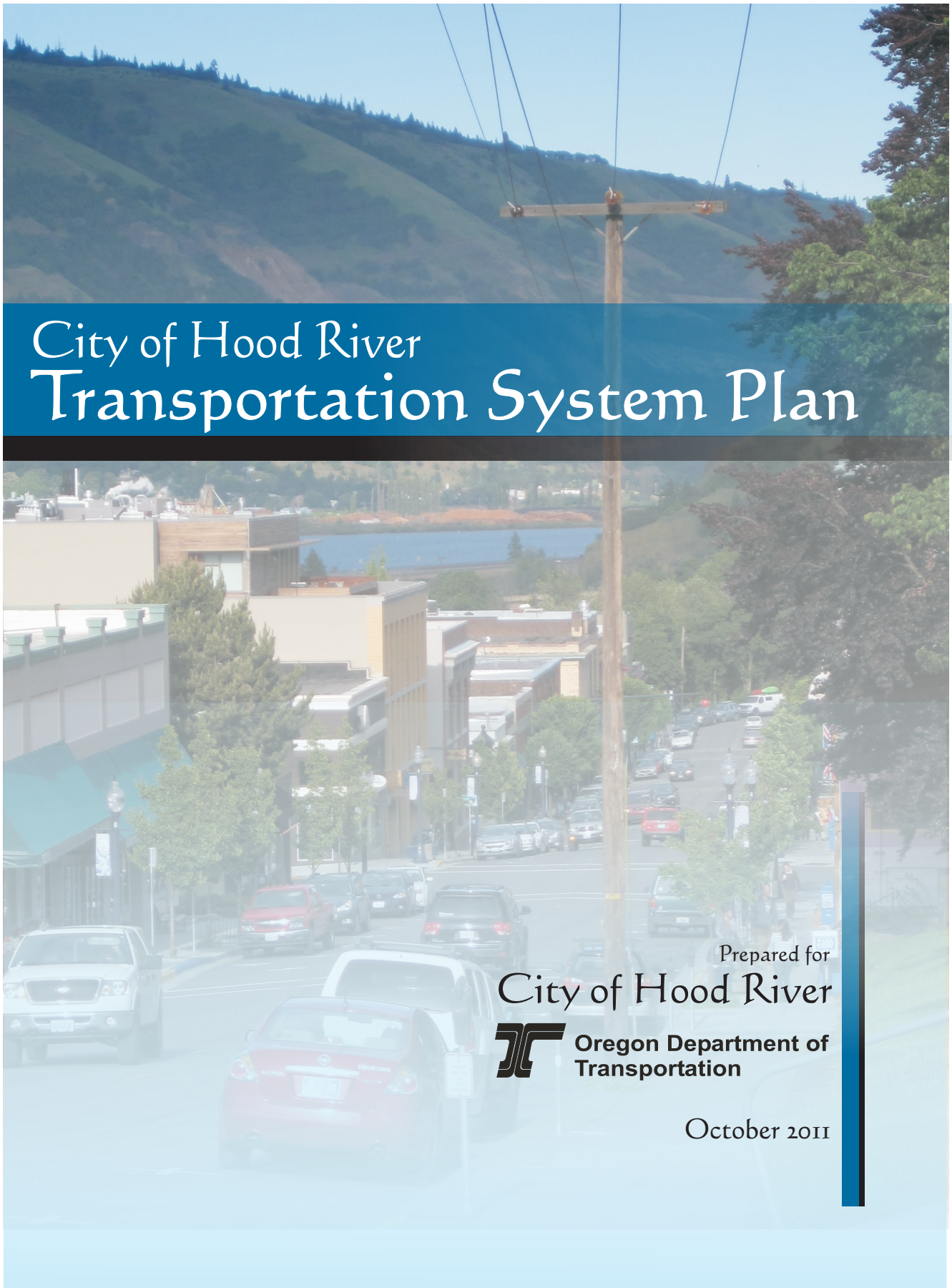

City of Hood River
Transportation System Plan

Prepared for

City of Hood River

Oregon Department of Transportation

October 2011

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Hood River
Transportation System Plan

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This project was partially funded by a grant from the Transportation Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation, and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), local government, and State of Oregon Funds. The contents of this document do not necessarily reflect views or policies of the State of Oregon.

Acknowledgements

This report was prepared through the collective effort of the following people:

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Useful Abbreviations and Acronyms

30 HV – 30th Highest Hourly Volumes
AASHTO – American Association of State Highway and Transportation Officials
ADA – Americans with Disabilities Act
ADT – Average Daily Traffic
ATR – Automatic Traffic Recorder
FHWA – Federal Highway Administration
HCRH – Historic Columbia River Highway
HCM – Highway Capacity Manual
HDM – Highway Design Manual
IAMP – Interchange Area Management Plan
LOS – Level of Service
NTM – Neighborhood Traffic Management
ODOT – Oregon Department of Transportation
OHP – Oregon Highway Plan
ROW – Right of Way
SDC – System Development Charge
TAZ – Transportation Analysis Zone
TDM – Transportation Demand Management
TPR – Transportation Planning Rule
TSM – Transportation System Management
TSP – Transportation System Plan
UGB – Urban Growth Boundary
V/C – Volume to Capacity Ratio
VMT – Vehicle Miles Traveled
VPH – Vehicles per Hour

Chapter 1: Introduction

The City of Hood River, in cooperation with Hood River County and the Oregon Department of Transportation (ODOT), has completed a thorough review of its transportation system with this update to the City's Transportation System Plan (TSP). This TSP serves as the transportation element of the City of Hood River Comprehensive Plan, establishing a system of facilities and services to address local transportation needs through the year 2031.

OAR 660 Division 12 (also referred to as the Transportation Planning Rule, or TPR) requires jurisdictions throughout Oregon to prepare and adopt transportation plans as elements of their comprehensive plans. While cities with populations less than 10,000 may qualify for a whole or partial exemption from this requirement (The City's population was estimated at 6,945 as of the 2010 Census), the City of Hood River has chosen to undertake this planning effort because the plan will serve as a valuable resource for staff, policy makers, and the public. Having an adopted TSP establishes the function, capacity, and location of future transportation facilities, informs the community of the level of investment needed for facilities to support anticipated growth and development, and better positions the City to compete for scarce transportation funding.

TSP Development Process

This plan was prepared with public and agency participation. It was developed in close coordination with City and ODOT staff and received input and direction from a TSP Advisory Committee (TSPAC) comprised of representatives from Columbia Area Transit, the Hood River County School District, Hood River County, the Hood River Valley Residents Committee, the Mid-Columbia Economic Development District, the Port of Hood River, the Historic Columbia River Highway Advisory Committee, the Department of Land Conservation and Development, Hood River Valley Parks and Recreation, the Hood River Downtown and Heights Business Associations, Planning Commission, City Council, and local businesses.

In response to a strong local interest in planning for non-motorized travel needs, a Bicycle-Pedestrian Group was formed as an advisory group to the TSP Advisory Committee. This group

included local residents, as well as representatives from the Hood River Valley Residents Committee and Hood River Valley Parks and Recreation.

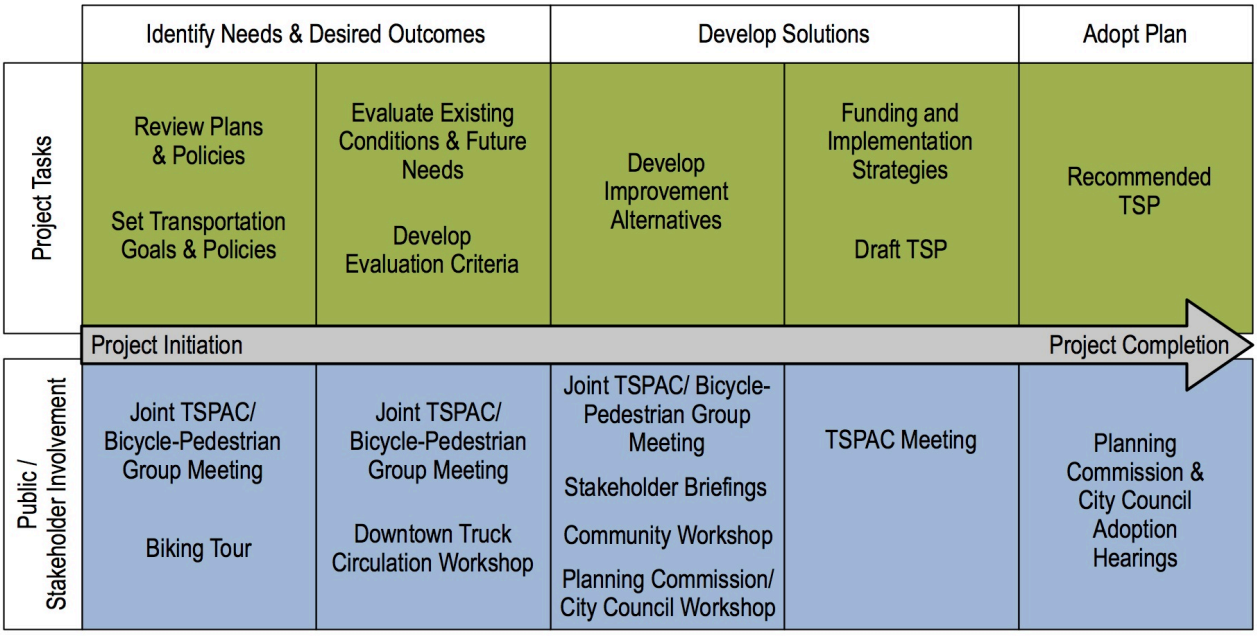
The TSP Advisory Committee met four times during the planning process, including three joint meetings with the Bicycle-Pedestrian Group. Together, participants guided the development of the TSP by reviewing methods and findings, providing input on alternatives considered, and commenting on the draft plan. In addition, the Bicycle-Pedestrian Group was taken on a facilitated biking tour of the city to share firsthand experience of areas where improvements to the bicycle network are needed.

The general public was invited to attend a community workshop where improvement alternatives for all modes of travel were presented and discussed. Their input was received through direct discussions, comment forms, and email. The public was also invited to attend two joint Planning Commission/ City Council work sessions where improvement alternatives, the draft plan, and implementing ordinance amendments were presented and discussed.

Other interest groups were engaged through direct outreach involving targeted stakeholder interviews to review proposed alternatives (Planning Commissioner, Healthy Active Hood River County, Downtown Business Council, local pedestrian advocate, Hood River County Engineer, a local land developer, the Port of Hood River, Heights Business District, downtown business representative, Hood River Valley Parks and Recreation, Hood River County School District) and a workshop with downtown business representatives to discuss truck accessibility for the industrial uses. Healthy Active Hood River County (HAHRC) is a group representing the underserved and the Latino, among other groups. Their response to the greatest need, especially for the Latino's in Hood River was for education about bike and walking safety. The SRTS grants have helped buy bike helmets and provide biker education for a school in Hood River that is a majority Latino. HAHRC believes that safe routes from home to school and from home to shopping is imperative to allow access for the Latino and other underserved populations to healthy lifestyle choices. The City will continue to work with HAHRC on this goal.

The City of Hood River TSP development process is summarized in Figure 1.

Figure 1: City of Hood River TSP Development Process



TSP Organization

This plan includes the actions and strategies needed to meet the City's transportation needs through the year 2031. The background documentation describing the existing transportation system, alternatives considered, and why some recommendations were made is included in the appendix for reference. As part of the TSP development process, amendments to the Hood River Municipal Code were recommended to maintain compliance with state planning regulations and to implement the TSP itself. These recommended amendments are not included as part of the TSP, but are included in the appendix for reference and a separate adoption process if desired.

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Chapter 2: Transportation Goals and Policies

This chapter presents the transportation-related goals and policies for the City of Hood River. These goals and policies were used to guide development of the City of Hood River TSP and can be incorporated into appropriate sections of the City's comprehensive plan.

In spring and summer 1995, citizens of Hood River participated in the development of the Community Vision, which is to be used to guide future planning decisions. The following Community Vision statements express the values and priorities of Hood River citizens now and into the future.

Hood River Community Vision

Hood River Is Attractive, Livable, and Viable

Our Quality Environment Is Preserved and Enhanced

Our Community Identity Is Not Limited by Political or Geographical Boundaries

The Agricultural Land Base Continues To Be Significant

All Aspects of Community Life Are Ethnically Integrated

A Diversity of Cultural Opportunities Is Available

We Live, Work, and Play in a Safe Environment

Housing Is Affordable by All

Clean, Light Industry Provides Family-Wage Jobs

The TSP includes transportation goals with related policies organized under each goal. All goals and policies related to transportation take into consideration the above Community Vision.

GOAL 1: A balanced transportation system.

