	43	0	0	23	2	7	0	0	0	0	0	258

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



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

Laurel Ln & 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 Laurel Ln				Southbound Laurel Ln				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	3	4	0	49	4	0	0	3	0	0	0	0	0	0	0	63	0	0	0	0
4:15 PM	0	2	2	0	23	5	0	0	9	0	4	0	0	0	0	0	45	0	0	0	0
4:30 PM	0	0	4	0	34	11	0	0	4	0	2	0	0	0	0	0	55	0	0	0	0
4:45 PM	0	4	1	0	28	5	0	0	8	0	0	0	0	0	0	0	46	0	0	0	0
5:00 PM	0	1	2	0	44	4	0	0	5	0	1	0	0	0	0	0	57	0	0	0	0
5:15 PM	0	4	4	0	21	6	0	0	2	0	2	0	0	0	0	0	39	0	0	0	0
5:30 PM	0	0	1	0	22	2	0	0	6	0	1	0	0	0	0	0	32	0	0	0	0
5:45 PM	0	1	0	0	18	4	0	0	2	1	3	0	0	0	0	0	29	0	0	0	0
Total Survey	0	15	18	0	239	41	0	0	39	1	13	0	0	0	0	0	366	0	0	0	0

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

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	20	31	51	0	159	33	192	0	30	0	30	0	0	145	145	0	209	0	0	0	0
%HV	30.0%				14.5%				20.0%				0.0%				16.7%				
PHF	0.71				0.75				0.58				0.00				0.83				

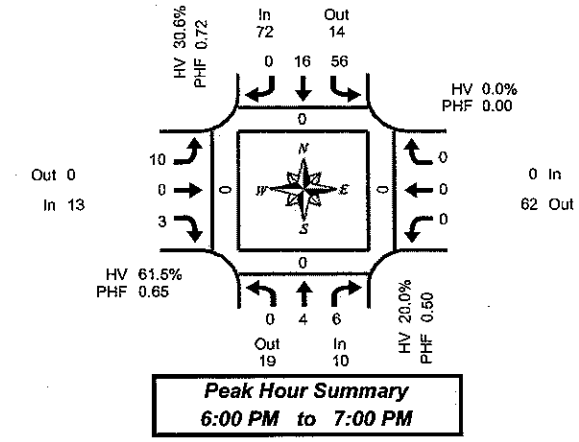
By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	9	11	20	134	25	0	159	24	0	6	30	0	0	0	0	209
%HV	0.0%	11.1%	45.5%	30.0%	12.7%	24.0%	0.0%	14.5%	16.7%	0.0%	33.3%	20.0%	0.0%	0.0%	0.0%	0.0%	16.7%
PHF	0.00	0.56	0.69	0.71	0.68	0.57	0.00	0.75	0.67	0.00	0.38	0.58	0.00	0.00	0.00	0.00	0.83

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	9	11	0	134	25	0	0	24	0	6	0	0	0	0	0	209	0	0	0	0
4:15 PM	0	7	9	0	129	25	0	0	26	0	7	0	0	0	0	0	203	0	0	0	0
4:30 PM	0	9	11	0	127	26	0	0	19	0	5	0	0	0	0	0	197	0	0	0	0
4:45 PM	0	9	8	0	115	17	0	0	21	0	4	0	0	0	0	0	174	0	0	0	0
5:00 PM	0	6	7	0	105	16	0	0	15	1	7	0	0	0	0	0	157	0	0	0	0

Total Vehicle Summary

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



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

Laurel Ln & I-84 EB 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 Laurel Ln				Southbound Laurel Ln				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	0	3	0	19	3	0	0	1	0	1	0	0	0	0	0	27	0	0	0	0
6:15 PM	0	3	2	0	18	7	0	0	3	0	0	0	0	0	0	0	33	0	0	0	0
6:30 PM	0	1	1	0	7	4	0	0	3	0	0	0	0	0	0	0	16	0	0	0	0
6:45 PM	0	0	0	0	12	2	0	0	3	0	2	0	0	0	0	0	19	0	0	0	0
7:00 PM	0	1	1	0	16	1	0	0	2	0	4	0	0	0	0	0	25	0	0	0	0
7:15 PM	0	0	1	0	9	2	0	0	0	0	1	0	0	0	0	0	13	0	0	0	0
7:30 PM	0	1	0	0	7	2	0	0	1	0	0	0	0	0	0	0	11	0	0	0	0
7:45 PM	0	0	0	0	4	3	0	0	2	0	0	0	0	0	0	0	9	0	0	0	0
Total Survey	0	6	8	0	92	24	0	0	15	0	8	0	0	0	0	0	153	0	0	0	0

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

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	10	19	29	0	72	14	86	0	13	0	13	0	0	62	62	0	95	0	0	0	0
%HV	20.0%				30.6%				61.5%				0.0%				33.7%				
PHF	0.50				0.72				0.65				0.00				0.72				

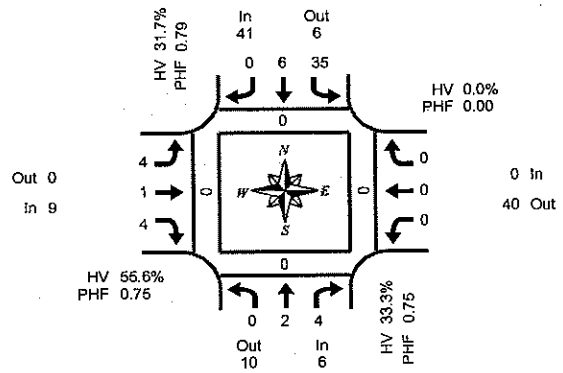
By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	4	6	10	56	16	0	72	10	0	3	13	0	0	0	0	95
%HV	0.0%	0.0%	33.3%	20.0%	32.1%	25.0%	0.0%	30.6%	70.0%	0.0%	33.3%	61.5%	0.0%	0.0%	0.0%	0.0%	33.7%
PHF	0.00	0.33	0.50	0.50	0.74	0.57	0.00	0.72	0.83	0.00	0.38	0.65	0.00	0.00	0.00	0.00	0.72

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	4	6	0	56	16	0	0	10	0	3	0	0	0	0	0	95	0	0	0	0
6:15 PM	0	5	4	0	53	14	0	0	11	0	6	0	0	0	0	0	93	0	0	0	0
6:30 PM	0	2	3	0	44	9	0	0	8	0	7	0	0	0	0	0	73	0	0	0	0
6:45 PM	0	2	2	0	44	7	0	0	6	0	7	0	0	0	0	0	68	0	0	0	0
7:00 PM	0	2	2	0	36	8	0	0	5	0	5	0	0	0	0	0	58	0	0	0	0

Total Vehicle Summary

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



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

Laurel Ln & 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 Laurel Ln				Southbound Laurel Ln				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	1	0	0	6	1	0	0	1	0	1	0	0	0	0	0	10	0	0	0	0
8:15 PM	0	0	2	0	11	2	0	0	1	1	0	0	0	0	0	0	17	0	0	0	0
8:30 PM	0	1	1	0	12	1	0	0	0	0	3	0	0	0	0	0	18	0	0	0	0
8:45 PM	0	0	1	0	6	2	0	0	2	0	0	0	0	0	0	0	11	0	0	0	0
9:00 PM	0	0	0	0	2	3	0	0	0	0	1	0	0	0	0	0	6	0	0	0	0
9:15 PM	0	1	1	0	6	3	0	0	0	0	2	0	0	0	0	0	13	0	0	0	0
9:30 PM	0	1	0	0	1	3	0	0	1	0	0	0	0	0	0	0	6	0	0	0	0
9:45 PM	0	1	1	0	8	1	0	0	0	0	1	0	0	0	0	0	12	0	0	0	0
Total Survey	0	5	6	0	52	16	0	0	5	1	8	0	0	0	0	0	93	0	0	0	0

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

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	6	10	16	0	41	6	47	0	9	0	9	0	0	40	40	0	56
%HV	33.3%				31.7%				55.6%				0.0%				35.7%
PHF	0.75				0.79				0.75				0.00				0.78

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0

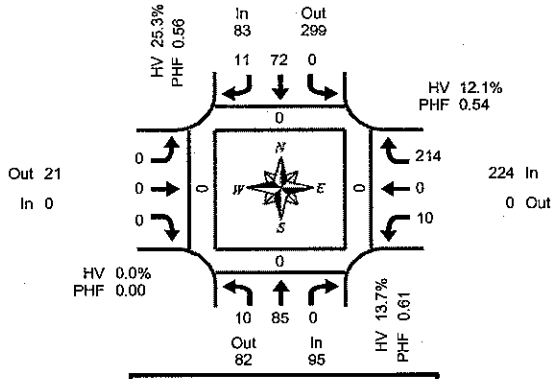
By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 EB Ramps				Westbound I-84 EB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	2	4	6	35	6	0	41	4	1	4	9	0	0	0	0	56
%HV	0.0%	50.0%	25.0%	33.3%	31.4%	33.3%	0.0%	31.7%	50.0%	#####	50.0%	55.6%	0.0%	0.0%	0.0%	0.0%	35.7%
PHF	0.00	0.50	0.50	0.75	0.73	0.75	0.00	0.79	0.50	0.25	0.33	0.75	0.00	0.00	0.00	0.00	0.78

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	2	4	0	35	6	0	0	4	1	4	0	0	0	0	0	56	0	0	0	0
8:15 PM	0	1	4	0	31	8	0	0	3	1	4	0	0	0	0	0	52	0	0	0	0
8:30 PM	0	2	3	0	26	9	0	0	2	0	6	0	0	0	0	0	48	0	0	0	0
8:45 PM	0	2	2	0	15	11	0	0	3	0	3	0	0	0	0	0	36	0	0	0	0
9:00 PM	0	3	2	0	17	10	0	0	1	0	4	0	0	0	0	0	37	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

