Oregon
Theodore R. Kulongoski, Governor

**Department of Transportation**
Office of the Director
355 Capitol St NE Rm 135
Salem, OR 97301

**DATE:** December 3, 2009

**TO:** Oregon Transportation Commission

**FROM:** Mathew L. Garrett
Director

**SUBJECT:** **Consent 5 -** Boardman Main Street Interchange Area Management Plan

***Requested Action***

Approve a request to adopt the Boardman Main Street Interchange Area Management Plan (IAMP) and associated amendments with the condition that the projects identified in the plan are determined to reasonably likely to be funded under the Transportation Planning Rule (TPR) when the city has established the necessary funding mechanisms to implement the plan. The plan will amend the Oregon Highway Plan (OHP) to include an Access Management Plan for the Main Street interchange with Interstate 84 in Boardman (Exit 164). OTC adoption will identify circulation and access management strategies and capital improvement projects, including cost estimates and potential funding sources that will address the long-term safety needs of the interchange.

This IAMP has been adopted into all relevant local Comprehensive Plans and Transportation System Plans.

***Background***

Interstate 84 runs east-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 and connect the north and south parts of town are Main Street and Laurel Avenue. Currently, employment centers at the Port of Morrow are generally located north of Interstate 84, and residential property is generally south of Interstate 84.

In 2006, the City of Boardman initiated an IAMP for both the Main Street (Exit 164) and Laurel Avenue (Exit 165) interchanges in the city through the Transportation Growth Management (TGM) program. Ultimately, the city did not adopt an IAMP that included both interchanges, electing instead to go forward with a plan for only the Main Street interchange. A city steering committee consisting of elected and appointed officials, property and business owners, and real estate professionals, was instrumental in the decision and development of the plan and continues to guide the implementation of the Main Street IAMP.

The Boardman Main Street Interchange (Exit 164) is a 1964 design and 1966 construction. There are existing safety issues at the interchange due to access on Main Street placed too close to the on and off ramps to the highway. There are also issues with vehicles periodically stacking up at the westbound ramp, a situation that will worsen as the area develops, and the city increases in population. The IAMP identifies a local street network, access management and specific roadway and interchange

improvements that will ensure the transportation system around the interchange operates efficiently and safely.

Based on an annual growth rate of 2.5% and related development assumptions, no short-range (0-5 years) transportation improvements will be necessary in the vicinity of the interchange. Medium - (5-10 years) and long-range (10-20 years) improvements identified in the IAMP will be triggered by system failures (such as the level of service drops below standards or an unacceptable increase in crashes) and will be implemented as funding becomes available and/or property (re)develops.

The Boardman City Council adopted Ordinance No. 5-2009 amending the city's Transportation System Plan (TSP), Comprehensive Plan and Development Code Chapters, on October 20, 2009. The implementing ordinance directs the city council to establish a funding mechanism necessary to implement the IAMP within 12 months of the effective date of the ordinance.

To meet Transportation Planning Rule requirements, the department recommends that the plan be adopted with the condition that projects identified in the plan be considered as reasonably likely to be funded when the city has established the necessary funding mechanisms to implement the plan.

An Oregon Department of Transportation (ODOT) staff report is attached as Exhibit A. ODOT findings of fact that demonstrate compliance with the modal plan amendment process and the facility plan adoption process are attached as Exhibit B. Adoption Ordinances and Resolutions from the affected local jurisdiction that demonstrates compatibility with its local comprehensive plan is attached as Exhibit C. The IAMP is attached as Exhibit D.

Requests for additional hard copies of the plan should be directed to ODOT Region 5 Planning at (541) 963-1344.

Notification of this OTC action has been provided to the affected local jurisdiction and to the Department of Land Conservation and Development.

*Attachments:*
Exhibit A: Boardman Main Street Interchange Area Management Plan Staff Report
Exhibit B: Boardman Main Street Interchange Area Management Plan Findings of Fact (includes ODOT Letter of Concurrence as attachment)
Exhibit C: City of Boardman Ordinance No. 5-2009
Exhibit D: Letter from the Department of Land Conservation and Development
Exhibit D: Boardman Main Street Interchange Area Management Plan, April, 2009 with amendments adopted by City of Boardman October, 2009

*Copies (w/attachments) to:*

| | | | |
|---|---|---|---|
| Doug Tindall | Joan Plank | Patrick Cooney | Lorna Youngs |
| Jerri Bohard | Barbara Fraser | Robert Maestre | Nancy Murphy |
| Bob Cortright, DLCD | | | |

# Boardman Main Street Interchange Area Management Plan
## Staff Report
November 16, 2009

## I. Introduction

In 2006, the City of Boardman began work on an Interchange Area Management Plan (IAMP) for the Main Street interchange with Interstate 84. The IAMP project was funded in part through the Transportation Growth Management (TGM) grant program administered jointly by the Oregon Department of Land Conservation and Development (DLCD) and the Oregon Department of Transportation (ODOT).

The IAMP was initiated to address potential safety issues at the interchange due to frontage roads placed too close to the on and off ramps to the highway. The Main Street interchange and front streets were designed and constructed nearly 50 years ago. At the time, the interchange served a community of about 250 people and the front streets provided easy access to fuel, food and lodging primarily for interstate travelers. Today, the Port of Morrow has attracted industry providing some 2000 manufacturing jobs and the City's population has grown to about 3,200 people. Most of the employment in the Boardman area lies north of I-84, while most of the new residential growth lies to the south of I-84, which creates the need for regular trips across the freeway. As a result, there are also problems periodically with vehicles stacking up at the west bound ramp – a situation that is projected to get worse as the area develops and Boardman increases in population.

The IAMP documents what transportation improvements are needed, and when, in order to improve safety and operations in and around the interchange as the community continues to grow. The plan includes cost estimates and identifies potential funding sources for improvements. The plan also identifies ways for the City to provide funding for future projects through System Development Charges (SDC) or Local Improvement District (LID) program. The City is committed to adopting a local funding mechanism to be used for funding transportation projects associated with the identified improvements within the next 12 months as stated in the City of Boardman Ordinance No. 5-2009.

## II. Public Involvement Process

Originally, the IAMP planning process included both Boardman I-84 interchanges, at the Main Street (Exit 164) and the Port of Morrow (Exit 165) interchanges. In 2006, at the start of the planning process, the City distributed a public survey to gather information about issues and challenges surrounding both interchanges. In 2007, a series of stakeholder interviews were conducted to get input from citizens who rely on the interchange and the residents and business owners within the study area was notified of public meetings related to the project. Ultimately, the City did not adopt an IAMP that included both interchanges, due in part to concerns surrounding the timing of improvements at the Port of Morrow interchange and development pressures at the Main Street interchange, where a land use approval hinged on the City's adoption of the plan.

As a result, ODOT submitted a notice of intent to appeal the City's decision to the Land Use Board of Appeals (LUBA). In response, the City appointed a Steering Committee, in June 2007, comprised of affected land owners and council members to work collaboratively with ODOT to find issues which posed barriers to the approval. The Steering Committee and ODOT met several

times in 2008 and produced a final draft report of the Boardman Main Street IAMP in April, 2009 and finalized language to for the Boardman Development Code to implement the revised IAMP.

In addition, the City held two Focus Groups and a city-wide Open House on June 22, 2009 to gather citizen input and to answer questions about the Boardman Main Street Interchange Area Management Plan. On July 22, 2009 a joint workshop of the Boardman City Council and Boardman Planning Commission was held concerning the Boardman Main Street Interchange Area Management Plan.

Notice of public hearings on the proposed changes to the City of Boardman's Comprehensive Plan and implementing ordinances was sent 20 days in advance to property owners, interested parties and governmental agencies. On August 12, 2009 the Boardman Planning Commission conducted a public hearing and recommended approval of the Boardman Main Street IAMP to the City Council with amendments. The City Council conducted a public hearing on September 15, 2009 and approved the revised IAMP, with recommended amendments, for adoption. On October 20, 2009 the City Council adopted by ordinance the Boardman Main Street Interchange Area Management Plan into the City's Transportation System Plan and Comprehensive Plan.

Notice of the pending OTC action on the Boardman Main Street IAMP has been provided to the affected local jurisdiction and to the Department of Land Conservation and Development.

## III. Components of the Plan for which Local Governments are Responsible

### City of Boardman

The City of Boardman Ordinance No. 5-2009 was passed by the City Council on October 20, 2009. The City of Boardman approved a post acknowledgement plan amendment which establishes an Interchange Area Management Plan Overlay Zone, changes language in the City's development code, amends the Boardman Zoning Map, and amends the Boardman Transportation System Plan in order to implement the Boardman Main Street Interchange Area Management Plan. The IAMP provides cost estimates and identifies potential funding sources including the City and property owners. The ordinance directs the City Council to complete within 12 months the necessary changes to the Boardman Comprehensive Plan to establish the funding mechanisms necessary to implement the IAMP.

## IV. Components of the Plan for which the Department is Responsible

### Oregon Transportation Commission

The Oregon Transportation Commission will consider for adoption the Boardman Main Street IAMP as part of the 2006 Oregon Highway Plan. The Boardman Main Street IAMP provides recommendations for short-, medium-, and long- range interchange improvements, and access management actions to provide for safe and efficient travel around the I-84 interchange to meet the year 2026 travel demand.

### Oregon Department of Transportation

I-84 is classified an Interstate and is part of the National Highway System. Proposed interchange improvements and the access management actions were designed to ensure the safe and efficient high-speed, continuous-flow operation of I-84, consistent with state policy. A key outcome of the IAMP is the identification of potential vehicle queuing onto the mainline freeway. The IAMP protects the safe and efficient operation of the Main Street interchange with I-84 through

proposing interchange improvements and regulating access near the interchange in part through a planned local street network.

The plan provides cost estimates and identifies potential funding sources for improvements that include funding from the Oregon Department of Transportation. In order to meet Transportation Planning Rule (TPR) requirements, it is recommended that projects identified in the plan are not to be considered reasonably likely to be funded until the City has established the necessary funding mechanisms to implement its portion of the plan.

## V. How the Boardman Main Street Interchange Area Management Plan implements the Oregon Highway Plan (OHP) and Access Management Rule (OAR 734 -051)

The Boardman Main Street IAMP was developed in accordance with policies set forth in the Oregon Highway Plan (OHP). Policies in the OHP emphasize the efficient management of the highway system to increase safety and to extend highway capacity. In general, the IAMP is consistent with OHP Policies 1A, 1B, 1C, 1F, 1G, 2B, 2F, 3A, and 3C as summarized below.

Policy 1A defines the function of highways to serve different traffic and Policy 1C states the need to balance the movement of goods and services. The proposed interchange improvements and access management plan minimize access points on Main Street in the vicinity of the interchange to ensure the function of I-84 is maintained.

Policy 1B requires coordination between state and local jurisdictions which occurred throughout the preparation of the IAMP.

Policy 1F sets mobility standards to allow the interchange to function at a reliable and acceptable level. Future traffic conditions in the vicinity of the Main Street Interchange shows that the existing interchange facility does not meet acceptable safety standards and will not accommodate the expected traffic volumes over a 20-year planning horizon without the proposed improvements to widen the ramps, install a traffic signal and limit access to North and South Front Streets.

Policy 1G requires improving safety and efficiency before major improvements are made to a facility. The improvements identified in the IAMP have been prioritized into short-, medium-, and long-range actions. The IAMP includes short- and medium- range actions, such as access management and local street improvements that do not add capacity.

Policy 2B calls for off system improvements to help local jurisdictions adopt land use and access management policies. The IAMP identifies a local street network that will provide access to locations and properties in west Boardman.

Policy 2F improves the safety of the highway system. The main goal of the IAMP is to provide for safe and efficient travel around the interchange.

Policy 3A sets access spacing standards for driveways and approaches. The access management component of the Boardman Main Street IAMP includes development standards that regulate access spacing for new development and redevelopment near the interchange.

Policy 3C sets policy for managing interchange areas by developing an IAMP that identifies and addresses current interchange deficiencies. The IAMP identifies access management and

implementation actions and transportation policies intended to preserve the safety and function over the 20-year plan horizon.

The Boardman Main Street IAMP was also developed in accordance with the guidelines set forth in the State of Oregon's Access Management Rules. OAR 734-051 governs permitting, management and standards of approaches to state highways to ensure safe and efficient operation of the highway. The IAMP moves in the direction of meeting the approach road spacing standards established by OAR 734-051. The IAMP contains short-, medium- and long- range access strategies that will be applied within the IAMP Overlay District in order regulate existing and future driveway and other approaches in the vicinity of the interchange.

Short-range (0-5 years), there are no specific actions identified. Medium-range (5-10 years), calls for reconstruction of South Main Street that will delineate driveways and the addition of an approach lane to the I-84 ramp terminals that will restrict turning movements to right-turn only at North and South Front Streets. Long-range (10-20 years), identifies the installation of a traffic signal at Main Street and the I-84 westbound ramp that will require closure of North and South Front Streets, when new public streets are constructed as property is redeveloped and driveways are consolidated, and that will lead to the widening of the Main Street Bridge to include a center left-turn lane.

## VI. Summary of Findings

The findings included in exhibit B highlight the actions for which the Oregon Transportation Commission has authority to approve, such as issues related to highway operations, mobility standards and access management.

Through the local adoption of the Boardman Main Street IAMP, the plan is compatible with the acknowledged comprehensive plan of the City of Boardman and is in compliance with relevant state planning goals, and policies. These include Statewide Planning Goals and Guidelines, Oregon Transportation Plan, (2006), Oregon Highway Plan (2006). The IAMP is consistent with the Access Management Rule (OAR 734-051), as the plan moves in the direction of meeting the approach road spacing standard, and the Transportation Planning Rule (OAR 660-012) provided projects identified in the plan are not relied upon for determining significant affect until the City has established necessary funding mechanisms to implement the plan.

## VII. Requested Action by the Oregon Transportation Commission (OTC)

The requested action by the Oregon Transportation Commission (OTC) is *to adopt an amendment to the Oregon Highway Plan (OHP) to include the Boardman Main Street Interchange Area Management Plan with the condition that for purposes of meeting the Transportation Planning Rule, the projects identified in the plan are not to be considered as reasonably likely to be funded until the City has established the necessary funding mechanisms to implement the plan.*

With the adoption of the Boardman Main Street Interchange Area Management Plan, the OTC is accepting and agreeing to the conclusions and decisions of the plan that shall guide future Department and local government actions to implement improvements that meet acceptable safety and mobility standards and move in the direction of meeting the approach road spacing standards established by OAR 734-051.

# Boardman Main Street Interchange Area Management Plan
# Findings of Fact
# Oregon Transportation Commission

November 16, 2009

## I. Introduction

The Boardman Main Street Interchange Area Management Plan Findings are divided into four sections. The first addresses compatibility with acknowledged comprehensive plans of affected counties and cities. The second addresses compatibility with Statewide Planning Goals, the third compatibility with affected modal plans and the Oregon Transportation Plan (OTP), and the fourth compatibility with applicable Oregon Administrative Rules. The findings highlight the actions for which the Oregon Transportation Commission has authority to approve, such as issues related to highway operations, mobility standards and access management.

## II. Compatibility with Acknowledged Comprehensive Plans of Counties and Cities

There are six planning Goals of the Boardman Comprehensive Plan directly applicable to the Main Street IAMP as identified in the City of Boardman Community Development Staff Report dated September 8, 2009. They are; Goal 1 Citizen Involvement; Goal 2: Housing; Goal 9: Economic Needs; Goal 10 Housing; Goal 11: Public Facilities; and Goal 12 Transportation.

**CHAPTER 1: CITIZEN INVOLVEMENT:** The directly related policies of the Boardman Main Street IAMP are #1- 4.

*CHAPTER 1 – CITIZEN INVOLVEMENT COMPREHENSIVE PLAN POLICIES:*

*1. Provide for change in Comprehensive Plan relative to new or unanticipated developments, major change in community, change in Council or Planning Commission policy, and through regular review and re-evaluation.*

*2. Consistency must be maintained between the Comprehensive Plan and Development Code and other supplemental ordinances and policies in order to maintain the integrity of the planning effort.*

*3. The City should endeavor to adhere to the spirit of the Land Conservation and Development Commission in its planning activities.*

*4. The Planning Commission is officially designated as the Citizen Involvement Committee.*

*5. The City completed a Community Visioning workshop in 1997 to gain understanding of the current needs and concerns of the community.*

Response: The IAMP is consistent with policies 1-4 of Goal 1 Citizen Involvement polices of the Boardman Comprehensive Plan. Adoption by the Boardman City Council of the Main Street IAMP, which is an element of the City's Transportation System Plan, amends the City's

Comprehensive Plan. Consistent with Policy #1, the IAMP has been developed to respond to the City's long-range development needs.

**CHAPTER 2: LAND USE PLANNING:** The directly related policies of the Boardman Main Street IAMP are policies #3, #4, #5 and #6. These policies are to coordinate the land use planning efforts of the city and to meet the overall Comprehensive Plan Policies and Goals.

*CHAPTER 2 – LAND USE PLANNING COMPREHENSIVE PLAN POLICIES:*

1. *The City completed a Buildable Lands Analysis in 1997 which reflected that the City has ample land within its Urban Growth Boundary to meet commercial and housing needs of the City for the next 20 years.*
2. *The City encourages the development of infill and redevelopment of existing land in order to balance the need to expand the Urban Growth Boundary (UGB).*
3. *The City has adopted the City of Boardman Development Code, a unified zoning and subdivision land use code to facilitate the development process and implement the land use goals of the City as outlined in the Comprehensive Plan.*
4. *The City recognizes that the location of a City Center is important to the development of the City of Boardman.*
5. *The City has adopted language in the Development Code as Chapter 2.2.190 that will assist in the implementation of a City Center in Boardman.*
6. *The development of the City Center will use the Downtown Plan completed in 2000 as a resource document when guiding future development within the City of Boardman.*
7. *The City will continue to work with Morrow County to maintain a consistent and coordinated plan for management of the Urban Growth Boundary (UGB) and the Urban Growth Area (UGA).*
8. *The City will continue to work with the Port of Morrow to encourage development of industrial lands within the Urban Growth Boundary.*

Response: The IAMP is consistent with policies #1 and #2 but not directly related. The IAMP is consistent with policies #3 - #6 as it directly addresses policies concerning the downtown plan and areas around the freeway interchange by provision of transportation connectivity planning and protection of the existing system function until improvements are necessary. As this proposal does not include industrial lands or areas outside of the city limits, policies #7 and #8 do not directly relate to the IAMP but do have some influence on the traffic counts at the interchange.

