

Section 5

Transportation System Plan

Transportation System Plan

INTRODUCTION

This section describes the individual elements of the City of Boardman Transportation System Plan. The preferred alternative presented in this TSP consists of those transportation and land use improvements necessary to support the City of Boardman's Comprehensive Land Use Plan. The TSP addresses several components for development of the future transportation network including:

- Preferred Land Use Alternative
- Roadway System Plan
- Pedestrian System Plan
- Bicycle System Plan
- Public Transportation System Plan
- Marine System Plan
- Air/Water/Pipeline System Plan
- Access Management Plan
- Implementation Plan

The individual plans and policies presented in this section were developed specifically to address the requirements of Oregon's Transportation Planning Rule. Projects associated with each plan element have been identified and costs have been estimated as described herein. The recommendations set forth by this plan reflect the findings of the existing and forecast future conditions analyses, the alternatives analysis, and the concerns expressed by both the citizens of Boardman and the public agencies that serve them.

PREFERRED LAND USE PLAN

Desirable Elements of the Preferred Alternative

A concept plan has been drawn that depicts how the preferred alternative downtown might develop. To gain the community benefits of the downtown at this location, the following are desirable elements that should be explored in its planning and design, preferably through a comprehensive master plan. These elements have been found to be the keys to success of traditional downtowns and are being emulated in mixed-use developments throughout the United States today:

- development of 200 foot blocks in the central part of the downtown with an outer ring of 300 to 400 foot blocks;
- key access points from all sides of the downtown via the collector and arterial street system, including, at a minimum, Wilson Road, Main Street, the extension of Kinkade Road through the center of downtown, and the construction of Future Boulevard;
- sidewalks throughout, with particular emphasis on wide sidewalks along both sides of Main Street and an interior "main street;"
- a mix of on-street and off-street parking, including shared parking arrangements; to maintain the required mobility on the arterial street system, on-street parking should not be permitted on Main Street, rather on adjacent parcels and collector and local street grid in the downtown;
- the development of a public square or park as a central focal point;

- the inclusion of public buildings to help anchor the downtown, such as City Hall, Library and the Post Office;
- mixed use and multi-family development including senior housing;
- two story retail including housing over retail uses (see inset depiction below);



Downtown Building Styles With Housing on Second Story

- community facilities and services such as day care centers and health clinics; county and state offices should also be encouraged to locate in the downtown;
- careful arrangement of buildings, parking, and access points that will promote a compact, pedestrian-oriented design;
- shallow front yard setback of buildings (0 – 5 feet) with windows oriented to the street; and,
- parking on-street, along the side or in the rear of buildings; large parking lots in front of buildings should be prohibited.

There may be other opportunities that the community identifies in a master plan that can help provide more definition and excitement to the downtown concept and that would be unique for Boardman.

Development Potential on South Main Street

One of the key reasons to locate the downtown on South Main Street is because of the large supply of relatively undeveloped commercial land that is still in large parcels. Other commercial lands in the city could be used for other types of commercial development that would not be appropriate to the downtown, such as uses that cater to travelers.

The 1997 Buildable Lands Study found that Boardman would need about 61 acres of commercial land by 2017 to meet projected needs, based on projected income. The 61 acres is for all types of commercial uses – land need data for just the downtown is not available.

The acreage available on South Main Street was examined to determine its capacity to meet projected commercial land needs. The city is in the process of obtaining the right-of-way and constructing Future Boulevard. This will take some of the C-1 zoned land along South Main and create separate parcels on the north and south of the boulevard. The land area to the south of Future Boulevard would be the downtown. The commercial land north of the boulevard could be developed for other types of commercial uses.

Appendix D contains graphical illustrations of the downtown concept, including the construction of the Future Boulevard and the extension of Kinkade Road to the east. The downtown would consist of commercial blocks on the east and west sides of South Main Street, developed on a grid of 200 to 300 foot blocks, with the more intensive area on the east side of South Main Street.

Based on a review of available land and potential commercial uses, the amount of land available on South Main for the downtown is more than adequate for 20 years of growth, especially considering commercial land elsewhere in the community that can serve other kinds of commercial needs. If two story buildings are constructed in the downtown, land area needs would be less and ensure that the land supply would be adequate for a much longer period. Two story buildings should be encouraged at least on the east side of South Main Street.

Implementation

The creation of a new downtown in a location where almost none of the elements exist today will be challenging and require considerable commitment, perseverance and patience by the community. A partnership between the city and property owners to plan and implement the downtown, including establishing appropriate zoning and development regulations, will be a necessity to make such an effort successful. The city and property owners should seek technical and financial assistance from state and federal agencies to conduct the planning and help with implementation. Involvement by the citizens of the community in planning, design and financing of the downtown will also be beneficial to the city's ability to sustain a commitment over a long period of time.

Public/Private Partnerships

There are many examples in Oregon where private landowners and city governments have worked together to create developments that meet public objectives and make a profit for the property owner and developer. In some cases, a public agency has provided all of the funding, in others the property owner has provided all of the funding and in a number of others, contributions have been made from both the public and private sectors. The TGM program in Oregon has been a beneficial source of funding for this type of activity in recent years. The Department of Land Conservation and Development (DLCD) could assist the city to identify models of public/private partnerships that have worked in other communities.

Another possible source of assistance could be one of the state's universities. Students within urban planning, architecture and landscape architecture schools are often seeking challenging projects as part of work/study degree requirements. A group of students may find developing a downtown concept for Boardman a challenging and rewarding project.

Development Regulations

The establishment of a regulatory framework to accomplish the city's objectives will be extremely important. Regulations also assist the developer and property owner in at least three ways:

- 1) eliminate potentially competitive sites that can diffuse the market for downtown development sites;
- 2) prevent "suburban-style" development that will preclude the development of a downtown on a grid system of block and streets; and,
- 3) ensure a compatible mix of commercial and residential uses that will foster investment.