Laurel Ln & 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 Laurel Ln				Southbound Laurel Ln				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	0	7	0	0	0	2	0	0	0	0	0	0	1	0	16	0	26	0	0	0	0
6:15 AM	2	6	0	0	0	4	1	0	0	0	0	0	2	1	26	0	42	0	0	0	0
6:30 AM	3	17	0	0	0	8	1	0	0	0	0	0	1	0	63	0	93	0	0	0	0
6:45 AM	0	39	0	0	0	3	1	0	0	0	0	0	4	0	99	0	146	0	0	0	0
7:00 AM	3	19	0	0	0	33	4	0	0	0	0	0	5	0	28	0	92	0	0	0	0
7:15 AM	4	10	0	0	0	28	5	0	0	0	0	0	0	0	24	0	71	0	0	0	0
7:30 AM	1	8	0	0	0	13	5	0	0	0	0	0	1	0	23	0	51	0	0	0	0
7:45 AM	1	8	0	0	0	11	3	0	0	0	0	0	1	0	28	0	52	0	0	0	0
Total Survey	14	114	0	0	0	102	20	0	0	0	0	0	15	1	307	0	573	0	0	0	0

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

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	95	82	177	0	83	299	382	0	0	21	21	0	224	0	224	0	402	0	0	0	0
%HV	13.7%				25.3%				0.0%				12.1%				15.2%				
PHF	0.61				0.56				0.00				0.54				0.69				

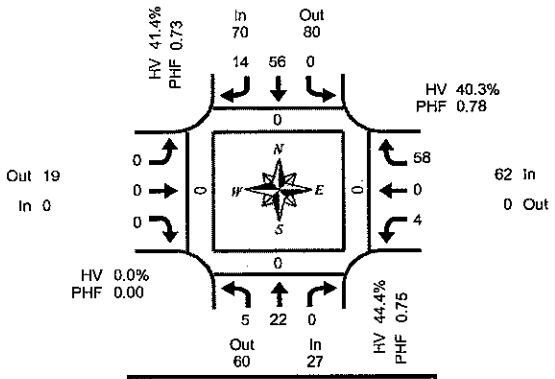
By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	10	85	0	95	0	72	11	83	0	0	0	0	10	0	214	224	402
%HV	30.0%	11.8%	0.0%	13.7%	0.0%	19.4%	63.6%	25.3%	0.0%	0.0%	0.0%	0.0%	40.0%	0.0%	10.7%	12.1%	15.2%
PHF	0.63	0.54	0.00	0.61	0.00	0.55	0.55	0.56	0.00	0.00	0.00	0.00	0.50	0.00	0.54	0.54	0.69

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	5	69	0	0	0	17	3	0	0	0	0	0	8	1	204	0	307	0	0	0	0
6:15 AM	8	81	0	0	0	48	7	0	0	0	0	0	12	1	216	0	373	0	0	0	0
6:30 AM	10	85	0	0	0	72	11	0	0	0	0	0	10	0	214	0	402	0	0	0	0
6:45 AM	8	76	0	0	0	77	15	0	0	0	0	0	10	0	174	0	360	0	0	0	0
7:00 AM	9	45	0	0	0	85	17	0	0	0	0	0	7	0	103	0	266	0	0	0	0

Total Vehicle Summary

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



Peak Hour Summary
8:45 AM to 9:45 AM

Laurel Ln & 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 Laurel Ln				Southbound Laurel Ln				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 AM	2	6	0	0	0	16	4	0	0	0	0	0	1	1	21	0	51
8:15 AM	0	4	0	0	0	17	3	0	0	0	0	0	0	0	14	0	38
8:30 AM	0	6	0	0	0	17	0	0	0	0	0	0	2	0	12	0	37
8:45 AM	1	4	0	0	0	9	5	0	0	0	0	0	1	0	11	0	31
9:00 AM	1	5	0	0	0	17	1	0	0	0	0	0	1	0	16	0	41
9:15 AM	1	8	0	0	0	12	2	0	0	0	0	0	2	0	11	0	36
9:30 AM	2	5	0	0	0	18	6	0	0	0	0	0	0	0	20	0	51
9:45 AM	1	1	0	0	0	11	3	0	0	0	0	0	0	0	11	0	27
Total Survey	8	39	0	0	0	117	24	0	0	0	0	0	7	1	116	0	312

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

Peak Hour Summary
8:45 AM to 9:45 AM

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	27	60	87	0	70	80	150	0	0	19	19	0	62	0	62	0	159
%HV	44.4%				41.4%				0.0%				40.3%				41.5%
PHF	0.75				0.73				0.00				0.78				0.78

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0

By Movement	Northbound Laurel Ln				Southbound Laurel Ln				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	22	0	27	0	56	14	70	0	0	0	0	4	0	58	62	159
%HV	40.0%	45.5%	0.0%	44.4%	0.0%	35.7%	64.3%	41.4%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	39.7%	40.3%	41.5%
PHF	0.63	0.69	0.00	0.75	0.00	0.78	0.58	0.73	0.00	0.00	0.00	0.00	0.50	0.00	0.73	0.78	0.78

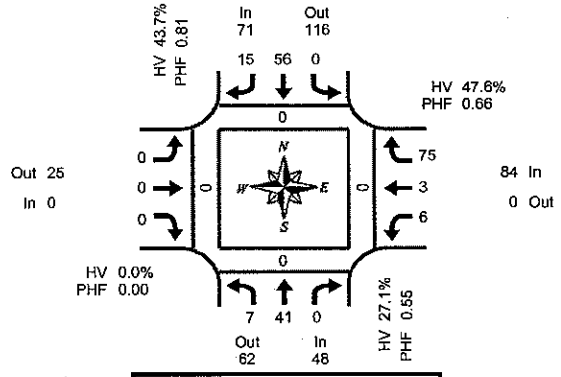
Rolling Hour Summary
8:00 AM to 10:00 AM

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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 AM	3	20	0	0	0	59	12	0	0	0	0	0	4	1	58	0	157
8:15 AM	2	19	0	0	0	60	9	0	0	0	0	0	4	0	53	0	147
8:30 AM	3	23	0	0	0	55	8	0	0	0	0	0	6	0	50	0	145
8:45 AM	5	22	0	0	0	56	14	0	0	0	0	0	4	0	58	0	159
9:00 AM	5	19	0	0	0	58	12	0	0	0	0	0	3	0	58	0	155

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



Laurel Ln & I-84 WB Ramps

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

Peak Hour Summary
10:45 AM to 11:45 AM

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	0	3	0	0	0	13	2	0	0	0	0	0	0	0	14	0	32	0	0	0	0
10:15 AM	1	3	0	0	0	12	0	0	0	0	0	0	0	0	16	0	32	0	0	0	0
10:30 AM	0	7	0	0	0	9	2	0	0	0	0	0	4	0	8	0	30	0	0	0	0
10:45 AM	1	6	0	0	0	15	1	0	0	0	0	0	2	3	27	0	55	0	0	0	0
11:00 AM	2	4	0	0	0	9	4	0	0	0	0	0	1	0	13	0	33	0	0	0	0
11:15 AM	2	20	0	0	0	18	2	0	0	0	0	0	2	0	13	0	57	0	0	0	0
11:30 AM	2	11	0	0	0	14	8	0	0	0	0	0	1	0	22	0	58	0	0	0	0
11:45 AM	1	7	0	0	0	14	13	0	0	0	0	0	2	1	17	0	55	0	0	0	0
Total Survey	9	61	0	0	0	104	32	0	0	0	0	0	12	4	130	0	352	0	0	0	0

Peak Hour Summary
10:45 AM to 11:45 AM

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	48	62	110	0	71	116	187	0	0	25	25	0	84	0	84	0	203	0	0	0	0
%HV	27.1%				43.7%				0.0%				47.6%				41.4%				
PHF	0.55				0.81				0.00				0.66				0.88				

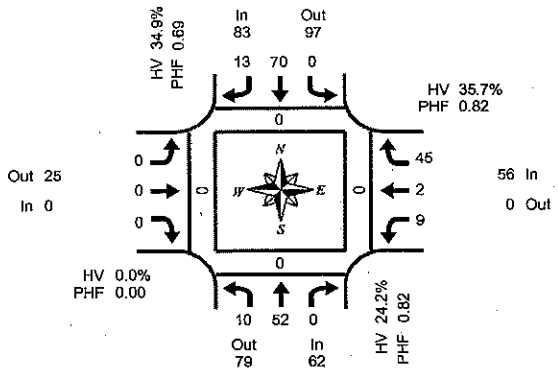
By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	7	41	0	48	0	56	15	71	0	0	0	0	6	3	75	84	203
%HV	57.1%	22.0%	0.0%	27.1%	0.0%	44.6%	40.0%	43.7%	0.0%	0.0%	0.0%	0.0%	83.3%	66.7%	44.0%	47.6%	41.4%
PHF	0.88	0.51	0.00	0.55	0.00	0.78	0.47	0.81	0.00	0.00	0.00	0.00	0.75	0.25	0.69	0.66	0.88

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	19	0	0	0	49	5	0	0	0	0	0	6	3	65	0	149	0	0	0	0
10:15 AM	4	20	0	0	0	45	7	0	0	0	0	0	7	3	64	0	150	0	0	0	0
10:30 AM	5	37	0	0	0	51	9	0	0	0	0	0	9	3	61	0	175	0	0	0	0
10:45 AM	7	41	0	0	0	56	15	0	0	0	0	0	6	3	75	0	203	0	0	0	0
11:00 AM	7	42	0	0	0	55	27	0	0	0	0	0	6	1	65	0	203	0	0	0	0

Total Vehicle Summary

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



Laurel Ln & I-84 WB Ramps

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

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

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	2	9	0	0	0	23	7	0	0	0	0	0	3	1	10	0	55	0	0	0	0
12:15 PM	3	14	0	0	0	17	5	0	0	0	0	0	3	1	10	0	53	0	0	0	0
12:30 PM	3	16	0	0	0	15	1	0	0	0	0	0	3	0	14	0	52	0	0	0	0
12:45 PM	2	13	0	0	0	15	0	0	0	0	0	0	0	0	11	0	41	0	0	0	0
1:00 PM	0	4	0	0	0	11	2	0	0	0	0	0	1	0	12	0	30	0	0	0	0
1:15 PM	0	8	0	0	0	19	5	0	0	0	0	0	3	0	16	0	51	0	0	1	0
1:30 PM	0	2	0	0	0	15	6	0	0	0	0	0	2	1	13	0	39	0	0	0	0
1:45 PM	0	4	0	0	0	16	2	0	0	0	0	0	2	0	19	0	43	0	0	0	0
Total Survey	10	70	0	0	0	131	28	0	0	0	0	0	17	3	105	0	364	0	0	1	0