**CHAPTER 9: ECONOMIC NEEDS:** The directly related policies in Goal 9 – Economic Needs are #1, #2, and #4. Polices #3 and #5 are related to industrial lands which this IAMP does not address directly.

*CHAPTER 9 – ECONOMIC NEEDS COMPREHENSIVE PLAN POLICIES:*

1. *Advance the position of Boardman as a regional center for industry, power generation, commerce, recreation, and culture.*
2. *Encourage tourist commercial activity near Interstate 84.*
3. *Allow for the creation of industrial park development with adequate off-street parking, landscaping, and site screening.*
4. *Promote cooperation among the city, the Port of Morrow, and other interested parties to facilitate the most effective uses of public facilities serving the planning area.*

5. *As resources permit, review the City's supply industrial land to monitor supply and demand.*

Response: Adoption of this proposal directly addresses policy #1, #2 and #4 in it provides a plan to address the transportation needs and connectivity for the commercial areas in an effective manner, providing for future commercial growth while meeting transportation demands. Policies #3 and #5 are unrelated in they deal with industrial lands issues which are indirectly related to the IAMP by adding to the overall traffic at the interchange.

**CHAPTER 10: HOUSING:** Goal 10 policies, although not directly related to the adoption of the April 2009 Boardman Main Street Interchange Area Management Plan, do influence the overall functional operation of the interchange area through traffic counts from housing projects adding to overall traffic at the interchange.

*CHAPTER 10 – HOUSING COMPREHENSIVE PLAN POLICIES*

1. *The City shall provide a variety of living environments to meet regional housing needs for those of different family size and income.*
2. *The City, recognizing the financial difficulties of a segment of the City's population in providing themselves safe, sanitary and healthful shelter, shall work cooperatively with the private sector to seek state and federal aid where desirable to assist persons to obtain suitable housing.*
3. *Encourage new development concepts to meet changing housing demands and to provide self-contained recreation facilities.*
4. *Locate high-density multiple-family developments in areas to offer a buffer between single-family residential and commercial or industrial uses, close to schools and shopping, and with quick access to arterial streets.*
5. *Encourage planned unit developments while maintaining an overall low-density profile by incorporation of more open space in the development.*
6. *Promote energy efficient programs.*
7. *Provide infill opportunities for attached rowhouse development, duplex and triplex development in residential neighborhoods.*
8. *The City shall promote where possible, the evolution of safe and aesthetically pleasing residential neighborhoods that are efficiently integrated with business and commercial property, schools, parks, public facilities and other urban development.*
9. *The City shall give consideration to development of alternative residential construction both in form and layout for such reasons as aesthetics, energy conservation, reduced development costs and provision of open space.*
10. *Encourage through provisions in the City's Development Code, the opportunity to develop mixed use Development (commercial and higher density residential) to provide affordable housing options for all residents of Boardman.*
11. *The City shall encourage residential development within city limits in areas which are appropriate for urban development.*
12. *Work with federal and State agencies to establish funding for low to moderate income housing projects within Boardman.*
13. *Given recent growth trends, it will be important for the City and Morrow County staff to monitor the supply of buildable land and, if necessary, revise future housing need and land supply projections.*

Response: Although these policies are not directly related to the Interchange Area Management Plan, housing uses do add to the traffic totals at the Main Street interchange. The IAMP accounts

for overall existing and future trips from all types of land uses at the interchange by identifying triggers for improvements as traffic demand warrants them. The triggers are based on overall traffic demand in the interchange area and will be tracked through a system of traffic generation reports from commercial development and by review of projected trip generation based on the ITE Traffic Generation Manual for proposed residential developments outside of the IAMP boundaries. This proposal is consistent with the policies of Goal 10 - Housing.

It should be noted there are approximately 27 acres of "Manufactured Home Park Sub-district" zoned property within the IAMP boundaries. This acreage was calculated in the IAMP traffic projections as "commercial" zoning. This provides a worse case scenario in terms of traffic generation; however, the current zoning does not change with the adoption of the IAMP, even though the property owner has expressed a desire to change this zone in the future and the city supports this desire. A future zone change for this parcel will require a separate land use action and the replacement of residential acreage to meet the 20-year needs for the Manufactured Home Park Sub-District zone prior to any change of zone being finalized.

**CHAPTER 11: PUBLIC FACILITIES:** Policies #1, #2, #3, #5, #6, #8, #9, #11, #12, #13, #14, #16, and #20 are directly or indirectly related to transportation. The provisions of these policies are met; however, several actions will be required in the near future to ensure that funding is available for the improvements identified in the IAMP. Most of these changes will be related to current efforts being undertaken by the City concerning reconfiguration of the Capital Improvement Plan (CIP) projects list. This reconfiguration of the CIP includes numerous projects which are not currently contained in the Public Facilities Plan, mostly through the addition of projects associated with the IAMP and overall transportation circulation connectivity. The completion of the CIP is an essential element to accurately work out the funding mechanisms to be used for funding improvements associated with the IAMP. The City Council has provided guidelines for the addition of several options to fund transportation improvements, which include systems development charges (SDC's), local improvement districts (LID's), general fund transfers, exactions at the time of development, portions of the transient room tax devoted to transportation, and others to adequately fund future roadway improvements to facilitate the IAMP and overall network connectivity. The city will need to complete this work within a 12 -18 month period to adequately fund all the identified projects in the IAMP. There are currently 109 projects in the CIP of which approximately 35% currently have accurate cost estimates. When these changes are accomplished an additional Post Acknowledgement Plan Amendment to make the required changes to the Public Facilities Plan, the Capital Improvement Plan and the Comprehensive Plan will need to be accomplished.

*CHAPTER 11 – PUBLIC FACILITIES COMPREHENSIVE PLAN POLICIES*

*1. The City shall assure urban services (water, sewer and storm drainage services and transportation infrastructure) to residential, commercial and industrial lands within the City's Urban Growth Area as these lands are urbanized.*

*2. To minimize the cost of providing public services and infrastructure, the City shall discourage inefficient development without adequate public services and promote efficient use of urban and urbanizable land within the City's urban growth boundary, including requiring all urban development to be served by full urban services.*

*3. The City shall support development that is compatible with the City's ability to provide adequate public facilities and services.*

*4. The City shall assure there are adequate sites for solid waste disposal and solid waste collection for the City and Urban Growth Boundary. The service may be provided by private contractors or public entities.*

*5. The City shall promote coordination among the City, Port of Morrow, and other interested parties to facilitate the most effective uses of public facilities serving the planning area.*

*6. The City shall prioritize development of land serviced by utilities and require the extension of water, sewer and storm drainage facilities for all urban level development within the UGB.*

*7. The City shall coordinate provision of public services with annexation of land outside the City limits.*

*8. The City shall adopt long range master plans for its water, sewer, storm drainage and transportation systems and review and/or update them periodically.*

*9. The City shall adopt and periodically update the City's Public Facilities Plan for development of public services and facilities in conformance with the policies of the Comprehensive Plan. Significant changes in projected capacity of public facilities required by proposed new development to be served by the City may necessitate update of the Public Facilities Plan.*

*10. The City shall comply with state and federal regulations for utility systems.*

*11. The City shall establish and maintain a range of funding mechanisms for building new water, sewer, storm drainage and transportation infrastructure and maintaining existing infrastructure.*

*12. The City shall monitor the condition of water, sewer, storm drainage and transportation infrastructure and finance regular maintenance of these facilities.*

*13. The City shall utilize its adopted System Development Charges (SDCs) to finance new water and wastewater infrastructure as allowed by state law, and adjust SDCs to keep them up to date with current costs.*

*14. The City shall establish and maintain utility rates and user fees that equitably allocate costs for operations and maintenance to users.*

*15. The City shall maintain an eight (8) year supply of commercial and industrial land that is serviceable by water, sewer, storm drainage and transportation infrastructure.*

*16. The City will periodically amend the Comprehensive Plan list of public facility projects when implementing plans or agreements are updated.*

*17. The City shall protect its water supply and enhance groundwater quality and quantity of the City's drinking water supplies by:*

- *Establishing wellhead protection measures;*
- *Working with landowners and managers for protection of water sources; and*
- *Adhering to applicable permitting requirements when approving new residential, commercial and industrial development and when constructing new water, sewer, storm drainage transportation infrastructure.*

*18. The City shall plan for and establish standards for storm drainage detention and management facilities for management of urban storm runoff as an environmental service, rather than flood control, during periods of heavy rain. In doing so, where feasible, the City will encourage natural storm drainage management techniques, such as modified bio-swales, landscaping, retention ponds and natural drainage ways.*

*19. The City shall take steps to minimize adverse impacts from construction and other sources of erosion and sedimentation on natural drainage ways and storm drainage facilities.*

*20. In order to allow for safe, orderly and coordinated development, the City shall adopt utility and transportation design standards and construction specifications as part of its development code.*

*21. The City will continue to work with the Boardman Rural Fire Protection District in their provision of fire protection services for the City.*

*22. The City is working (as of 2003) with the Oregon Water Resources Department to complete and obtain approval for, a Water Management and Conservation Plan, pursuant to OAR 690-86. Should the approved Plan include system improvement projects, the Capital Improvements Project list will be updated to reflect these additional projects.*

Response: The general provisions of Goal 11 policies are met with this proposed Interchange Area Management Plan. The necessary actions noted above concerning funding mechanisms are currently being pursued for completion. The recommendation is for the City to commit the capital outlay necessary for establishment of SDC's, LID's and other funding mechanisms to ensure that the transportation improvements of the IAMP are available to sustain future growth and development.

**CHAPTER 12: TRANSPORTATION:**

*CHAPTER 12 – TRANSPORTATION COMPREHENSIVE PLAN POLICIES:*

1. *The Transportation System Plan is an element of the Boardman Comprehensive Plan (as a Technical Appendix).*
2. *The City of Boardman shall protect the function of existing and planned roadways as identified in the Transportation System Plan.*
3. *The City of Boardman shall include a consideration of land use impacts on existing or planned transportation facilities in all land use decisions.*
4. *The City of Boardman will plan and develop a network of streets, accessways and other improvements, including bikeways, sidewalks, and safe street crossings to promote safe and convenient bicycle and pedestrian circulation within the community.*
5. *Several large properties in the southern portion of Boardman that are categorized in the North Morrow County TGM Project Community Visioning Analysis of Buildable Lands and Housing Needs as having potential for infill have limited access, posing potential problems for future development. In addition, other areas, such as the one south of Kunze Road, are served by unpaved roads that are in very poor condition. A well connected street pattern will be essential for efficient future urban development in these areas both to provide the opportunity for development at more urban densities and to*

*make it possible to travel easily between and among different parts of the community. The City has developed a local street plan, as part of the Transportation System Plan and require development to improve local streets to city standards.*

Response: The approval and adoption of the Boardman Main Street Interchange Area Management Plan is consistent will all of the transportation policies of the Comprehensive Plan. Adoption of the Main Street IAMP as an element of the City's Transportation System Plan, thereby amends the City's Comprehensive Plan. The IAMP includes a planned local street system south of the Main Street interchange and other transportation improvements that were developed in response to projected traffic from planned land uses. Bicycle and pedestrian improvements are part of the preferred interchange alternative, including the long-range reconstruction and expansion of the Main Street overpass to accommodate a center left turn lane, bicycle lanes and wider sidewalks.

**TRANSPORTATION SYSTEM PLAN POLICIES**

The Transportation System Plan (TSP) Policies, contained in Section 7 of the Boardman Transportation System Plan, associated with this proposed Interchange Area Management Plan (IAMP) are as follows; policies of approval process, policies for protection of transportation facilities, policies for coordinated review, and policies for pedestrian and bicycle circulation. Each of these categories has several policies and directives to accomplish the goals of the Transportation System Plan.

*POLICIES FOR APPROVAL PROCESS:*

- ☐ *The Transportation System Plan is an element of the Boardman Comprehensive Plan. It identifies the general location of transportation improvements. Changes in the specific alignment of proposed public road and highway projects that shall be permitted without plan amendment if the new alignment falls within a transportation corridor identified in the Transportation System Plan.*

- ☐ *Operation, maintenance, repair, and preservation of existing transportation facilities shall be allowed without land use review, except where specifically regulated.*

- ☐ *Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, for improvements designated in the Transportation System Plan, the classification of the roadway and approved road standards shall be allowed without land use review.*

- ☐ *Changes in the frequency of transit, rail and airport services that are consistent with the Transportation System Plan shall be allowed without land use review.*

- ☐ *For State projects that require an Environmental Impact Study (EIS) or Environmental Assessment (EA), the draft EIS or EA shall serve as the documentation for local land use review, if local review is required.*

Response: Review of this proposal indicates all of the policies for the approval process are met and will be enhanced by the adoption of this Interchange Area Management Plan by the City of Boardman and the Oregon Transportation Commission.

*POLICIES FOR PROTECTING EXISTING AND FUTURE OPERATION OF FACILITIES*

- *The City of Boardman shall protect the function of existing and planned roadways as identified in the Transportation System Plan.*

- *The City of Boardman shall include a consideration of their impact on existing or planned transportation facilities in all land use decisions.*

- *The City of Boardman shall protect the function of existing or planned roadways or roadway corridors through the application of appropriate land use regulations.*

- *The City of Boardman shall consider the potential to establish or maintain accessways, paths, or trails prior to the vacation of any public easement or right-of-way.*

- *The City of Boardman shall preserve right-of-way for planned transportation facilities through exactions, voluntary dedication, or setbacks.*

Response: The Interchange Area Management Plan is specifically designed to address the policies of protection of existing and future operation of the transportation infrastructure in the vicinity of the Main Street interchange. The IAMP identifies necessary transportation projects and actions to meet the needs of planned land uses within the area, including an enhanced local street network and access management measures to improve safety and operations of the interchange facility and I-84. The steps necessary to implement the improvements, and the "triggers" at which point the traffic demand requires the improvements, are identified in the plan. Upon adoption by the City of Boardman and the Oregon Transportation Commission, the projects and actions in the IAMP will become the blueprint for incremental steps to attain protection of the existing system and enhancement of the future transportation system. All of the City's TSP policies are met in this Interchange Area Management Plan.

*POLICIES FOR COORDINATED REVIEW*

- *The City of Boardman shall coordinate with the Department of Transportation to implement the highway improvements listed in the Statewide Transportation Improvement Program (STIP) that are consistent with the Transportation System Plan and comprehensive plan.*

- *The City of Boardman shall consider the findings of ODOT's draft Environmental Impact Statements and Environmental Assessments as integral parts of the land use decision-making procedures. Other actions required, such as a goal exception or plan amendment, will be combined with review of the draft EA or EIS and land use approval process.*

Response: Existing language in the Boardman Development Code provide for the required coordination of traffic reviews by the Department of Transportation. Newly adopted changes in the language to the Boardman Development Code enhance the notification and coordination between the City of Boardman and Department of Transportation in the review of land use and development proposals within the IAMP Overlay District. Additionally, changes to the language also clarify when updates to the IAMP are necessary.

*POLICIES FOR PEDESTRIAN AND BICYCLE CIRCULATION AND ACCESS*

- ☐ *It is the policy of the City of Boardman to plan and develop a network of streets, accessways, and other improvements, including bikeways, sidewalks, and safe street crossings to promote safe and convenient bicycle and pedestrian circulation within the community.*

- ☐ *The City of Boardman shall require streets and accessways where appropriate to provide direct and convenient access to major activity centers, including downtown, schools, shopping areas, and community centers.*

- ☐ *In areas of new development the City of Boardman shall investigate the existing and future opportunities for bicycle and pedestrian accessways. Many existing accessways such as user trails established by school children distinguish areas of need and should be incorporated into the transportation system.*

- ☐ *Bikeways shall be included on all new arterials and collectors within the Urban Growth Boundary except on limited access freeways.*

- ☐ *Retrofitting existing arterials and collectors with bike lanes shall proceed on a prioritized schedule as appropriate and practical (i.e., bike lanes may not be appropriate in downtown core areas where it would require the removal of parking).*

- ☐ *Sidewalks shall be included on all new streets within the Urban Growth Boundary except on limited access freeways.*

- ☐ *Retrofitting existing streets with sidewalks shall proceed on a prioritized schedule.*

- ☐ *Priority shall be given to developing accessways to major activity centers within the Urban Growth Boundary, such as the downtown commercial center, schools, and community centers.*

- ☐ *Bikeways and pedestrian accessways shall connect to local and regional travel routes.*

- ☐ *Bikeways and pedestrian accessways shall be designed and constructed to minimize potential conflicts between transportation modes. Design and construction of such facilities shall follow the guidelines established by the Oregon Bicycle and Pedestrian Plan.*

- ☐ *Maintenance and repair of existing bikeways and pedestrian accessways (including sidewalks) shall be given equal priority to the maintenance and repair of motor vehicle facilities.*

- ☐ *Bicycle parking facilities shall be provided at all new residential multifamily developments of four units or more, commercial, industrial, recreational, and institutional facilities.*

- ☐ *A citizens advisory committee shall be established to protect and promote bicycle and pedestrian transportation within the Urban Growth Boundary.*

Response: Existing pedestrian and bicycle circulation and access was evaluated as part of the IAMP planning process and future improvements are part of the preferred interchange alternative. All incremental improvements along with the connective roadways identified in the IAMP are to include provisions for pedestrian and bicycle travel routes. The provisions of pedestrian and bicycle circulation and access polices are met with the IAMP.