The DLCD is in the process of developing a model zoning ordinance for small communities (those with a population of less than 10,000) that can assist the city to establish appropriate regulations. The city should consider adoption of a new zoning ordinance that incorporates processes and standards that will promote downtown development.

Platting

To achieve the appropriate development pattern for downtown, the most important zoning regulation that the city could adopt is a requirement that the C-1 zone be subdivided in a grid pattern of streets and blocks to prevent partitioning of parcels into odd sizes or shapes that would prevent the most

desirable downtown development design. This should be done as soon as possible to deter “suburban style” commercial development, which usually occurs as large irregularly shaped parcels with broad setbacks and large amounts of parking in the front yards. This could be accomplished by amending the Zoning Ordinance to include the following:

- 1) establish a minimum parcel size of five acres for partitioning in C-1 zoning, prior to the adoption of a master plan;
- 2) require a master plan to permit partitioning of less than five acres; and,
- 3) establish standards for block sizes and all streets serving the downtown through a master plan.

ROADWAY SYSTEM PLAN

Based on the identified existing and anticipated operational and circulation needs, the roadway system plan was developed. The city’s roadway system plan provides guidance as to how to best facilitate travel within the city by addressing two key issues:

- a roadway functional classification system and corresponding roadway design standards, and
- roadway connectivity, including new and improved streets to meet future capacity, circulation, and safety needs.

Functional Classification

The purpose of classifying roadways is to create a mechanism through which a balanced transportation system can be developed that facilitates mobility for all modes of transportation. A given roadway’s functional classification determines its intended purpose, the amount and character of traffic that it is expected to carry, commitment to serve and promote non-auto travel, and its design standards.

The classification of a given street is intended to convey the requirements, capabilities, and capacity of each respective roadway while recognizing that roadway’s contribution to the overall transportation system. It is imperative that the classification of streets is considered in relation to adjacent properties, the land uses that they serve, and the modes of transportation that can be accommodated. Further, each street must be appropriately designed so as to accommodate local travelers (i.e., passenger cars, heavy trucks, pedestrians, and bicycles). The public right-of-way must also provide sufficient space for utilities to serve adjacent land uses.

The City of Boardman Comprehensive Plan, through Chapter 12, identified the need to develop an interim and ultimate roadway classification system. The intent of the interim plan was to provide adequate capacity and reasonable levels of service for low volume conditions through use of relatively narrow streets and simplified traffic control devices. The intent of the ultimate plan was to provide for a more robust roadway network capable of handling increased traffic volumes through a system of arterials and intersection improvements. The comprehensive plan did not, however, present a functional classification system for roadways within the city.

The City of Boardman Transportation System Plan incorporates five functional categories: freeways, arterials, minor collectors, neighborhood collectors, and local streets.

Freeways

Freeways are limited-access facilities that primarily serve motorized vehicle traffic travelling through an area for statewide or interstate travel purposes. Freeways offer the highest level of mobility and, consequently, tend to be high-speed facilities with widely spaced access points (in the form of interchanges), medians, and limited or no access for pedestrians and bicyclists.

Arterials

Arterials are roadways that are primarily intended to serve traffic entering and leaving the urban area. Arterials tend to carry significant intra-urban travel between downtown areas and outlying residential areas. While arterials may provide access to adjacent land, that function is subordinate to the travel service provided to major traffic movements. Arterials are the longest distance, highest volume roadways within the urban growth boundary. Although focused on serving longer distance trips, pedestrian and/or bicycle activities often are associated with the arterial streetscape.

Minor Collectors

Collector facilities link arterials with the local street system. As implied by their name, collectors are intended to collect traffic from local streets and sometimes from direct land access, and channel it to arterial facilities. Collectors are shorter than arterials and tend to have moderate speeds.

For the purposes of TPR compliance, all collector facilities in this TSP are considered to be Minor Collectors. (The TPR requires that sidewalks and bikelanes be provided on all Major Collectors within a given Urban Growth Boundary).

Neighborhood Collectors

Neighborhood collector facilities are a subset of collectors serving the objective of penetrating local neighborhoods to provide direct land access service and traffic circulation. These facilities tend to carry lower traffic volumes at slower speeds than typical collectors. On-street parking is more prevalent and bike facilities may be exclusive or shared roadways.

Local Streets

Local streets are primarily intended to provide access to abutting land uses. Local street facilities offer the lowest level of mobility and consequently tend to be short, low-speed facilities. As such, local streets should primarily serve passenger cars, pedestrians, and bicyclists; heavy truck traffic should be discouraged. On-street parking is common and sidewalks are typically present.

Using the five roadway designations described, all current and future streets within the city have been designated in the Functional Classification Plan presented in Figure 11. As identified in Figure 11, the major roadway designations are summarized below.

Freeways

- Interstate 84

Arterials

- Main Street (between Columbia Avenue and Kunze Road)
- Columbia Avenue (between North Main Street and urban growth boundary)
- Wilson Road
- Olson Road (between Marine Drive and Kunze Road)
- Laurel Road (from curve south of interchange ramp north to Columbia Ave.)

Figure 11
Roadway Network and Functional Classification System

Minor Collectors

- Marine Drive
- North Front Street
- North Main Street (between Columbia Avenue and Marine Drive)
- West 1st Street (between North Front Street and Boardman Avenue)
- East 1st Street (between North Front Street and Boardman Avenue)
- Future Boulevard (between Smith Road and Olson Road)
- Laurel Road (south from the curve located south of the interchange ramp)

Neighborhood Collectors

- Paul Smith Road (south to Kunze Road)
- Faler Road (between the future east-west roadway and Wilson Road)
- Willow Fork Drive
- Kinkade Road
- Locust Road
- Anderson Road
- Kunze Road
- Boardman Avenue
- Puskarich Avenue
- Columbia Avenue (west of North Main Street)

Local Streets

The remaining roads in the city are designated as local streets.