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

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	62	79	141	0	83	97	180	0	0	25	25	0	56	0	56	0	201	0	0	0	0
%HV	24.2%				34.9%				0.0%				35.7%				31.8%				
PHF	0.82				0.69				0.00				0.82				0.91				

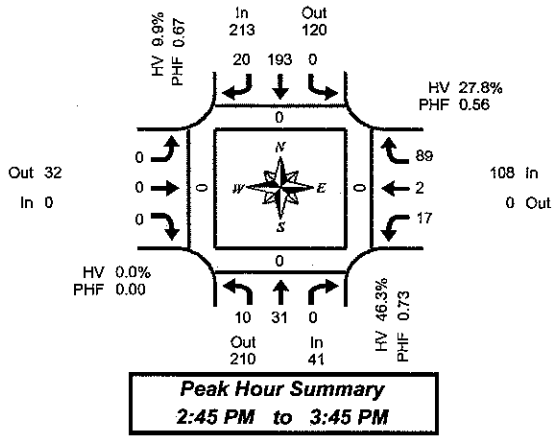
By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	10	52	0	62	0	70	13	83	0	0	0	0	9	2	45	56	201
%HV	10.0%	26.9%	0.0%	24.2%	0.0%	34.3%	38.5%	34.9%	0.0%	0.0%	0.0%	0.0%	44.4%	0.0%	35.6%	35.7%	31.8%
PHF	0.83	0.81	0.00	0.82	0.00	0.76	0.46	0.69	0.00	0.00	0.00	0.00	0.75	0.50	0.80	0.82	0.91

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	10	52	0	0	0	70	13	0	0	0	0	0	9	2	45	0	201	0	0	0	0
12:15 PM	8	47	0	0	0	58	8	0	0	0	0	0	7	1	47	0	176	0	0	0	0
12:30 PM	5	41	0	0	0	60	8	0	0	0	0	0	7	0	53	0	174	0	0	1	0
12:45 PM	2	27	0	0	0	60	13	0	0	0	0	0	6	1	52	0	161	0	0	1	0
1:00 PM	0	18	0	0	0	61	15	0	0	0	0	0	8	1	60	0	163	0	0	1	0

Total Vehicle Summary

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



Laurel Ln & I-84 WB 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 Laurel Ln				Southbound Laurel Ln				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	0	7	0	0	0	17	2	0	0	0	0	0	5	0	22	0	53	0	0	0	0
2:15 PM	6	8	0	0	0	14	4	0	0	0	0	0	4	0	53	0	89	0	0	0	0
2:30 PM	4	6	0	0	0	19	7	0	0	0	0	0	4	0	25	0	65	0	0	0	0
2:45 PM	3	6	0	0	0	46	6	0	0	0	0	0	4	0	20	0	85	0	0	0	0
3:00 PM	2	8	0	0	0	73	6	0	0	0	0	0	3	0	14	0	106	0	0	0	0
3:15 PM	1	7	0	0	0	31	5	0	0	0	0	0	5	0	14	0	63	0	0	0	0
3:30 PM	4	10	0	0	0	43	3	0	0	0	0	0	5	2	41	0	108	0	0	0	0
3:45 PM	1	11	0	0	0	33	4	0	0	0	0	0	3	0	16	0	68	0	0	0	0
Total Survey	21	63	0	0	0	276	37	0	0	0	0	0	33	2	205	0	637	0	0	0	0

Peak Hour Summary
2:45 PM to 3:45 PM

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	41	210	251	0	213	120	333	0	0	32	32	0	108	0	108	0	362	0	0	0	0
%HV	46.3%				9.9%				0.0%				27.8%				19.3%				
PHF	0.73				0.67				0.00				0.56				0.84				

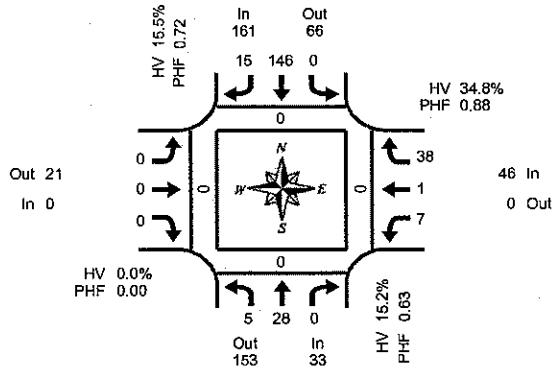
By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	10	31	0	41	0	193	20	213	0	0	0	0	17	2	89	108	362
%HV	50.0%	45.2%	0.0%	46.3%	0.0%	8.3%	25.0%	9.9%	0.0%	0.0%	0.0%	0.0%	47.1%	50.0%	23.6%	27.8%	19.3%
PHF	0.63	0.78	0.00	0.73	0.00	0.66	0.83	0.67	0.00	0.00	0.00	0.00	0.85	0.25	0.54	0.56	0.84

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	13	27	0	0	0	96	19	0	0	0	0	0	17	0	120	0	292	0	0	0	0
2:15 PM	15	28	0	0	0	152	23	0	0	0	0	0	15	0	112	0	345	0	0	0	0
2:30 PM	10	27	0	0	0	169	24	0	0	0	0	0	16	0	73	0	319	0	0	0	0
2:45 PM	10	31	0	0	0	193	20	0	0	0	0	0	17	2	89	0	362	0	0	0	0
3:00 PM	8	36	0	0	0	180	18	0	0	0	0	0	16	2	85	0	345	0	0	0	0

Total Vehicle Summary

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



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

Laurel Ln & 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 Laurel Ln				Southbound Laurel Ln				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	2	2	0	0	0	51	5	0	0	0	0	0	1	0	11	0	72	0	0	0	0
4:15 PM	2	11	0	0	0	27	3	0	0	0	0	0	2	0	9	0	54	0	0	0	0
4:30 PM	0	5	0	0	0	40	3	0	0	0	0	0	1	1	8	0	58	0	0	0	0
4:45 PM	1	10	0	0	0	28	4	0	0	0	0	0	3	0	10	0	56	0	0	0	0
5:00 PM	0	6	0	0	0	49	6	0	0	0	0	0	1	0	9	0	71	0	0	0	0
5:15 PM	3	3	0	0	0	25	4	0	0	0	0	0	1	0	11	0	47	0	0	0	0
5:30 PM	1	4	0	0	0	26	4	0	0	0	0	0	1	1	8	0	45	0	0	0	0
5:45 PM	2	2	0	0	0	20	2	0	0	0	0	0	2	0	9	0	37	0	0	0	0
Total Survey	11	43	0	0	0	266	31	0	0	0	0	0	12	2	75	0	440	0	0	0	0

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

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	33	153	186	0	161	66	227	0	0	21	21	0	46	0	46	0	240	0	0	0	0
%HV	15.2%				15.5%				0.0%				34.8%				19.2%				
PHF	0.63				0.72				0.00				0.88				0.83				

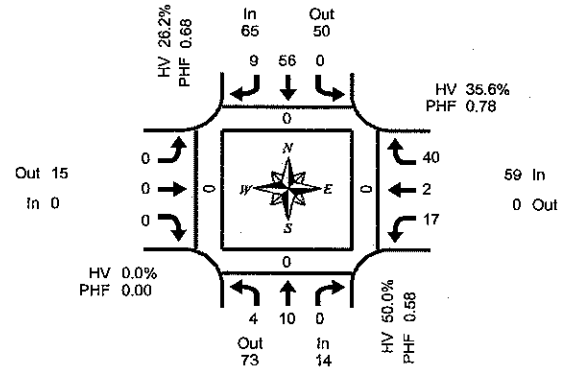
By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	5	28	0	33	0	146	15	161	0	0	0	0	7	1	38	46	240
%HV	40.0%	10.7%	0.0%	15.2%	0.0%	14.4%	26.7%	15.5%	0.0%	0.0%	0.0%	0.0%	42.9%	0.0%	34.2%	34.8%	19.2%
PHF	0.63	0.64	0.00	0.63	0.00	0.72	0.75	0.72	0.00	0.00	0.00	0.00	0.58	0.25	0.86	0.88	0.83

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	5	28	0	0	0	146	15	0	0	0	0	0	7	1	38	0	240	0	0	0	0
4:15 PM	3	32	0	0	0	144	16	0	0	0	0	0	7	1	36	0	239	0	0	0	0
4:30 PM	4	24	0	0	0	142	17	0	0	0	0	0	6	1	38	0	232	0	0	0	0
4:45 PM	5	23	0	0	0	128	18	0	0	0	0	0	6	1	38	0	219	0	0	0	0
5:00 PM	6	15	0	0	0	120	16	0	0	0	0	0	5	1	37	0	200	0	0	0	0

Total Vehicle Summary

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



Laurel Ln & I-84 WB 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 Laurel Ln				Southbound Laurel Ln				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	0	1	0	0	0	21	3	0	0	0	0	0	3	2	12	0	42	0	0	0	0
6:15 PM	4	2	0	0	0	15	3	0	0	0	0	0	7	0	12	0	43	0	0	0	0
6:30 PM	0	4	0	0	0	8	1	0	0	0	0	0	5	0	8	0	26	0	0	0	0
6:45 PM	0	3	0	0	0	12	2	0	0	0	0	0	2	0	8	0	27	0	0	0	0
7:00 PM	0	3	0	0	0	16	5	0	0	0	0	0	0	0	9	0	33	0	0	0	0
7:15 PM	0	0	0	0	0	9	1	0	0	0	0	0	2	0	4	0	16	0	0	0	0
7:30 PM	1	1	0	0	0	7	3	0	0	0	0	0	2	1	7	0	22	0	0	0	0
7:45 PM	0	2	0	0	0	3	0	0	0	0	0	0	4	0	7	0	16	0	0	0	0
Total Survey	5	16	0	0	0	91	18	0	0	0	0	0	25	3	67	0	225	0	0	0	0

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

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	14	73	87	0	65	50	115	0	0	15	15	0	59	0	59	0	138	0	0	0	0
%HV	50.0%				26.2%				0.0%				35.6%				32.6%				
PHF	0.58				0.68				0.00				0.78				0.80				