***POLICIES*:**

1. Develop and implement public street standards that recognize the multi-purpose and shared nature of the street right of way for utility, pedestrian, bicycle, transit, truck, and

auto use and recognize these streets as important to community identity as well as providing a needed service.

Action: *Develop and maintain design standards for motor vehicles, bicycles, pedestrian, transit, and truck facilities in Hood River.*

2. Provide connectivity to each area of the City for convenient multi-modal access.

   Action: *Require the provision of an adequate local street system and trail system for both residential and non-residential development.*

3. Develop and maintain a safe, complete, attractive and efficient system of pedestrian and bicycle ways, including bike lanes, bicycle boulevards, shared roadways, off-street pathways/trails and sidewalks according to the pedestrian and bicycle system maps. Road standards shall address bicycle and pedestrian paths.

   Action: *Refer to the design guidelines set forth in the "Guide to Development of New Bicycle Facilities" (latest edition) as published by the American Association of State Highways and Transportation Officials (AASHTO), the Oregon Bicycle and Pedestrian Plan (ODOT), and other professional publications regarding best practices for bicycle and pedestrian treatments. Coordinate with the County of Hood River, ODOT, and the various Park Departments to develop pedestrian and bike paths. Bicycle and pedestrian facilities should be provided and designed to accommodate the unique requirements of various user groups and trip types (including school trips, commuter trips, neighborhood circulation trips, and recreation trips). Pathways should be located to provide the "shortest path" between origins and destinations. Emphasis should be placed on getting walking and biking trails off of high traffic areas and into natural setting. Accommodate non-automobile movements specifically by bicyclists and pedestrians within neighborhoods. Sidewalks will continue to be the responsibility of fronting property owners. Continue to recognize the importance of walking and bicycling as forms of transportation and recreation.*

4. When development or redevelopment of land occurs, provide bike and pedestrian facilities consistent with standards and policies of this plan. Mandate easements to increase or enhance connectivity for walking paths, trails and off-street biking routes.

GOAL 2: Transportation facilities designed, constructed, and maintained in a manner that enhances Hood River's livability.

***POLICIES*:**

1. Ensure the livability of Hood River through proper location and design of transportation facilities.

   Action: *Design streets and highways to respect the characteristics of the surrounding land uses, natural features, and other community amenities. Recognizing that the magnitude and scale of capital facilities also affect aesthetics and environmental quality, the City will require design plans and impact analyses for all new streets within the City.*

2. Locate and design recreational and bicycle pathways so as to balance the needs of human use and enjoyment, including access to recreational opportunities, with resource preservation in identified Natural Resource areas.

   Action: *Locate pathways to have the lowest level of impact on a stream, sensitive riparian vegetation, or significant tree groves*.

3. Meet the applicable requirements of state and federal resource agencies for wetlands or stream corridors in development of City transportation facilities.

4. Protect neighborhoods from excessive through traffic and travel speeds while providing reasonable access to and from residential areas. Build local and neighborhood streets to minimize speeding.

   Action: *Develop and maintain street design standards and criteria for neighborhood traffic management for use in new development and existing neighborhoods. Measures to be developed may include narrower streets, speed humps, traffic circles, curb and sidewalk extensions, curving streets, diverters and other traffic calming measures.*

5. Require new commercial and industrial development to identify traffic plans for residential streets where increased cut-through traffic may occur due to the proposed development.

   Action: *Where development adds 20 or more through trips in the evening peak hour on a neighborhood route and local street, traffic management plans should be developed to reduce the occurrence of cut-through traffic in residential areas.*

6. Support the preservation of the Historic Columbia River Highway, while ensuring its effective function as a City arterial.

7. Maintain and enhance accessibility to recreational opportunities and tourism attractions.

   Action: *Work toward establishing Hood River as a major junction for long-distance recreational and transportation bicycling by enhancing connections between the Historic Columbia River Highway State Trail, and the Sierra Cascades Trail along OR 35.*

GOAL 3*:* A safe transportation system.

***POLICIES*:**

1. Improve traffic safety through a comprehensive program of engineering, education and enforcement.

2. Design streets to serve the anticipated function and intended uses as determined by the comprehensive plan.

   Action: *Develop and maintain a functional classification system for Hood River, which meets the City's needs and respects needs of other agencies including Hood River County and ODOT.*

3. Enhance safety by prioritizing and mitigating high crash locations within the City.

   Action: *Engineering and construction of facilities will follow standards presented and adopted by the City. City facilities will conform to the Manual of Uniform Traffic Control Devices (MUTCD), as supplemented and adopted by the Oregon Transportation Commission. Identify roadwork sections, bridges and intersections with traffic safety problems and develop a list of projects necessary to eliminate deficiencies. The City should develop a crash record evaluation program working cooperatively with Hood River County and ODOT.*

4. Establish rights-of-way at the time of land division and site development and where appropriate officially secure them by dedication of property.

   Action: *The City shall adopt street right of way standards and design standards.*

5. Designate safe routes to each school and to and from any new residential project.

   Action: *The City shall work with the school district and community to develop and maintain safe bus, pedestrian, and bicycle routes to schools, and update routes for any new residential projects.*

6. Construct pathways only where they can be developed with satisfactory design components consistent with City design standards that address safety, security, maintainability and acceptable pathway use.

   Action: *New construction of pathways along residential rear lot lines will not be encouraged unless a vegetative barrier is developed or no comparable substitute alignment is possible in the effort to connect common attractors or existing segment links.*

7. Provide satisfactory levels of maintenance to the transportation system in order to preserve user safety, facility aesthetics and the integrity of the system as a whole.

8. Establish and implement access management standards for arterial and collector roadways consistent with City, County, and State requirements to reduce conflicts between vehicles and trucks, as well as conflicts between vehicles, bicycles, and pedestrians.

   Actions: *Preserve the functional integrity of the motor vehicle system by regulating access consistent with the TSP. Require each parcel of property to provide and maintain safe access to the public street system. In residential areas, discourage driveway access onto collector streets; provide access primarily by neighborhood or local streets. For all land uses, access should be taken from the street of lower functional classification where access to multiple streets is available. Where access spacing standards cannot be met, consider alternatives such as combining multiple points of access, requiring the establishment of cross-over easements in order to consolidate access, or developing frontage drives and roadways.*

9. Meet or move in the direction of ODOT access management spacing standards for access along US 30, OR 281, and interchange crossroads.

10. Ensure adequate access for emergency service vehicles is provided throughout the City.

GOAL 4: An efficient transportation system that reduces the number of trips made by single occupancy vehicles and limits congestion.

POLICIES:

1. Support trip reduction strategies developed regionally, including employment, tourist and recreational trip programs.

Action: *Explore opportunities to provide bicycle and pedestrian travel across the Columbia River.*

2. Encourage trip reduction strategies and programs that reduce automobile use during peak travel periods.

   Action**:** *Place an emphasis on walking and biking facilities that connect parks, schools, community centers, and neighborhoods.*

3. Adopt the highest applicable (most restrictive) access management categories consistent with existing or planned adjacent land uses, to reduce congestion and intermodal conflicts.

4. A minimum level of service (LOS) D on transportation systems serving new developments is desired on streets and signalized and unsignalized intersections. Level of service shall be based on the most recent edition of the Highway Capacity Manual. Where a facility is maintained by the County or ODOT, the more restrictive of the standards should apply.[1]

5. Plan for a coordinated traffic signal system and work with operating agencies to regularly review and optimize signal timing.

6. Advocate for expanded local transit services to increase transit ridership and help reduce traffic congestion.

   Action**:** *Advocate for bus service improvements needed to meet transit and transportation demand management policies.*

   Action**:** *Advocate for the development of future park and ride locations.*

GOAL 5: Transportation facilities, which are accessible to all members of the community and reduce trip length.

POLICIES:

1. Construct transportation facilities to meet the requirements of the Americans with Disabilities Act.

[1] An exception to this requirement will be allowed for the intersection on 2nd Street at Cascade Avenue.

2. Develop neighborhoods and local connections for all modes of travel to provide adequate circulation in and out of the neighborhoods.

   Action: *Work toward the eventual connection of streets identified in the TSP as funds are available and opportunities arise. Provide bicycle and pedestrian connections in areas where connectivity is needed but access for all modes not feasible or is not appropriate.*

3. The City will use public rights of way for bicycle and pedestrian connections between neighborhoods and shopping areas.

4. Prioritize sidewalk snow removal and sanding to maintain walkable routes through the city.

GOAL 6: Transportation facilities, which provide efficient movement of goods.

POLICIES:

1. Designated arterial routes and freeway access areas in Hood River are essential for efficient movement of goods. Design these facilities and adjacent land uses to reflect this need.

   Action: *Maintain accessibility for freight movement to the waterfront industrial area.*

2. Consider existing water, railroad, and air transportation facilities as City resources and reflect the needs of these facilities in land use decisions.

3. Designate freight routes to, from, and through the city that are designed and managed to safely and efficiently facilitate the movement of goods, with the least impact to residential areas and to bicycle and pedestrian travel.

   Action: *Design roadway elements, such as corner turning radii, to accommodate freight vehicles.*

   Action: *Identify freight routes connecting major industrial and commercial areas with the regional roadway network.*

4. Design and manage transportation facilities to support freight access and protect the function of the Downtown and the Heights commercial districts.

GOAL 7: Implement the transportation plan by working cooperatively with federal, state, regional and local governments, private sector and residents, and by creating a stable, flexible transportation financing system.

POLICIES:

1. Coordinate transportation projects, policy issues, and development actions with all affected governmental units in the area, including Hood River County, Columbia Area Transit, the Port of Hood River, ODOT and other affected special districts or service providers.

2. Participate in regional transportation and growth management efforts and work with regional agencies to assure adequate funding of transportation facilities to support those policies.

3. Monitor and update the transportation element of the Comprehensive Plan so that issues and opportunities related to growth and change are resolved in a timely manner.

4. Develop and utilize the System Development Charge and Traffic Impact Fee as an element of an overall funding program to pay for adding capacity to the collector and arterial street system to make safety improvements necessitated by land development.

   Action: *Base the roadway system taxes and fees on the total expected cost of making extra capacity and safety improvements over a twenty-year period, and allocate back to development on a pro rata formula taking into account the expected future traffic impact of the subject development.*

5. Develop a long-range financial strategy to implement needed improvements in the transportation system and support operational and maintenance requirements.

   Action: *Work with other units of government in the region. This financial strategy should consider the appropriate share of motor vehicle fees, impact fees, property tax levies and development contributions to balance needs costs and revenues. View the process of improving the transportation system as that of a partnership between the public (through fees and taxes) and private sectors (through exactions and conditions of development approval), each of which has appropriate roles in the financing of these improvements to meet present and projected needs.*

6. Develop and utilize new funding sources to support the implementation of pedestrian, bicycle, and transit projects.

Action: *Consider amending the City of Hood River Transportation Systems Development Charge ordinance to allow for expenditures toward projects constructing pedestrian, bicycle, or transit facilities.*

7. Provide funding for local match share of jointly funded capital projects with other public partners.

8. Continue to explore and evaluate new and innovative transportation financing tools and implement them when feasible and appropriate.

GOAL 8: Protect the function and operation of the I-84 interchanges, interstate highway and local street network consistent with the following interchange functions and their relationship to the community and broader transportation system.

- **Exit 62** serves the residential areas of Hood River and Hood River County on the west. The interchange is an important access point for freight movement from Hood River County on the interstate system to markets outside of the county. The interchange provides access to the Heights residential area, as well as large undeveloped commercial and future residential lands at the west end of the City of Hood River. As the west end of the city continues to develop Exit 62 will become an important gateway.

- **Exit 63** serves as the primary entrance into the commercial heart of the City of Hood River. The interchange also serves as the primary entrance into the Port of Hood River property north of the interstate. This area is currently underdeveloped, but is planned to support light industrial, recreational, commercial and residential uses in the future. This interchange serves as a link between downtown and the Columbia River Bridge and is the primary pedestrian connection between downtown and the waterfront.

- **Exit 64** serves as a vital connection between the states of Washington and Oregon connecting the central Gorge area and facilitating the local and interstate movement of freight. The interchange also serves to facilitate the movement of recreational traffic from the interstate system to the numerous recreational areas in both Oregon and Washington states. A third function of the interchange is the facilitation of movement of commuters and consumers between Washington and Oregon. Highway commercial development at the interchange provides interstate travelers with convenient gas, food, and lodging.

POLICIES:

1. Provide for an adequate system of local roads and streets for access and circulation within the interchange areas that reduces the reliance on the interchanges and on the interchange ramps.

Action: *As part of the development permit approval process, the City will require future development to plan for and develop local roadway connections that are consistent with the I-84 Exit 62 and I-84 Exit 63 & Exit 64 Interchange Area Management Plans (IAMPs).*

2. Provide safe and efficient operations between the connecting roadways (and the local street network, if applicable) within the IAMP management areas.