## III. Compatibility with Statewide Planning Goals

Pertinent Statewide Planning Goals adopted by the Land Conservation and Development Commission (LCDC) include Goal 1 (Citizen Involvement), Goal 2 (Land Use Planning), Goal 9 (Economic Development), Goal 10 (Housing), Goal 11 (Public Facilities and Services) and Goal 12 (Transportation). The following findings demonstrate that adoption of the Boardman Main Street IAMP is consistent with LCDC's Goals.

**Goal 1: Citizen Involvement**
*Goal 1 requires the development of a citizen involvement program that is widespread, allows two-way communication, provides for citizen involvement through all planning phases, and is understandable, responsive, and funded.*

Response: In 2006, at the start of the planning process, the City distributed a public survey to gather information about the issues and challenges surrounding both Boardman I-84 interchanges and a project newsletter informing citizens of the planning process and how people could participate. In January 2007, a series of stakeholder interviews were conducted to get input specifically from Boardman citizens who rely on the interchange(s) regarding existing problems and possible solutions pertaining to function and safety (See Appendix 2 of the IAMP). Questions included how best to accommodate non-motorized transportation (bicycle, pedestrians) and how to fund the needed improvements.

Public hearings to adopt an IAMP for both interchanges in 2007 did not result in plan approval. In June of 2007 a Steering Committee was appointed by the city to guide the development and implementation of an IAMP for the Main Street Interchange only. The Steering Committee consisted of elected and appointed officials, property and business owners, and real estate professionals. Work continued on the IAMP throughout 2008, resulting in updated IAMP plan documents ("Final Reports") that were subject to City review and revisions. The Steering Committee then met several times during 2009 to review proposed revisions to the IAMP and to give input on proposed implementation measures.

In addition, the City held two Focus Group meetings and a city-wide Open House on June 22, 2009 to help ensure that interested Boardman residents, business owners, and property owners were aware of the proposed IAMP and regulatory provisions associated with implementing the plan. Property and business owners were invited to the Focus Group meetings, the first of which was for those with interests to the north of the interchange and the second for those primarily interested in planning south of the interchange. The Open House, which was advertised city-wide and open to the public, provided an overview of the IAMP planning process and the proposed future improvements necessary to manage traffic and access in the vicinity of the interchange.

Notice of public hearings on the proposed changes to the City of Boardman's Comprehensive Plan and implementing ordinances was sent 20 days in advance of the hearings to property owners, interested parties, and governmental agencies, pursuant to City code requirements. The scheduled hearings provided opportunities for public comment on the proposed changes. Notification of OTC Action has been provided to the affected local jurisdiction and the Department of Land Conservation and Development.

**Goal 2: Land Use Planning**

*This goal requires that a land use planning process and policy framework be established as a basis for all decisions and actions relating to the use of land. All local governments and state agencies involved in the land use action must coordinate with each other. City, county, state and federal agency and special districts plans and actions related to land use must be consistent with the comprehensive plans of cities and counties and regional plans adopted under Oregon Revised Statues (ORS) Chapter 268.*

Response: Preliminary tasks in the development of the Boardman Main Street IAMP included a thorough review and analysis of all relevant state, regional and local planning documents in order to establish a planning process and policy framework. The following documents were reviewed:

- Oregon Transportation Plan
- Oregon Highway Plan
- Oregon Bicycle and Pedestrian Plan
- Statewide Planning Goals
- Oregon Access Management Rule OAR 734-051
- State Transportation Improvement Program (STIP)
- Morrow County Transportation System Plan
- City of Boardman Comprehensive Plan
- City of Boardman Transportation System Plan
- City of Boardman Development Code
- Main Street "Downtown" Development Plan

This review identified how the documents influence planning for the Main Street interchange project. Detailed review of plans and policies can be found in Appendix 1Background Plan Review.

The Boardman Main Street IAMP was prepared jointly by the City of Boardman and ODOT and coordination between the two agencies took place routinely throughout the process. A Project Management Team (PMT) was established to guide the IAMP process. The PMT consisted of representatives from the City and ODOT. The implementation of the IAMP, including the development of the new IAMP Overlay District development code chapter, was funded by a State Transportation Growth Management (TGM) grant. Both the TGM grant manager and the City's Department of Land Conservation and Development representative participated in Steering Committee and public meetings associated with the completion and implementation of the IAMP. ODOT staff helped facilitate and support the adoption of the IAMP by the City of Boardman and, since locally adopted, by the Oregon Transportation Commission (OTC). ODOT and the City will continue to coordinate on development activity and land use actions within the interchange area.

The City's adoption of the IAMP ensures that the transportation element of the Comprehensive Plan (the TSP) is consistent with the proposed Main Street Interchange improvements.

**Goal 9: Economic Development**

*This goal requires that local comprehensive plans and policies contribute to a stable and healthy economy in all regions of the state.*

Response: The Main Street Interchange provides a vital function in supporting local economic development goals and plans. The City's civic center, including City Hall and the library, the High School, and the City's businesses and available commercial land are served by the interchange. Local traffic, including commercial vehicles, must have safe and efficient access to the interstate. The intent of the IAMP is to protect the safe and efficient operation of the interchange (see Chapter 2, Plan Goals, Objectives, and Evaluation Criteria). The City's adoption of the IAMP ensures that transportation improvements will ultimately be available to support the planned uses in this area of Boardman, consistent with this economic development goal.

**Goal 10: Housing**

*This goal requires the City plans provide for the appropriate type, location and phasing of public facilities and services sufficient to support housing development in areas presently developed or undergoing development or redevelopment.*

Response: The IAMP Overlay District includes some limited areas zoned for single-family, a small area zoned for multi-family residential, and an approximately 27 acres zoned parcel zoned for manufactured homes. The single-family zoning lies along North Main Street and, south of the interchange, partially within the BPA easement at the eastern boundary of the District. The Multifamily Sub-district lies at the southwestern boundary of the district, partially within the BPA easement, which limits its development. The parcel zoned Residential Manufactured Home Sub-district was the subject of a proposed land use amendment to commercial use that initiated the IAMP planning process in 2006. The proposed plan and zoning amendment was not approved by the City, but the IAMP assumes commercial uses on this parcel in anticipation of this land use change (See Figure 4.1 in the IAMP).

The Main Street Interchange serves all of western Boardman, including existing and planned residential areas both within and outside of the Overlay District. Residential trips were a part of the future (2026) traffic conditions analyzed at the Main Street interchange. The IAMP includes physical improvements associated with this interchange that will ensure that the facility will continue to operate safely and efficiently for all users. Preserving the function and capacity of the interchange facility through the adoption of the IAMP will benefit travelers to and from residential areas in the western part of the city.

**Goal 11: Public Facilities and Services**

*Goal 11 requires cities and counties to plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development. The goal requires that urban and rural development be "guided and supported by types and levels of urban and rural public facilities and services appropriate for, but limited to, the needs and requirements of the urban, urbanizable and rural areas to be served."*

Response: Transportation facilities are considered a primary type of public facility. The IAMP documents the current and future transportation needs in the vicinity of the Main Street Interchange. The analysis of possible alternatives resulted in recommended intersection improvements, a proposed local circulation plan, a new street standard for South Main Street, and an access management plan that are intended to meet future transportation demand. With the adoption of the IAMP, the OTC is adopting the recommended implementation measures related to the protection of the function and operation of the Main Street Interchange.

**Goal 12: Transportation**

*Goal 12 requires cities, counties, metropolitan planning organizations, and ODOT to provide and encourage a "safe, convenient and economic transportation system." This is accomplished through development of Transportation System Plans based on inventories of local, regional and state transportation needs. Goal 12 is implemented through OAR 660, Division 12, also known as the Transportation Planning Rule ("TPR"). The TPR contains numerous requirements governing transportation planning and project development. (See the "OAR 660, Division 12" section of this document for findings of compliance with the TPR.)*

Response: The purpose of the Boardman Main Street IAMP is to protect the function of the interchange and its ability to serve future transportation demands, thereby preserving the state's investment in the facility. The IAMP contains a discussion of the transportation analysis that was conducted in order to determine future demand, available capacity, deficiencies, and necessary transportation improvements for this interchange area. The analysis demonstrates that the planned transportation facilities will be adequate to safely and efficiently serve trips generated by future land uses for a period of at least 20 years.

To implement the IAMP, it must be adopted into the City of Boardman's Transportation Plan. Policy and zoning ordinance language, as summarized in IAMP Chapter 5 under the *Policies, Rules and Ordinances* section, is added to the City's Comprehensive Plan and Development Code in order to maintain interchange function and ensure that development inconsistent with the objectives of the IAMP does not cause unexpected traffic volumes or create non-conforming access points. The City adopted the IAMP and implementing ordinances on October 20, 2009. The IAMP and the supporting city code amendments (new Chapter 2.5 Interchange Area Management Overlay District) provide for coordination between the City and ODOT for any land use actions proposed within the IAMP study area.

Local plans must be consistent with state plans. Subsequent to local action, adoption of the IAMP by the Oregon Transportation Commission will amend the Oregon Highway Plan to establish the preferred interchange project alternative.

See additional findings under OAR 660, Division 12 Transportation Planning Rule.

## IV. Compatibility with statewide modal plans and the OTP

In addition to Statewide Planning Goals, an IAMP must be consistent with applicable State transportation planning goals and policies. Findings of compatibility with the Oregon Transportation Plan and the Oregon Highway Plan are addressed below.

**Oregon Transportation Plan (2006)**

The Oregon Transportation Plan (OTP) is the state's long-range multimodal transportation plan. The OTP is the overarching policy document among a series of plans that together form the state transportation system plan (TSP). An IAMP must be consistent with applicable OTP goals and policies. Findings of compatibility will be part of the basis for IAMP approval. The most pertinent OTP goals and policies for interchange planning are as follows:

*POLICY 1.2 – Equity, Efficiency and Travel Choices*
*It is the policy of the State of Oregon to promote a transportation system with multiple travel choices that are easy to use, reliable, cost-effective and accessible to all potential users, including the transportation disadvantaged.*

Response: To address non-motorized modes of transportation, an inventory of sidewalks, designated bike lanes, shoulder bikeways, identified shared roadways and off- street trails along the city streets was conducted as part of the IAMP development. South Main Street currently has a multi-use path for pedestrians and bicycles and there are bike lanes along North Main Street and a multi-use path for bicycles along the north side of Wilson Road. The preferred pedestrian and bicycle network in the IAMP calls for curb and sidewalk similar to North Main Street to improve the safety of pedestrians along South Main Street (see Figure 5.3 South Main Street Improvements). Pedestrian access across Main Street is also detailed in the IAMP. Pedestrian crossings shall be accommodated at the major access points (I-84 ramps, Oregon Trail Boulevard, City Center Boulevard, Kinkade Road and Wilson Road). This would include sidewalk with ADA pedestrian ramps on the corners and possibly supplemental signing and/or painted crosswalks. A "mid-block" pedestrian crossing could be accommodated on the north side of the BPA easement. The mid-block crossing could incorporate a center pedestrian refuge island, once South Main Street is reconstructed to the arterial standard. The City's recent award of an Economic Stimulus Funding grant for improvements on South Main Street will fund the first phase of these improvements.

The long-range phase of improvements include reconstruction and expansion of the Main Street overpass to accommodate a center left turn lane, bicycle lanes and wider sidewalks.

*POLICY 1.3 – Relationship of Interurban and Urban Mobility*
*It is the policy of the State of Oregon to provide intercity mobility through and near urban areas in a manner which minimizes adverse effects on urban land use and travel patterns and provides for efficient long distance travel.*

Response: The Boardman Main Street IAMP provides for improved safety and efficiency for travelers accessing Interstate 84 and land in the western part of Boardman. The IAMP documents how access management and planned improvements will ensure that the interchange facility will operate at levels consistent with the state's mobility standards over the 20-year planning horizon.

*POLICY 2.1 - Capacity and Operational Efficiency*
*It is the policy of the State of Oregon to manage the transportation system to improve its capacity and operational efficiency for the long term benefit of people and goods movement.*

Response: The Boardman Main Street IAMP project was developed in response to safety and operational efficiency issues affecting the existing interchange in west Boardman. The IAMP includes short-, medium- and long-range actions that accomplish state management objectives by identifying access management steps, necessary local street connections, improvements to South Main Street, and improvements to the interchange (traffic signals, widening Main Street Bridge). Through these actions, the IAMP protects long-term system capacity by ensuring that the interchange continues to function at a level that meets the mobility expectations of the state. The IAMP contains policies and recommendations that support the access management spacing standards and the new IAMP overlay district code chapter establishes that proposed land use actions that are inconsistent with the assumptions in the IAMP must include a review of potential impacts to interchange operations. Actions to

minimize access locations will occur as part of future redevelopment, and only when reasonable alternate access becomes available.

*POLICY 2.2 – Management of Assets*
*It is the policy of the State of Oregon to manage transportation assets to extend their life and reduce maintenance costs.*

Response: The stated purpose of the Boardman Main Street IAMP is to provide for safe and efficient travel around the interchange. This includes providing safe and efficient connections between local streets and the state highway, managing access in the vicinity of the interchange, and providing a logical and efficient local street network south of the interchange. Implementing the recommendations of the IAMP maximizes the interchange's operational life and the State's investment in the facility. In addition, through the provisions of Chapter 5 of the IAMP and the City's new Chapter 2.5 Interchange Area Management Plan (IAMP) Overlay District in the Development Code, the IAMP requires proposed changes to the planned land use system to demonstrate consistency with IAMP policies protecting the long-term function of the interchange facility.

*POLICY 3.1 – An Integrated and Efficient Freight System*
*It is the policy of the State of Oregon to promote an integrated, efficient and reliable freight system involving air, barges, pipelines, rail, ships and trucks to provide Oregon a competitive advantage by moving goods faster and more reliably to regional, national and international markets.*

*POLICY 3.2 – Moving People to Support Economic Vitality*
*It is the policy of the State of Oregon to develop an integrated system of transportation facilities, services and information so that intrastate, interstate and international travelers can travel easily for business and recreation.*

Response: I-84 is classified as an Interstate Highway and is part of the National Highway System. The primary function of the Interstate is to provide connections to major cities, regions of the State, and other states. I-84 is a major freight route and the primary objective of this facility is to provide mobility. A secondary function in urban areas is to provide connections for regional trips within the metropolitan area.

There are existing safety issues at the interchange due to accesses on Main Street placed too close to the on and off ramps to the highway. Of a more immediate concern are the existing problems with vehicles stacking up at the west bound ramp – a situation that is made more difficult when truck traffic backs up. The IAMP documents a way to improve this situation over time, including the eventual warrant of a traffic signal at the west bound ramp terminal (see *Timing of Improvements*, IAMP Chapter 5). The Main Street Interchange provides a vital link between I-84 and the services provided in town to freight movers. The Boardman Main Street IAMP provides management tools to ensure continued mobility on I-84, while allowing safe and efficient vehicular movements onto, and in the vicinity of, the interchange.

*POLICY 4.1 - Environmentally Responsible Transportation System*
*It is the policy of the State of Oregon to provide a transportation system that is environmentally responsible and encourages conservation and protection of natural resources.*

Response: The Boardman Main Street IAMP was developed to identify necessary improvements to an existing interchange in anticipation of future growth in the City of

Boardman. Land in the vicinity of the interchange is currently developed or is planned for urban-level development. Through the implementation and construction of improvements included in the preferred transportation system and interchange alternative natural resources will be avoided or mitigated.

*POLICY 5.1 – Safety*
*It is the policy of the State of Oregon to continually improve the safety and security of all modes and transportation facilities for system users including operators, passengers, pedestrians, recipients of goods and services, and property owners.*

Response: The Boardman Main Street IAMP states that a key element of the long-range preservation of operational efficiency and safety of the interchange is the management of access to Main Street. Because access points introduce a number of potential vehicular conflicts on a roadway and are frequently the causes of slowing or stopping vehicles, they can significantly degrade the flow of traffic and reduce the efficiency of the transportation system. The IAMP includes an Access Management Plan that includes short-, medium-, and long-range actions that, over time, will reduce the overall number of access points and providing greater separation between them in order to minimize the impacts of these conflicts. To reduce the conflicts and potential safety concerns, the full-access intersections at North and South Front Street will gradually need to be more restricted, which may include limiting to right-turn movements only or full closure (See *Transportation Alternatives*, IAMP Chapter 5).

Safety issues on the ramps are anticipated to need addressing in the medium- to long-range time frame and the IAMP calls for the construction of additional approach lanes on the ramp terminals and, as traffic conditions meet warrants, the installation of a traffic signal at the westbound ramp to improve the operation of the intersections and reduce queuing. The ultimate improvement alternative includes expanding the current freeway interchange by widening the bridge, which would improve safety by eliminating the existing sight distance issue for vehicles on the off-ramps looking across the bridge.

*POLICY 7.1 – A Coordinated Transportation System*
*It is the policy of the State of Oregon to work collaboratively with other jurisdictions and agencies with the objective of removing barriers so the transportation system can function as one system.*

Response: ODOT worked in collaboration with the City of Boardman to develop and adopt the IAMP. The IAMP describes a local transportation system, including access management and necessary local street connectivity that improves the safety and efficiency for motorized and non-motorized mode of travel. The Main Street interchange is a vital link in this system, providing access for travelers to services offered in the City of Boardman and for residents and business owners traveling to and from the northern and southern parts of town. The IAMP details how improvements to the local street system and, eventually, to the state's interchange facility, will continue to provide for the needs of residents and travelers on I-84. Proposed IAMP implementation language ensures future collaboration between the City and ODOT by requiring notification to ODOT of land use actions proposed within the IAMP Overlay Zone and including the system by which the IAMP will be updated (see *Policies, Rules and Ordinances* in Chapter 5 of the IAMP and proposed Chapter 2.5 Interchange Area Management Plan (IAMP) Overlay District in the City of Boardman Development Code.)