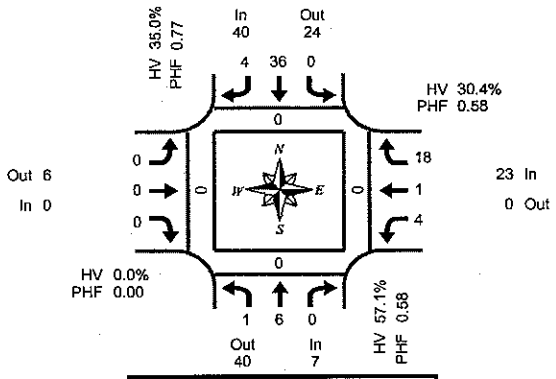
By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	4	10	0	14	0	56	9	65	0	0	0	0	17	2	40	59	138
%HV	50.0%	50.0%	0.0%	50.0%	0.0%	25.0%	33.3%	26.2%	0.0%	0.0%	0.0%	0.0%	47.1%	0.0%	32.5%	35.6%	32.6%
PHF	0.25	0.63	0.00	0.58	0.00	0.67	0.75	0.68	0.00	0.00	0.00	0.00	0.61	0.25	0.83	0.78	0.80

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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	4	10	0	0	0	56	9	0	0	0	0	0	17	2	40	0	138	0	0	0	0
6:15 PM	4	12	0	0	0	51	11	0	0	0	0	0	14	0	37	0	129	0	0	0	0
6:30 PM	0	10	0	0	0	45	9	0	0	0	0	0	9	0	29	0	102	0	0	0	0
6:45 PM	1	7	0	0	0	44	11	0	0	0	0	0	6	1	28	0	98	0	0	0	0
7:00 PM	1	6	0	0	0	35	9	0	0	0	0	0	8	1	27	0	87	0	0	0	0

Total Vehicle Summary

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



Laurel Ln & I-84 WB Ramps

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

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

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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 PM	1	2	0	0	0	5	2	0	0	0	0	0	1	0	4	0	15	0	0	0	0
8:15 PM	0	1	0	0	0	10	1	0	0	0	0	0	3	0	4	0	19	0	0	0	0
8:30 PM	0	1	0	0	0	13	0	0	0	0	0	0	0	0	1	0	15	0	0	0	0
8:45 PM	0	2	0	0	0	8	1	0	0	0	0	0	0	1	9	0	21	0	0	0	0
9:00 PM	0	0	0	0	0	5	1	0	0	0	0	0	0	0	3	0	9	0	0	0	0
9:15 PM	0	2	0	0	0	8	1	0	0	0	0	0	1	0	0	0	12	0	0	0	0
9:30 PM	1	0	0	0	0	4	1	0	0	0	0	0	1	0	2	0	9	0	0	0	0
9:45 PM	0	1	0	0	0	7	1	0	0	0	0	0	1	0	2	0	12	0	0	0	0
Total Survey	2	9	0	0	0	60	8	0	0	0	0	0	7	1	25	0	112	0	0	0	0

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

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				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	7	40	47	0	40	24	64	0	0	6	6	0	23	0	23	0	70	0	0	0	0
%HV	57.1%				35.0%				0.0%				30.4%				35.7%				
PHF	0.58				0.77				0.00				0.58				0.83				

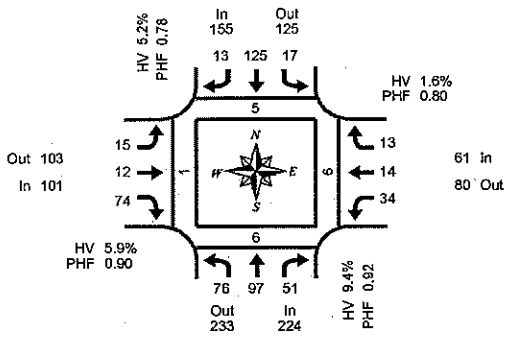
By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound I-84 WB Ramps				Westbound I-84 WB Ramps				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	1	6	0	7	0	36	4	40	0	0	0	0	4	1	18	23	70
%HV	#####	50.0%	0.0%	57.1%	0.0%	33.3%	50.0%	35.0%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	33.3%	30.4%	35.7%
PHF	0.25	0.75	0.00	0.58	0.00	0.69	0.50	0.77	0.00	0.00	0.00	0.00	0.33	0.25	0.50	0.58	0.83

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				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 PM	1	6	0	0	0	36	4	0	0	0	0	0	4	1	18	0	70	0	0	0	0
8:15 PM	0	4	0	0	0	36	3	0	0	0	0	0	3	1	17	0	64	0	0	0	0
8:30 PM	0	5	0	0	0	34	3	0	0	0	0	0	1	1	13	0	57	0	0	0	0
8:45 PM	1	4	0	0	0	25	4	0	0	0	0	0	2	1	14	0	51	0	0	0	0
9:00 PM	1	3	0	0	0	24	4	0	0	0	0	0	3	0	7	0	42	0	0	0	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 & Boardman Ave

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 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				

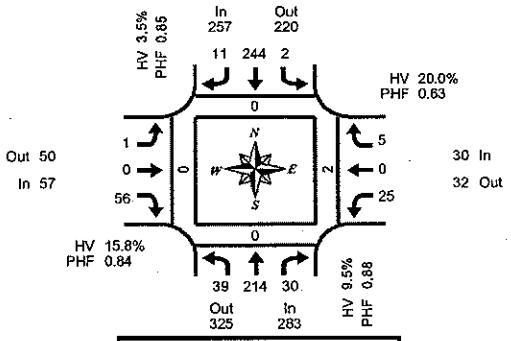
By Movement	Northbound Main St				Southbound Main St				Eastbound Boardman Ave				Westbound Boardman Ave				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	76	97	51	224	17	125	13	155	15	12	74	101	34	14	13	61	541
%HV	5.3%	9.3%	15.7%	9.4%	0.0%	3.2%	30.8%	5.2%	0.0%	8.3%	6.8%	5.9%	2.9%	0.0%	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				

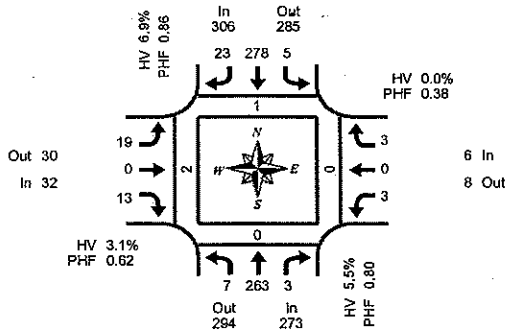
By Movement	Northbound Main St				Southbound Main St				Eastbound Front St NW				Westbound Front St NW				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	39	214	30	283	2	244	11	257	1	0	56	57	25	0	5	30	627
%HV	5.1%	9.3%	16.7%	9.5%	0.0%	3.7%	0.0%	3.5%	0.0%	0.0%	16.1%	15.8%	20.0%	0.0%	20.0%	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				

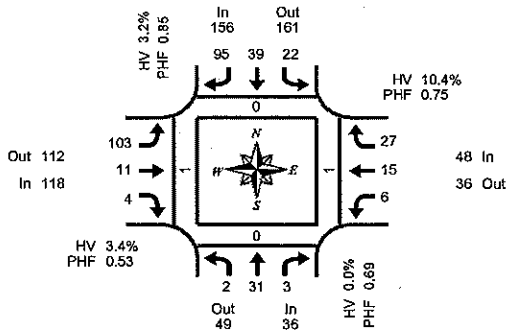
By Movement	Northbound Main St				Southbound Main St				Eastbound Front St SW				Westbound Front St SW				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	7	263	3	273	5	278	23	306	19	0	13	32	3	0	3	6	617
%HV	0.0%	5.7%	0.0%	5.5%	80.0%	4.7%	17.4%	6.9%	0.0%	0.0%	7.7%	3.1%	0.0%	0.0%	0.0%	0.0%	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

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 & Wilson Rd

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 Wilson Rd				Westbound Wilson Rd				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	1	0	0	0	2	3	0	7	3	0	0	0	1	2	0	19	0	0	0	0
4:05 PM	0	1	0	0	1	1	9	0	18	2	0	0	0	0	1	0	33	0	0	0	0
4:10 PM	0	2	0	0	5	5	13	0	12	1	1	0	0	1	2	0	42	0	0	1	0
4:15 PM	0	3	1	0	1	4	7	0	17	5	0	0	0	4	4	0	46	0	0	0	0
4:20 PM	0	3	0	0	3	2	5	0	6	0	1	0	0	3	1	0	24	0	0	0	0
4:25 PM	0	3	0	0	1	3	9	0	8	0	1	0	2	1	1	0	29	0	0	0	0
4:30 PM	1	0	0	0	0	0	8	0	5	0	0	0	1	0	3	0	18	0	0	0	0
4:35 PM	0	3	0	0	3	2	6	0	4	1	0	0	0	0	4	0	23	0	0	0	1
4:40 PM	1	3	0	0	3	5	6	0	9	0	0	0	0	0	1	0	28	0	0	0	0
4:45 PM	0	3	0	0	0	5	5	0	11	2	0	0	0	2	3	0	31	0	0	0	0
4:50 PM	0	4	2	0	2	3	12	0	3	0	0	0	1	0	0	0	27	0	0	0	0
4:55 PM	0	3	0	0	2	6	9	0	6	0	1	0	2	2	3	0	36	0	0	0	0
5:00 PM	0	3	0	0	1	3	6	1	2	0	0	0	0	2	4	0	21	0	0	0	0
5:05 PM	0	3	0	0	4	3	13	0	5	1	0	0	0	1	0	0	30	0	0	0	0
5:10 PM	0	3	0	0	3	3	10	0	2	0	0	0	0	1	1	0	23	0	0	0	0
5:15 PM	0	2	2	0	3	4	4	0	3	2	0	0	0	3	1	0	24	0	0	0	0
5:20 PM	1	2	0	0	2	7	10	0	9	2	1	0	1	1	1	0	37	0	0	0	0
5:25 PM	0	1	0	0	1	5	4	0	4	2	0	0	2	0	3	0	22	0	0	0	0
5:30 PM	0	2	0	1	5	3	6	0	7	2	0	0	0	3	3	0	31	0	0	0	0
5:35 PM	0	1	0	0	2	1	2	0	2	1	0	0	0	1	1	0	11	0	0	0	0
5:40 PM	0	6	1	0	3	3	3	0	8	1	0	0	0	1	3	0	29	0	0	0	0
5:45 PM	0	4	1	0	7	3	5	0	7	1	0	0	0	2	3	0	33	1	0	0	0
5:50 PM	0	1	0	0	4	8	14	0	6	1	0	0	0	2	0	0	36	0	0	0	0
5:55 PM	1	0	0	0	0	0	12	0	5	2	0	0	0	0	2	0	22	2	0	0	0
Total Survey	4	57	7	1	56	81	181	1	168	29	5	0	9	31	47	0	675	3	0	1	1