   Action: *The City will approve development proposals only after it has been demonstrated that proposed access and local circulation are consistent with the Access Management Plan in the applicable IAMP.*

   Action: *Bicycle and pedestrian connections within the IAMP management areas will be required for new development consistent with the IAMPs and City of Hood River TSP. Opportunities for connections for non-motorized transportation will be required to be identified even where street connections are not possible or required.*

3. Ensure that changes to the planned land use system are consistent with protecting the long-term function of the interchange and the associated local street system.

   Action: *Any proposed change to the Comprehensive Plan Map, Zoning Map, or the Development Code that would result in additional vehicle trips from what is allowed under the current zoning and assumed in the IAMP must include a review of transportation impacts consistent with the state Transportation Planning Rule, OAR 660-12-0060.*

   Action: *Notify affected governmental units, including Hood River County and ODOT, of proposed changes to the land use system within the IAMP management areas to ensure local, regional, and state coordination in planning for adequate transportation facilities.*

4. Recognize the importance of the interchange function to support the City's economic development goals and plans.

5. Partner with ODOT to ensure that the needs of regional, through trips, and the timeliness of freight movements are considered when developing and implementing plans and projects on freight routes.

Exit 62: In addition to the IAMP policies that are generally applicable to all of the interchanges within the City of Hood River, the following policies are applicable to the Exit 62 interchange:

6. Support a design of the Historic Columbia River Highway that provides a distinctive roadway character consistent with the City's vision to develop the area in the vicinity of Exit 62 as a gateway into the city.

7. Partner with ODOT to ensure that planned improvements to the local roadway system are consistent with the proposed improvements to Exit 62 and that local transportation improvements enhance safety and reduce turning conflicts in the vicinity of the interchange.

   Action: *Determine and implement appropriate funding measures to ensure the construction of the realignment of Country Club Road.*

8. Support safe bicycle and pedestrian facilities in the vicinity of Exit 62 that provide connectivity throughout the area and to destinations along the waterfront and the Historic Columbia River Highway.

Exit 63: In addition to the IAMP policies that are generally applicable to all of the interchanges within the City of Hood River, the following policies are applicable to the Exit 63 interchange:

9. Recognize the strategic importance of Exit 63 as an essential transportation facility that serves the City's two major employment districts, the Downtown and the Waterfront, and plays a critical role in the vitality of these two regional employment areas.

10. Support safe and efficient bicycle and pedestrian facilities in the vicinity of Exit 63 that encourage employees to arrive to work via alternative modes of transportation and provide recreational opportunities for residents and visitors alike.

Exit 64: In addition to the IAMP policies that are generally applicable to all of the interchanges within the City of Hood River, the following policies are applicable to the Exit 64 interchange:

11. Recognize the vital role Exit 64 has in providing regional connectivity between destinations in Hood River County and the rest of the state, via I-84 and OR 35 in Oregon and SR 14 in Washington State.

12. Support safe bicycle and pedestrian facilities in the vicinity of Exit 64 that provide recreational access to the Columbia River and to the Historic Columbia River Highway.

GOAL 9: Provide a sustainable transportation system that meets the needs of present and future generations.

POLICIES:

1. Encourage an energy efficient transportation system.

   Action: *Explore strategies to reduce street lighting energy use such as new technologies and operations practices.*

   Action: *Incorporate energy efficiency into evaluation criteria when deciding between design alternatives of capital projects.*

   Action: *Encourage the development of electric vehicle plug-in stations.*

2. Decrease reliance on the automobile and increase the use of other modes of travel and other techniques to reduce transportation demand to minimize transportation system impacts on the environment.

   Action: *Advocate for increased public transit services.*

   Action: *Evaluate options for transportation demand management strategies when reviewing the transportation impacts of major developments.*

3. Practice stewardship of air, water, land, wildlife, and botanical resources. Establish regulations and standards that avoid, reduce or mitigate impacts to natural environments in the planning, design, construction, and maintenance of the transportation system.

4. Develop and implement environmentally friendly transportation system design alternatives.

Chapter 3: Modal Plans

This chapter contains the different modal plans that will guide the decisions Hood River makes to meet the goals and policies presented in Chapter 2. The modal plans provide project lists and direction to improve each mode of travel within Hood River through the year 2031. The projects and standards presented in the modal plans were developed through the planning process with input from the City of Hood River, ODOT, the TSP Advisory Committee, and other stakeholders. Several documents served as the basis for developing the different modal plans. These documents can be found in the appendix and are listed below:

- Existing Conditions Memorandum
- Future Transportation System Needs Memorandum
- Technical Memorandum #3 (Hood River Transportation Systems Solutions)

Pedestrian System Plan

The pedestrian system plan identifies projects that improve the livability of Hood River by providing efficient pedestrian access to key destinations such as schools, parks, and local businesses. The existing pedestrian system was evaluated and its deficiencies served as the basis for proposed projects. Project input was also given by City staff, stakeholder groups, and Hood River residents. The existing pedestrian system conditions can be referenced in the appendix in the Existing Conditions Memorandum.

Recommended Pedestrian Projects

Improvements to the pedestrian network include sidewalk infill along key arterial and collector street corridors. Proposed priority sidewalk infill projects are listed in Table 1 below, and can be viewed in Figure 2: Pedestrian Network. This set of projects represents the pedestrian component of the "Preferred Plan", which consists of all transportation improvements identified to meet future needs through the year 2031. Construction of new roadways identified in the Motor Vehicle System Plan of this document are not included in Table 1, but will include construction of sidewalks or pedestrian facilities appropriate to the street classification of the new roadway.

Many other pedestrian projects also benefit bicycle transportation, such as intersection and crossing improvements, connectivity improvements, and paths. These shared pedestrian and

bicycle improvement concepts are included in the pedestrian system plan, but affect both modes.

Table 1: Priority Sidewalk Infill Corridors – Preferred Plan

Project ID	Name/Location	Cost Estimate* (High)	Cost Estimate* (Low)	Note
SW1	Rand Road	$1,010,000	$460,000	Low estimate assumes sidewalks on east side of street only.
SW2	20th Street	$420,000	$155,000	Low estimate assumes sidewalks on west side of street only.
SW3	Cascade Avenue/HCRH-Westcliff Drive to Mt. Adams Avenue	$125,000	$125,000	Estimate includes 6' sidewalk on the north side of the roadway.
SW4	Sherman Avenue	$1,075,000	$420,000	Low estimate assumes sidewalks on north side of street only.
SW5	State Street	$280,000	$140,000	Low estimate includes sidewalk on south side of street (sidewalk already exists on north side).
SW6	OR 35 (north of US 30)	$0	$0	This project is included as part of project MV16.
SW7	Serpentine Road/Eugene Street	$270,000	$270,000	Community input indicated that sidewalks on only one side of this street would be sufficient.
SW8	May Street	$1,245,000	$470,000	Low estimate assumes sidewalks on south side of street only.
SW9	22nd Street	$640,000	$315,000	Low estimate assumes sidewalks on west side of street only.
SW10	18th Street	$575,000	$240,000	Low estimate assumes sidewalks on east side of street only.
SW11	Belmont Avenue	$505,000	$245,000	Low estimate assumes sidewalks on north side of street only.
SW12	Frankton Road	$1,855,000	$310,000	Low estimate assumes sidewalks on one side of street from May Street south to city limits (Post Canyon Road).
SW13	Country Club Road	$705,000	$705,000	Sidewalk proposed for south side of the street only.
SW14	Cascade Avenue/HCRH (between Mt. Adams Avenue and Rand Road)	$225,000	$90,000	Widen sidewalks to 6' on both sides of the road, as adjacent development occurs.

Project ID	Name/Location	Cost Estimate* (High)	Cost Estimate* (Low)	Note
SW15	13th Street/OR281	$100,000	$100,000	This project is to complete a sidewalk gap present on the east side of the street only.
SW16	12th Street/OR 281	$60,000	$60,000	This project is to complete a sidewalk gap present on the east side of the street only.
SW17	OR 35 (near I-84)	$60,000	$60,000	This project is to complete a sidewalk gap present on the east side of the street only.
SW18	Cascade Avenue (15th to 20th)	$400,000	-	This project is to complete a sidewalk gap on the north side of Cascade Avenue. Project will likely require construction of retaining walls. As an optional alignment that may save cost, sidewalk could be constructed on the south side of Cascade Avenue from Oak Street to 15th Street, with new crossings installed to use the concrete island at Cascade/Oak as a pedestrian refuge.
	Total Cost	**$9,550,000**	**$4,165,000**	

* Cost estimates for sidewalk infill assume 6' curb- tight sidewalk with curb, gutter and drainage, and include project administration, mobilization, engineering/design and contingency. In areas where drainage improvements already exist, costs may be significantly lower. Cost estimates include planter strips only for projects along streets where adopted City standard cross sections indicate planter strips are required. Cost estimates are planning-level and do not include topographical/other site-specific issues that may increase overall cost. High estimates assume completion of sidewalks on both sides of the street; low estimates assume completion of sidewalk on one side of the street or other design as noted. For low estimates, the side of the street with the most existing sidewalks was used.

City of Hood River
Transportation System Plan

Figure 2

PEDESTRIAN SYSTEM PLAN

NORTH

0 0.25 0.5 Miles

October 2011

Legend

Proposed Improvements
- Point/Crossing
- Sidewalk Infill
- Improve Path Access
- Path

Existing Pedestrian Facilities
- Sidewalk on arterial and collector roadway
- Trail
- Stairway

Roadways
- Arterial
- Collector
- Local

- Wetland
- Civic/ Government
- City Limits
- Parks
- Railroad
- Schools
- Streams
- Waterbodies
- Parcels
- UGB

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Shared Pedestrian and Bicycle Improvements

The Preferred Plan projects proposed below will provide benefits to both bicycle and pedestrian travel in Hood River. Intersection improvements that reduce crossing distances and increase visibility can make crossing busy streets easier for all non-motorized modes. These improvement projects can be viewed on both Figure 2: Pedestrian Network and Figure 3: Bicycle Network, and are listed in Table 2 below.

[1] Transverse Crosswalk across 12th Street at June

In addition to the improvements described in Table 2, each of these intersections should be prioritized for ADA-compliant curb ramp replacement as necessary. At school crossings and mid-block crossings, transverse crosswalks will be replaced with continental crosswalks for higher visibility. Examples of existing [1] transverse and continental [2] crosswalks in Hood River are shown at right.

[2] Continental Crosswalk across Belmont Street near Westside School

Marked crosswalks at unsignalized approaches will only be considered when an engineering study demonstrates their need and the location meets the following criteria:

- There is good visibility of the crosswalk from all directions, or it can be obtained. Stopping sight distance is a minimum.
- There is no reasonable alternative crossing location.
- There is established pedestrian usage. Considerations include: volume of pedestrians, opportunity for safe crossing (i.e., sufficient gaps in traffic), percentage of elderly or young children, and the nature of the land uses on both sides of the road. Lower pedestrian volumes would be acceptable for areas where there are greater proportion of less experienced and less agile pedestrians (e.g., near schools)
- Posted speeds are 35 mph or less.
- Traffic volumes should be 10,000 or less ADT. If above 10,000 ADT, and/or on multi-lane highways, pedestrian crossing enhancements (curb extensions and/or pedestrian refuges/raised medians) should be considered.

The following crossing improvements are conceptual. Improvement feasibility and design would be determined through an engineering study required by the City (local roads) or ODOT (state highways) prior to installation of improvements.