New Roadways

As part of the TSP development process, conceptual alignments for future collector roadways were identified as shown in Figure 11. The purpose of identifying these potential future roadways was to:

- provide for appropriate future roadway infrastructure to serve areas with future development potential;
- increase the connectivity of future development with respect to existing neighborhoods and infrastructure;
- provide access to property through multiple locations; and,
- provide the city with guidelines for roadway alignments as future development occurs.

The need for the facilities identified in Figure 11 will be driven by future development within the city's urban growth boundary. *It should be stressed that the location of the potential new roadways is approximate and that the actual roadway alignment will need to be determined based on identified constraints and specific development plans for individual areas.*

Street Design Standards

Street design standards are based on the functional and operational characteristics of streets such as travel volume, capacity, operating speed, and safety. They are necessary to ensure that the system of streets, as it develops, will be capable of safely and efficiently serving the traveling public while also accommodating the orderly development of adjacent lands.

Figure 12 presents typical cross sections for the various roadways identified in the functional classification system. The typical roadway cross sections comprise the following elements: right-of-way, number of travel lanes, bicycle and pedestrian facilities, drainage, and optional amenities such as landscape strips. The cross sections illustrated in Figure 12 are intended for planning and design purposes for new road construction as well as for those locations where it is physically and economically feasible to improve existing streets.

The typical cross sections present standards for roadways that allow for flexibility in defining the actual roadway width through optional features such as landscape strips and on-street parking. The use of on-street parking and planter strips would be subject to the discretion of the City of Boardman which would determine whether such amenities are required on a given street (in the case of the Interstate 84 interchange area, appropriate representatives from ODOT would have ultimate authority over the roadway design).

Table 7 summarizes the street design standards for the different roadway classifications.

**TABLE 7
STREET DESIGN STANDARDS**

| Classification | Cross Section | ROW | Turn Lanes | Travel Lanes | Bike Lane | Side-walks | On-Street Parking | Landscape Strip |
|--|---------------|------------|------------|--------------|------------|------------|-------------------|-----------------|
| Arterial – Main Street | 2 lanes | 60-80 feet | 12 feet | 12 feet | No | 10 feet | No | 12 feet |
| Arterial – City Developed Alternative | 2 lanes | 80 feet | Yes(a) | 14 feet | 8 feet(a) | 10 feet | No | No |
| Downtown Collector | 2 lanes | 60-80 feet | No | 11-12 foot | 5-6 feet | 6-9 feet | 7 feet | 4-5 feet (b) |
| Collector – City Developed Alternative | 2 lanes | 75 feet | Yes(a) | 12 feet | 8 feet (a) | 5 feet | 7 feet | No |
| Local Street – Option 1 | 2 lanes | 60 feet | No | 10 feet | No | 6 feet | 8 feet | 5 feet (c) |
| Local Street – Option 2 | 2 lanes | 60 feet | No | 9 feet | No | 6 feet | 7 feet | 6.5 feet (c) |
| Alleys | 1-2 lane | 20 feet | No | 15-20' | No | No | No | No |
| Multi-Use Path | -- | 8-10 feet | No | No | 8-10 feet | 8-10 feet | No | No |

The optional availability of streetscape treatments such as landscape strips, pedestrian refuges and bike lanes may be valuable to the city in the future as an instrument by which the character of roadways can be influenced. The City of Boardman would also have the prerogative of allowing narrower local streets in their development projects, thereby creating an ability to reduce impervious surface and provide site-specific standards for roadway improvement projects that reflect local conditions. Narrower streets may also be desirable in some neighborhood areas for use as a deterrent to through or speeding traffic on local streets. It should be noted that ODOT would have the ultimate authority as to which improvements are made along Main Street in the area of the Interstate 84 interchange.

Under the street standards, arterial streets will have a right-of-way requirement of 80 feet. The street cross-section will consist of two 12-foot travel lanes, an optional center left-turn lane, and appropriate

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- (a) Turn lanes at intersections utilizing the 28' median (21' for collector) that includes turns lanes, 8' multi-use path, and 10' stormwater/utility strip on both sides of multi-use pathway.
 - (b) 5 foot paver/planter strip.
 - (c) 5 foot stormwater/utility strip on outside of sidewalk (at edge of ROW)

pedestrian and bicycle facilities as identified in the Pedestrian and Bicycle System Plan presented later in this section. Provision of landscape strips will be made at the discretion of the city.

Minor collector streets will have a right-of-way requirement of 70 feet and a required cross-section consisting of two 12-foot wide travel lanes and an optional center left-turn lane. Sidewalks and bike lanes will not be required where a multi-use path is available, in accordance with the Pedestrian and Bicycle System Plan presented later in this section. Optional landscape strips and on-street parking may also be required at the discretion of the city. It should be noted that a minimum ten-foot landscape strip will be required on one side of the road in conjunction with each multi-use path.

Figure 12
Street Cross-Sections

Figure 12
Street Cross-Sections

Neighborhood collector streets will have a right-of-way requirement of 60 feet and a required cross-section consisting of two 12-foot wide travel lanes. No bike lanes will be required; however, landscape strips and on-street parking will be required at the discretion of the city.

Local streets will have a right-of-way requirement of 50 feet, a 32-foot wide paved cross section, and five-foot wide sidewalks. Requirement of adjacent landscape strips may be made at the discretion of the city.

Requirement of adjacent landscape strips will be made at the discretion of the city. The landscaping strips are located between street and sidewalk on arterial and collector facilities to provide a buffer between cars and pedestrians. The provision of a landscaping strip between the street and sidewalk will allow for an area with no obstructions or impediments that would prevent or discourage pedestrian movements. Further, the landscape strips can be used for the location of street signs, power poles, utility easements, etc. to provide for unimpeded pedestrian movements.