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

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Wilson Rd				Westbound Wilson Rd				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	4	0	0	6	8	25	0	37	6	1	0	0	2	5	0	94	0	0	1	0
4:15 PM	0	9	1	0	5	9	21	0	31	5	2	0	2	8	6	0	99	0	0	0	0
4:30 PM	2	6	0	0	6	7	20	0	18	1	0	0	1	0	8	0	69	0	0	0	1
4:45 PM	0	10	2	0	4	14	26	0	22	2	1	0	3	4	6	0	94	0	0	0	0
5:00 PM	0	9	0	0	8	9	29	1	9	1	0	0	0	4	5	0	74	0	0	0	0
5:15 PM	1	5	2	0	6	16	18	0	16	6	1	0	3	4	5	0	83	0	0	0	0
5:30 PM	0	9	1	1	10	7	11	0	17	4	0	0	0	5	7	0	71	0	0	0	0
5:45 PM	1	5	1	0	11	11	31	0	18	4	0	0	0	4	5	0	91	3	0	0	0
Total Survey	4	57	7	1	56	81	181	1	168	29	5	0	9	31	47	0	675	3	0	1	1

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

By Approach	Northbound Main St				Southbound Main St				Eastbound Wilson Rd				Westbound Wilson Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	36	49	85	0	156	161	317	1	118	112	230	0	48	36	84	0	358	0	0	1	1
%HV	0.0%				3.2%				3.4%				10.4%				3.9%				
PHF	0.69				0.85				0.53				0.75				0.74				

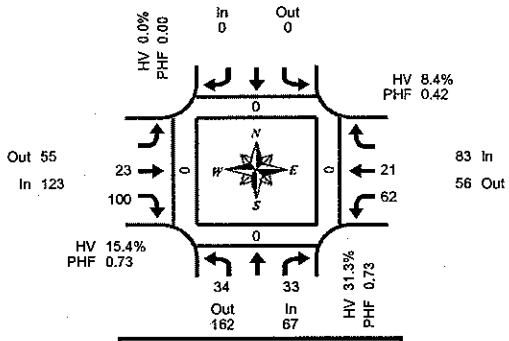
By Movement	Northbound Main St				Southbound Main St				Eastbound Wilson Rd				Westbound Wilson Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	2	31	3	36	22	39	95	156	103	11	4	118	6	15	27	48	358
%HV	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	4.2%	3.2%	3.9%	0.0%	0.0%	3.4%	16.7%	6.7%	11.1%	10.4%	3.9%
PHF	0.25	0.78	0.38	0.69	0.61	0.70	0.82	0.85	0.55	0.34	0.50	0.53	0.50	0.47	0.84	0.75	0.74

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

Interval Start Time	Northbound Main St				Southbound Main St				Eastbound Wilson Rd				Westbound Wilson Rd				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	2	29	3	0	21	38	92	0	108	14	4	0	6	14	25	0	356	0	0	1	1
4:15 PM	2	34	3	0	23	39	96	1	80	9	3	0	6	16	25	0	336	0	0	0	1
4:30 PM	3	30	4	0	24	46	93	1	65	10	2	0	7	12	24	0	320	0	0	0	1
4:45 PM	1	33	5	1	28	46	84	1	64	13	2	0	6	17	23	0	322	0	0	0	0
5:00 PM	2	28	4	1	35	43	89	1	60	15	1	0	3	17	22	0	319	3	0	0	0

Total Vehicle Summary

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



Laurel Ln & Columbia Blvd

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

Peak Hour Summary
4:20 PM to 5:20 PM

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound Columbia Blvd				Westbound Columbia Blvd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
4:00 PM	5		1	0				0	2	13	0	1	2		0	24		0	0	0	0
4:05 PM	4		3	0				0	1	15	0	2	1		0	26		0	0	0	0
4:10 PM	0		1	0				0	0	22	0	5	2		0	30		0	0	0	0
4:15 PM	5		1	0				0	0	9	0	2	0		0	17		0	0	0	0
4:20 PM	4		4	0				0	1	10	0	3	0		0	22		0	0	0	0
4:25 PM	4		1	0				0	2	3	0	2	1		0	13		0	0	0	0
4:30 PM	1		3	0				0	1	13	0	4	0		0	22		0	0	0	0
4:35 PM	0		1	0				0	1	6	0	4	2		0	14		0	0	0	0
4:40 PM	4		4	0				0	3	18	0	2	3		0	34		0	0	0	0
4:45 PM	2		7	0				0	4	9	0	7	0		0	29		0	0	0	0
4:50 PM	4		2	0				0	1	2	0	2	1		0	12		0	0	0	0
4:55 PM	1		3	0				0	7	4	0	2	0		0	17		0	0	0	0
5:00 PM	3		2	0				0	1	7	0	1	0		0	14		0	0	0	0
5:05 PM	3		2	0				0	2	13	0	15	5		0	40		0	0	0	0
5:10 PM	5		1	0				0	0	10	0	13	6		0	35		0	0	0	0
5:15 PM	3		3	0				0	0	5	0	7	3		0	21		0	0	0	0
5:20 PM	5		0	0				0	1	6	0	3	0		0	15		0	0	0	0
5:25 PM	5		1	0				0	0	3	0	3	1		0	13		0	0	0	0
5:30 PM	3		0	0				0	1	7	0	1	1		0	13		0	0	0	0
5:35 PM	1		1	0				0	1	3	0	4	2		0	12		0	0	0	0
5:40 PM	4		1	0				0	0	9	0	5	1		0	20		0	0	0	0
5:45 PM	3		0	0				0	0	8	0	1	3		0	15		0	0	0	0
5:50 PM	4		0	0				0	1	6	0	2	1		0	14		0	0	0	0
5:55 PM	2		0	0				0	0	3	0	3	3		0	11		0	0	0	0
Total Survey	75		42	0				0	30	204	0	94	38		0	483		0	0	0	0

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound Columbia Blvd				Westbound Columbia Blvd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
4:00 PM	9		5	0				0	3	50	0	8	5		0	80		0	0	0	0
4:15 PM	13		6	0				0	3	22	0	7	1		0	52		0	0	0	0
4:30 PM	5		8	0				0	5	37	0	10	5		0	70		0	0	0	0
4:45 PM	7		12	0				0	12	15	0	11	1		0	58		0	0	0	0
5:00 PM	11		5	0				0	3	30	0	29	11		0	89		0	0	0	0
5:15 PM	13		4	0				0	1	14	0	13	4		0	49		0	0	0	0
5:30 PM	8		2	0				0	2	19	0	10	4		0	45		0	0	0	0
5:45 PM	9		0	0				0	1	17	0	6	7		0	40		0	0	0	0
Total Survey	75		42	0				0	30	204	0	94	38		0	483		0	0	0	0

Peak Hour Summary
4:20 PM to 5:20 PM

By Approach	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound Columbia Blvd				Westbound Columbia Blvd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	67	162	229	0	0	0	0	0	123	55	178	0	83	56	139	0	273	0	0	0	0
%HV	31.3%				0.0%				15.4%				8.4%				17.2%				
PHF	0.73				0.00				0.73				0.42				0.71				

By Movement	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound Columbia Blvd				Westbound Columbia Blvd				Total
	L		R	Total				Total	T	R	Total	L	T		Total		
Volume	34		33	67				0	23	100	123	62	21		83		273
%HV	47.1%	NA	15.2%	31.3%	NA	NA	NA	0.0%	4.3%	18.0%	15.4%	9.7%	4.8%	NA	8.4%		17.2%
PHF	0.77		0.63	0.73				0.00	0.48	0.68	0.73	0.44	0.38		0.42		0.71

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

Interval Start Time	Northbound Laurel Ln				Southbound Laurel Ln				Eastbound Columbia Blvd				Westbound Columbia Blvd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
4:00 PM	34		31	0				0	23	124	0	36	12		0	260		0	0	0	0
4:15 PM	36		31	0				0	23	104	0	57	18		0	269		0	0	0	0
4:30 PM	36		29	0				0	21	96	0	63	21		0	266		0	0	0	0
4:45 PM	39		23	0				0	18	78	0	63	20		0	241		0	0	0	0
5:00 PM	41		11	0				0	7	80	0	58	26		0	223		0	0	0	0

Operational Analysis

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

Intersection #7 I84 EB Ramps @ Laurel

Average Delay (sec/veh): 4.9 Worst Case Level Of Service: B[11.1]

Street Name:	Laurel						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	1	0 0	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	0	60	5	60	20	0	35	0	5	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	60	5	60	20	0	35	0	5	0	0	0
User Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
PHF Adj:	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
PHF Volume:	0	88	7	88	29	0	52	0	7	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	88	7	88	29	0	52	0	7	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.3	xxxx	xxxxx	6.7	xxxx	6.5	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.4	xxxx	xxxxx	3.7	xxxx	3.5	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	96	xxxx	xxxxx	298	xxxx	29	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1376	xxxx	xxxxx	644	xxxx	978	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1376	xxxx	xxxxx	610	xxxx	978	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.06	xxxx	xxxx	0.08	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	0.3	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx	11.4	xxxx	8.7	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	B	*	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	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.1			xxxxxx		
ApproachLOS:	*			*			B			*		

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

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

Intersection #8 I84 WB Ramps @ Laurel

Average Delay (sec/veh): 6.7 Worst Case Level Of Service: B[11.5]