Table 2: Point/Crossing Improvement Projects – Preferred Plan

Project ID	Name/Location	Description	Cost Estimate*
CR1	**Westcliff Drive & Cascade Avenue-HCRH	• When signal is constructed as proposed, stripe crosswalks with protected crossing phase for pedestrians, and also provide crossings.	n/a
CR2	Wasco Avenue & 20th Street/ Jaymar Road	• Stripe crosswalks on all legs of intersection and add advance warning signage.	$5,000
CR3	**2nd Avenue (I-84 Eastbound)	• Improve sight distance by reconstructing the southeast corner and realigning the east crosswalk to bring it closer to 2nd Street. • Add advance stop bar on the northbound approach to protect pedestrian and bicyclists crossing the south leg of the intersection.	$105,000
CR4	6th Street & State Street	• Consider adding curb extension on State Street westbound on the NE corner of the intersection with a curb cut to help cyclists make a left turn using the crosswalk.	$15,000
CR5	Hood River Bicycle & Pedestrian Bridge	• Pave approaches to bridge ramps on either side of bridge.	$15,000
CR6	**OR 281-13th Street & Sherman Avenue	• Consider striped crosswalks on north and/or south legs of intersection across 13th Street and add advance warning signage.	$5,000
CR7	**OR 281-13th Street & Montello Avenue	• Add advance warning signage to existing crosswalk.	$5,000
CR8	12th Street (North Leg) & May Street	• Consider adding curb extensions on the east leg of the intersection to reduce pedestrian crossing distance.	$35,000

Project ID	Name/Location	Description	Cost Estimate*
CR9	**OR 281-13th Street & May Street	• Consider interim improvement: Install a refuge island for pedestrians to help cross the right turn slip lane from westbound May Street onto 13th Street northbound. • Consider interim improvement: Revise striping of crosswalk between new refuge island and northeast corner at an angle perpendicular to the slip lane and add advance warning signage to increase visibility. • Interim improvement: Stripe new crosswalk on east leg of intersection between southeast corner and new refuge island. • Interim improvement: Install pedestrian-activated rectangular rapid-flash beacons (RRFB) on east leg of intersection. • Ultimate Improvement: Consider signalizing intersection (not included in cost estimate).	$55,000 ($30,000 if RRFB is not included)
CR10	**OR 281-12th Street & Belmont Avenue	• Stripe crosswalks on north and/or south legs of intersection across 12th Street and add advance warning signage.	$5,000
CR11	**OR 281-13th Street & Belmont Avenue	• Interim Improvement: Stripe crosswalks on north and/or south legs of intersection across 13th Street and add advance warning signage. • Interim Improvement: Consider installing a curb extension on one side of 13th Street to reduce crossing distances (pending reconfiguration of 13th Street). • Ultimate Improvement: Traffic signal to be added to reduce motor vehicle delay will also improve pedestrian crossings.	$15,000
CR12	17th Street & May Street	• Extend curb on west to reduce turn radius and pedestrian crossing distance on 17th Street (southbound approach will be stopped with motor vehicle improvements, and stop sign will be removed from May Street).	$45,000
CR13	Rocky Road & May Street	• Stripe crosswalks on east and/or west legs of intersection across May Street and add advance warning signage to assist crossing for future Westside Community Trail.	$5,000
CR14	Fairview Drive & Belmont Drive	• Consider adding stop signs to Belmont Drive to make this intersection an all-way stop (future north-south extension of Mt. Adams Avenue will not have stop signs when street is extended). • Stripe crosswalks on all legs of the intersection. • Reconfigure intersection geometry to reduce the radius of the curve on Belmont Drive, to lower vehicle speeds. • Consider installing curb extensions or refuge islands to reduce crossing distances.	$45,000
CR15	**OR 281-13th Street & State Street-HCRH	• Consider striping crosswalks on east side of intersection across State Street.	$5,000

Project ID	Name/Location	Description	Cost Estimate*
CR16	**OR 281-12th Street & Pacific Avenue	• Add pedestrian countdown signal to help Indian Creek Trail users cross 12th Street safely. • Install directional signage to encourage trail users to use the signalized intersection when crossing between segments of the Indian Creek Trail. • Consider widening the sidewalk at the northeast and northwest corners to increase queuing capacity for bicyclists and pedestrians waiting to cross 12th Street (acquire right of way if necessary).	$5,000
CR17	**5th Street & Oak Street-HCRH	• Consider adding curb extension if SHPO approval can be obtained on east leg of intersection at existing crosswalk to reduce crossing distance and improve visibility.	$15,000
CR18	OR 281-13th Street & Oak Street-HCRH	• Install advanced stop bar and advance warning signage for the eastbound right turn lane on the west leg of the intersection to encourage motor vehicles to yield to users.	$5,000
CR19	2nd Street & State Street	• Stripe crosswalks on east side of intersection across State Street and add advance warning signage.	$5,000
CR20	(Future) Westside Community Trail & Belmont Drive	• Add advance stop bars before crosswalk. • Consider relocating crossing or closing school parking lot driveway in order to reduce complication of turning movements at the crossing. • Complete project CR 14 (described previously) to improve nearby intersection at Fairview Drive and Belmont Drive, with the goal of reducing the speed of motorists approaching the crossing eastbound on Belmont Drive.	$5,000
CR21	**Cascade Avenue-HCRH (midblock between Mt. Adams Avenue and Rand Road)	• Consider installing midblock crosswalk with advance warning signage. • Consider installing rectangular rapid flash beacons to improve motorist compliance if necessary after an observation period.	$25,000
CR22	**Cascade Avenue near-HCRH (midblock between Rand Road and 20th Street)	• Consider installing midblock crosswalk with median refuge island and advance warning signage. • Consider installing rectangular rapid flash beacons to improve motorist compliance if necessary after an observation period.	$25,000
		Total Cost	**$445,000**

* All cost estimates include project administration, mobilization, engineering/design and contingency costs. Cost estimates are planning-level and do not include topographical/other site-specific issues that may increase overall cost.

**The establishment of marked crosswalks at unsignalized approaches or mid-block crossings, or modification of existing approaches/crossings of state highways will require the completion of an engineering study and approval by the State Traffic Engineer and ODOT.

In addition to point and intersection improvements, facilities such as paths and trails can create both efficient commuter routes and recreational opportunities for bicycling and walking. Proposed off-street facilities are listed in Table 3 below and can be viewed on both Figure 2: Pedestrian Network and Figure 4: Bicycle Network. A typical cross section for path design is proposed in Figure 3.

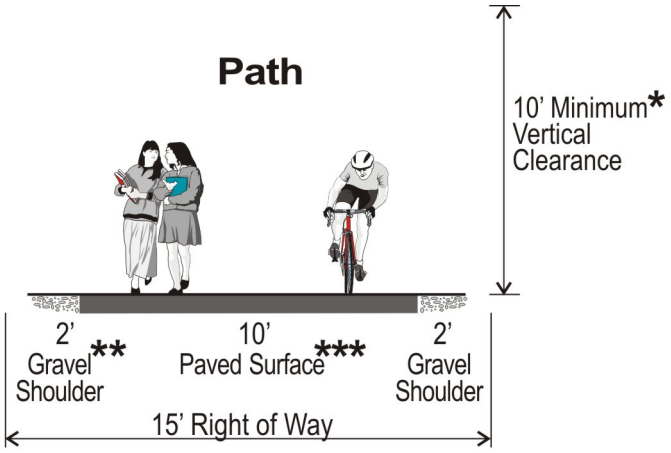
Table 3: Off-Street Bicycle & Pedestrian Facility Projects – Preferred Plan

Project ID	Name/Location	Cost Estimate*	Note
P1	Westcliff Drive Pedestrian Path	A future refinement plan will produce an alternative cross-section for Westcliff Drive	Westcliff provides an east west pedestrian connection through Hood River connecting to the HCRH trail. The path along the north side of Westcliff Drive is intended to serve pedestrians only, with bicycles sharing the roadway with motor vehicles. See Figure 6E.
P2	Waterfront Path	$1,125,000	Proposed path connecting Westcliff Drive to the existing paths along the Columbia River.
P3	Waterfront Path Access from US 30	$230,000	Proposed alternative access to the Waterfront Path from east of downtown.
P4	Westside Community Trail	Project already funded by Hood River Valley Parks & Recreation	This previously proposed path being pursued by Hood River Valley Parks & Recreation would create a key link in Hood River's bicycle and pedestrian networks.
P5	Hood River Middle School Path	$25,000	This previously proposed connection through the Hood River Middle School campus being pursued by the Hood River County School District through the school's Safe Routes to Schools program would create a key link in Hood River's bicycle and pedestrian networks.
P6	Indian Creek Trail Access from Union Street	$5,000	Soft surface trail improvements to formalize access to the Indian Creek Trail from Union Street.
P7	Cascade Avenue between Mt Adams Avenue and Westcliff Drive	$255,000	Proposed 10' path along the south side of Cascade Avenue between Mt Adams Avenue and Westcliff Drive. See SW3 for sidewalk on north side of the roadway.
P8	Indian Creek Trail, Segment 2	Pending future easement, project will be funded by Hood River Valley Parks & Recreation	This previously proposed segment of the Indian Creek Trail being pursued by Hood River Valley Parks & Recreation would create a key link in Hood River's bicycle and pedestrian networks.
P9	Indian Creek Trail Access from Sherman Avenue	$360,000	Improvements to connection between 2nd Street & State Street and the northern end of the Indian Creek Trail. Cost estimate assumes construction of a sidewalk on one side of the street along this route.

Project ID	Name/Location	Cost Estimate*	Note
P10	Port of Hood River Path	$265,000	The Port of Hood River is actively pursuing construction of this new path that would improve the connection between the Hood River Bicycle & Pedestrian Bridge and the existing Waterfront Path.
P11	Post Canyon Path	$660,000	A road extension of Belmont Avenue to Post Canyon Drive is proposed. Sidewalk and bike lane would be included as part of that construction. However, this project to construct an east-west path between Belmont Avenue and Frankton Road, aligned with Post Canyon Drive, could be constructed as an interim improvement or as a complimentary one. The alignment of this path should remain within the urban growth boundary and should avoid the National Scenic Area.
P12	Indian Creek Trail (segment parallel to 12th Street/OR 281)	$215,000	Proposed path along an existing segment of the Indian Creek Trail to improve access across Indian Creek east of 12th Street/OR 281.
	Total Cost	**$3,140,000**	

* All cost estimates include project administration, mobilization, engineering/design and contingency costs. Cost estimates are planning-level and do not include topographical/other site-specific issues that may increase overall cost.

Figure 3: Path Typical Cross Section



* In constrained areas, vertical clearance may be reduced to a minimum of 8 feet.
** Where path abuts existing or proposed hard surface, shoulders shall be paved to tie into the hard surface.
*** Where not required by City code, can be hard-packed gravel surface.

Citywide and Programmatic Improvements

Several types of bicycle and pedestrian needs in Hood River are not related to specific corridors, but pertain to City policy or conditions found in widespread locations. To supplement all of the projects already listed, Table 4 provides optional programs in support of bicycle and pedestrian needs for future consideration.

Table 4: Optional Citywide and Bicycle and Pedestrian Programs

Name	Description	Cost Estimate
ADA/Curb Ramp Upgrade Program	Upgrade curb ramps and eliminate gaps in ADA access along prioritized pedestrian routes near key destinations.	Example: $20,000/year. Fixed or percentage amount annually for capital improvements.
"Smart Trips" Individualized Marketing Program	Develop an outreach program targeted at residents in neighborhoods receiving new bicycle and pedestrian infrastructure to encourage them to walk and bike more often. Distribute walking and bicycling maps; partner with local businesses for coupon incentives; organize group walks and rides to local recreational and commercial destinations. Administer before/after travel survey to evaluate effectiveness.	Example: $20,000. (Variable by size; assume ~$10/person in program area).
Bicycle/Pedestrian Connections to Transit	Coordinate infrastructure upgrades near transit stops and park and rides to improve access and amenities targeted at increasing ridership.	Example: $20,000/year. Fixed or percentage amount annually for capital improvements.
Safe Routes to Schools Curriculum	Leverage ODOT Safe Routes Program with local investment to bring Safe Routes curriculum to all area K-8 schools.	Example: $20,000/year. Fixed or percentage amount annually for capital improvements.
Bicycle Wayfinding Signage	Implement a bicycle wayfinding signage program to assist new bicyclists in choosing comfortable routes, and to help visiting bicyclists navigate through the city.	Example: $100,000. Assumes one sign every 800 feet each direction along the ~20 mile proposed bicycle network, including 30% for design/engineering.
Bicycle Parking Program	Implement bicycle rack design and placement standards; review development applications for compliance; coordinate with sidewalk installation by developments or in city projects.	Example: $5,000/year. Can be funded through fees for developments requesting related design variances.

Bicycle System Plan

The Bicycle System Plan identifies improvements to the bicycle network in the City of Hood River for the next twenty years. Bicycles often use the same facilities as pedestrians, so to avoid overlap this section focuses primarily on bicycle-specific facilities. After review of the existing facilities and with input from City staff, stakeholder groups, and Hood River residents, projects were proposed to improve the efficiency and access for bicyclists within Hood River. The summary of the existing bicycle system and deficiencies, which served as the basis for proposed projects, can be found in the Existing Conditions Memorandum included in the appendix.

Recommended Bicycle Projects

Improvements to the bicycle network include completion of bike lanes (requiring a six food shoulder) by restriping streets where space is available and through roadway expansion on streets in outer Hood River where shoulders are narrow or do not exist. Several streets in and near downtown are proposed to be treated with shared lane markings (also known as "sharrows", example shown at right [3]) and signs where space is not available to add bike lanes. In many Hood River neighborhoods, streets are proposed for bike boulevards: comfortable, low traffic streets where bicycles share the road with vehicles. Bike boulevards can be treated with a wide range of wayfinding signage and traffic calming techniques in order to emphasize that they are neighborhood streets where walking, bicycling, and local access are prioritized above vehicle mobility. Additional analysis will be necessary to identify specific treatments on each bike boulevard corridor.