Comments from the City of Boardman revealed that, for maintenance purposes, it is desirable to place landscape strips next to the adjacent property line rather than between the roadway and the sidewalks. The adjacent resident maintains the landscaping as part of their property (e.g., lawns, etc.). Further, city comments revealed that a minimal amount of impeding objects will occur on local streets. For this reason, landscaping strips will be placed behind sidewalks.

Guidelines for Arterial/Collector Intersection Improvements

In addition to roadway cross-section standards, the city should adopt standards for intersection improvements. As intersection improvements are made at arterial/collector intersections in the city, the following general guidelines are suggested for consideration:

- maintain adequate signing of side-streets (stop signs and visible street signs);
- provide street lighting at intersections to increase visibility; and,
- provide proper channelization (striping, raised medians, etc.) of movements to/from the arterial.

Relation to Development Activities

At the time development activities are proposed, the City of Boardman, when appropriate, will require half-street improvements as part of a given project's conditions of approval. The conditions of approval should require that roadways adjacent to development activities be constructed to comply with the street standards presented in this TSP. Section 7, **Policies and Land Use Modifications**, provides sample development review guidelines that are recommended for adoption by the city.

Relation to County Facilities

The Morrow County Transportation System Plan (Reference 3) identified roadway standards for county facilities. The county's right-of-way requirement for Rural Access Roadways is 60 feet as compared to the 50 foot requirement identified for local streets in this TSP. Although the county's Rural Access Roadways may be applicable to some roadways within the City of Boardman Urban Growth Area, the roadway standards contained in the City of Boardman TSP do not conflict with the county's standards. The county's Rural Access Roadway standards are intended for roads that do not exhibit substantial traffic volumes now but may be expected to expand in the future, hence the additional right-of-way requirement. By comparison, the 50 foot right-of-way required on city roads designated as being local streets reflects the expectation that these roadways will not require additional widening in the long-term future. The city's neighborhood collector designation would be an appropriate counterpart to the county's Rural Access Roadway designation.

Parking Restrictions

To ensure adequate intersection sight distance, curbside parking should be prohibited within 20 feet of the edge of a given intersection.

Access spacing standards for the respective roadway classifications are presented later within this section.

ROADWAY IMPROVEMENT PROGRAM

The required transportation improvements in the City of Boardman over the next 20 years, to meet both short- and long-term needs, are listed below in Table 8. The projects are listed in priority order and have been divided into three time periods; 0 to 5 years, 5 to 10 years, and 10 to 20 years.

**TABLE 8
ROADWAY IMPROVEMENTS**

| Improvement Description | Estimated Cost* | Responsible Jurisdiction |
|--|-----------------|--------------------------|
| Near-Term, High Priority Projects (0-5 years) | | |
| Revise Traffic Control Devices and Improve Pedestrian Crossings at the South Main Street/Wilson Road intersection | \$6,000 | City |
| Re-stripe Main Street to a 3-lane Section and provide pedestrian and bicycle facilities in the Main Street Corridor | \$200,000 | City |
| Main Street Realignment | \$380,000 | City |
| Railroad Overpass (to Marine Drive) | \$3.5 million | city |
| Mid-Term Projects (5-10 years) | | |
| Construct Oregon Trail Boulevard along the BPA Easement | \$3.5 million | Private |
| As Appropriate/Concurrent with Local Development | | |
| Extend Olson Road across Interstate 84 (will not include Interstate ramps) | \$8-10 million | City/ODOT |
| Reduce Vehicular Reliance Through Zoning and Development Code Revisions | Administrative | City |
| Extend NE Boardman Avenue to Olson Road | \$420,000 | Private |
| Provide Strategic Roadway Extensions as Identified in Alternative #12 (extension of Third Street, Second Street, Chaperell Drive, Kinkade Road, and Anderson Road) | Not Estimated | Private |
| Promote Access Management | Administrative | City |
| Implement Transportation Demand Management Measures | Administrative | City |

*Estimated costs are in 1999 dollars and do not include right-of-way acquisition

ACCESS MANAGEMENT STRATEGIES

As the City of Boardman continues to develop, the arterial/collector/local street system will become more heavily relied upon for a variety of travel needs. As such, it will become increasingly important to manage access on the existing and future arterial/collector street system as new development occurs. Access locations on roadway sections need to be properly located to ensure safe and efficient travel along a given transportation facility. Access locations should be placed appropriately to limit potential conflicting turning movements, weaving maneuvers over short distances, and congestion along facilities.

The Oregon Transportation Planning Rule (TPR) defines access management as a set of measures regulating access to streets, roads, and highways, from public roads and private driveways. The TPR requires that new connections to arterials and state highways be consistent with designated access management categories. One objective of the Boardman TSP was to develop an access management

policy that maintains and enhances the integrity (capacity, safety, and level-of-service) of the city's streets. From a policy perspective, the Oregon Department of Transportation has legal authority to regulate access points along Interstate 84 within the city's urban growth boundary. The City of Boardman will manage access on other collector and local streets within its jurisdiction to ensure the efficient movement of traffic and enhance safety.

Access management standards vary depending on the functional classification and purpose of a given roadway. Roadways in the upper echelon of the functional classification system (i.e. arterials) tend to have stringent spacing standards, while facilities ranked lower in the functional classification system allow more closely spaced access points. The following discussion presents the hierarchical access management system for roadways in Boardman.

ODOT Access Management Standards

The 1999 Oregon Highway Plan specifies an access management classification system for state facilities and has classified Interstate 84 as being of an *Interstate Level of Importance*. The recently adopted update to the Oregon Highway Plan did not change the *Interstate* designation. Although Boardman may designate state highways as arterial roadways within their transportation system, the access management categories for these facilities should generally follow the guidelines of the Oregon Highway Plan.