Street Name:	Laurel						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 1	0	0	0 0	0 0	1	0 0	0 1
Volume Module:												
Base Vol:	10	85	0	0	70	10	0	0	0	10	0	215
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	85	0	0	70	10	0	0	0	10	0	215
User Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
PHF Adj:	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
PHF Volume:	16	134	0	0	111	16	0	0	0	16	0	340
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	16	134	0	0	111	16	0	0	0	16	0	340
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.5	xxxx	6.3
FollowUpTim:	2.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.6	xxxx	3.4
Capacity Module:												
Cnflict Vol:	126	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	284	xxxx	134
Potent Cap.:	1389	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	685	xxxx	889
Move Cap.:	1389	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	679	xxxx	889
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	0.38
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	1.8
Control Del:	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.4	xxxx	11.5
LOS by Move:	A	*	*	*	*	*	*	*	*	B	*	B
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	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.5		
ApproachLOS:	*			*			*			B		

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

Future PMt

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

****

Intersection #1 Wilson @ Main

****

Cycle (sec):	100	Critical Vol./Cap.(X):	0.224
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	8.3
Optimal Cycle:	0	Level Of Service:	A

****

Street Name:	Main						Wilson					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1!	0 0	0 0	1!	0 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	5	30	5	20	40	95	105	10	5	5	15	30
Growth Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	5	33	5	22	44	104	114	11	5	5	16	33
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	6	36	6	24	48	115	127	12	6	6	18	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	36	6	24	48	115	127	12	6	6	18	36
PCE 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
MLF 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
Final Vol.:	6	36	6	24	48	115	127	12	6	6	18	36
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.12	0.75	0.13	0.13	0.26	0.61	0.88	0.08	0.04	0.10	0.30	0.60
Final Sat.:	95	568	95	108	216	513	648	62	31	77	232	464
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.06	0.22	0.22	0.22	0.20	0.20	0.20	0.08	0.08	0.08
Crit Moves:		****			****		****			****		
Delay/Veh:	7.8	7.8	7.8	8.3	8.3	8.3	8.7	8.7	8.7	7.8	7.8	7.8
Delay 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
AdjDel/Veh:	7.8	7.8	7.8	8.3	8.3	8.3	8.7	8.7	8.7	7.8	7.8	7.8
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		7.8			8.3			8.7			7.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		7.8			8.3			8.7			7.8	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.1	0.1	0.1	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1

****

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

****

Future PMt

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

Intersection #2 Front S @ Main

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: B[14.7]

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:	1 0 0	1	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:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	11	289	5	5	305	27	22	0	16	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:	13	332	6	6	351	31	25	0	19	6	0	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	13	332	6	6	351	31	25	0	19	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:	382	xxxx	xxxxx	338	xxxx	xxxxx	742	xxxx	366	749	xxxx	335
Potent Cap.:	1155	xxxx	xxxxx	1193	xxxx	xxxxx	330	xxxx	677	331	xxxx	711
Move Cap.:	1155	xxxx	xxxxx	1193	xxxx	xxxxx	323	xxxx	677	318	xxxx	711
Volume/Cap:	0.01	xxxx	xxxx	0.01	xxxx	xxxx	0.08	xxxx	0.03	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:	8.2	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	416	xxxxx	xxxx	439	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	0.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.7	xxxxx	xxxxx	13.4	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			14.7			13.4		
ApproachLOS:	*			*			B			B		

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

Future PMt

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

Intersection #3 I84 EB Ramps @ Main

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: B[14.3]

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			1 0 0 1 0			0 0 0 0 0		
Volume Module:												
Base Vol:	0	180	105	70	285	0	25	0	20	0	0	0
Growth Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	0	196	114	76	311	0	27	0	22	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	207	120	80	327	0	29	0	23	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	207	120	80	327	0	29	0	23	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	327	xxxx	xxxxx	754	xxxx	327	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1216	xxxx	xxxxx	340	xxxx	656	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1216	xxxx	xxxxx	322	xxxx	656	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.07	xxxx	xxxx	0.09	xxxx	0.03	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	17.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	C	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	656	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	0.1	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	10.7	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	B	*	*	*
ApproachDel:	xxxxxx			xxxxxx			14.3			xxxxxx		
ApproachLOS:	*			*			B			*		

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

Future PMt

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

Intersection #4 I84 WB Ramps @ Main

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: B[12.7]

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	1	0	0 0 0	0	0	1 0 0	1	0
Volume Module:												
Base Vol:	10 200	0		0 260	40		0 0	0		80 0		80
Growth Adj:	1.09 1.09	1.09		1.09 1.09	1.09		1.09 1.09	1.09		1.09 1.09		1.09
Initial Bse:	11 218	0		0 283	44		0 0	0		87 0		87
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:	12 234	0		0 305	47		0 0	0		94 0		94
Reduct Vol:	0 0	0		0 0	0		0 0	0		0 0		0
Final Vol.:	12 234	0		0 305	47		0 0	0		94 0		94
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:	352 xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		586 xxxx		234
Potent Cap.:	1180 xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		452 xxxx		774
Move Cap.:	1180 xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		448 xxxx		774
Volume/Cap:	0.01 xxxx	xxxx		xxxx xxxx	xxxx		xxxx xxxx	xxxx		0.21 xxxx		0.12
Level Of Service Module:												
2Way95thQ:	0.0 xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		0.8 xxxx		xxxxx
Control Del:	8.1 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		15.1 xxxx		xxxxx
LOS by Move:	A	*		*	*		*	*		C	*	
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 xxxx		774
SharedQueue:	0.0 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx		0.4
Shrd ConDel:	8.1 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx		10.3
Shared LOS:	A	*		*	*		*	*		*	*	B
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			12.7		
ApproachLOS:	*			*			*			B		

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

Future PMt

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

Intersection #5 Front N @ Main

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: C[18.6]

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:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	44	234	33	5	267	11	5	0	60	27	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:	50	266	37	6	303	12	6	0	68	31	0	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	50	266	37	6	303	12	6	0	68	31	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:	316	xxxx	xxxxx	303	xxxx	xxxxx	709	xxxx	310	740	xxxx	285
Potent Cap.:	1200	xxxx	xxxxx	1246	xxxx	xxxxx	331	xxxx	699	311	xxxx	713
Move Cap.:	1200	xxxx	xxxxx	1246	xxxx	xxxxx	317	xxxx	699	271	xxxx	713
Volume/Cap:	0.04	xxxx	xxxx	0.00	xxxx	xxxx	0.02	xxxx	0.10	0.11	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.1	xxxx	xxxxx	7.9	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	635	xxxxx	xxxx	302	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	0.4	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.4	xxxxx	xxxxx	18.6	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			11.4			18.6		
ApproachLOS:	*			*			B			C		

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

Future PMt

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

Intersection #6 Boardman @ Main

Average Delay (sec/veh): 5.1 Worst Case Level Of Service: B[14.5]

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	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	75	100	50	20	125	15	15	10	75	35	15	15
Growth Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	82	109	55	22	136	16	16	11	82	38	16	16
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:	90	120	60	24	150	18	18	12	90	42	18	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	90	120	60	24	150	18	18	12	90	42	18	18
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:	168	xxxx	xxxxx	180	xxxx	xxxxx	545	557	150	587	545	150
Potent Cap.:	1369	xxxx	xxxxx	1378	xxxx	xxxxx	443	433	886	421	446	897
Move Cap.:	1369	xxxx	xxxxx	1378	xxxx	xxxxx	393	398	886	347	409	897
Volume/Cap:	0.07	xxxx	xxxx	0.02	xxxx	xxxx	0.05	0.03	0.10	0.12	0.04	0.02
Level Of Service Module:												
2Way95thQ:	0.2	xxxx	xxxxx	0.1	xxxx	xxxxx	0.1	xxxx	xxxxx	0.4	xxxx	xxxxx
Control Del:	7.8	xxxx	xxxxx	7.7	xxxx	xxxxx	14.6	xxxx	xxxxx	16.8	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	B	*	*	C	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	774	xxxx	xxxx	562
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	0.5	xxxxx	xxxx	0.2
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	10.4	xxxxx	xxxx	11.8
Shared LOS:	*	*	*	A	*	*	*	*	B	*	*	B
ApproachDel:	xxxxxx			xxxxxx			11.0			14.5		
ApproachLOS:	*			*			B			B		

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

Future PMt

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

Intersection #7 I84 EB Ramps @ Laurel

Average Delay (sec/veh): 6.6 Worst Case Level Of Service: B[11.5]

Street Name:	Laurel						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			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	10	10	135	25	0	25	0	5	0	0	0
Growth Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	0	11	11	147	27	0	27	0	5	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	12	12	164	30	0	30	0	6	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	12	12	164	30	0	30	0	6	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.3	xxxx	xxxxx	6.6	xxxx	6.4	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx	3.7	xxxx	3.5	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	24	xxxx	xxxxx	375	xxxx	30	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1510	xxxx	xxxxx	592	xxxx	995	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1510	xxxx	xxxxx	538	xxxx	995	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.11	xxxx	xxxx	0.06	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	0.2	xxxx	0.0	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	12.1	xxxx	8.6	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	B	*	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	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.5			xxxxxx		
ApproachLOS:	*			*			B			*		

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

Future PMt

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

Intersection #8 I84 WB Ramps @ Laurel

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: A[9.3]

Street Name:	Laurel						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	1 0	0 0	1
Volume Module:												
Base Vol:	5	28	0	0	145	15	0	0	0	10	0	40
Growth Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	5	31	0	0	158	16	0	0	0	11	0	44
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	6	34	0	0	176	18	0	0	0	12	0	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	6	34	0	0	176	18	0	0	0	12	0	48
Critical Gap Module:												
Critical Gp:	4.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.7	xxxx	6.6
FollowUpTim:	2.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.8	xxxx	3.6
Capacity Module:												
Cnflict Vol:	194	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	231	xxxx	34
Potent Cap.:	1305	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	690	xxxx	952
Move Cap.:	1305	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	688	xxxx	952
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	0.05
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	0.2
Control Del:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.3	xxxx	9.0
LOS by Move:	A	*	*	*	*	*	*	*	*	B	*	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	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			9.3		
ApproachLOS:	*			*			*			A		

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

Future PMt

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

Intersection #9 Columbia @ Laurel

Average Delay (sec/veh): 8.7 Worst Case Level Of Service: B[10.7]