[3] Example of a sharrow pavement marking

Preferred Plan Bicycle projects can be viewed in Figure 4: Bicycle Network, and are listed in Table 5 below. Construction of new roadways identified in the Motor Vehicle System Plan are not included in Table 5, but will include construction of bicycle facilities appropriate to the street classification of the new roadway.

Many other bicycle improvement projects also benefit pedestrian transportation, such as intersection and crossing improvements, connectivity improvements, and paths. These shared pedestrian and bicycle improvement concepts were previously described in the Pedestrian System Plan section.

Table 5: Bicycle Improvement Projects – Preferred Plan

Project ID	Name/Location	Facility Type	Cost Estimate*	Note
BL1	Country Club Road	Bike Lanes	$365,000	Roadway expansion
BL2	Frankton Road	Bike Lanes	$340,000	Roadway expansion
BL3	Cascade Avenue-Oak Street-HCRH	Bike Lanes	$135,000	Intermittent bike lanes exist; assumes restriping along half of corridor length
BL4	State Street	Bike Lanes	$80,000	Restriping
BL5	OR 35/Hood River Bridge	Bike Lanes	$65,000	Restriping
BL6	May Street	Bike Lanes	$890,000	Roadway expansion

Project ID	Name/Location	Facility Type	Cost Estimate*	Note
BL7	Rand Road	Bike Lanes	$210,000	Roadway expansion
BL8	12th Street/13th Street/HCRH	Bike Lanes	$245,000	Restriping
BL9	Belmont Avenue	Bike Lanes	$110,000	Restriping
BL10	Belmont Drive/ Hudson Road	Bike Lanes	$115,000	Roadway expansion
BL11	Indian Creek Road	Bike Lanes	$155,000	Roadway expansion
BL12	Brookside Drive/Eliot Drive	Bike Lanes	$360,000	Roadway expansion
BL13	13th Street	Bike Lanes	$70,000	Restriping.
BLSLM1	Serpentine Road/6th Street/Eugene Street	Uphill Bike Lane/ Downhill Shared Lane Markings	$40,000	Restriping
SLM1	Wasco Street/7th Street	Shared Lane Markings	$35,000	
SLM2	Industrial Street/3rd Street/2nd Street	Shared Lane Markings	$10,000	
SLM3	Oak Street/Front Street	Shared Lane Markings	$20,000	
SLM4	Cascade Avenue	Shared Lane Markings	$20,000	
SLM5	State Street	Shared Lane Markings	$20,000	
SLM6	Sherman Avenue	Shared Lane Markings	$40,000	
SLM7	9th Street/Park Street	Shared Lane Markings	$5,000	
SLM8	May Street	Shared Lane Markings	$10,000	
SLM9	22nd Street	Shared Lane Markings	$15,000	
SLM10	Portway Avenue	Shared Lane Markings	$15,000	
SLM11	Riverside Drive	Shared Lane Markings	$5,000	Shared lane markings and wayfinding signs between N 2nd Street and P10.
BLVD1	20th Street/Jaymar Road	Bike Boulevard	$25,000	
BLVD2	Sherman Avenue	Bike Boulevard	$10,000	
BLVD3	Montello Avenue/Eugene Street	Bike Boulevard	$115,000	

Project ID	Name/Location	Facility Type	Cost Estimate*	Note
BLVD4	9th Street	Bike Boulevard	$25,000	
BLVD5	4th Street	Bike Boulevard	$15,000	
BLVD6	18th Street/17th Street/Avalon Way/Avalon Drive	Bike Boulevard	$80,000	
BLVD7	8th Street	Bike Boulevard	$60,000	
	Total Cost		**$3,705,000**	

* All cost estimates include project administration, mobilization, engineering/design and contingency costs. Cost estimates are planning-level and do not include topographical/other site-specific issues that may increase overall cost. Bike lane cost estimates include striping removal, restriping, pavement markings, and signs. When applicable, roadway expansion assumes 6' shoulder in each direction. Shared lane marking cost estimates include pavement markings and signs. Bike boulevard cost estimates include pavement markings, signs, traffic control modifications (ex. turning stop signs) and example traffic calming treatments.

City of Hood River
Transportation System Plan

Figure 4

BICYCLE SYSTEM PLAN

NORTH

0 0.25 0.5 Miles

October 2011

Legend

Proposed Improvements

- Point/Crossing
- Bike Boulevard
- Bike Lane
- Shared Lane Markings
- Uphill Bike Lane/Downhill Shared Lane
- Improve Path Access
- Path

Existing Bicycle Facilities

- Bicycle Lane
  Shown on appropriate side of roadway where data is available.
- Trail

Roadways

- Arterial
- Collector
- Local

- Wetland
- Civic/ Government
- City Limits
- Parks
- Railroad
- Schools
- Streams
- Waterbodies
- Parcels
- UGB

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Motor Vehicle System Plan

The Motor Vehicle System Plan provides direction for the management and expansion of the roadway network to meet the City's needs through the year 2031. The plan elements provide an array of strategies to achieve local transportation goals by improving system capacity, efficiency, safety, and connectivity.

An analysis of the motor vehicle system under existing (2010) and future (2031) conditions, as well as documentation of all alternatives considered, can be referenced in the appendix.

Transportation System Management (TSM)

Transportation System Management (TSM) focuses on strategies to enhance the operational performance of the transportation system. The focus of TSM is to find solutions to better manage the existing facilities and treat all modes of travel as a coordinated system rather than relying on single mode improvements, such as adding roadway capacity for vehicles. TSM strategies are often easier to implement because they have lower capital investment costs and they extend the functional life of the existing and future facilities by optimizing their ability to move people in a safe and efficient manner.

Functional Classification

The functional classification system provides direction for the management and design of streets in the City of Hood River. The roadway functional classification map is shown in Figure 5, with management objectives and design criteria described below.

NORTH

0 0.25 0.5 Miles

City of Hood River

Transportation System Plan

Figure 5

ROADWAY FUNCTIONAL CLASSIFICATION

May 2011

Legend

Roadway Classification

- Major Arterial
- Minor Arterial
- Urban Collector
- County Collector
- Local

Future Extentsion, Functional Classification

- Major Arterial
- Minor Arterial
- Urban Collector
- County Collector
- Local

- Civic/Government
- City Limits

- Parks
- Railroad
- Schools
- Streams
- Waterbodies
- Parcels
- UGB

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Functional Classification Management Objectives

Major Arterial Streets

Major arterials in Hood River provide regional connections to and through the city. They are generally designed and managed to maintain high-speed, continuous-flow travel for longer trips. The only major arterials within the City of Hood River are I-84 and OR 35, which are both under ODOT jurisdiction.

Minor Arterial Streets

Minor arterial streets provide service between major arterials and collectors. They should generally be spaced approximately one mile apart to maintain citywide accessibility and reduce through traffic on collectors and local streets, which can negatively impact safety and livability. Because they primarily serve longer trips within the city, they should be provided in continuous lengths of multiple miles, not in short segments. Minor arterials typically serve higher volumes of traffic at moderate to high speeds, with posted speeds generally no lower than 30 mph. Access control is a key feature.

Collector Streets

Collector streets provide both access and circulation within and between residential, commercial, industrial, and mixed land uses. Collectors differ from arterials in that they provide more of a citywide circulation function and penetrate residential neighborhoods, distributing trips from the local street system to minor and major arterials. They are intended to carry between 1,200 and 10,000 vehicles per day, including limited through traffic, at a minimum posted speed of 25 mph. The maximum interval for collector roadways should be approximately 1,500 feet. While access and mobility are more balanced than on arterials, new driveways serving single or multi-family homes should not be permitted where traffic volume forecasts exceed 5,000 vehicles per day.

Local Streets

Local streets have the sole function of providing immediate access to adjacent land. These streets should be designed to enhance the livability of the neighborhood as well as to generally accommodate less than 2,000 vehicles per day. When traffic volumes reach 1,000 to 1,200 vehicles per day through residential areas, safety and livability can be degraded. A well-connected grid system of relatively short blocks can minimize excessive volumes of motor vehicles and encourage more use by pedestrians and bicyclists. Speeds are not normally posted, with a statutory 25-mph speed limit in effect.

Special Local Street Designs

Cul-de-sac, or "dead end" residential streets are intended to serve only the adjacent land in residential neighborhoods. These streets should be short, serving a maximum of 20 single-family houses. Because the streets are short and the traffic volumes relatively low, the street width can be narrower than a standard residential street, allowing for the passage of two lanes of traffic when no vehicles are parked at the curb or one lane of traffic when vehicles are parked at the curb. Cul-de-sacs should only be used where topographical or other environmental constraints prevent street connections. Pedestrian and bicycle connections to adjacent cul-de-sacs or through streets shall be included.

Alleys can be a useful way to diminish street width by providing rear access and parking to residential areas. Including alleys in a subdivision design allows homes to be placed closer to the street and eliminates the need for garages to be the dominant architectural feature. This pattern, once common, has been recently revived as a way to build better neighborhoods. In addition, alleys can be useful in commercial and industrial areas, allowing access by delivery trucks that are off of the main streets. Alleys are encouraged when appropriate in the urban areas of Hood River and can provide a place for utilities and access to parking.

Typical Roadway Standards

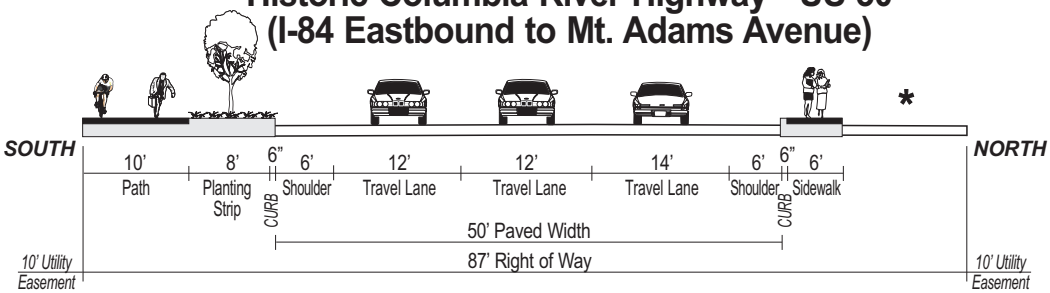
Typical roadway standards consist of cross sections that are required for City roadways based on their functional classification. The cross sections identify how City roadways will meet the necessary demand and multi-modal functions associated with their functional classification and provide consistency in roadway design throughout the City.

Actual roadway designs can vary depending on available right of way, adjacent land use, bike routes, and pedestrian corridors among other factors. Identifying cross sections in the TSP helps the City know what they should be striving to achieve or require of new development as roadways are constructed or modified.

Specific design features have been formulated for the Historic Columbia River Highway (HCRH), and OR 281. The *Historic Columbia River Highway Programmatic Agreement* defines the cross section for the HCRH travel lanes, and state highway design parameters are defined in the *Oregon Highway Plan (OHP)* and in the *Highway Design Manual (HDM)*. Deviations from the standards in these documents would require ODOT approval.

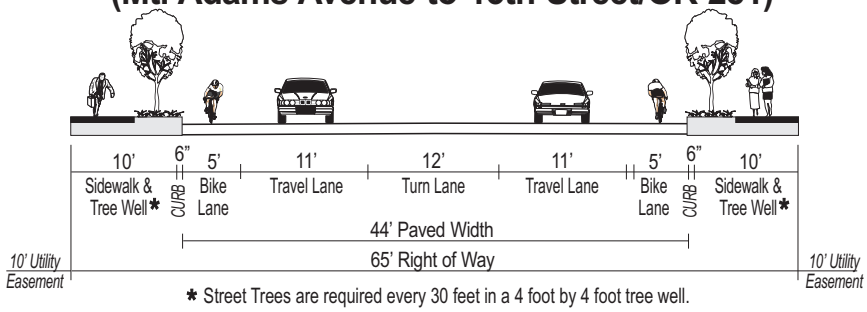
Cross section standards for streets in Hood River are provided in Figure 6A through 6G, with a Classical Street Light standard provided in Figure 6H.

Historic Columbia River Highway - US 30 (I-84 Eastbound to Mt. Adams Avenue)



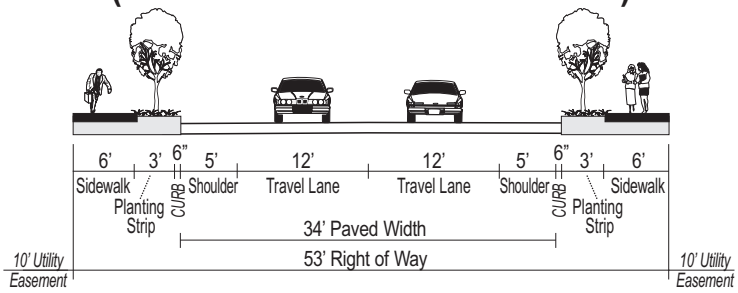
* Prior to construction of the outer westbound travel lane, the City of Hood River and ODOT will demonstrate the need for the lane based on updated traffic projections and will present the findings to the Historic Columbia River Highway Advisory Committee.