*POLICY 7.3 – Public Involvement and Consultation*
*It is the policy of the State of Oregon to involve Oregonians to the fullest practical extent in transportation planning and implementation in order to deliver a transportation system that meets the diverse needs of the state.*

*POLICY 7.4 - Environmental Justice*
*It is the policy of the State of Oregon to provide all Oregonians, regardless of race, culture or income, equal access to transportation decision-making so all Oregonians may fairly share in benefits and burdens and enjoy the same degree of protection from disproportionate adverse impacts.*

Response: Over the course of this three-year planning process, the City has engaged citizens in the development of the IAMP using various means, including project newsletters, stakeholder interviews, public surveys, focus group meetings, and open houses (also see the response under Goal 1 in this findings report). In addition, a Steering Committee consisting of elected and appointed officials, property and business owners, and real estate professionals was appointed by the City to guide the development and implementation an IAMP and represent the citizens' interests. During the implementation phase of the project, which commenced in 2009, the Steering Committee met several times to review proposed revisions to the IAMP and to give input on proposed implementation measures.

The interchange is an existing facility on the interstate highway system. The proposed transportation system and interchange facility recommendations provide improvements to address safety and operations issues and to manage traffic in the vicinity of the interchange consistent with adopted local and state policies. None of the proposed actions or analyzed alternatives affected land outside the immediate interchange area. While an approximately 27 acre parcel currently zoned for manufacture home park use was analyzed for commercial uses for purposes of future transportation generation, no property is being proposed for rezoning as part of the local action to adopt the IAMP. In order to meet the City's Goal 10 obligations, if this property is proposed for a change in land use in the future, an alternate site suitable for manufactured homes must be located and zoned for that use within the city prior to the city approving the land use amendment. No target Environmental Justice Groups - which include minorities, people with disabilities, the elderly, people that speak English as a second language or non-English speaking people, and low income populations – are disproportionately affected by the IAMP.

Notice of public hearings on the proposed changes to the City of Boardman's Comprehensive Plan and implementing ordinances was sent 20 days in advance of the hearings to property owners, interested parties, and governmental agencies, pursuant to City code requirements. The scheduled hearings provided opportunities for public comment on the proposed changes.

Notification of this OTC action has been provided to the affected local jurisdiction and to the Department of Land Conservation and Development.

**Oregon Highway Plan**

The 1999 Oregon Highway Plan (OHP) establishes policies and investment strategies for Oregon's state highway system over a 20-year period and refines the goals and policies found in the OTP. Policies in the OHP emphasize the efficient management of the highway system to increase safety and to extend highway capacity, partnerships with other agencies and local governments, and the use of new techniques to improve road safety and capacity. These policies

also link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and local road, bicycle, pedestrian, transit, rail, and air systems. The policies applicable to planning for the Main Street interchange improvements are described below.

***Policy 1A*** *(Highway Classification) defines the function of state highways to serve different types of traffic that should be incorporated into and specified through IAMPs.*

***Policy 1C*** *(State Highway Freight System) states the need to balance the movement of goods and services with other uses.*

Response: I-84 is classified an Interstate Highway and is part of the National Highway System. The primary function of the Interstate is to provide connections to major cities, regions of the State, and other states. I-84 is a major freight route and the primary objective of this facility is to provide mobility. A secondary function in urban areas is to provide connections for regional trips within the metropolitan area.

Proposed interchange improvements and the access management plan, designed to minimize access points on Main Street in the vicinity of the interchange, were designed to ensure the safe and efficient high-speed, continuous-flow operation of I-84, consistent with this state policy. In addition, the proposed preferred alternative improves freight mobility through the area by addressing safety, capacity, and efficiency issues.

***Policy 1B*** *(Land Use and Transportation) recognizes the need for coordination between state and local jurisdictions.*

Response: Coordination between ODOT and the City occurred throughout the preparation of the IAMP. A Project Management Team (PMT) was formed to inform the IAMP process and included members representing the City of Boardman and DLCD. The PMT coordinated throughout the project, including participating in meetings with the Steering Committee that were devoted to implementation measures and reviewed draft documents in order to provide consensual revisions.

***Policy 1F*** *(Highway Mobility Standards) sets mobility standards for ensuring a reliable and acceptable level of mobility on the highway system by identifying necessary improvements that would allow the interchange to function in a manner consistent with OHP mobility standards.*

Response: The analysis of future traffic conditions in the vicinity of the Main Street interchange shows that the existing interchange facility does not meet acceptable safety standards and that it will not be able to accommodate the expected traffic volumes over a 20-year planning horizon without the proposed improvements.

The Main Street and I-84 westbound ramp is expected to exceed the performance standard of V/C < 0.85 in the PM peak hour. Three other intersections - Main Street and Boardman Avenue, Main Street and I-84 eastbound ramp, and Main Street and Front Street (South) – will operate with LOS E or F, which is within the City of Boardman's LOS performance standards for average intersection delay and LOS, but may result in increased delay for the side street approaches.

Mobility standards were used as a criterion for selecting a preferred set of interchange improvements and developing a local street network and an access management plan for the interchange area.

***Policy 1G** (Major Improvements) requires maintaining performance and improving safety by improving efficiency and management before adding capacity. ODOT works with regional and local governments to address highway performance and safety.*

Response: The improvement alternatives in the IAMP have been prioritized into short, medium, and long-range actions, to provide guidance for future implementation and funding (see Table 1.2). The timing for implementing these actions assumes average growth over the next 20 years. The IAMP includes short- and medium-range actions, such as an access management and local street improvements that do not add capacity. From a capacity standpoint, the bridge is able to accommodate the forecasted vehicular traffic. However, the bridge is too narrow to incorporate northbound and southbound left turn lanes at the ramp intersections, an improvement that may be triggered within the planning horizon by either an increase in crashes or a decrease in LOS. An expansion of the Main Street overpass to accommodate a center left turn lane, bicycle lanes and wider sidewalks is only anticipated as a long-range project in response to accommodating the additional turn lanes.

***Policy 2B** (Off-System Improvements) helps local jurisdictions adopt land use and access management policies.*

Response: Adoption of the land use and access management policies and implementation measures in the IAMP protect the function of the interchange and other related transportation improvements. The IAMP's access management plan restricts direct access to the interchange and implementation of the proposed local street connectivity plan will provide a local street network that will safely and efficiently carry local trips and provide access to locations and properties in west Boardman.

***Policy 2F** (Traffic Safety) improves the safety of the highway system.*

Response: The main goal of the IAMP is to provide for safe and efficient travel around the interchange. A key outcome of the IAMP is the identification of potential vehicle queuing onto the mainline freeway. The IAMP protects the safe and efficient operation of the interchange by proposing transportation system and facility improvements to meet the year 2026 traffic demand, regulating access, and providing alternatives to highway use via a planned local street network.

***Policy 3A** (Classification and Spacing Standards) sets access spacing standards for driveways and approaches to the state highway system.*

Response: The IAMP moves in the direction of meeting the approach road spacing standards established by OAR 734-051. The IAMP contains short- and long-range access strategies that will be applied within the IAMP Overlay District in order to regulate existing and future driveway and other approaches in the vicinity of the interchange. As shown in Chapter 5 of the IAMP, the long range improvements on south side of the interchange could ultimately achieve the standards. The access management plan north of the interchange will result in consolidated private approaches in the long-term but, given the existing built environment and the vital east-west connection Boardman Avenue provides, the access management standards for approach roads will not be achievable. As required in the IAMP and the

proposed Chapter 2.5 Interchange Area Management Plan (IAMP) Overlay District, modifications to the access management plan will need to be addressed in an amendment to the IAMP.

***Policy 3C** (Interchange Access Management Areas) sets policy for managing interchange areas by developing an IAMP that identifies and addresses current interchange deficiencies and establishes short, medium and long term solutions.*

Response: The IAMP provides recommendations for short-, medium-, and long-range access management and implementation actions, as well as land use and transportation policies that are intended to protect the interchange over the 20-year planning horizon.

***Policy 3D** (Deviations) establishes general policies and procedures for deviations from adopted access management standards and policies.*

Response: This policy is not applicable as the IAMP does not identify any necessary deviations from adopted State access management standards and policies.

## V. Compatibility with applicable Oregon Administrative Rules

**OAR 660 Division 12 Transportation Planning Rule (TPR)**

The purpose of the TPR is "to implement Statewide Planning Goal 12 (Transportation) and promote the development of safe, convenient and economic transportation systems that are designed to reduce reliance on the automobile so that the air pollution, traffic and other livability problems faced by urban areas in other parts of the country might be avoided." A major purpose of the Transportation Planning Rule (TPR) is to promote more careful coordination of land use and transportation planning, to ensure that planned land uses are supported by and consistent with planned transportation facilities and improvements. The TPR references OAR 731, Division 15 for ODOT coordination procedures for adopting facility plans and plans for Class 1 and 3 projects.

***Section 660-012-0005 through 660-012-0050***

Response: These sections of the TPR contain policies for preparing and implementing a transportation system plan. The Boardman Main Street IAMP has been adopted as part of the City's existing transportation system plan and most of these sections are not applicable. The TPR requires that local governments adopt land use regulations consistent with state and federal requirements "to protect transportation facilities, corridors, and sites for their identified functions (OAR 660-012-0045(2))." As part of IAMP adoption, the City has revised the City of Boardman Development Code to include a new Interchange Area Management Plan Overlay District section (proposed Chapter 2.5). The requirements of this new Development Code section is to ensure that future local land use actions are consistent with the transportation facility planning within the IAMP.

***Section 660-012-0055 – Timing of Adoption and Update of Transportation System Plans***

Response: Part (5) in this Section requires cities and counties to update their TSPs and implementing measures when a refinement plan has been completed. The Boardman Main Street IAMP is considered a refinement plan and therefore is subject to this requirement.

Consistent with this TPR requirement, the City of Boardman has amended the TSP to adopt the IAMP by reference. The *Policies, Rules and Ordinances* section of Chapter 5 in the IAMP outlines the policies and implementation measures that have been adopted by the City.

***Section 660-012-0060 – Plan and Land Use Regulation Amendments***

Response: Part (1) in this section requires that where an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation would significantly affect an existing or planned transportation facility, the local government shall put in place measures to assure that allowed land uses are consistent with the identified function, capacity, and performance standards of the facility. Current and future planned land uses were considered in development of the IAMP's preferred interchange improvements in order to ensure the facility's ability to support future traffic demands.

Existing City code requires -0060 findings for comprehensive plan, zoning map or development regulation amendments. Implementation measures within the City's newly adopted Chapter 2.5 Interchange Area Management Plan (IAMP) Overlay District extend this requirement to the interchange area, requiring that plan amendment and zone change requests within the IAMP area demonstrate that they will not have a significant affect on the interchange facility. Related to this policy, the new code chapter contains development standards that codify traffic impact analysis requirement for development within the Overlay District. These implementation measures also require that any proposed land use actions within the Overlay Zone be noticed to ODOT.

Where an amendment could impact a state highway facility, ODOT then needs to inform the local government as to what transportation improvements the City can rely on as being available by the end of the planning period, so that the local government can determine significant affect. Typically, these are projects authorized in a TSP for which a funding mechanism is in place or for which funding is "reasonably likely" to be provided by the end of the planning period.

Since the Boardman City Council adopted the IAMP through an implementing ordinance which includes the following conditions:

1) Complete within 12 months the necessary changes to the Public Facilities Plan, Capital Improvement Plan and Chapter 11 of the Boardman Comprehensive Plan to solidify the funding mechanisms necessary to implement the IAMP.

2) Establish transportation funding mechanisms, including transportation systems development charges, consistent with the consensus of the Council developed at the City Council Workshop on Transportation Funding held September 20, 2008.

it is recommended that projects identified in the IAMP not be relied upon for determining significant affect until the City has established the necessary funding mechanisms at which point the state will be able to determine which funding is "reasonably likely" to be provided by the end of the planning period.

**OAR 731-015-0065 Coordination Procedures for Adopting Final Facility Plans**

OAR 731-015-0065 regulates ODOT procedure for adopting facility plans. An IAMP is a facility plan. The procedure outlined in OAR 731-015-0065 requires that ODOT coordinate with DLCD and local government agencies during development of the plan and provide a draft of the facility plan to affected cities, counties, and other agencies for comment. The facility plan must be consistent with statewide planning goals and local comprehensive plan policies, and findings of compatibility must be presented to the Oregon Transportation Commission for facility plan adoption.

Response: The Boardman Main Street IAMP is the result of a collaborative planning effort between ODOT and the City. Coordination with DLCD during IAMP development occurred primarily through notification of project management team meetings and distribution of materials for these meetings. Financial support for the implementation phase of the project came from the Transportation Growth Management Program, a joint ODOT and DLCD program. Findings addressing statewide goals and requirements in support of IAMP adoption are included in this report. A final draft of the IAMP has been provided to all affected government and other agencies, and any potential conflicts with state or local plans have been jointly resolved through the local public adoption process with the exception of addressing the timing of when the City can use the projects identified in the IAMP for determining significant affect. Findings of compliance with statewide planning goals and local comprehensive plans are included in materials for presentation to the Oregon Transportation Commission. Adoption of the IAMP will take place in conformance with this provision.

**OAR 734, Division 51. Highway Approaches, Access Control, Spacing Standards and Medians**

OAR 734-051 governs the permitting, management, and standards of approaches to state highways to ensure safe and efficient operation of the state highways. OAR 734-051 policies address the following:

- How to bring existing and future approaches into compliance with access spacing standards, and ensure the safe and efficient operation of the highway;
- The purpose and components of an access management plan; and
- Requirements regarding mitigation, modification and closure of existing approaches as part of project development.

Section 734-051-0125, Access Management Spacing Standards for Approaches in an Interchange Area, establishes interchange management area access spacing standards. It also specifies elements that are to be included in IAMPs, such as short-, medium-, and long-range actions to improve and maintain safe and efficient roadway operations within the interchange area.

Response: The access management plan component of the Boardman Main Street IAMP includes development standards that regulate access spacing for new development and redevelopment near the interchange. 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.

Implementation of the access management plan is intended to occur over a long period of time because some affected properties maintain infrastructure (e.g. buildings and internal roadways) that was established based on prior approvals of access locations to the subject roadways and some elements of the plan depend on the presence of new public streets that cannot be constructed until funds are made available. Therefore, the improvements in the IAMP 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 (see *Access Management Plan* in Chapter 5 of the IAMP).

Section 734-051-0125, 734-051-0155, Access Management Plans and Interchange Area Management Plans, states that the intent of developing an IAMP is to protect the function of the interchange by maximizing its capacity for safe movement from the mainline facility, to provide safe and efficient operations between connecting roadways, and to minimize the need for major improvements to an existing facility. This section also details IAMP requirements, including the requirement that the IAMP includes the local policies and standards that are relied upon for implementation.

Response: As detailed in the response under OHP Policy 1G in this report, the recommended improvements in the IAMP have been prioritized into short, medium, and long-range actions and that implementation of short- and medium-range improvements will postpone the need for the reconstruction and expansion of the Main Street overpass, which is not anticipated to be necessary until late in the 20-year planning horizon.

Implementation of the IAMP is reliant upon the City of Boardman's amendment to the local Transportation System Plan to incorporate the local connectivity, access management, and transportation improvements associated with the preferred interchange improvement. In addition, implementation of the IAMP occurs through the City of Boardman's amendment of the Development Ordinance to include an IAMP overlay district. The newly adopted Chapter 2.5 Interchange Area Management Plan (IAMP) Overlay District contains the submittal requirements and review standards for land use amendment and development proposals within the district; access management standards and local street connectivity requirements based on the IAMP.

The locally amended TSP and the amendments to the City of Boardman Development Code (new Chapter 2.5 Interchange Area Management Plan (IAMP) and associated amendments to Chapter 3.1 Access and Circulation and Chapter 4.10Traffic Impact Study ), are the documents that are relied upon to implement the IAMP.

## VI. Conclusion

The Boardman Main Street Interchange Area Management Plan has been open to public input and has been thoughtfully crafted by consultants, a Steering Committee formed by the City comprised of elected officials, local business owners and real estate professionals, the Oregon Department of Transportation, the Oregon Department of Land Conservation and Development and City staff.

Through the local adoption of the Boardman Main Street IAMP, the plan is compatible with the acknowledged comprehensive plan of the City of Boardman and is in compliance with relevant state planning goals, and policies. These include Statewide Planning Goals and Guidelines, Oregon Transportation Plan, (2006), Oregon Highway Plan (2006). The IAMP is consistent with the Access Management Rule (OAR 734-051), as the plan moves in the direction of meeting the

approach road spacing standard, and the Transportation Planning Rule (OAR 660-012) provided projects identified in the plan are not relied upon for determining significant affect until the City has established necessary funding mechanisms to implement the plan.

Oregon
Theodore R. Kulongoski, Governor

**Department of Transportation**
**Region 5**
3012 Island Avenue
La Grande, OR 97850
(541) 963-3177
FAX (541) 963-9079

# INTEROFFICE MEMORANDUM

November 13, 2009

To: Teresa Penninger
Region 5 Planning Manager

From: Thomas Kuhlman PE; PLS
Region 5 Traffic and Access Manager

Subject: Letter of Concurrence
I-84 Boardman Interchange IAMP
Hwy 2 – Interstate 84

The Oregon Department of Transportation (ODOT), Transportation Development Division (TDD) Requires Interchange Area Management Plans, (IAMP) and Corridor Refinement Plans to be approved by the Oregon Transportation Commission, (OTC). Included in this process are approvals by the Region Access Management Engineer, (RAME) and the Region Manager. As such, this letter is intended to document concurrence and support for approval of the subject I-84 Boardman Interchange Area Management Plan by the Region 5 RAME.