Street Name:	Laurel						Columbia					
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	0 0 0	0	0	0 0 1	0	1	1 0 1	0	0
Volume Module:												
Base Vol:	35	0	35	0 0 0	0	0	0 25	100		60 20	0	
Growth Adj:	1.09 1.09	1.09		1.09 1.09 1.09	1.09	1.09	1.09 1.09	1.09		1.09 1.09	1.09	
Initial Bse:	38	0	38	0 0 0	0	0	0 27	109		65 22	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 1.00	1.00	
PHF Adj:	0.90 0.90	0.90		0.90 0.90 0.90	0.90	0.90	0.90 0.90	0.90		0.90 0.90	0.90	
PHF Volume:	42	0	42	0 0 0	0	0	0 30	121		73 24	0	
Reduct Vol:	0	0	0	0 0 0	0	0	0 0	0		0 0	0	
Final Vol.:	42	0	42	0 0 0	0	0	0 30	121		73 24	0	
Critical Gap Module:												
Critical Gp:	4.4 xxxx	xxxxx		xxxxx xxxx xxxxx	xxxxx	xxxxx	6.7	6.4		7.2 6.6	xxxxx	
FollowUpTim:	2.5 xxxx	xxxxx		xxxxx xxxx xxxxx	xxxxx	xxxxx	4.1	3.4		3.6 4.1	xxxxx	
Capacity Module:												
Cnflict Vol:	0 xxxx	xxxxx		xxxx xxxx xxxxx	xxxx	xxxx	127	0		121 106	xxxxx	
Potent Cap.:	900 xxxx	xxxxx		xxxx xxxx xxxxx	xxxx	xxxx	740	900		840 773	xxxxx	
Move Cap.:	900 xxxx	xxxxx		xxxx xxxx xxxxx	xxxx	xxxx	704	900		677 736	xxxxx	
Volume/Cap:	0.05 xxxx	xxxx		xxxx xxxx xxxx	xxxx	xxxx	0.04	0.13		0.11 0.03	xxxx	
Level Of Service Module:												
2Way95thQ:	0.1 xxxx	xxxxx		xxxx xxxx xxxxx	xxxx	xxxx	0.1	0.5		0.4 0.1	xxxxx	
Control Del:	9.2 xxxx	xxxxx		xxxxx xxxx xxxxx	xxxxx	xxxxx	10.3	9.6		11.0 10.1	xxxxx	
LOS by Move:	A	*	*	* * *	*	*	B	A		B B	*	
Movement:	LT - LTR	-	RT	LT - LTR	-	RT	LT - LTR	-	RT	LT - LTR	-	RT
Shared Cap.:	xxxx xxxx	xxxxx		xxxx xxxx xxxxx	xxxx	xxxx	xxxx xxxx	xxxxx		xxxx xxxx	xxxxx	
SharedQueue:	xxxxx xxxx	xxxxx		xxxxx xxxx xxxxx	xxxxx	xxxxx	xxxx xxxx	xxxxx		xxxxx xxxx	xxxxx	
Shrd ConDel:	xxxxx xxxx	xxxxx		xxxxx xxxx xxxxx	xxxxx	xxxxx	xxxx xxxx	xxxxx		xxxxx xxxx	xxxxx	
Shared LOS:	* *	*		* * *	*	*	* *	*		* *	*	
ApproachDel:	xxxxxx			xxxxxx			9.8			10.7		
ApproachLOS:	*			*			A			B		

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

Future PMt

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #1 Wilson @ Main

Cycle (sec):	100	Critical Vol./Cap.(X):	0.742
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	17.3
Optimal Cycle:	0	Level Of Service:	C

Street Name:	Main						Wilson					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1!	0 0	0 0	1!	0 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	5	30	5	20	40	95	105	10	5	5	15	30
Growth Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	5	33	5	22	44	104	114	11	5	5	16	33
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol:	0	80	0	25	115	135	190	0	0	0	0	45
Initial Fut:	5	113	5	47	159	239	304	11	5	5	16	78
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	6	125	6	52	176	265	338	12	6	6	18	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	125	6	52	176	265	338	12	6	6	18	86
PCE 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
MLF 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
Final Vol.:	6	125	6	52	176	265	338	12	6	6	18	86
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.04	0.92	0.04	0.10	0.36	0.54	0.95	0.03	0.02	0.05	0.16	0.79
Final Sat.:	24	489	24	70	237	357	544	19	10	29	86	410
Capacity Analysis Module:												
Vol/Sat:	0.26	0.26	0.26	0.74	0.74	0.74	0.62	0.62	0.62	0.21	0.21	0.21
Crit Moves:	****			****					****		****	
Delay/Veh:	10.8	10.8	10.8	20.6	20.6	20.6	17.3	17.3	17.3	10.3	10.3	10.3
Delay 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
AdjDel/Veh:	10.8	10.8	10.8	20.6	20.6	20.6	17.3	17.3	17.3	10.3	10.3	10.3
LOS by Move:	B	B	B	C	C	C	C	C	C	B	B	B
ApproachDel:	10.8			20.6			17.3			10.3		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	10.8			20.6			17.3			10.3		
LOS by Appr:	B			C			C			B		
AllWayAvgQ:	0.3	0.3	0.3	2.3	2.3	2.3	1.3	1.3	1.3	0.2	0.2	0.2

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

Future PMt

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

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Intersection #2 Front S @ Main

****

Average Delay (sec/veh): 3.4 Worst Case Level Of Service: F[79.8]

****

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:	1 0 0 1 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:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	11	289	5	5	305	27	22	0	16	5	0	5
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol:	0	315	60	0	430	30	0	0	5	0	0	80
Initial Fut:	11	604	65	5	735	57	22	0	21	5	0	85
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:	13	694	75	6	845	66	25	0	25	6	0	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	13	694	75	6	845	66	25	0	25	6	0	98
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:	911	xxxx	xxxxx	769	xxxx	xxxxx	1696	xxxx	878	1660	xxxx	732
Potent Cap.:	731	xxxx	xxxxx	823	xxxx	xxxxx	73	xxxx	346	79	xxxx	425
Move Cap.:	731	xxxx	xxxxx	823	xxxx	xxxxx	55	xxxx	346	72	xxxx	425
Volume/Cap:	0.02	xxxx	xxxx	0.01	xxxx	xxxx	0.46	xxxx	0.07	0.09	xxxx	0.23
Level Of Service Module:												
2Way95thQ:	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	10.0	xxxx	xxxxx	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	94	xxxxx	xxxx	328	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	2.4	xxxxx	xxxxx	1.3	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	79.8	xxxxx	xxxxx	21.0	xxxxx
Shared LOS:	*	*	*	*	*	*	*	F	*	*	C	*
ApproachDel:	xxxxxx			xxxxxx			79.8			21.0		
ApproachLOS:	*			*			F			C		

****

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

Future PMt

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

Intersection #3 I84 EB Ramps @ Main

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: D[25.1]

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			1 0 0 1 0			0 0 0 0 0		
Volume Module:												
Base Vol:	0	180	105	70	285	0	25	0	20	0	0	0
Growth Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	0	196	114	76	311	0	27	0	22	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol:	0	185	130	25	330	0	10	0	105	0	0	0
Initial Fut:	0	381	244	101	641	0	37	0	127	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	401	257	107	674	0	39	0	133	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	401	257	107	674	0	39	0	133	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	659	xxxx	xxxxx	1418	xxxx	674	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	915	xxxx	xxxxx	132	xxxx	411	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	915	xxxx	xxxxx	119	xxxx	411	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.12	xxxx	xxxx	0.33	xxxx	0.32	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	1.3	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	9.5	xxxx	xxxxx	49.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	E	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	411	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	1.4	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	9.5	xxxx	xxxxx	xxxxx	xxxx	17.9	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	C	*	*	*
ApproachDel:	xxxxxx			xxxxxx			25.1			xxxxxx		
ApproachLOS:	*			*			D			*		

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

Future PMt

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

Intersection #4 I84 WB Ramps @ Main

Average Delay (sec/veh): 50.8 Worst Case Level Of Service: F[169.5]

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	1 0		0 0 0	0 0		1 0	0 1	0
Volume Module:												
Base Vol:	10	200	0	0	260	40	0	0	0	80	0	80
Growth Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	11	218	0	0	283	44	0	0	0	87	0	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol:	70	125	0	0	170	15	0	0	0	190	0	30
Initial Fut:	81	343	0	0	453	59	0	0	0	277	0	117
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:	87	369	0	0	488	63	0	0	0	298	0	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	87	369	0	0	488	63	0	0	0	298	0	126
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:	551	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1062	xxxx	369
Potent Cap.:	995	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	234	xxxx	649
Move Cap.:	995	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	217	xxxx	649
Volume/Cap:	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	1.37	xxxx	0.19
Level Of Service Module:												
2Way95thQ:	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	16.8	xxxx	xxxxx
Control Del:	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	236.1	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	F	*	*
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	xxxx	649
SharedQueue:	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.7
Shrd ConDel:	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.9
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	B
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			169.5		
ApproachLOS:	*			*			*			F		

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

Future PMt

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

****

Intersection #5 Front N @ Main

****

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: D[27.9]

****

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:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	44	234	33	5	267	11	5	0	60	27	0	5
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol:	0	155	45	0	160	5	0	0	5	0	0	20
Initial Fut:	44	389	78	5	427	16	5	0	65	27	0	25
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:	50	442	88	6	485	18	6	0	74	31	0	29
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	50	442	88	6	485	18	6	0	74	31	0	29
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:	503	xxxx	xxxxx	531	xxxx	xxxxx	1107	xxxx	494	1129	xxxx	487
Potent Cap.:	1021	xxxx	xxxxx	1027	xxxx	xxxxx	176	xxxx	548	167	xxxx	546
Move Cap.:	1021	xxxx	xxxxx	1027	xxxx	xxxxx	160	xxxx	548	139	xxxx	546
Volume/Cap:	0.05	xxxx	xxxx	0.01	xxxx	xxxx	0.04	xxxx	0.13	0.22	xxxx	0.05
Level Of Service Module:												
2Way95thQ:	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	8.7	xxxx	xxxxx	8.5	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	461	xxxxx	xxxx	217	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	xxxxx	1.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.4	xxxxx	xxxxx	27.9	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	D	*
ApproachDel:	xxxxxx			xxxxxx			14.4			27.9		
ApproachLOS:	*			*			B			D		