Historic Columbia River Highway - US 30 (Mt. Adams Avenue to 13th Street/OR 281)

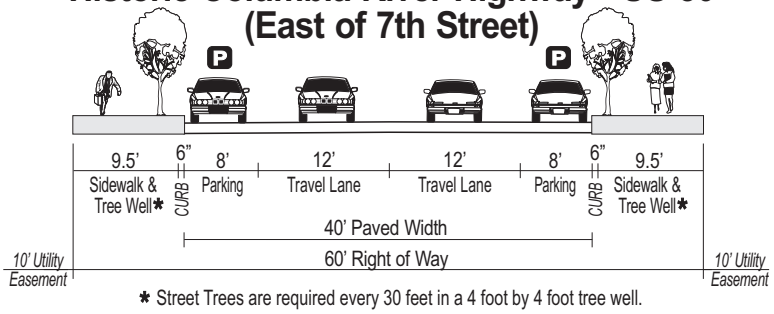


* Street Trees are required every 30 feet in a 4 foot by 4 foot tree well.

Historic Columbia River Highway - US 30 (13th Street/OR 281 to 7th Street)



Historic Columbia River Highway - US 30 (East of 7th Street)



* Street Trees are required every 30 feet in a 4 foot by 4 foot tree well.

General Notes:

1. Drawings represent the standard required cross-section. Modifications to be reviewed by ODOT and the City Engineer, and may be permitted.

LEGEND

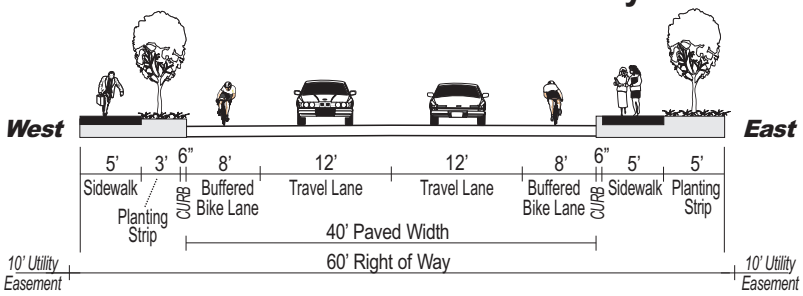
P - On-Street Parking Lane

City of Hood River
Transportation System Plan

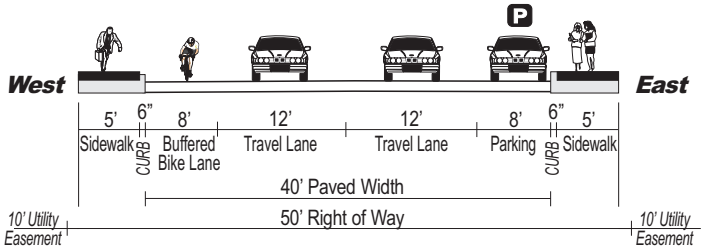
Figure 6A

HISTORIC COLUMBIA RIVER HIGHWAY - US 30 STANDARD DIAGRAM

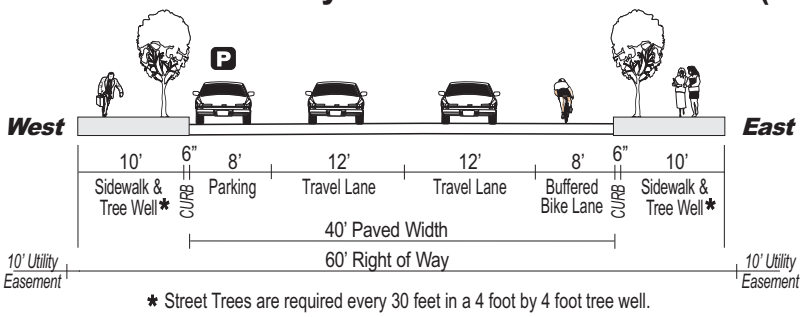
OR 281- Between Oak Street & May Street



OR 281/13th Street - Between May Street & Belmont Avenue (One-Way Street)

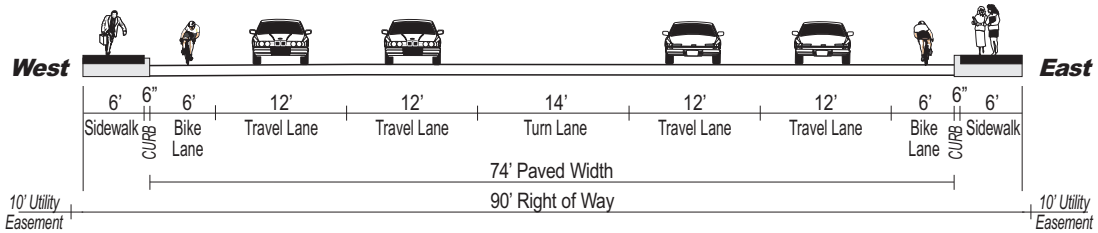


OR 281/12th Street - Between May Street & Belmont Avenue (One-Way Street)



* Street Trees are required every 30 feet in a 4 foot by 4 foot tree well.

OR 281 - Between Belmont Avenue & Brookside Drive



General Notes:

1. Drawings represent the standard required cross-section. Modifications to be reviewed by ODOT and the City Engineer, and may be permitted.
2. Prior to removal of on-street parking for the addition of bike lanes to 12th/13th/OR 281 between May Street and Belmont Avenue, a satellite parking lot must first be provided to offset lost on-street parking.

LEGEND

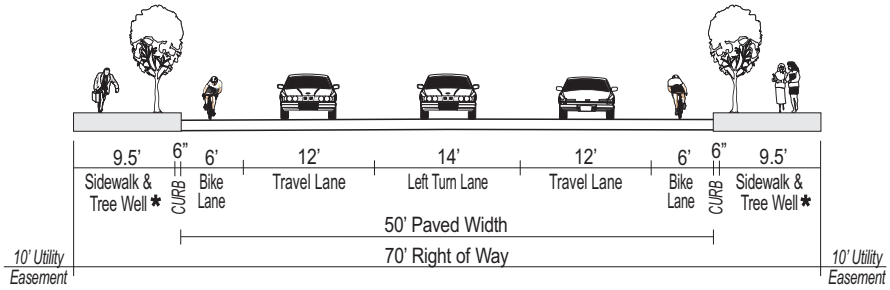
P - On-Street Parking Lane

City of Hood River
Transportation System Plan

Figure 6B

OR 281 STANDARD DIAGRAM

Minor Arterial



* Street Trees are required every 30 feet in a 4 foot by 4 foot tree well.

General Notes:

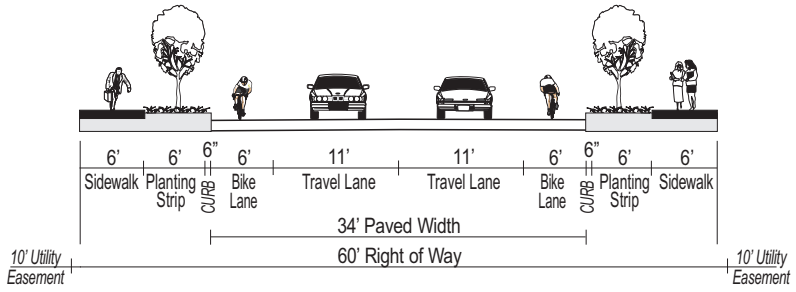
1. Drawing represents the standard required cross-section. Modifications may be permitted by the City Engineer.

City of Hood River
Transportation System Plan

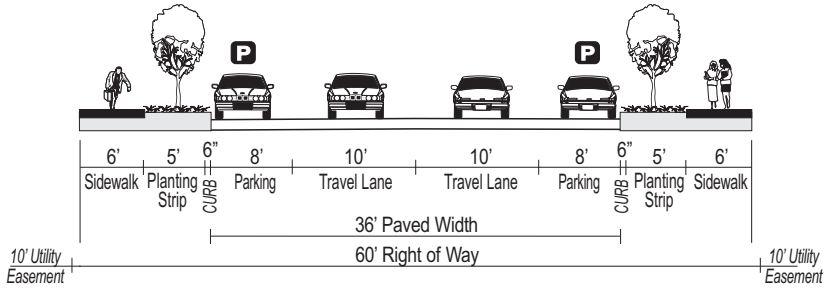
Figure 6C

ARTERIAL STREETS STANDARD DIAGRAM

Commercial/Residential Collector



Neighborhood Collector



General Notes:

1. Drawings represent the standard required cross-section. Modifications may be permitted by the City Engineer.

LEGEND

P - On-Street Parking Lane

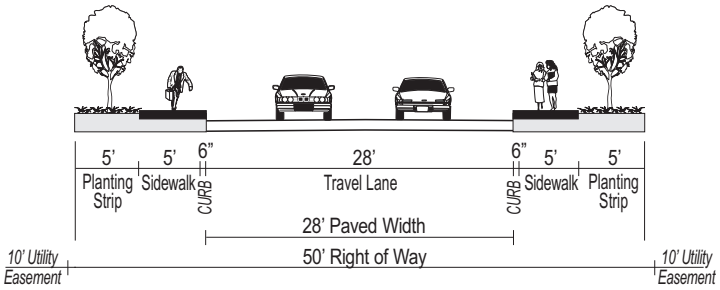
City of Hood River

Transportation System Plan

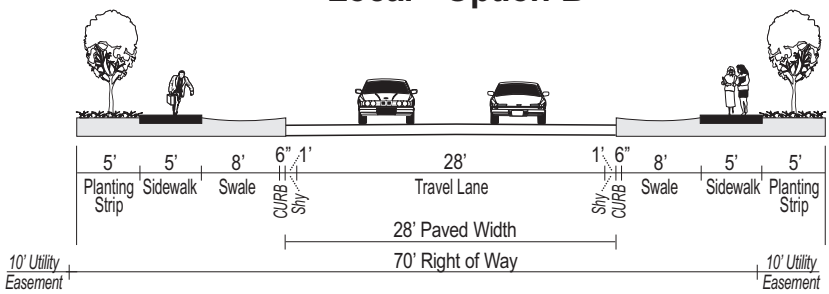
Figure 6D

COLLECTOR STREETS STANDARD DIAGRAM

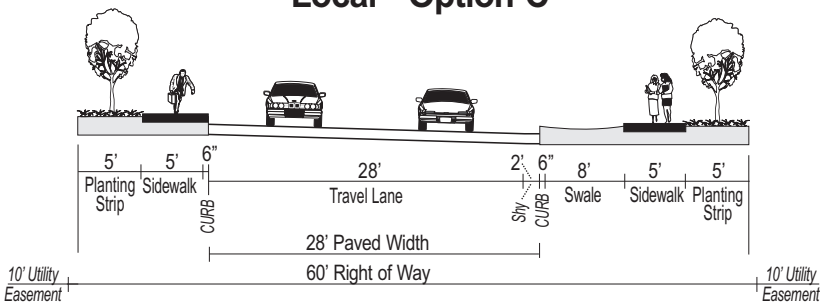
Local - Option A



Local - Option B



Local - Option C



General Notes:

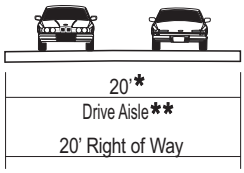
1. Drawings represent the minimum required cross-section. Modifications may be permitted by the City Engineer.
2. A future refinement plan will produce an alternative cross-section for Westcliff Drive. However, development on Westcliff Drive will be subject to the local street standard. As part of the refinement plan, the sidewalk along the commercial property frontages may be replaced with a pedestrian walkway on public easements through private properties. Walkways through private properties must connect to abutting properties adjacent to Westcliff Drive, with the endpoints of the walkway corridor always connecting to the Westcliff Drive right of way.
3. Parking on one side of the street may be allowed with an approved queuing plan.