Impact on Local Development Activities

Future developments along Interstate 84 (zone changes, comprehensive plan amendments, redevelopment, and/or new development) will be required to meet the 1999 Oregon Highway Plan Level of Importance and Access Management policies and standards.

To protect the function of the I-84 Interchange, access management will need to be evaluated in the future. This should include evaluation of access spacing, turning movements, turning movements within ¼ mile of the interchange, and opportunities for consolidating existing access.

As shown in Table 9, within urban or urbanizing areas, a new development will need to maintain a 3-mile spacing (centerline-to-centerline) between interchanges and no private access points or traffic signals will be allowed. Full median control is required on the interstate.

**TABLE 9
INTERSTATE HIGHWAY ACCESS MANAGEMENT STANDARDS***

| Classification | Intersection | | | | Signal Spacing | Median Control |
|----------------|--------------|---------|---------------|----------------|----------------|----------------|
| | Public Road | | Private Drive | | | |
| | Type | Spacing | Type | Spacing | | |
| Interstate | Interchange | 3 miles | None | Not Applicable | None | Full |

*Source: 1999 Oregon Highway Plan, Appendix C, Table 12

The following table shows the access spacing standards for (applicable Boardman) interchanges as discussed in the 1999 Oregon Highway Plan Goal 3, Policy 3C: Interchange Access Management Areas.

TABLE 9A
Minimum Spacing Standards Applicable to Freeway Interchanges with Two-Lane Crossroads

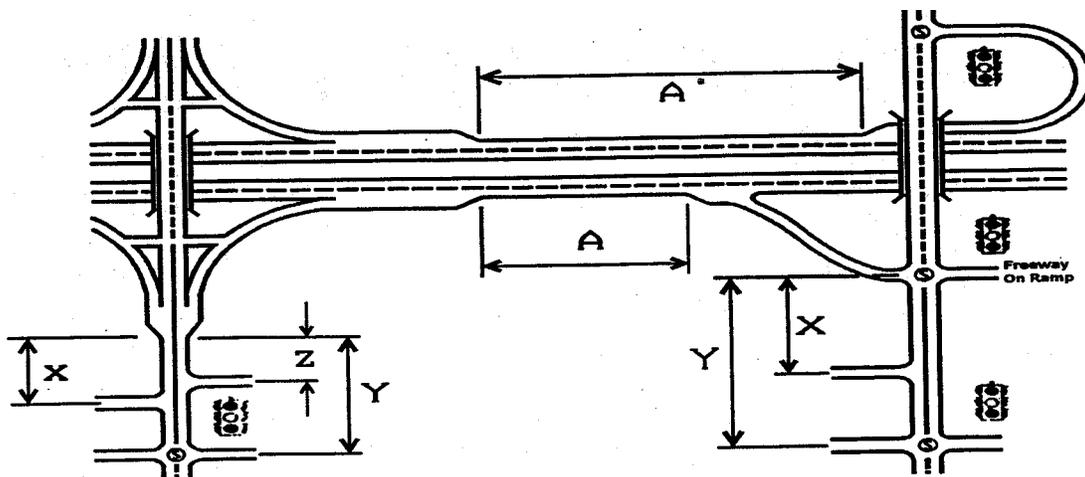
| Category of Mainline | Type of Area | Spacing Dimension | | | |
|----------------------|--------------|-------------------|---------------------|---------------------|--------------------|
| | | A | X | Y | Z |
| Freeway | Urban | 1 mi. (1.6 km) | 1320 ft. (400 m) | 1320 ft. (400 m) | 990 ft. (300 m) |

A = Distance between the start and end of tapers of adjacent interchanges

X = Distance to the first approach on the right; fight in/right out only

Y = Distance to first major intersection; no left turns allowed in this roadway section

Z = Distance between the last right in/right out approach road and the start of the taper for the on-ramp



In addition to the standards shown in Table 9, according to the 1999 Oregon Highway Plan, the impact in traffic generation from land uses must allow a major street level of service "C" to be maintained for interstate segments within the development's influence area along the highway. The influence area is defined as the area in which the average daily traffic is increased by 10 percent or more by a single development, or 500 feet in each direction from the property-line of the development (whichever is greater).

The existing legal driveway connections and public street intersection spacing are not required to meet the spacing standards immediately upon adoption of this transportation system plan. However, existing permitted connections not conforming to the design goals and objectives of the roadway classification will be upgraded as circumstances permit and during redevelopment. At any time, an approach road may need to be modified due to a safety problem or a capacity issue that exists or becomes apparent. By statute, the City of Boardman and ODOT are required to ensure that all safety and capacity issues are addressed. Proposed land use actions that do not comply with the designated

access spacing policy will be required to apply for an access variance from the City of Boardman and/or ODOT.

Variance Process

Access variances may be provided to parcels whose highway frontage, topography, or location would otherwise preclude issuance of a conforming permit and would either have no reasonable access or cannot obtain reasonable alternate access to the public road system. In such a situation, a conditional access permit may be issued by ODOT and the City of Boardman for a single connection to a property that cannot be accessed in a manner that is consistent with the spacing standards.

The permit may carry a condition that the access may be closed at such time that reasonable access becomes available to a local public street. Approval conditions might also require a given land owner to work in cooperation with adjacent land owners to provide either joint access points, front and rear cross-over easements, or a rear-access upon future redevelopment. In addition, approval of a conditional permit might require ODOT-approved turning movement design standards to ensure safety and managed access. Under special circumstances, ODOT may purchase property in order to prevent safety conflicts.