The Boardman Interchange is located at mile point 164.16 of the Columbia River Highway No. 2, and is located on Route I-84. This interchange has distinct differences between the north side and the south side of the interstate. The north side, which is Main Street Boardman, is well built out for commercial businesses, but also with insufficient separation of the connecting city streets. The south side is not as well developed. The existing parcels of property are not well laid out to adequately and easily accommodate an effective access management plan. However, as the commercial properties have not fully developed, the opportunity has not been totally compromised to achieve an effective plan.

The IAMP adequately addresses access spacing standards per our Highway Plan Policy 3A. In addition Policy 3C is addressed by identifying current interchange deficiencies and solutions to improve this interchange area over time. This being short, median and long term projects.

Chapter 2.5 of this IAMP also addresses some key elements for long term application, particularly element - 2.5.140 Access Management: Item A - Provisions are outlined for a process that requires access permits for the City Street system. Item B – Provisions are outlined for establishing cross access easements, which will minimize direct approaches from every property parcel. Item C – Provisions are provided for the Access Management Plan modifications, which ensures ODOT will be at the table and any changes proposed will move in the direction of meeting the adopted access spacing requirements.

Summarizing – This plan works towards improving the safety and efficiency of this interchange for the long term. It sets mobility standards and access requirements that are consistent with Oregon Highway Plan and OAR 734-051. As such, I am in concurrence with the adopted Boardman Main Street Interchange Area Management Plan and support its adoption by the OTC.

**CITY OF BOARDMAN**
**ORDINANCE NO. 5-2009**

**AN ORDINANCE APPROVING POST ACKNOWLEDGEMENT PLAN AMENDMENT 01-2009, WHICH ESTABLISHES AN INTERCHANGE AREA MANAGEMENT PLAN OVERLAY ZONE, CHANGES LANGUAGE IN DEVELOPMENT CODE CHAPTERS 3.1 AND 4.10, AMENDS THE BOARDMAN ZONING MAP, AND AMENDS THE BOARDMAN TRANSPORTATION SYSTEM PLAN, IN ORDER TO IMPLEMENT THE BOARDMAN MAIN STREET INTERCHANGE AREA MANAGEMENT PLAN.**

**WHEREAS,** the City of Boardman and the Oregon Department of Transportation are contemplating improvements to state and local transportation facilities near Intestate 84 at the Boardman Main Street interchange to address safety, congestion and substandard facility issues, and;

**WHEREAS,** Oregon Administrative Rules (OAR) 734-051-0155(2) and (7) requires ODOT to work with local governments to develop an Interchange Area Management Plan (IAMP) prior to construction of significant modifications to existing interchanges, and the IAMP be consistent with local plans and codes, and;

**WHEREAS,** Pursuant to Chapter 660, Division 12, of the Oregon Administrative Rules, and specifically OAR 660-12-0045, the City of Boardman, as part of its Comprehensive Plan, adopted by Ordinance 7-2002, a Transportation System Plan for the City of Boardman ("TSP"); and,

**WHEREAS,** the Boardman Main Street Interchange Area Management Plan is an amendment to the Boardman TSP, which describes in detail the improvements, and associated ODOT access control management, ODOT and the City of Boardman are contemplating, and;

**WHEREAS,** adoption of the Boardman Main Street Interchange Area Management Plan as a refinement to the City of Boardman Transportation System Plan is necessary prior to construction of the improvements, and;

**WHEREAS,** the Boardman Main Street IAMP is consistent with Boardman Comprehensive Plan Chapters 1, 2, 9, 10, 11, and 12; and,

**WHEREAS,** the Boardman Main Street IAMP is consistent with all pertinent goals and policies, including Statewide Planning Goals, Oregon Administrative Rule 660 Division 12 Transportation Planning Rule, Oregon Administrative Rule 731-015-0065 Coordination Procedures for Adopting Final Facility Plans, Oregon Administrative Rule 734 Division 51 Highway Approaches, Access Control, Spacing Standards and Medians; and,

**WHEREAS,** the city has conducted an extensive public outreach effort to inform and solicit feedback from citizens on the components of the Main Street IAMP, including two Focus Group meetings and an Open House on June 22, 2009; and

**WHEREAS,** evidence within the record documents the Main Street IAMP is consistent with the adopted goals and policies in the Boardman Comprehensive Plan and meets the requirements of Boardman Development Code Chapter 4.7 - Land Use District Map and Text Amendments, and the requirements of applicable state and local law; and,

**WHEREAS,** the City of Boardman City Council and Planning Commission held a joint workshop on July 22, 2009, to consider the methodology and findings of the Main Street IAMP; and,

**WHEREAS,** The Boardman Planning Commission, after conducting a public hearing on August 19, 2009, unanimously approved the Boardman Main Street IAMP forwarding a unanimous recommendation to the Boardman City Council to approve the plan with the conditions of approval forwarded by the Commission; and,

**WHEREAS,** the City council agrees with the Planning Commission recommendation to update the City's Capital Improvement Plan (CIP) project list to be consistent with the transportation improvements contained in the IAMP and to adopt a local funding mechanism to be used for funding transportation projects associated with identified improvements within a 12 month time period in order to meet the City's Goal 11 policies and State Transportation Planning Rule requirements; and,

**WHEREAS,** the Boardman City Council held a public hearing on the Boardman Main Street IAMP on Tuesday September 15, 2009 to obtain additional public input on the plan,

THE PEOPLE OF THE CITY OF BOARDMAN DO ORDAIN AS FOLLOWS:

**Section 1.** The Boardman Main Street Interchange Area Management Plan dated April 2009, with amendments included in Attachments "E", "E-1" and "E-2" of the IAMP Staff Report to the City Council be Approved and Adopted,

**Section 2.** The establishment of an Interchange Area Management Area Overlay District in accordance with adoption of a new Chapter 2.5 to the Boardman Development Code included as Attachment "B" of the IAMP Staff Report to the City Council be Approved and Adopted,

**Section 3.** The changes to the Boardman Zoning and Comprehensive Plan map be adopted in accordance to the overlay district boundaries as indentified in Attachment

"A-1" and Figure 3.1 of the Plan included as Attachment "A" of the IAMP Staff Report to the City Council be Approved and Adopted,

**Section 4.** The language changes to the Boardman Development Code in Chapter 3.1, included as Attachment "C", and Chapter 4.10, included as Attachment "D" of the IAMP Staff Report to the City Council be Approved and Adopted,

**Section 5,** The City Council Complete within 12 months of the effective date of this ordinance, the necessary changes to the Public Facilities Plan, Capital Improvement Plan and Chapter 11 of the Boardman Comprehensive Plan to solidify the funding mechanisms necessary to implement the IAMP,

**Section 6,** Establish transportation funding mechanisms, including transportation systems development Charges, consistent with the consensus of the City Council developed at the City Council Workshop on Transportation Funding held September 20, 2008,

**Section 7,** The City Council Approves and Adopts the Boardman Main Street Interchange Area Management Plan as amended, as noted in Section 1, the Map and Development Code language changes, as noted in Section 2 through Section 4, the Planning Commission recommendations contained in Section 5 and Section 6, and provide as an attachment to this ordinance the City Council Staff Report on the Interchange Area Management Plan including all attachments of the report.

Passed by the Council and approved by the Mayor this 20th day of October, 2009.

MAYOR

ATTEST:

CITY RECORDER

Oregon
Theodore R. Kulongoski, Governor

**Department of Land Conservation and Development**
635 Capitol Street, Suite 150
Salem, OR 97301-2540
(503) 373-0050
Fax (503) 378-5518
www.lcd.state.or.us

November 24, 2009

Gail Achterman, Chair
Oregon Transportation Commission
Transportation Building
355 Capitol Street NE, Room 135
Salem OR 97301

**Regarding: Boardman Main Street Interchange Area Management Plan**

Chair Achterman:

The Department of Land Conservation and Development recommends approval of the Boardman Main Street Interchange Area Management Plan (IAMP). Furthermore, DLCD recommends that the OTC adopt a condition as requested by ODODT staff to clarify that until local funding has been established the improvements listed in the IAMP may not be relied upon under Transportation Planning Rule (TPR) 0060(4)(c)(B).

Interchange areas have always been a topic of overlapping interest with ODOT and DLCD, but in Boardman, the process has been especially closely coordinated between the agencies. In April of 2007 the City of Boardman approved a request to rezone 30 acres to Tourist Commercial near the interchange. DLCD and ODOT both filed LUBA appeals because the application was not supported with transportation analysis and the approval was not conditioned with specific mitigation. In October of 2007, the applicant withdrew the application, opting instead to participate in the IAMP process that was already underway with ODOT funding. This gave the city, ODOT and DLCD and opportunity to comprehensively evaluate potential impacts and identify appropriate mitigations projects.

ODOT and DLCD continued the collaboration through the Transportation and Growth Management (TGM) program. In late 2008 the city requested help from the Code Assistance section of TGM translate the draft IAMP into specific code language. The request was granted, and the city enacted the resulting code amendments in September of 2009. While those code amendments are not part of what the OTC will be adopting, they played an important role in the process of coordinating transportation and land use. Several aspects are worth highlighting here.

The IAMP includes an assumptions about traffic generation for each parcel within the interchange area. The simplest approach to translating this into code would have been to use those assumptions as trip caps for each parcel. The dilemma for the city, however, is that they

wish to promote commercial development in the short term while maintaining the long term functioning of the interchange so that businesses continue to thrive. Instead of imposing absolute limits at the parcel level, the code amendment defines several triggers applicable to the entire interchange area. If and when any of these conditions is met, then any land development will require extensive traffic analysis, or the IAMP will be updated comprehensively. One of the triggers will require an IAMP update when the total amount of development within the interchange area reaches 85% of what is assumed in the IAMP. Another trigger will require full traffic analysis for any development if either ramp terminal is operating over .75 v/c.

Overall we believe that the IAMP and amendments to the city's development code will provide a solid basis for managing the interchange area in the future. We are hopeful that managing land uses, providing alternative circulation, and moving driveways off of Main Street will be sufficient to defer the need for widening the overcrossing within the planning horizon. Avoiding such costly projects to reconstruct interchanges is one of the primary reasons that managing interchange areas is so important to ODOT, DLCD and local governments. Accordingly, we recommend that the OTC adopt the Boardman Main Street IAMP.

Sincerely,

Matthew Crall

Matthew Crall
Transportation and Land Use Planner

cc: Teresa Penninger, ODOT Region 5
Robert Cortright, Transportation Planning Coordinator
Grant Young, DLCD Regional Representative
Barry Beyeler, City of Boardman

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Final Report for

# Boardman Main Street Interchange Area Management Plan

Prepared by

DKS Associates
TRANSPORTATION SOLUTIONS

Winterbrook Planning


April 2009

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# Chapter 1. Executive Summary

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

## Goals and Objectives

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

The IAMP objectives include:

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

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

## Relevant Plans and Standards

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

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

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

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

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

## Existing Land Use and Transportation Issues

### Geographic Boundaries

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

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

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

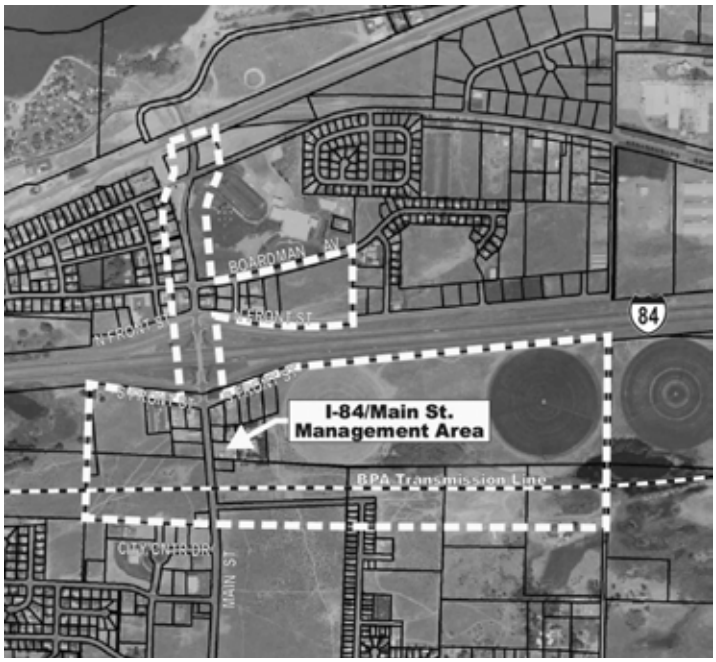



**Figure 1.1: Management Area**

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

### Local Access and Circulation

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

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

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

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

### Existing Safety and Operations

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

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

## Future Forecasts and Needs Analysis

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

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

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

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

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

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

- Main Street at I-84 Westbound Ramp

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

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

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

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

## Interchange Area Management Plan

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

### Local Connectivity Plan

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

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

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

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

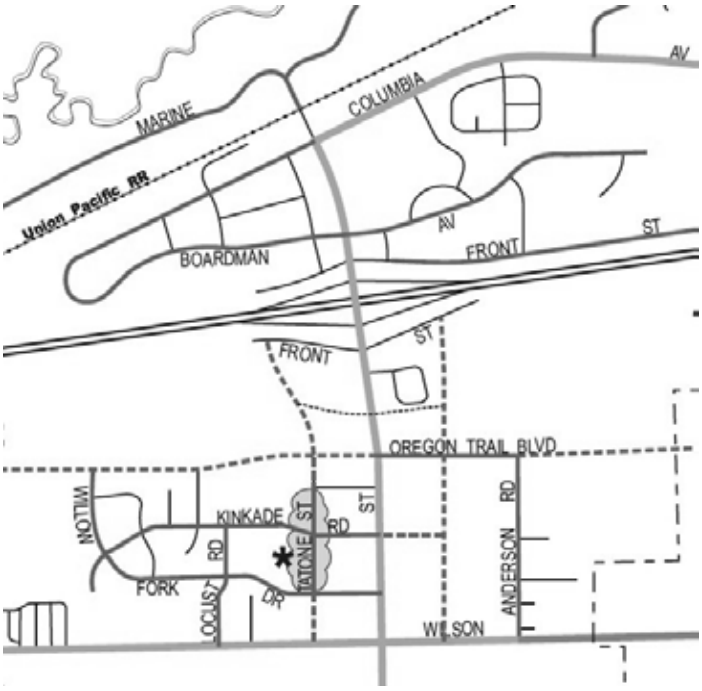



**Figure 1.2: Main Street Area Plan**

## Access Management Plan

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

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

The goals of this access management plan are listed below:

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

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

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

## Interchange Improvements

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

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

## Improvement Cost Estimates

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

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

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

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

**Table 1.2: IAMP Improvements**

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

| | | | |
|---|---|---|---|
| • Medium-range actions from access management plan. | - Increase in crashes<br>- Recurring public complaint<br>- Property (re)development | NA | • City<br>• Property owners |
| • Construct additional approach lane on I-84 ramp terminals | - Increase in crashes<br>- LOS drops below standards<br>- Turn lanes warranted | $150,000 | • FHWA<br>• ODOT<br>• City |
| **Long-Range Improvements (10 to 20 years)** | | | |
| • Construct new public streets according to adopted Local Connectivity Plan. | - Property (re)development | $10 to 12 million | • City<br>• Property owners |
| • Install traffic signal at Main Street & I-84 Westbound Ramp | - Traffic signal warrants met | $300,000 | • ODOT<br>• City |
| • Reconstruct Main Street Bridge over I-84 – including wider sidewalk, bike lanes and turn lanes. | - Turn lanes warranted<br>- Money becomes available<br>- ODOT Bridge program – structural deficiency<br>- Increase in bike/ped crashes | $10 to 15 million | • FHWA<br>• ODOT<br>• City |
| • Long-range actions from access management plan. | - Increase in crashes<br>- Recurring public complaints<br>- Property (re)development | NA | • City<br>• Property Owners |
| Note: Medium and long-range improvements could be constructed sooner than anticipated as opportunities arise through private property development or other means. | | | |