City of Hood River
Transportation System Plan

Figure 6E

LOCAL STREETS STANDARD DIAGRAM

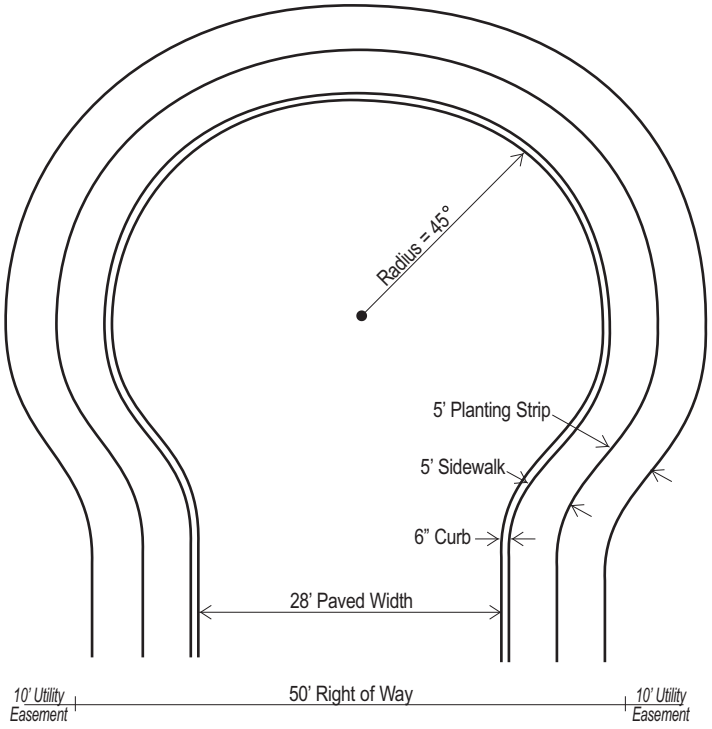
Alley



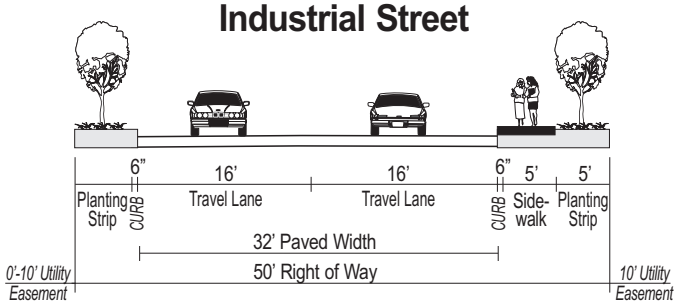
* Recommend 16-feet of paving with 2-foot-wide gravel shoulder on each side, except where alley abuts existing or proposed hard surfacing (e.g. driveway or other parking area). Where alley abuts existing or proposed hard surfacing, alley pavement should tie into abutting hard surfacing (eliminating gravel shoulder).

* On-Street Parking prohibited.

Cul-de-sac



Industrial Street



General Notes:

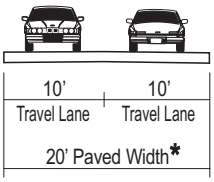
1. Drawings represent the standard required cross-section. Modifications may be permitted by the City Engineer.

City of Hood River
Transportation System Plan

Figure 6F

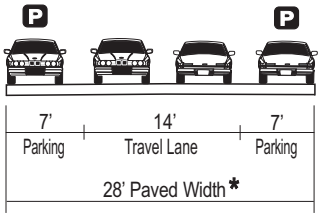
ALLEY, CUL-DE-SAC & INDUSTRIAL STREETS STANDARD DIAGRAMS

Six Home Private Street [1.]



1. 20 foot private street may be used for up to 6 homes.

Private Street [2., 3.]



2. Cross-Section applies to PUD streets that serve more than 6 homes. An additional 0.50 parking spaces shall be added for each additional unit beyond 6 homes.

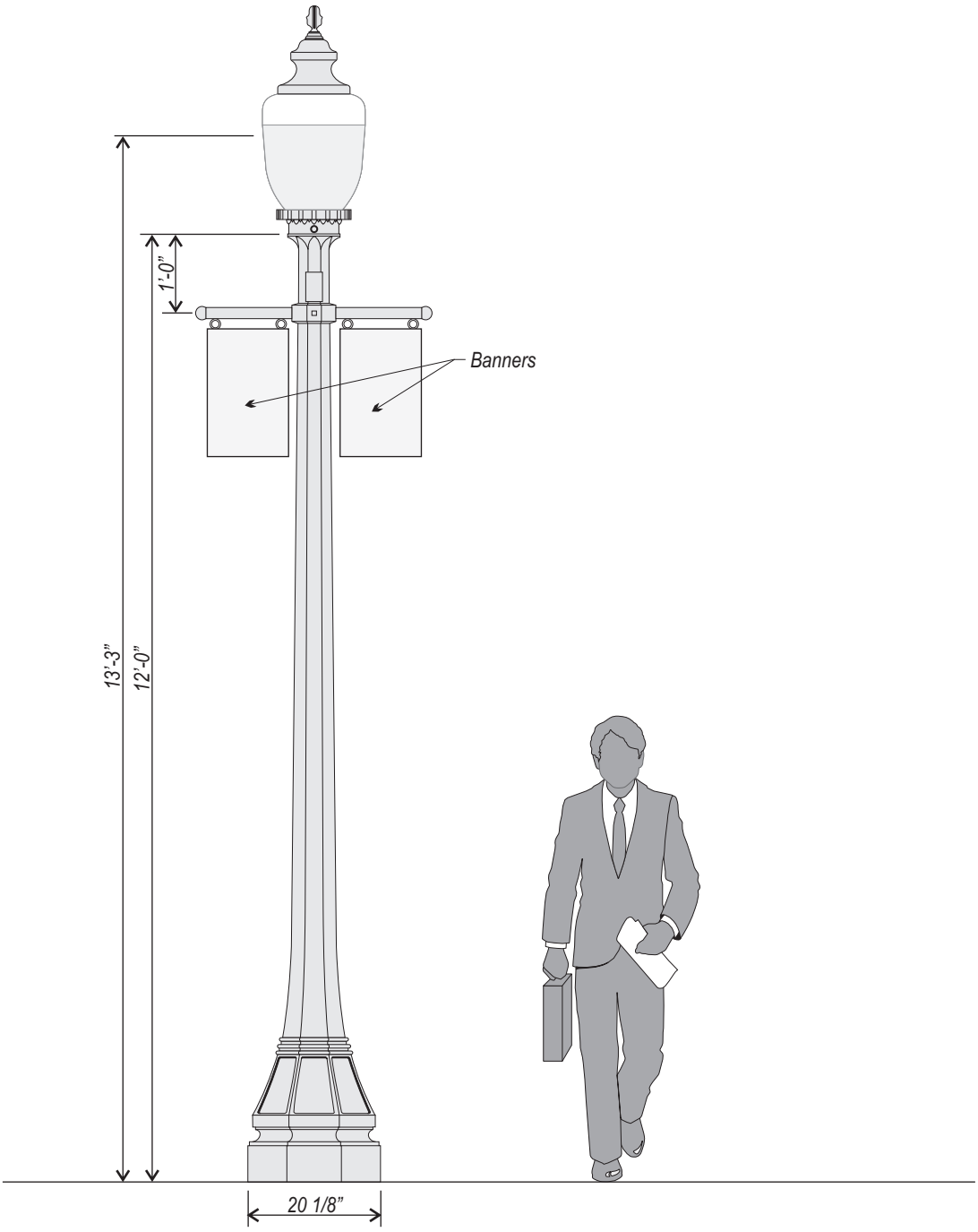
3. Parking shall be staged to allow room for passing vehicles.

***** Recommend 2-foot-wide gravel shoulder on each side, except where private road abuts existing or proposed hard surfacing (e.g. driveway or other parking area).

City of Hood River
Transportation System Plan

Figure 6G

PRIVATE STREET STANDARD DIAGRAM



General Notes:

Application: Classic lights on Oak Street and Second Street.
Description: Acorn post top luminaire with a Type 3 distribution that is dark sky friendly. Light pole shall have a cast iron cross bar for banner attachment.

City of Hood River
Transportation System Plan

Figure 6H

CLASSIC STREET LIGHT STANDARD DIAGRAM

Mobility Standards

Mobility standards are established to delineate the maximum level of congestion that will be accepted on a given facility or within a specified area. They are agency-specific and apply to roadways under a given agency's jurisdiction.

The City of Hood River mobility standard requires a minimum level of service (LOS) D on streets and signalized and unsignalized intersections. Level of service shall be based on the most recent edition of the *Highway Capacity Manual*. Where a facility is maintained by the County or ODOT, the more restrictive of the standards should apply.

ODOT mobility standards are given as volume to capacity (V/C) ratios and are based on roadway classification, designations, and posted speed limits. There are two types of mobility standards for state facilities that are used for different purposes. Those contained in ODOT's 1999 Oregon Highway Plan are applied to the review of development proposals and for the determination of needed infrastructure improvements (i.e., No Build conditions). However, the mobility standards from ODOT's Highway Design Manual are to be applied to the evaluation of all alternatives considered for roadway improvements through public investments. ODOT mobility standards applicable within the City of Hood River are shown in Table 6.

Table 6: ODOT Mobility Standards within Hood River

Highway Category	Inside Urban Growth Boundary			Outside Urban Growth Boundary
	Non-MPO outside of STA's where non-freeway speed ≤ 35 mph	Non-MPO outside of STAs where non-freeway speed > 35 mph	Non-MPO where non-freeway speed limit ≥ 45mph	Rural Lands
Oregon Highway Plan *Applied to the review of development proposals and for the determination of needed infrastructure improvements (i.e., No Build conditions)*				
Interstate Highways	-	0.70*	0.70*	0.70*
Freight Route on a Statewide Highway	0.80	0.75	0.70	0.70
District/ Local Interest Roads	0.90	0.85	0.80	0.75
Highway Design Manual *Applied to the evaluation of all alternatives considered for roadway improvements through public investments*				
Interstate Highways	-	0.70	0.65	0.60
Freight Route on a Statewide Highway	0.70	0.70	0.70	0.60
District/ Local Interest Roads	0.80	0.80	0.75	0.70

* The maximum volume to capacity ratio for ramp terminals of interchange ramps shall be the smaller of the values of the volume to capacity ratio for the crossroad or 0.85.

In addition to the Table 6 mobility standards, special conditions apply at some locations. The maximum V/C ratio for ramp terminals of interchange ramps shall be the smaller of the values of the volume to capacity ratio for the crossroads or 0.85. Also, at unsignalized intersections and road approaches, the volume to capacity ratios shall not be exceeded for either of the state highway approaches that are not stopped. Approaches at which traffic must stop, or otherwise yield the right of way, shall be operated to maintain safe operation of the intersection and all of its approaches and shall not exceed the volume capacity ratios for District/Local Interest Roads in Table 6 within the urban growth boundaries.

In coordination the City of Hood River's TSP update, it is recommended that Hood River County amend their mobility standard to allow for operation at a LOS D (a LOS C is currently required) on all roads and intersections under County jurisdiction within the urban growth area.

Neighborhood Traffic Management (NTM)

Neighborhood Traffic Management (NTM) is a term used to describe strategies to slow down traffic and potentially reduce volumes with the intent of improving safety for pedestrians and bicyclists and protecting neighborhood livability. NTM strategies, which commonly include the installation of traffic calming devises, are often inappropriate for use on arterial and collector streets but can work well on low speed local streets.

To address neighborhood impacts, the City of Hood River will require that in addition to assessing impacts to the entire transportation network, traffic studies for new developments must also assess impacts to residential neighborhoods and identify mitigation when developments are anticipated to add significant traffic volumes or increase vehicle speeds on nearby residential streets. The threshold to determine if this additional analysis is needed is that the proposed development is expected to increase through-traffic volumes on a residential local street by 20 or more vehicles in the evening peak hour or 200 vehicles per day. Once the analysis is performed, criteria used to determine if residential streets are impacted are:

- Local residential street volumes should not increase above 1,200 average daily trips
- Local residential street speeds should not exceed 28 miles per hour (85^{th} percentile speeds)

Mitigation measures for neighborhood traffic impacts must balance the need to manage vehicle speeds and volumes with the need to maintain mobility, circulation, and function for service providers (e.g., emergency response). Table 7 lists common NTM applications with a corresponding photo log included in the appendix. NTM projects must include coordination with emergency response staff to ensure public safety is not compromised. An initial response from Hood River Fire and EMS to the proposed NTM strategies is provided in Table 7.

Table 7: Summary of Traffic Calming Strategies

NTM Application	Use by Functional Classification			Impact		Hood River Fire and EMS Response to Traffic Calming Strategy
	Arterial	Collector	Local	Speed Reduction	Traffic Diversion	
Chicanes			✓	✓	✓	Not Acceptable
Chokers			✓	✓	✓	Not Acceptable
Curb Extensions	✓	✓	✓	✓		OK
Diverters (with emergency vehicle pass-through)		✓	✓		✓	OK
Median Islands	✓	✓	✓	✓		OK
Raised Crosswalks			✓	✓	✓	OK
Speed Cushions (with emergency vehicle pass-through)			✓	✓	✓	Not Acceptable
Speed Hump			✓	✓	✓	Not Acceptable
Traffic Circles			✓	✓	✓	OK

Access Management

Access Management is a broad set of techniques that balance the need to provide efficient, safe, and timely travel with the ability to allow access to individual destinations. It involves the control or limiting of access to arterial and collector facilities to maximize the roadways' capacity and preserve their functional integrity.