City Standards

Table 10 identifies the minimum public street intersection and private access spacing standards for the City of Boardman roadway network as they relate to new development and redevelopment. Table 11 identifies standards for private access driveway widths. In cases where physical constraints or unique site characteristics limit the ability for the access spacing standards listed in Tables 10 and 11 to be met, the City of Boardman should retain the right to grant an access spacing variance. County facilities within the city’s urban growth boundary should be planned and constructed in accordance with these street design standards.

**TABLE 10
MINIMUM INTERSECTION SPACING STANDARDS***

| Functional Classification | Public Street (feet) | Private Access Drive (feet) |
|---------------------------|----------------------|-----------------------------|
| Arterial | 600** | 300 |
| Collector | 300 | 75 |
| Neighborhood Collector | 200 | 50 |
| Local | 150 | 15 |

*Spacing measured from centerline to centerline

** To promote circulation in the downtown, public streets can be spaced at 200-foot intervals.

**TABLE 11
PRIVATE ACCESS DRIVEWAY WIDTH STANDARDS**

| Land Use | Minimum (feet) | Maximum (feet) |
|---------------------------|----------------|----------------|
| Single Family Residential | 12 | 24 |
| Multi-Family Residential | 24 | 30 |
| Commercial | 30 | 40 |
| Industrial | 30 | 40 |

Management Techniques

From an operational perspective, the City of Boardman should consider implementing access management measures to limit the number of redundant access points along roadways. This will enhance roadway capacity and benefit circulation. Improvements that should be considered include:

- planning for and developing intersection improvement programs in order to regularly monitor intersection operations and safety problems;
- purchasing right-of-way and closing driveways; and
- installing positive channelization and driveway access controls as necessary.

Enforcement of the access spacing standards should be complemented with the availability of alternative access points. Purchasing right-of-way and closing driveways without a parallel road system and/or other local access could seriously effect the viability of the impacted properties. Thus, if an access management approach is taken, alternative access should be developed prior to “land-locking” a given property. Specifically, provision of key collector facilities as identified in Figure 11 would provide alternative access to land adjacent to major roadways such as Interstate 84 and Main Street; thereby reducing or eliminating the need to provide new direct highway access to multiple properties.

As part of every land use action, the City of Boardman should evaluate the potential need for conditioning a given development proposal with the following items, in order to maintain and/or improve traffic operations and safety along the arterial and collector roadways.

- Crossover easements should be provided on all compatible parcels (considering topography, access, and land use) to facilitate future access between adjoining parcels. Figure 13 illustrates how this process would, in the long run, facilitate compliance with access management objectives.
- Conditional access permits should be issued to developments having proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing driveways. The actual access spacing policy will be developed later as part of the TSP process.
- Right-of-way dedications should be provided to facilitate the future planned roadway system in the vicinity of proposed developments.
- Half-street improvements (sidewalks, curb and gutter, bike lanes/paths, and/or travel lanes) should be provided along site frontages that do not have full-buildout improvements in place at the time of development.

Figure 13
Example of Crossover Easements and Conditional Access Policy/Process

As suggested by Figure 13, using these guidelines, all driveways and roadways along the highway will eventually comply with the access spacing policy set for a particular segment of roadway as development and redevelopment occurs in the study area. It should be noted that not every parcel can or should be addressed through the process illustrated in Figure 13. The topography of the parcel, type of proposed or adjoining use, and/or highway frontage may preclude a development from using consolidated or crossover access points (e.g., consolidating access for a commercial business and an industrial or agricultural land use would be inappropriate).

PEDESTRIAN SYSTEM PLAN

Ideally, pedestrian facilities should provide connectivity between major activity centers, such as housing, commercial areas, schools, the post office, and recreation areas. The city has generally provided such connections in residential areas but additional facilities are desirable to serve various locations such as the Riverside High School and the Port of Morrow.

The pedestrian and bicycle system plan is shown in Figure 14. The key objective in the development of the pedestrian and bicycle system plan was to provide connectivity between major activity centers. Within the City of Boardman, these activity centers primarily include the downtown commercial area north of Interstate 84 (North Main Street), Riverside High School, the Sam Boardman Elementary School on Wilson Road, the parks along the Columbia River, the post office, recreation areas, and the proposed Morrow County Heritage Trail.

Sidewalk Improvements

As indicated in Figure 14, Boardman's existing sidewalks are generally provided within residential areas. Under the pedestrian component of the plan, sidewalks would be provided along all major roadways not served by multi-use paths in an effort to continue the development of a comprehensive sidewalk system throughout the city. It is essential that existing sidewalks be connected to new sidewalks as new developments are constructed or as road improvements are made. Sidewalks should be included in any full reconstruction of arterials or collectors. Provision of sidewalks along one or both sides of key local roads is also encouraged.

Key elements of the pedestrian plan include:

- the provision of a continuous sidewalk network in existing multi-family and single-family developments;
- sidewalks along Boardman Avenue, East First Street, East Second Street, and the school's north access drive to provide better pedestrian access to Riverside High School from the downtown and the northeast portions of the city;
- provision of sidewalks linking the western portions of Columbia Avenue and Boardman Avenue;
- provision of sidewalks along the entire length of Faler Road, Kinkade Avenue, Locust Road, and Willow Fork Drive;
- provision of sidewalks along Olson Road (north of Columbia Avenue) and Puskarich Avenue to link multi-use paths on Marine Drive and Columbia Avenue with residential developments;
- provision of appropriate sidewalk both to and within all new development in the city; and,
- provision of new or extended multi-use path facilities.

Figure 14
Pedestrian and Bicycle System Plan

Multi-Use Facilities

Multi-use paths located along Main Street and Wilson Road have significantly enhanced the city's pedestrian and bicycle network; however, there is still a lack of sidewalks and pedestrian crossings along several key roadway facilities in the study area. As illustrated in Figure 14, in addition to maintaining the existing path network, the multi-use path system is to be extended to serve areas including Wilson Road, South Main Street, Paul Smith Road, Olson Road, North Front Street, Columbia Avenue, and Laurel Road. Further, as the alignment of the proposed Morrow County Heritage Trail is better defined, connections should be made with this facility to provide pedestrian/bicycle access along the Columbia River.