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

**Table 1.3: Basis for Project Priorities**

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

# Chapter 2. Plan Goals, Objectives, and Evaluation Criteria

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

## Goals & Objectives

### Project Goal

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

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

### Objectives and Evaluation Criteria

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

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

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

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

# Chapter 3. Existing Land Use and Transportation Conditions

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

## Study Area Land Uses

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

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

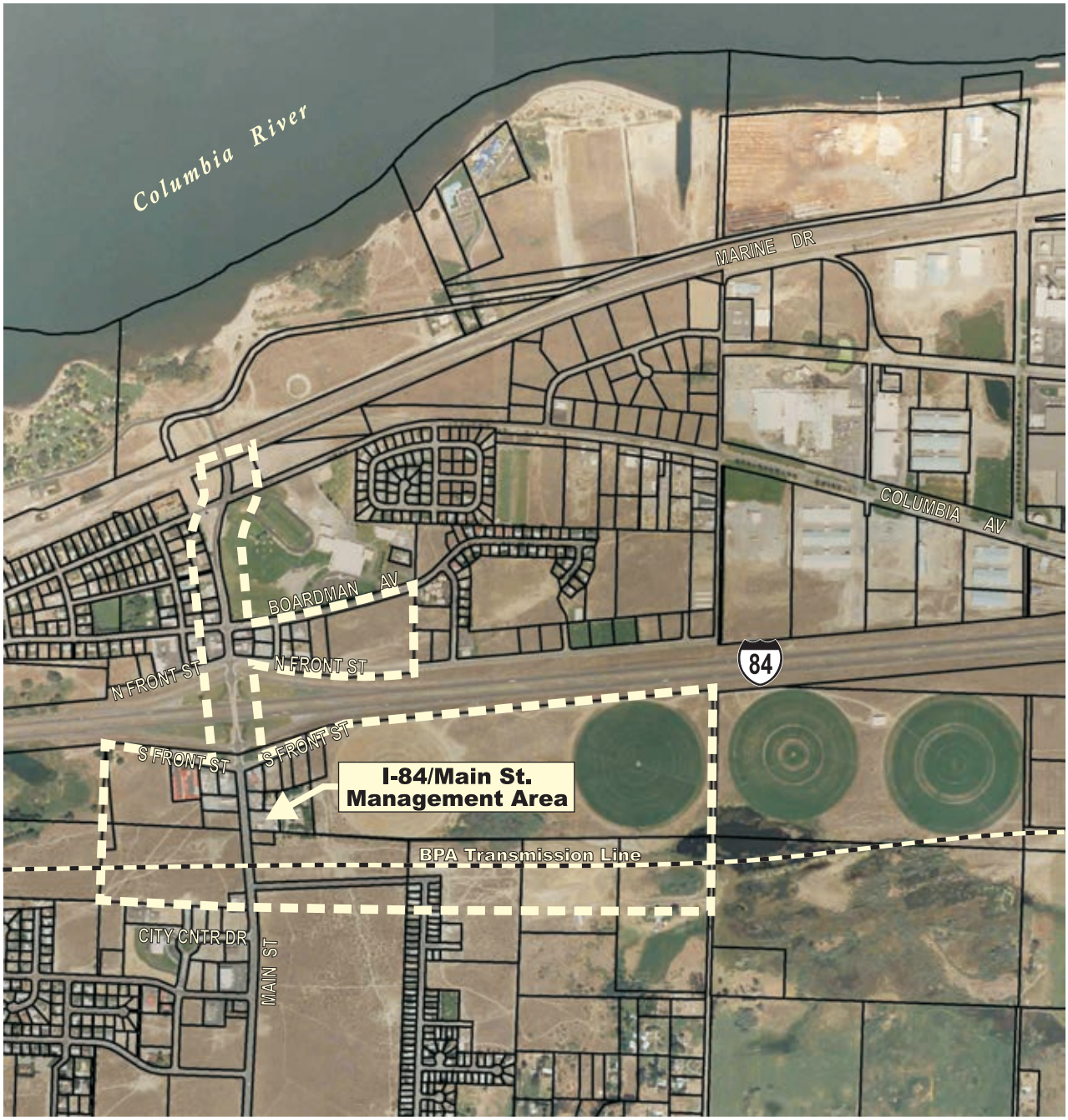
Management area limits generally extend one-quarter mile north and one-quarter mile south of I-84 along Main Street. North of I-84, most of the property is fully developed along the Main Street frontage area. In this developed portion of the city, the management area was limited to just one block either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

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

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

## Study Area Street Network

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




**City of Boardman Main Street IAMP**
April 2009

NO SCALE

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**Figure 3.1**

**STUDY AREA**

**Table 3.1: Study Area Roadways for Main Street IAMP**

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

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

## Operational Analysis

### Traffic Volumes

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

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

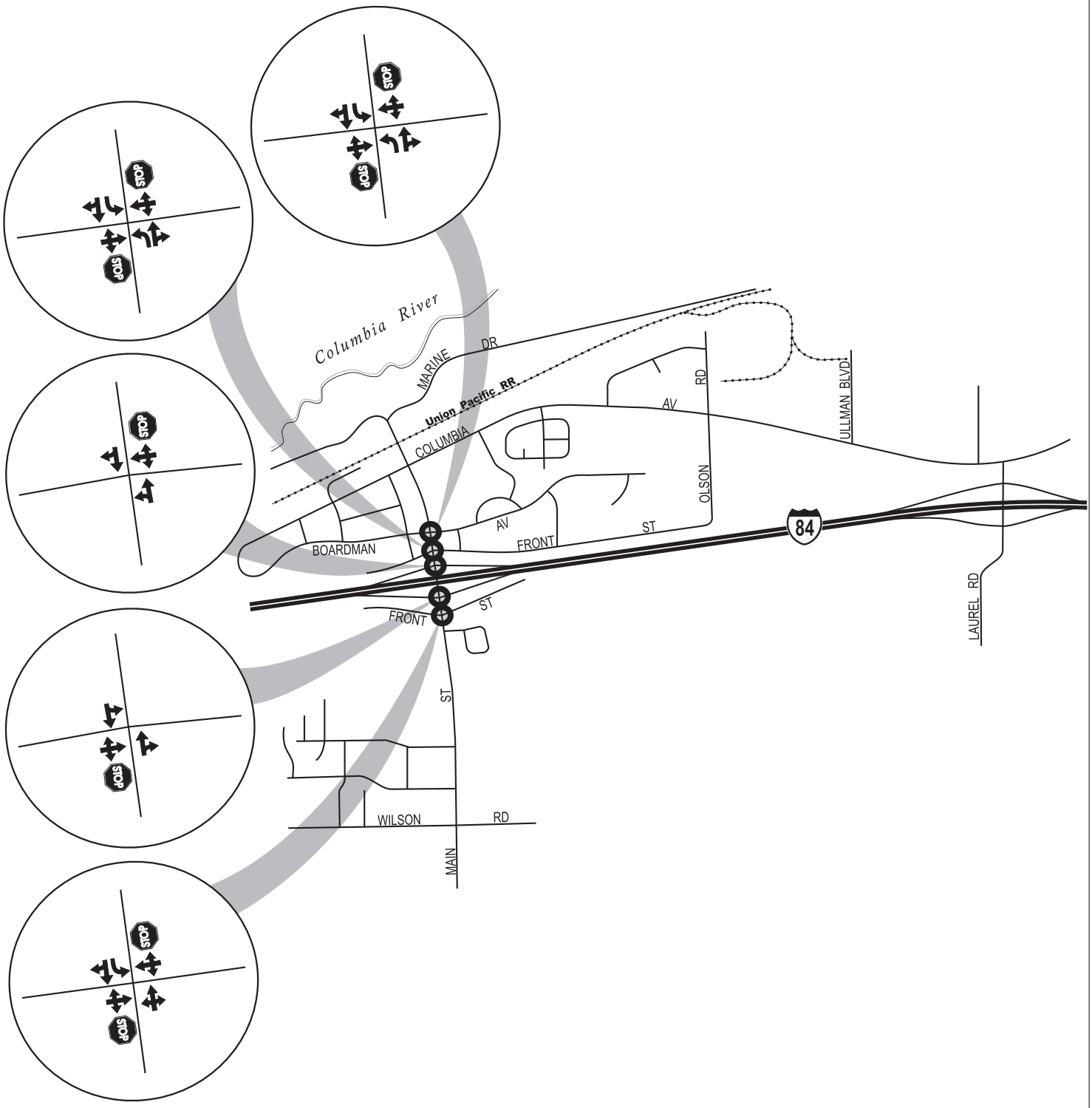
- I-84 EB Ramp at Main Street
- I-84 WB Ramp at Main Street

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

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

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

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




**LEGEND**

- Study Intersection
- Lane Configuration
- Stop Sign

**City of Boardman Main Street IAMP**
April 2009

NO SCALE

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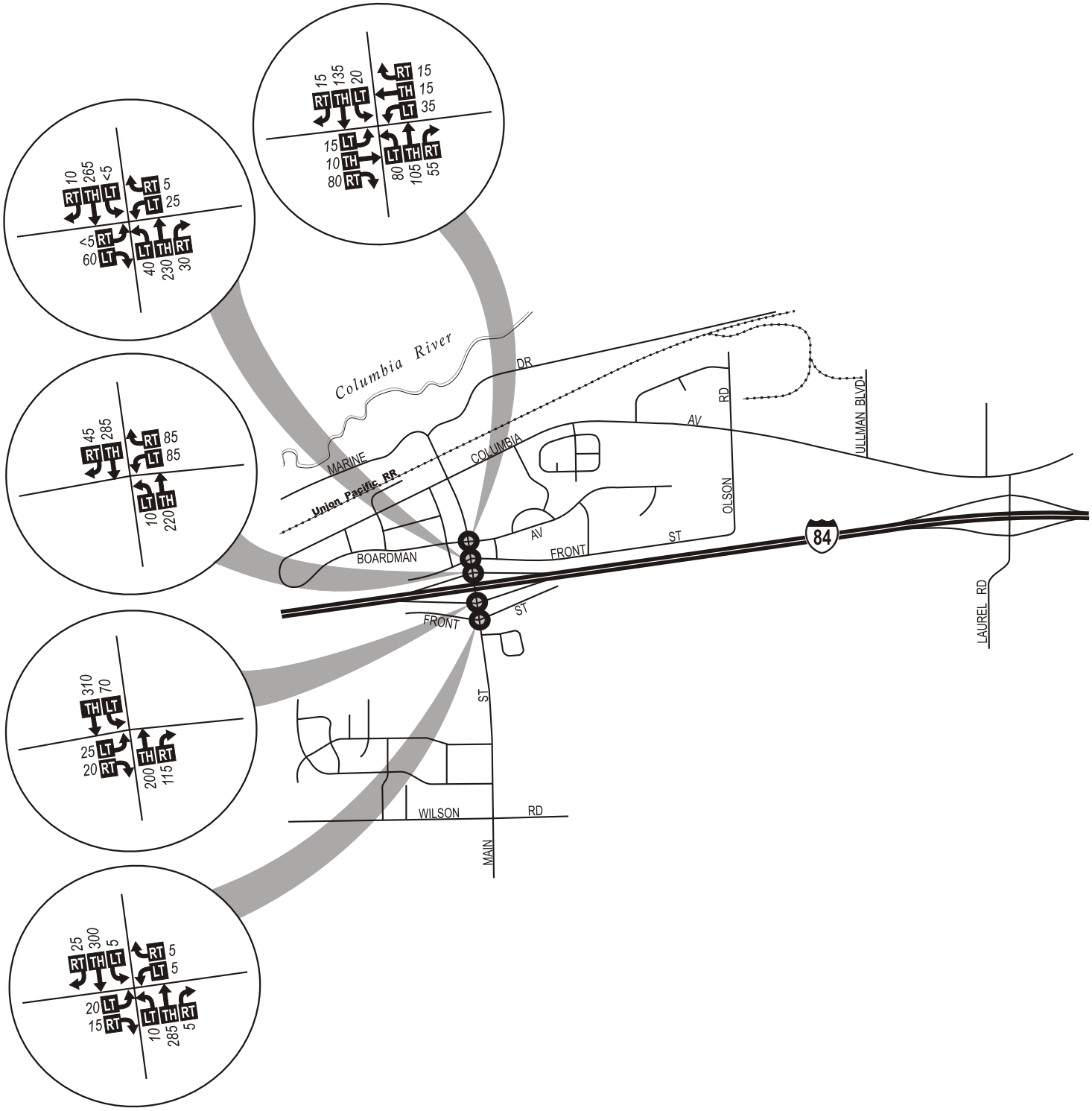
**Figure 3.2**

**EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROL DEVICES**




**LEGEND**

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

**City of Boardman Main Street IAMP**
January 2009

NO SCALE

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**Figure 3.3**

# 2006 EXISTING WEEKDAY PM PEAK HOURS TRAFFIC VOLUMES

## Study Area Roadway Performance

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

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

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

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

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

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

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

## Heavy Vehicles

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

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

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

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

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

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

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

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

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

## Crash Analysis

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

**Table 3.4: Study Intersection Collision Data by Type**

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

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

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

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

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

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

## Local Access and Circulation

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

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

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

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

### Issues to be Addressed

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

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

## Pedestrians/Bicycles

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

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

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

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

The identified pedestrian and bicycle issues are summarized below.

**LEGEND**

0 - Access Location & Number

- No Access Control

000 - Tax Lot ID#

SCALE: 1"=400' (Approx.)

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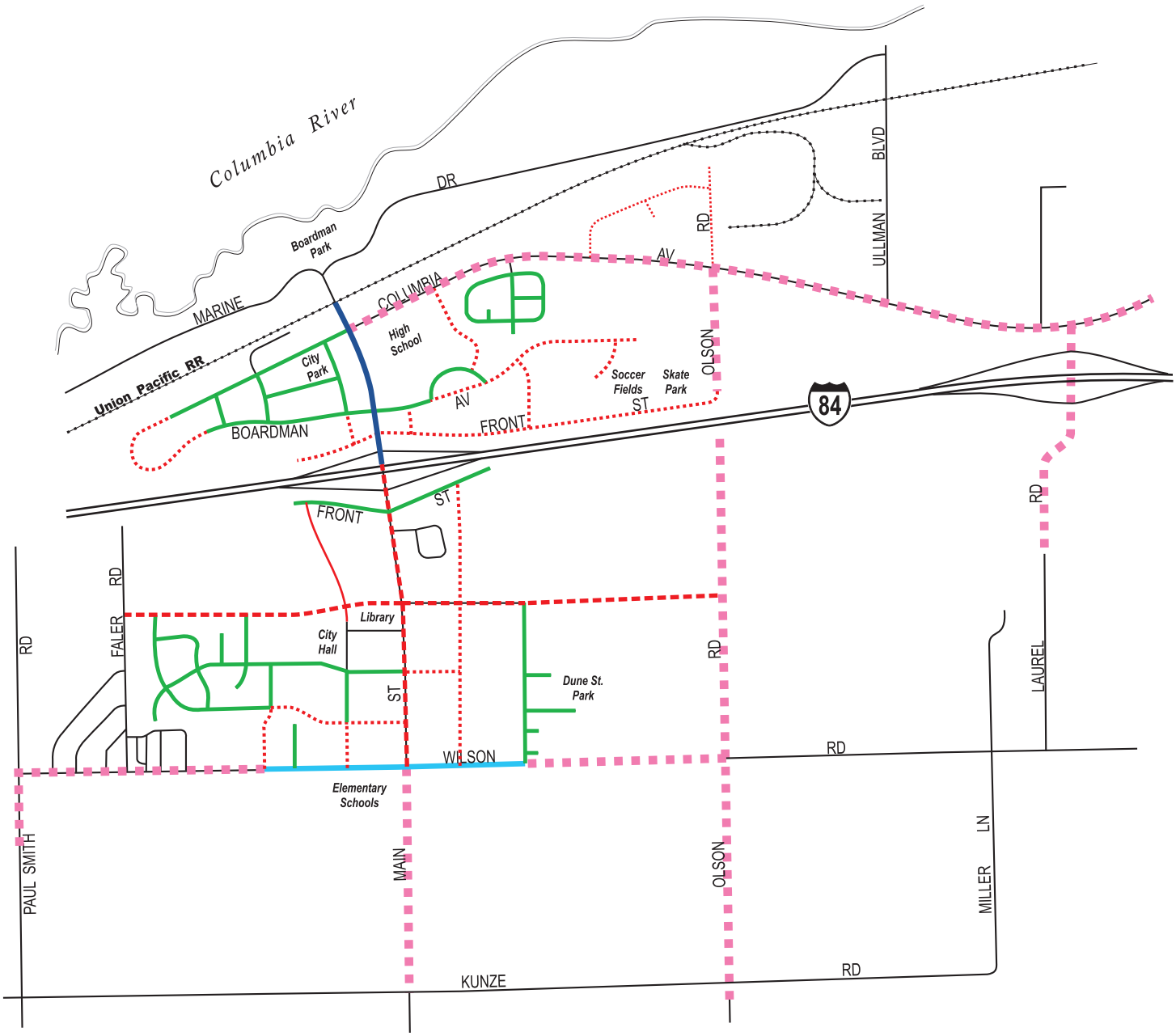
**City of Boardman Main Street IAMP**
April 2009

**Figure 3.4**

**MAIN STREET IAMP**
**EXISTING ACCESS POINTS**




**LEGEND**

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

**City of Boardman Main Street IAMP**
April 2009

NO SCALE

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**Figure 3.5**

**EXISTING PEDESTRIAN AND BICYCLE NETWORK**

### Issues to be Addressed

Deficiencies in the existing pedestrian facility network include:

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

Deficiencies in the existing bicycle facility network include:

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

## Freight

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

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

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

### Issues to be Addressed

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

# Chapter 4. Future Travel Forecasts and Needs Analysis

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

## Land Inventory and Analysis

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

### Population and Employment Forecasts

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

**Table 4.1: Boardman Population Projections**

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

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

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

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

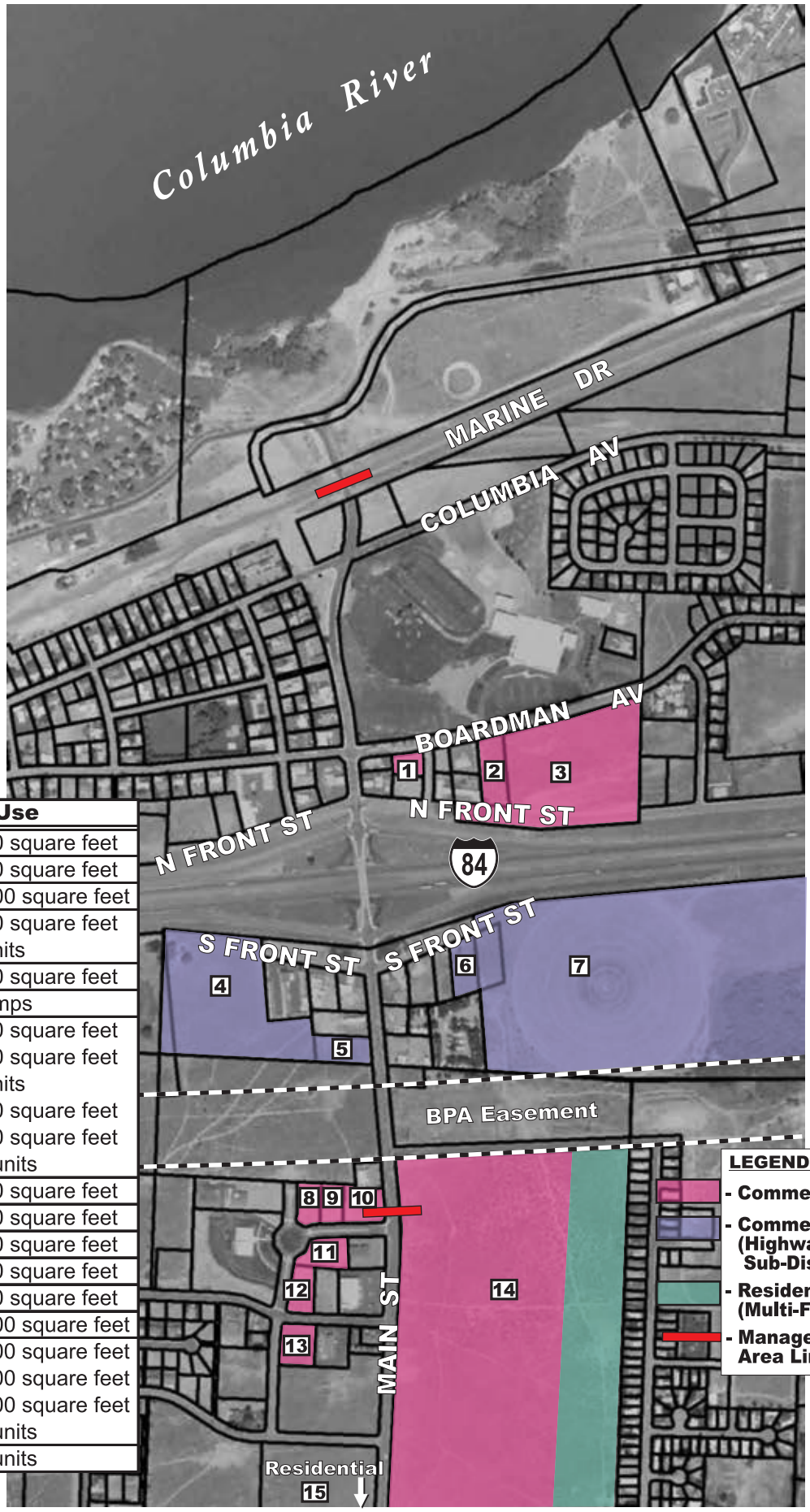
## Future Year Forecasts

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

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

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

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




## Main Street

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

NO SCALE

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**City of Boardman Main Street IAMP**
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**Figure 4.1**

**MAIN STREET 20-YEAR FORECASTED DEVELOPMENT**

**Table 4.2: PM Peak Hour Trip Generation Rates**

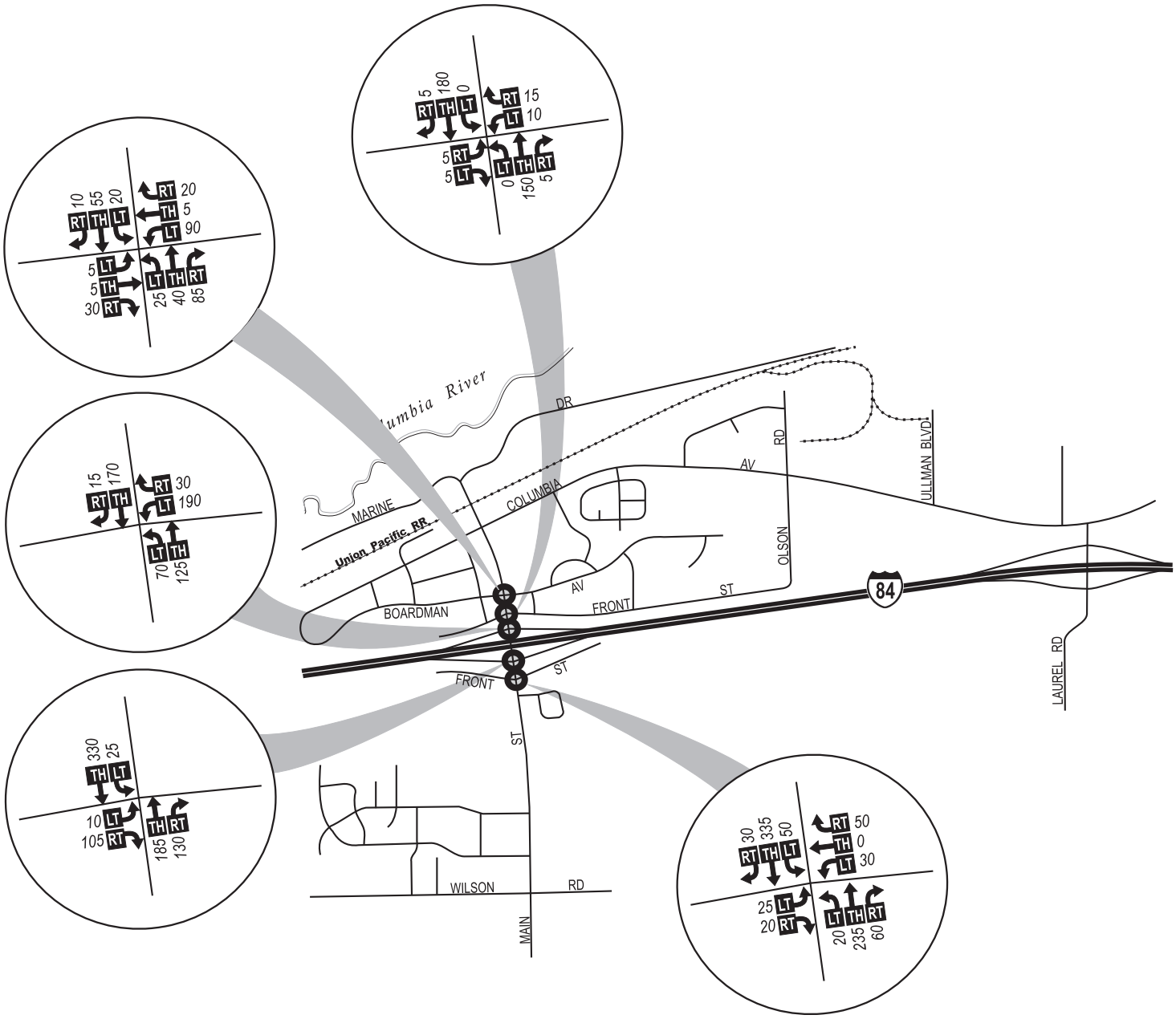
| Land Use Description | ITE Code | Land Use Unit | Vehicle Trips Per Land Use Unit | Assumed Size of Land Use |
|---|---|---|---|---|
| Single Family Detached Housing | 210 | Dwelling Unit | 1.01 | 220 |
| Housing - Condos | 230 | Dwelling Unit | 0.52 | 120 |
| Motel | 320 | Room | 0.58 | 130 |
| Single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

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

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

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

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




**LEGEND**

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

**City of Boardman Main Street IAMP**
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**Figure 4.2**

NO SCALE

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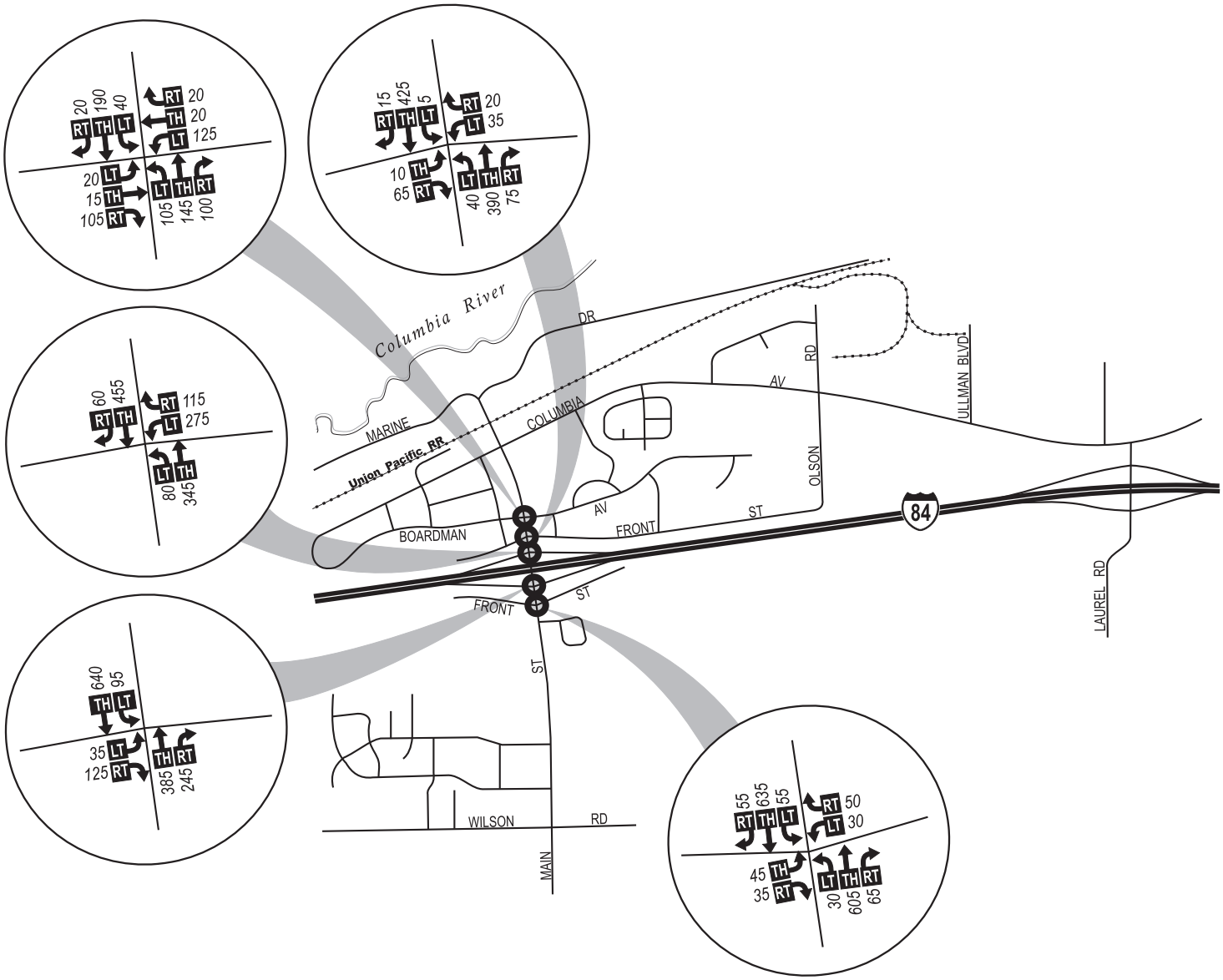
# PM PEAK TRIPS GENERATED BY 20-YEAR FORECASTED DEVELOPMENT




**LEGEND**

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

**City of Boardman Main Street IAMP**
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NO SCALE

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**Figure 4.3**

## 2026 PM PEAK HOUR TRAFFIC VOLUMES

### Boardman Speedway

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

### Volume Comparisons to Past Studies

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

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

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

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

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

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

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

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

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

### South Main Street Development Alternative

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

## Future 2026 Operations

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

### Intersection Operations

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

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

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

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

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

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

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

- Main Street & I-84 Westbound Ramp

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

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

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

## Future 2026 Deficiencies

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

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

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

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

## Access/Intersection Spacing

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

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

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

## Pedestrian/Bicycle Network

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

## Sensitivity Analysis

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

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

## Major Constraints

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

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

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

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

# Chapter 5. Interchange Area Management Plan

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

## Transportation Alternatives

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

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

- Main Street & I-84 Westbound Ramp

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

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

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

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

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

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

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

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

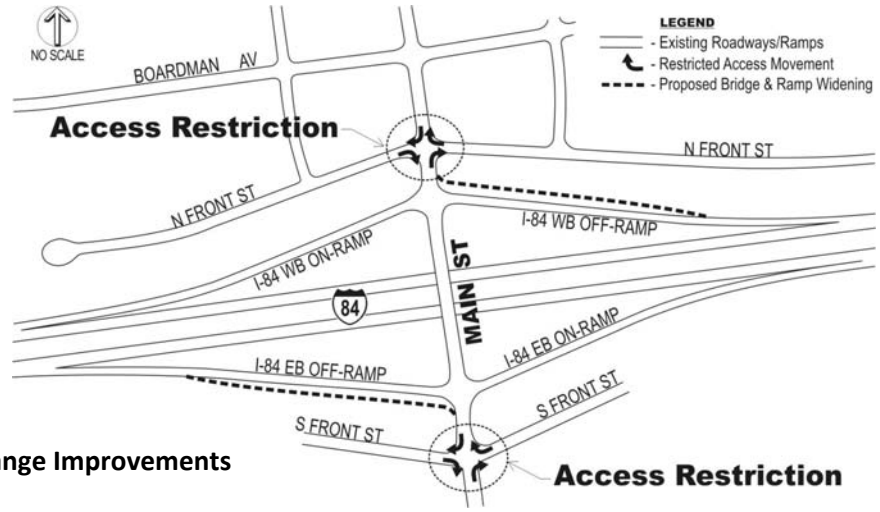



**Figure 5.1a**
**Short/Mid-Range Improvements**

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

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

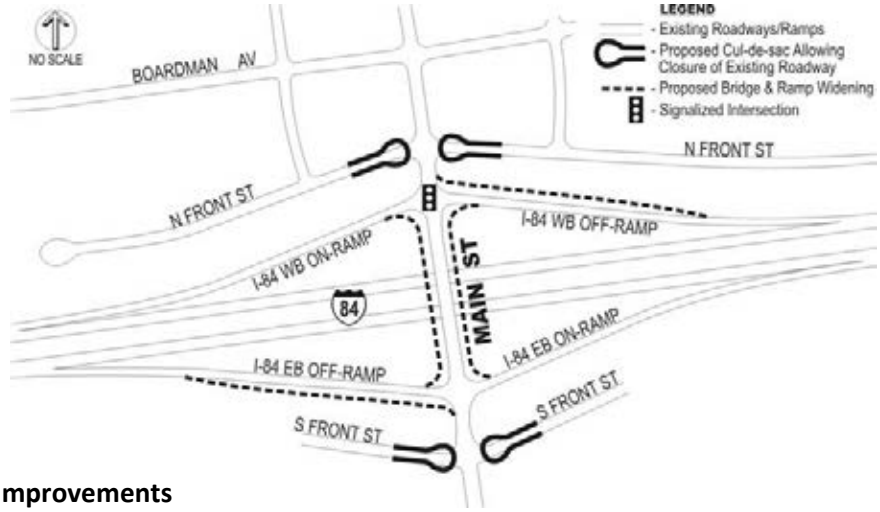



**Figure 5.1b**
**Long-Range Improvements**

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

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

## Timing of Improvements

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

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

### Main Street & I-84 Westbound Ramp

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

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

### Main Street & I-84 Eastbound Ramp

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

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

### Main Street & Front Avenue (North and South)

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

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

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

### Main Street & Boardman Avenue

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

### Main Street Overpass Bridge

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

## Local Connectivity Plan

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

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

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

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

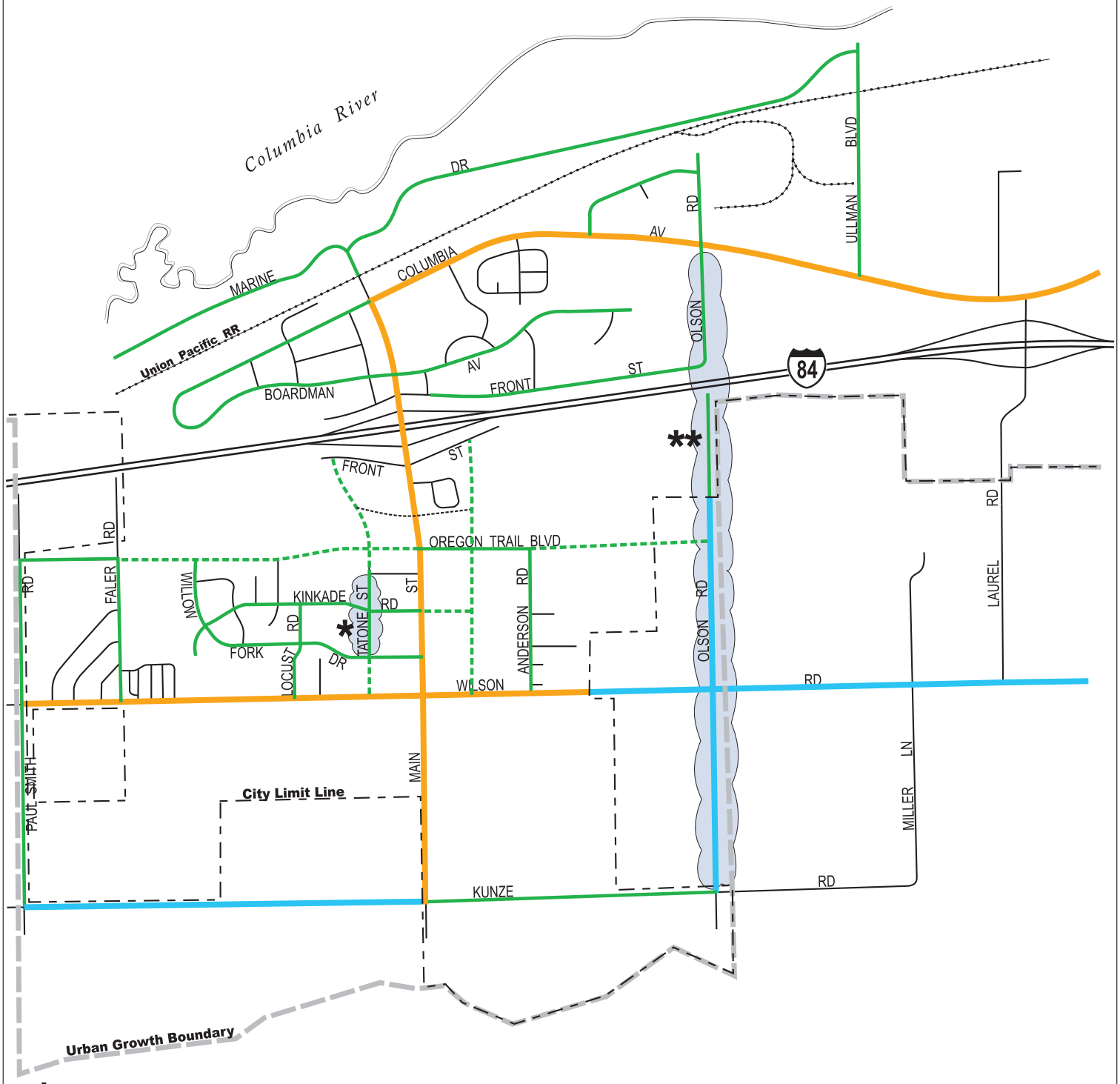
There are several potential opportunities to improve the north-south and east-west connectivity within the City, which will make drivers less dependent on Main Street for every trip around town. Currently, the north-south connectivity is limited to Main Street and Laurel Lane due mainly to the constraints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