****

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

Future PMt

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

****

Intersection #6 Boardman @ Main

****

Average Delay (sec/veh): 11.0 Worst Case Level Of Service: E[40.9]

****

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	1 0	0	1 0	1 0	0	1 0
Volume Module:												
Base Vol:	75	100	50	20	125	15	15	10	75	35	15	15
Growth Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	82	109	55	22	136	16	16	11	82	38	16	16
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol:	25	40	40	20	55	5	5	5	25	90	5	5
Initial Fut:	107	149	94	42	191	21	21	16	107	128	21	21
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:	117	164	104	46	210	23	23	17	117	141	23	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	117	164	104	46	210	23	23	17	117	141	23	23
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:	234	xxxx	xxxxx	268	xxxx	xxxxx	776	804	210	831	776	216
Potent Cap.:	1294	xxxx	xxxxx	1279	xxxx	xxxxx	310	312	820	289	329	824
Move Cap.:	1294	xxxx	xxxxx	1279	xxxx	xxxxx	256	273	820	213	288	824
Volume/Cap:	0.09	xxxx	xxxx	0.04	xxxx	xxxx	0.09	0.06	0.14	0.66	0.08	0.03
Level Of Service Module:												
2Way95thQ:	0.3	xxxx	xxxxx	0.1	xxxx	xxxxx	0.3	xxxx	xxxxx	4.0	xxxx	xxxxx
Control Del:	8.1	xxxx	xxxxx	7.9	xxxx	xxxxx	20.5	xxxx	xxxxx	49.7	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	C	*	*	E	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	651	xxxx	xxxx	427
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	0.8	xxxxx	xxxx	0.4
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx	xxxxx	xxxx	12.0	xxxxx	xxxx	14.5
Shared LOS:	*	*	*	A	*	*	*	*	B	*	*	B
ApproachDel:	xxxxxx			xxxxxx			13.2			40.9		
ApproachLOS:	*			*			B			E		

****

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

Future PMt

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

****

Intersection #7 I84 EB Ramps @ Laurel

****

Average Delay (sec/veh): 8.3 Worst Case Level Of Service: D[34.3]

****

Street Name:	Laurel						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			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	0	10	10	135	25	0	25	0	5	0	0	0
Growth Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	0	11	11	147	27	0	27	0	5	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol:	0	60	50	235	95	0	25	0	15	0	0	0
Initial Fut:	0	71	61	382	122	0	52	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	79	68	425	136	0	58	0	23	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	79	68	425	136	0	58	0	23	0	0	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.3	xxxx	xxxxx	6.6	xxxx	6.4	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx	3.7	xxxx	3.5	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	146	xxxx	xxxxx	1098	xxxx	136	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	1360	xxxx	xxxxx	218	xxxx	867	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	1360	xxxx	xxxxx	148	xxxx	867	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.31	xxxx	xxxx	0.39	xxxx	0.03	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	1.3	xxxx	xxxxx	1.7	xxxx	0.1	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	8.8	xxxx	xxxxx	44.1	xxxx	9.3	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	E	*	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	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	1.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			34.3			xxxxxx		
ApproachLOS:	*			*			D			*		

****

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

Future PMt

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

Intersection #8 I84 WB Ramps @ Laurel

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[10.7]

Street Name:	Laurel						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	1	0	0 0 0	0	0	1 0	0	0 1
Volume Module:												
Base Vol:	5 28	0	0	145	15	0	0	0	10	0	40	
Growth Adj:	1.09 1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	
Initial Bse:	5 31	0	0	158	16	0	0	0	11	0	44	
Added Vol:	0 0	0	0	0	0	0	0	0	0	0	0	
Future Vol:	10 75	0	0	325	30	0	0	0	5	0	50	
Initial Fut:	15 106	0	0	483	46	0	0	0	16	0	94	
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:	0.90 0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
PHF Volume:	17 117	0	0	537	52	0	0	0	18	0	104	
Reduct Vol:	0 0	0	0	0	0	0	0	0	0	0	0	
Final Vol.:	17 117	0	0	537	52	0	0	0	18	0	104	
Critical Gap Module:												
Critical Gp:	4.3 xxxx xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.7	xxxx	6.6		
FollowUpTim:	2.3 xxxx xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.8	xxxx	3.6		
Capacity Module:												
Cnflict Vol:	588 xxxx xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	714	xxxx	117		
Potent Cap.:	926 xxxx xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	353	xxxx	853		
Move Cap.:	926 xxxx xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	348	xxxx	853		
Volume/Cap:	0.02 xxxx xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.05	xxxx	0.12		
Level Of Service Module:												
2Way95thQ:	0.1 xxxx xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	0.4		
Control Del:	9.0 xxxx xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.9	xxxx	9.8		
LOS by Move:	A *	*	*	*	*	*	*	*	C	*	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	xxxx	xxxxx	
SharedQueue:	0.1 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	9.0 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	A *	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	xxxxxx		xxxxxx		xxxxxx		10.7					
ApproachLOS:	*		*		*		B					

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

Future PMt

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

****

Intersection #9 Columbia @ Laurel

****

Average Delay (sec/veh): 32.3 Worst Case Level Of Service: F[60.6]

****

Street Name:	Laurel						Columbia					
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	0 0 0	0	0	0 0 1	0	1	1 0 1	0	0
Volume Module:												
Base Vol:	35	0	35	0	0	0	0	25	100	60	20	0
Growth Adj:	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Initial Bse:	38	0	38	0	0	0	0	27	109	65	22	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol:	50	0	75	0	0	0	0	50	85	270	45	0
Initial Fut:	88	0	113	0	0	0	0	77	194	335	67	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	98	0	126	0	0	0	0	86	216	373	74	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	98	0	126	0	0	0	0	86	216	373	74	0
Critical Gap Module:												
Critical Gp:	4.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	6.7	6.4	7.2	6.6	xxxxx
FollowUpTim:	2.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.1	3.4	3.6	4.1	xxxxx
Capacity Module:												
Cnflict Vol:	0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	322	0	302	259	xxxxx
Potent Cap.:	900	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	575	900	639	635	xxxxx
Move Cap.:	900	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	509	900	387	562	xxxxx
Volume/Cap:	0.11	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.17	0.24	0.96	0.13	xxxx
Level Of Service Module:												
2Way95thQ:	0.4	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	0.6	0.9	11.0	0.5	xxxxx
Control Del:	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	13.5	10.3	70.2	12.4	xxxxx
LOS by Move:	A	*	*	*	*	*	*	B	B	F	B	*
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	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.2			60.6		
ApproachLOS:	*			*			B			F		

****

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

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.
- The Port of Morrow will expand by 225 employees in the near term (5 years). The traffic forecasts assume that the Port has 500 new employees in the next 20 years. It was assumed that one-third of the new trips will use the Hwy 730 interchange to access Each Beach, since the new connection is in the County TSP.

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.

Laurel Lane Trip Distribution:

All traffic was oriented to the I-84 Ramps and used current turning movement percentages at the intersections.

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	**2,761**	**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)

Laurel Lane IAMP

Table A2: Cumulative Development Raw Trip Generation – Laurel Lane IAMP Area

Land Use	ITE Code	Units (square ft)	Trip Generation				
			Daily	AM In	AM out	PM In	PM Out
General Light Industrial	110	50,000	349	40	6	6	43
Fast Food with Drive-Thru	934	4,000	1,984	108	104	72	67
West Columbia – Subtotal			**2,333**	**149**	**110**	**78**	**110**
General Light Industrial	110	100,000	697	81	11	12	86
General Light Industrial	110	100,000	697	81	11	12	86
Gas Station w/Mart	945	8 pumps	1,302	40	40	54	54
East Columbia - Subtotal			**2,696**	**202**	**62**	**77**	**226**
General Light Industrial	110	50,000	349	40	6	6	43
Gas Station w/Mart	945	8,000	1,302	40	40	54	54
Truck Stop	none	6 slots	810	39	42	42	39
Laurel Lane - Subtotal			**2,461**	**120**	**88**	**102**	**136**
Warehouse	150	500 emp	1,945	184	71	103	192
Laurel Lane - Subtotal			**1,945**	**184**	**71**	**103**	**192**
Subtotal for Laurel Lane IAMP Area			**9,435**	**1,021**		**1,075**	

Table A2a: Cumulative Development Trip Generation – Laurel Lane IAMP Area

Including Trip Reductions

Land Use	Trip Generation				
	Daily	AM In	AM out	PM In	PM Out
General Light Industrial	349	40	6	6	43
Fast Food with Drive-Thru**	1,131	62	59	41	38
West Columbia – Subtotal	**1,480**	**102**	**65**	**47**	**81**
General Light Industrial	697	81	11	12	86
General Light Industrial	697	81	11	12	86
Gas Station w/Mart****	716	22	22	29	29
East Columbia - Subtotal	**2,110**	**184**	**44**	**53**	**202**
General Light Industrial	349	40	6	6	43
Gas Station w/Mart****	716	22	22	29	29
Truck Stop****	591	28	31	31	28
Laurel Lane - Subtotal	**1,656**	**91**	**58**	**66**	**101**
Warehouse	1,945	184	71	103	192
Laurel Lane - Subtotal	**1,945**	**184**	**71**	**103**	**192**
Subtotal (Laurel Lane IAMP)	**7,505**	**836**		**897**	

** Trip Reduction of 43% (Fast Food)

****Trip Reduction of 27% (gas station)

Preliminary Signal Warrants

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	Y
	Minor	2	2,500	3,325	
Case B	Major	1	9,300	8,800	N
	Minor	2	1,250	3,325	

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.

Oregon Department of Transportation
Transportation Development Branch
Transportation Planning Analysis Unit

Preliminary Traffic Signal Warrant Analysis[1]

Major Street:	Laurel Lane	**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	6,050	
	Minor	2	2,500	600	N
Case B	Major	1	9,300	6,050	
	Minor	2	1,250	600	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.

Oregon Department of Transportation
Transportation Development Branch
Transportation Planning Analysis Unit

Preliminary Traffic Signal Warrant Analysis[1]

Major Street:	Laurel Lane	**Minor Street:**	Columbia Blvd
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	6,775	
	Minor	2	2,500	1,400	N
Case B	Major	1	9,300	6,775	
	Minor	2	1,250	1,400	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.