By extending the multi-use path system to encompass the areas designated in Figure 14, a strong base network of pedestrian/bicycle connections will be available to the community. This base network can then be tapped by local sidewalk facilities to provide a more complete pedestrian and bicycle system in an environment free of vehicular traffic. The cross sections of these multi-use pathways would consist of 10-foot wide paved paths separated from the roadway by a minimum of 10-feet (accomplished through use of a 10-foot wide landscaping strip would provide the necessary separation).

It should be noted that multi-use paths are especially effective in undeveloped areas. As properties develop/redevelop at urban densities in Boardman, the city should consider replacing the multi-use paths with sidewalks on all streets and bicycle lanes on arterial and collector streets. In addition, sidewalks and bicycle lanes, where appropriate, should be provided on all facilities in the downtown as it develops along South Main Street.

Other Pedestrian Amenities

In addition to providing the pedestrian system components, there are several other potential enhancements that should be considered along arterial and collector streets, including:

- provision of additional street lighting to provide clear visibility of pedestrians at night;
- provision of curb extensions that reduce the exposed crossing distance pedestrians must walk; and
- use of median treatments that provide pedestrians with a “safe-haven” at a mid-crossing.

Provision of sidewalks along both sides of key collector and local roads not specifically identified in this plan is also encouraged.

Table 12 provides a summary of pedestrian and bicycle system projects.

Many of the sidewalk and multi-use facilities presented in Table 12 could be completed incrementally as part of local development projects. Creating “partnership programs” with landowners and businesses to construct such facilities would be one method by which individual projects could be brought to fruition in a timely manner. The pedestrian facilities could be constructed as adjacent properties develop, thereby ensuring alternative modes of access to various land uses. The city would however, need to develop a reasonably equitable methodology of assessing the extent of facilities that individual developers would be required to provide.

**TABLE 12
PEDESTRIAN AND BICYCLE SYSTEM IMPROVEMENTS**

| General Alignment | Project Start/End Point | Improvement Description | Estimated Cost* | Responsible Jurisdiction |
|--|---|----------------------------|--------------------------------|--------------------------|
| Near-Term, High Priority Projects (0-5 years) | | | | |
| Main Street | Interstate 84 to Marine Drive | Sidewalk and Bicycle Lanes | \$46,000 | City |
| Mid-Term Projects (5-10 years) | | | | |
| Future Boulevard | Paul Smith Road to Olson Road | Sidewalk and Bike Lanes | Included in cost of new street | Private |
| Marine Drive | Main Street to Olson Road | Multi-use Path | \$27,500 | City |
| Columbia Ave. | Main Street to east UGB | Multi-use Path | \$56,000 | City |
| Long-Term Projects (10-20 years) | | | | |
| Olson Road | Kunze Road to Marine Drive | Sidewalk and Bike lanes | \$230,000 | City |
| Concurrent with Local Development | | | | |
| Boardman Ave. | Riverside High School to Olson Road | Sidewalk | \$60,000 | Private |
| Front Street | West of W. First Street to Olson Road | Sidewalk | \$80,000 | Private |
| Second Street | Boardman Avenue to Front Street | Sidewalk | Not Estimated | Private |
| Third Street | Boardman Avenue to Front Street | Sidewalk | Not Estimated | Private |
| Wilson Road | West of Faler Road and East of Anderson | Multi-use Path | \$21,500 | Private |
| Smith Road | Future Boulevard to Kunze Road | Sidewalk or Multi-use Path | \$25,000 | Private |

*Estimated costs are in 1999 dollars and do not include right-of-way acquisition

PUBLIC TRANSPORTATION SYSTEM PLAN

Transit service provides mobility to community residents who do not have access to automobiles and provides an alternative to driving for those who do. Transit service should meet the needs both of travelers within the city and those of travelers making trips outside of the community.

The *1997 Oregon Public Transportation Plan* identifies minimum level of service standards for rural and frontier communities such as the City of Boardman (Reference 4). Under the *1997 Oregon Public Transportation Plan*, public transportation in small communities and rural areas in the year 2015 (under Level 3-Respond to State and Federal Mandates and Goals) should:

- Provide public transportation service to the general public based on locally established service and funding priorities;
- Provide an accessible ride to anyone requesting service;
- Provide a coordinated centralized scheduling system in each county and at the state level;
- Provide phone access to the scheduling system at least 40 hours weekly between Monday and Friday; and
- Respond to service requests within 24 hours (not necessarily provide a ride within 24 hours).

Service Enhancements

Overall, the City of Boardman should continue to monitor the adequacy of the transit service provided to the community and work with the county to extend service as necessary. The local transit program

should also seek to meet the 2015 minimum level of service standards identified in the *1997 Oregon Public Transportation Plan*. Three improvement strategies are identified below for further consideration.

Increase Public Awareness

Both the city and the county should promote a greater public awareness of the available public transit services and the need for additional volunteer dispatchers and drivers. Greater awareness of the service and its needs will likely result in increased usage and availability. Provision of better recognition for drivers and/or driver meetings would be an additional avenue by which to encourage more volunteer participation in the program.

Coordinate Trips

Consideration should be given to coordinating trip requests to other neighboring communities and areas outside the county such as Hermiston or the Tri-Cities. For example, a given day of the week could be designated for out-of-town trips. This would then allow the city's residents to visit specialized medical service providers or satisfy other needs on a scheduled basis. Similarly, weekly shopping trips to Hermiston or other communities could be established to allow community members to purchase commodities not available through local commercial and service providers.