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

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

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

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




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

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

**LEGEND**

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

**City of Boardman Main Street IAMP**
April 2009

NO SCALE

DKS Associates
TRANSPORTATION SOLUTIONS

**Figure 5.2**

**ROADWAY NETWORK AND CLASSIFICATION PLAN**

### South Main Street

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

### Olson Road

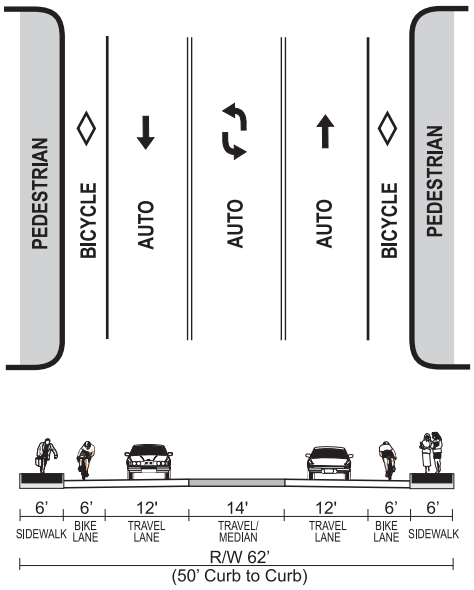
The City's 1999 Transportation System Plan envisions a new I-84 crossing at Olson Road. This new freeway overcrossing would not provide access to/from Interstate 84, but it would provide an alternate north-south circulation route between employment and school uses on the north side of the highway with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

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

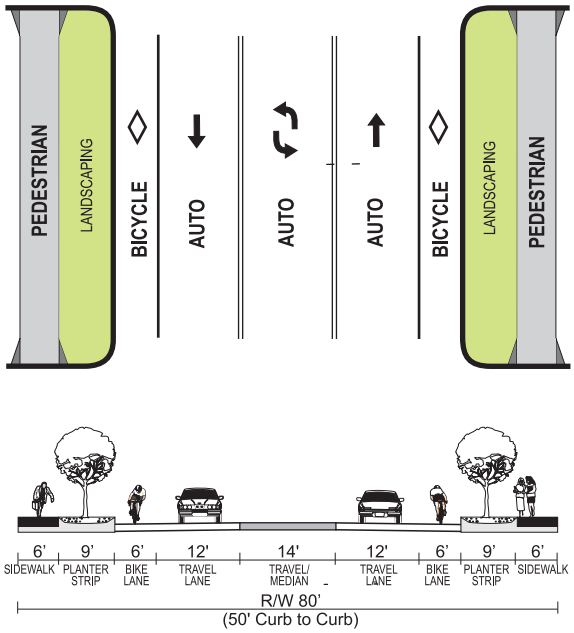
## Pedestrian/Bicycle Network

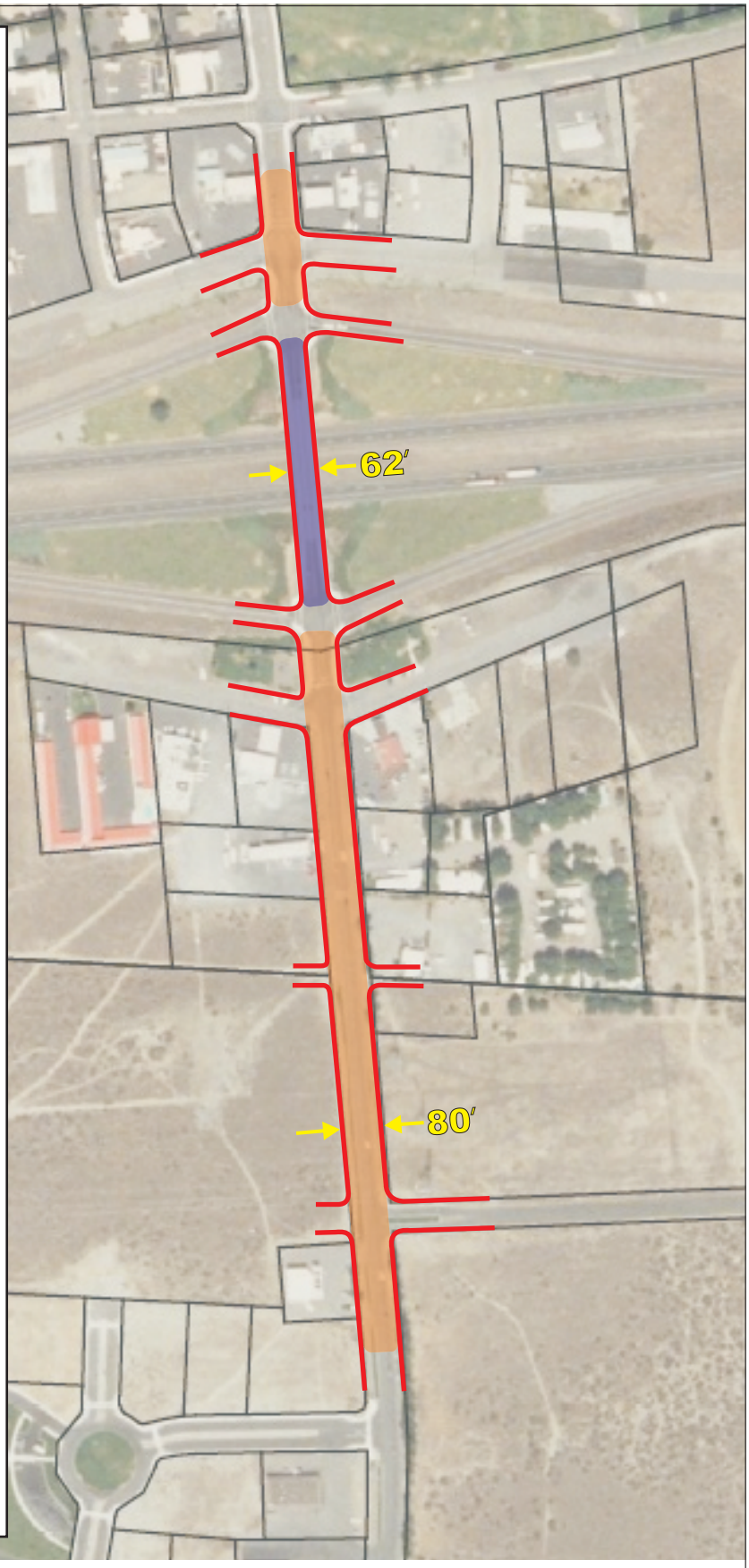
The pedestrian network should be addressed in parallel to the street network improvements. In general, curb and sidewalk similar to North Main Street will improve the safety of pedestrians along South Main Street. Pedestrian access across Main Street is also important. Pedestrian crossings shall be accommodated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

## Typical 62 foot cross-section




## Typical 80 foot cross-section




**LEGEND**

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

**City of Boardman IAMP**
April 2009

NO SCALE

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TRANSPORTATION SOLUTIONS

**Figure 5.3**

**SOUTH MAIN STREET IMPROVEMENTS**

The Ped/Bike network improvements include:

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

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

## Access Management Plan

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

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

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

The goals of this access management plan are listed below.

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

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

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

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

**Table 5.1: Main Street Access Actions**

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

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

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

## Policies, Rules, & Ordinances

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

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

In addition, the Transportation System Plan will be amended to adopt the Local Street Network and the Access Management Plan and specific roadway and interchange improvements including street standards for South Main Street.

To implement the IAMP, the City will amend the Zoning Map to include an overlay district and amend the Development Code to include land use, development and redevelopment requirements within the district.

The IAMP Overlay District refines and clarifies existing city requirements as they pertain to development within the overlay. For example, the city currently has a traffic impact study (TIS) requirement for proposals that involve a change in zoning or a plan amendment designation, or that "may have operational and safety concerns along a state highway". Within the IAMP Overlay District, a TIS would only be required if such land use amendment was expected to generate 10% or greater PM peak hour traffic than the current zoning. Proposals that do not include a land use change, or those that do, but are shown to have an impact less than 10% in the PM peak hour traffic, will only be required to submit a traffic generation report.

In addition, the City currently requires an access permit as a part of their Site Design Review. As part of the permit approval process, the applicant will have to demonstrate that the proposed development project within the Overlay District will not preclude any necessary cross access to adjacent parcels and that, if the proposed development relies on cross access, a signed agreement is included as part of the development proposal. A cross access easement would be required if the subject site is being subdivided.

### Updating the IAMP

The City will keep a record of all traffic generation reports and will use them to track how close the interchange is to operating at capacity. When the total new trips generated from development within the Overlay District exceeds approximately 85% of the trips assumed in the IAMP, the City will initiate an update of the IAMP. Once notified of the need to update the IAMP, ODOT will work with the City of Boardman to create a planning project similar in scope to the original IAMP process. It is expected that an update triggered by traffic volumes will include a 20-year future forecast and needs analysis, a review of recent development patterns and the adequacy of the local street network, and a safety and operations analysis of the interchange. Once completed, the updated IAMP will be adopted by the City of Boardman through a legislative adoption process.

The Boardman Main Street Interchange IAMP also must be amended when a proposed land use is inconsistent with the current land use zoning and is anticipated to increase PM peak hour traffic by more than 10%. This applicant-initiated legislative amendment is not expected to entail the level of analysis that the city-initiated review will require. However, applicants will be required to demonstrate that the proposed amendment will be consistent with the planned improvements in the Overlay District. In such cases, the applicant will supply information to amend the IAMP, including a documentation of the additional trips generated by the subject site that are not anticipated in the IAMP and findings that either show how the planned improvements in the IAMP are sufficient to support the proposal, or that identify additional necessary transportation improvements to bring the proposed land use action into conformance with the IAMP.

## Cost Estimates

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

indicated (State, City or Private), but they do not assure the availability or approval of such improvements.

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

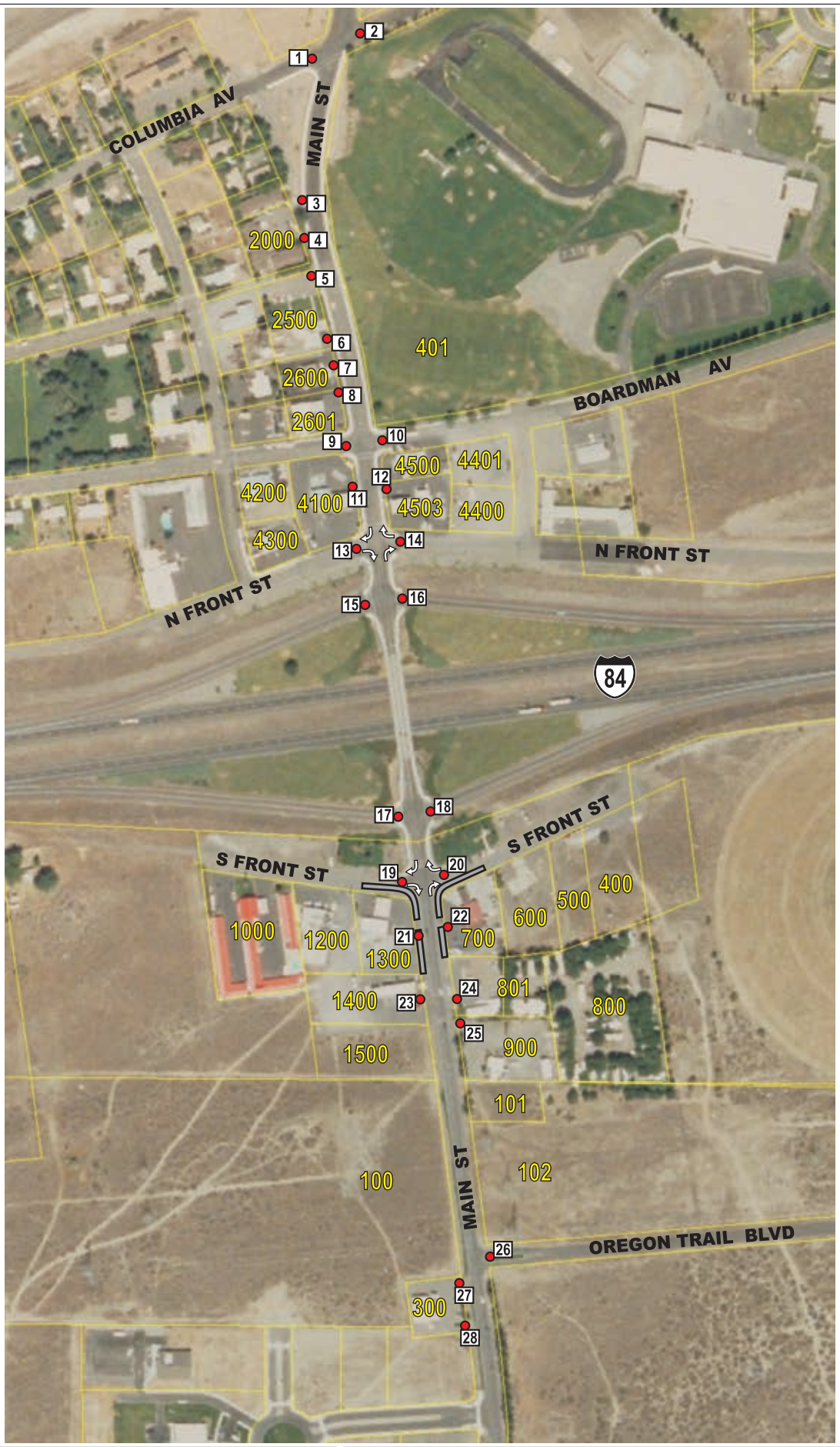
**Table 5.2: Cost Estimates for Main Street IAMP Improvements**

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

* Does not include Right of Way acquisition.

**Table 5.3: Cost Estimates for Local Street Network**

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




**LEGEND**

0 - Access Location & Number

000 - Tax Lot ID#

- Medium Range Limited Access

- Medium Range Future Curb

**City of Boardman Main Street IAMP**

April 2009

NO SCALE

**Figure 5.4**

**MAIN STREET IAMP MEDIUM RANGE ACCESS MANAGEMENT**

**LEGEND**

0 - Access Location & Number

000 - Tax Lot ID#

- Long Range Future Access

- Long Range Future Curb

**City of Boardman Main Street IAMP**
April 2009

NO SCALE

**Figure 5.5**

**MAIN STREET LONG RANGE ACCESS MANAGEMENT PLAN NORTH**

**LEGEND**

- 0 - Access Location & Number
- 000 - Tax Lot ID#
- Long Range Future Access
- Long Range Future Curb
- Future Roadway Network

**City of Boardman Main Street IAMP**
April 2009

NO SCALE

**Figure 5.6**

**MAIN STREET LONG RANGE ACCESS MANAGEMENT PLAN SOUTH**

## Alternative Evaluation and Prioritization

### Alternative Evaluation

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

### Prioritization of Improvements

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

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

**Table 5.3: Transportation Improvement Prioritization**

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

| Long-Range Improvements (10 to 20 years) | | | |
|---|---|---|---|
| • Construct new public streets according to adopted Local Connectivity Plan. | - Property (re)development | $10 to 12 million | • City<br>• Property owners |
| • Install traffic signal at Main Street & I-84 Westbound Ramp | - Traffic signal warrants met | $300,000 | • ODOT<br>• City |
| • Reconstruct Main Street Bridge over I-84 – including wider sidewalk, bike lanes and turn lanes. | - Turn lanes warranted<br>- Money becomes available<br>- ODOT Bridge program – structural deficiency<br>- Increase in bike/ped crashes | $10 to 15 million | • FHWA<br>• ODOT<br>• City |
| • Long-range actions from access management plan. | - Increase in crashes<br>- Recurring public complaints<br>- Property (re)development | NA | • City<br>• Property Owners |
| Note: Medium and long-range improvements could be constructed sooner than anticipated as opportunities arise through private property development or other means. | | | |

DKS Associates
TRANSPORTATION SOLUTIONS

## Project Participants

### Project Management Team

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

### Project Staff

| | |
|---|---|
| Carl Springer, PE | DKS Project Manager |
| Pamela O'Brien, PE | DKS Senior Engineer |
| Tom Armstrong | Winterbrook Planning |

## Project Sponsor

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