A recent survey conducted by transportation provider staff suggests that coordination of medical visits could be difficult due to the unpredictable nature of office visits, though the need for such a service should be more closely examined. Assuming that the demand for such a service exists, a scheduled weekly service would lend itself to greater coordination with service providers in the neighboring communities of Irrigon and Umatilla.

Close coordination between the City of Boardman and adjacent communities is also encouraged and should increase ridership and efficiency through better use of the resources available. Such coordination could prove to be especially fruitful if the weekly trips previously discussed are established as a joint community service. Coordinated trips to local community events would likely generate significant interest. Ultimately, if an increased demand for service can be established and documented, additional resources (i.e. funding, equipment) may be successfully pursued through grant applications or other alternative financing sources.

Provide Commuter Service

It is recommended that a carpool or vanpool service be provided for people who live in Boardman and work in neighboring communities. Provision of a vanpool and/or carpools to major employers in the area could help to reduce the number of single occupant vehicle commute trips from Boardman and help the community to achieve transportation demand management (TDM) objectives.

Vehicle Replacement

The Morrow County Special Transportation Program replaces vehicles on an as-needed basis. No specific plans to replace the current vehicles in use in the City of Boardman are in place. The county has budgeted to replace one vehicle in 1999 though that will not necessarily affect the vehicles in Boardman. The county is pursuing additional funding for vehicles and has, through the Region 5 Public Transit Division, submitted a grant application that would allow the program to purchase a new modified van in 2001 and a small bus in 2003. In addition, a new bus barn would be built somewhere in the county if the grant were to be approved. The City of Boardman should support the Morrow County Special Transportation Program in its pursuit of additional vehicles and funding.

MARINE SYSTEM PLAN

As previously noted in the **Existing Conditions** section, the Columbia River borders the City of Boardman to the north and serves as a means of both recreational and freight transportation. The city's public marine facility and the Port of Morrow are capable of accommodating future expansion and can be expected to continue to grow with the surrounding community, though no formal expansion plans have been identified to date. The City of Boardman should actively support the continued presence and operation of both the Port and the recreational boat launch as effective means of transportation. The creation of multi-use paths and other facilities that promote the multi-modal use of the recreational areas along the shore of the Columbia River should be encouraged.

RAIL TRANSPORTATION SYSTEM PLAN

Freight rail service will continue to be a prominent component of the city's transportation system. Union Pacific's main line through the city is expected to serve as a major western freight hub for the foreseeable future. Given that it is highly unlikely that the Union Pacific's mainline between the Pacific Northwest and Chicago would be abandoned; there is no potential for rail banking or alternative uses.

Future development in the Port of Morrow's industrial area should be planned to interface with the adjacent rail system to promote the safe and efficient transportation of freight. It should be noted that although the Port of Morrow has currently rail spurs, the rail line does not serve the port's barge container facility located north of the tracks. According to ODOT's Rail Section, the port plans to extend a spur line into the container facility. This extension would require the reconstruction of the existing bridge that connects the city to the container and wood chip facilities because there is insufficient space under the existing structure to accommodate the access track.

There is some potential for passenger service to be reinstated sometime in the future if funding resources can be found to support the train. At the time this TSP was prepared Amtrak and the Union Pacific Railroad had no plans to reintroduce passenger service on this line in the foreseeable future. If new service were to be introduced, it would probably be operated by a long distance train running between Portland and Salt Lake City, Denver or Chicago. A new passenger train might be configured as a package/express train carrying a few passenger coaches.

AIR TRANSPORTATION SYSTEM PLAN

Existing regional air service for passengers and freight is provided via a full service commercial airport in neighboring Pendleton and also at the Tri-Cities Airport located in Pasco, Washington. Air transport charter service is also available through the Port of Morrow's airport near Boardman and the Hermiston Municipal Airport. The continued use and appropriate expansion of these facilities is recommended.

PIPELINE SYSTEM PLAN

Existing pipeline facilities should be maintained and enhanced as necessary.

EVACUATION PLAN

The Morrow County Planning Department, in conjunction with several local and state agencies, has developed response plans in the unlikely event of an incident at the Umatilla Ordinance Depot. According to county officials, in the event of an incident at the ordinance depot, area residents will be notified of the event and will have two response options.

The first response option will be to shelter in place. Planning officials indicate that sheltering in place, by sealing up a room, may be safer than trying to evacuate in some instances. If, however, a decision is made by emergency coordinators to initiate an evacuation, the second response option is to conduct

an orderly exodus from affected areas. County planning staff note that it is important for persons in an evacuation area not to enter into an “mindset” with only one course of action because specific evacuation routes are subject to change based on the nature of the emergency and climatic conditions such as temperature and wind speed.

If an evacuation were to be necessary, appropriate directions would be provided by local alarms, changeable message signs, and tone-alert radio. The directions would then instruct persons to a safe destination, potentially involving reception areas that have been designated in the Dalles, Heppner, and Pendleton.

IMPLEMENTATION PLAN

This section has outlined specific transportation system improvement recommendations as well as a corresponding timeline for implementation of the identified improvements. The sequencing plan presented is not detailed to the point of a schedule identifying specific years when infrastructure should be constructed, but rather ranks projects to be developed over 0 to 5 year, 5 to 10 year, and 10 to 20 year horizon periods. In this manner, the implementation of identified system improvements has been staged to spread investment in this infrastructure over the 20-year life of the plan.

The construction of roads, water, sewer, and electrical facilities in conjunction with local development activity should be coordinated if the City of Boardman is to develop in an orderly and efficient way. Consequently, the plans presented in the TSP should be considered in light of developing infrastructure sequencing plans, and may need to be modified accordingly.

SUMMARY

The adoption and implementation of this Transportation System Plan will enable the City of Boardman to rectify existing transportation system deficiencies while also facilitating growth in the study area population and employment levels assumed in this study.