City of Hood River and ODOT Access Management Spacing Standards

Both the City of Hood River and ODOT have access management spacing standards established for roadways of various functional classifications. The standards for roadways under City of Hood River jurisdiction are provided in Table 8.

Table 8: City of Hood River Access Management Spacing Standards[a,b]

Street Classification	Spacing between Public Streets (Min – Max)	Minimum Spacing between Driveways and other Driveways or Public Streets[c]
Minor Arterial	660 – 1,000 ft.	300 ft.
Collector Street	220 – 440 ft.	100 ft.
Local Street	200 ft.	22 ft.

[a] Exceptions may be made by the City Engineer.

[b] As measured by straight curb between access points.

[c] Private access to arterial roadways shall only be granted through a requested variance of access spacing standards when access to a lower classified facility is not feasible.

The *Oregon Highway Plan* (OHP) access management spacing standards apply to roadways under ODOT jurisdiction and are implemented through OAR 734-051. Highway access spacing standards vary with highway classification, posted speed, and surrounding area land use. The standards applicable to highways within the City of Hood River urban growth boundary (UGB) are summarized in Table 9. Tables 10, 11, and 12 list supplementing access spacing standards that specifically apply to the I-84 Exit 62, Exit 63, and Exit 64 interchange areas, respectively. The standards in these tables supersede those from Table 8 where both apply.

Table 9: *Oregon Highway Plan* Access Management Spacing Standards

Facility	Access Spacing Standard[a] per Posted Speed (Urban Area[b])				
	≥ 55 mph	50 mph	40 & 45 mph	30 & 35 mph	≤ 25 mph
District Highway[c]	700 feet	550 feet	500 feet	350 feet	350 feet

[a] Measurement of the approach road spacing is from center to center on the same side of the roadway.

[b] The Urban standard applies within UBGs unless a management plan agreed to by ODOT and the local government(s) establishes a different standard.

[c] OR 281 and US 30 are classified as District Highways

Source: 1999 Oregon Highway Plan, as amended January 2006.

Table 10: I-84 Exit 62 Interchange Area Access Spacing Standards

Type of Access Point	Minimum Spacing Dimension*
Distance between ramp terminal and first major intersection on Cascade Ave. / Westcliff Dr.	1,320 feet
Distance between ramp terminal and first directional median opening on Cascade Ave. / Westcliff Dr.	1,320 feet
Distance between ramp terminal and last right-in/right-out approach on the right side of Cascade Ave. / Westcliff Dr. (when moving toward I-84)	990 feet**
Distance between ramp terminal and first right-in/right-out approach on the right side of Cascade Ave. / Westcliff Dr. (when moving away from I-84)	750 feet

* Spacing standards for Freeway Interchanges with Multi-lane Crossroads

** 990-foot spacing applies to the future improved corridor. Until the corridor is widened, the 2-lane crossroad spacing of 750 feet will apply.

Table 11: I-84 Exit 63 Interchange Area Access Spacing Standards

Type of Access Point	Minimum Spacing Dimension*
Distance between ramp terminal and first major intersection on 2nd St.	1,320 feet
Distance between ramp terminal and first directional median opening on 2nd St.	1,320 feet
Distance between ramp terminal and last right-in/right-out approach on the right side of 2nd St. (when moving toward I-84)	750 feet
Distance between ramp terminal and first right-in/right-out approach on the right side of 2nd St. (when moving away from I-84)	750 feet

* Spacing standards for Freeway Interchanges with Two-lane Crossroads

Table 12: I-84 Exit 64 Interchange Area Access Spacing Standards

Type of Access Point	Minimum Spacing Dimension*
Distance between ramp terminal and first major intersection on Button Bridge Rd.	1,320 feet
Distance between ramp terminal and first directional median opening on Button Bridge Rd.	1,320 feet
Distance between ramp terminal and last right-in/right-out approach on the right side of Button Bridge Rd. (when moving toward I-84)	990 feet
Distance between ramp terminal and first right-in/right-out approach on the right side of Button Bridge Rd. (when moving away from I-84)	750 feet

* Spacing standards for Freeway Interchanges with Multi-lane Crossroads

The OHP also includes standards for interchange spacing. There are three interchanges on I-84 serving the City of Hood River. Currently, Exit 62 on I-84 is approximately 1.9 miles from Exit 63, and Exit 63 is 0.5 miles from Exit 64. According to the OHP access management spacing standards, interchange spacing in urban areas should be a minimum 3 miles and in rural areas spacing should not be less than 6 miles. The I-84 interchanges in the City of Hood River are closer than the urban minimum access spacing standards; therefore no additional interchanges should be considered for I-84 within the City.

Access Management Plans for the areas surrounding the I-84 interchanges were developed as part of the Hood River I-84 Exit 62, Exit 63, and Exit 64 Interchange Area Management Plans (IAMPs). The focus was on achieving a reduction in direct access to interchange area crossroads, while maintaining accessibility for abutting properties.

The areas adjacent to the interchange crossroads were divided into “Access Blocks”, with many consisting of several parcels that have similar access constraints. For each block, recommendations for future access have been provided. As future changes in property access are proposed, the recommendations from the IAMP access management plans shall be applied through a collaborative effort between the City, ODOT, Hood River County, and affected property owners.

Access Management Strategies

In addition to spacing standards, there are access management strategies to help improve mobility and safety by limiting the number of traffic conflicts on roadways. Below is a list of access management strategies that can be implemented through local land use review to help improve roadway operations:

- Consolidate approaches between adjacent properties with compatible land uses. This may also be facilitated over time by requiring the subject property of a land use action to establish a cross-over easement with the adjacent parcel; when the parcel re-develops, joint access may be established.
- Consolidate existing access wherever separate parcels are assembled under one purpose.
- Designate the ultimate number of driveways for existing parcels, to be implemented as land division (partition or subdivision) occurs.
- To reduce road-driveway conflicts, restrict parking on roadways adjacent to driveways in order to increase the potential speed of vehicles leaving the roadway and entering a driveway.
- Establish a policy to require that access be taken from a lower classified street when available.
- Encourage connections between adjacent properties with compatible land uses, and the establishment of cross-over easements (for access as well as circulation).
- Require that development accommodate vehicular circulation on-site, rather than utilizing the adjacent roads.

Local Street Connectivity

Providing local street connectivity as required by the state Transportation Planning Rule (OAR 660-012) is an important objective for the City of Hood River. A lack of connectivity can result in the need for investments in wider roads, traffic signals, and turn lanes that could otherwise be avoided. However, providing connectivity between neighborhoods can reduce vehicle miles traveled (VMT), enhance the attractiveness of other travel modes, balance the traffic load on the network, and reduce public safety response times.

Figure 7 shows the Local Street Connectivity Plan and specifies the general locations where new local street connections will be installed as areas develop. The connector alignments are approximate and are aimed at reducing potential neighborhood traffic impacts by better balancing traffic flows on neighborhood routes. Consideration has also been given to environmental features, topography, and the existing built environment. Consider the following objectives when creating a local street system within Hood River's urban growth boundary:

- In the central business district, a compact block pattern has been established and should be retained; the maximum block length and perimeter will not exceed 400 feet and 1,200 feet, respectively.

- In residential zones, a block pattern that supports good pedestrian connectivity should be maintained; the maximum block length and perimeter will not exceed 600 feet and 1,600 feet, respectively.
- In industrial zones, large blocks may be necessary to support industrial development; no maximum block length or perimeter should be established, except where new collector or arterial roadways are planned.
- In all other zones, the maximum block length and perimeter will not exceed 800 feet and 2,000 feet, respectively.
- Pathways (for pedestrians and bicycles) will be provided at or near mid-block where the block length exceeds 600 feet in length. Pathways will be provided where cul-de-sacs or dead-end streets are planned, to connect the ends of the streets together, to other streets, and/or to other developments, as applicable.
- Dead-end streets or cul-de-sacs will be no more than 200 feet long and will only be used when environmental or topographical constraints, existing development patterns, or compliance with other standards preclude street extension and through circulation.

To protect existing neighborhoods from the potential traffic impacts caused by extending stub end streets, the design and construction of connector roadways will evaluate if neighborhood traffic management strategies are necessary. In addition, when a development constructs stub streets, the City requires the installation of signs to increase residents' awareness of the potential for future street connection/extension.

City of Hood River

Transportation System Plan

Figure 7

LOCAL STREET CONNECTIVITY

NORTH

0 0.25 0.5 Miles

May 2011

Legend

Proposed Roadway Classification

- Major Arterial
- Minor Arterial
- Urban Collector
- County Collector
- Local

Future Extentsion, Functional Classification

- Major Arterial
- Minor Arterial
- Urban Collector
- County Collector
- Local

Potential Local Street Connection

- Civic/ Government
- City Limits
- Parks
- Railroad
- Schools
- Streams
- Waterbodies
- Parcels
- UGB

DKS Associates, Inc., mapping 2010 Real Urban Geographics www.realurban.com

Motor Vehicle System Projects

The motor vehicle system projects presented in Table 13 address different types of capacity improvements, including projects within the interchange areas, overall system circulation projects, downtown-specific circulation projects, and individual targeted intersection improvements. This set of projects represents the motor vehicle component of the "Preferred Plan", which consists of all transportation improvements identified to meet future needs through the year 2031. The Financially Constrained Plan (presented in Chapter 4) is a subset of this plan that aligns with anticipated funding. Descriptions of the Preferred Plan projects are provided in Table 13 and the locations of the different projects can be seen in Figure 8.

Table 13: Motor Vehicle System Projects – Preferred Plan

Project ID	Location	Description	Planning Level Cost
MV1*	I-84 Exit 62 Interchange	I-84 Westbound Ramps/Terminal • Construct traffic signal • Construct northbound left turn lane (full length of bridge) • Construct second southbound through lane • Construct westbound left turn lane • Construct shared westbound through/left turn lane • Construct westbound right turn lane I-84 Eastbound Ramps/Terminal • Construct traffic signal • Construct northbound right turn lane (drop lane from Cascade Ave.) • Construct second southbound through lane • Construct southbound left turn lane • Construct eastbound right turn lane	$20,900,000
MV2*	Cascade Ave (HCRH): I-84 Exit 62 Interchange to Rand Rd.	• Construct second eastbound lane from I-84 eastbound ramp terminal to Mt. Adams Ave. (ends as right turn lane) • Construct second westbound lane from Mt. Adams Ave. to I-84 eastbound ramp terminal (ends as right turn lane)*** • Widen Cascade Ave. between Mt. Adams Ave. and Rand Rd. to include one travel lane in each direction and a center turn lane *(Traffic signal on Cascade Ave. at Mt. Adams Ave. listed as separate project – MV11)*	$2,700,000

Project ID	Location	Description	Planning Level Cost
MV3*	Country Club Rd. Realignment/ Mt. Adams Ave.	• Realign Country Club Road to intersect with Mt. Adams Ave., disconnecting the existing intersection on Cascade Ave. with Country Club Rd. to motor vehicle traffic • Construct Mt. Adams Ave. from Cascade Ave. to realigned Country Club Rd. <u>Cascade Ave. at Mt. Adams Ave.</u> • Construct two northbound left turn lanes on inside, full length to Country Club Rd. on outside) • Construct northbound right turn lane • Install yield control for eastbound right turn lane (constructed as part of MV2) *(Traffic signal on Cascade Ave. at Mt. Adams Ave. listed as separate project – MV11)* <u>Mt. Adams Ave. at Country Club Rd.</u> • When Mt. Adams Ave. is extended to the south (MV4), construct northbound left turn lane • When Mt. Adams Ave. is extended to the south (MV4), construct northbound shared through/right turn lane • Construct channelized southbound right turn lane under yield control (drop lane from Mt. Adams Ave.) • Construct southbound through lane • Construct southbound left turn lane serving property access on east approach • Construct eastbound left turn lane • Construct eastbound shared through/right turn lane • Construct east approach for property access, including a westbound left turn lane, and a shared westbound through/right turn lane *(Traffic signal on Mt. Adams Ave. at Country Club Rd. listed as separate project – MV12)*	$3,700,000
MV4	Mt. Adams Ave.: Country Club Rd. to Fairview Dr.	• Construct Mt. Adams Ave. as a 3-lane minor arterial from Country Club Rd. to Fairview Dr. along the existing 30th St. alignment and the south/west edge of the urban growth boundary (UGB). This project would be an extension of the Mt. Adams Ave. segment constructed under MV3. The alignment of this roadway should remain within the urban growth boundary and should avoid the National Scenic Area. Improvements within the National Scenic Area may be subject to review for consistency with National Scenic Area provisions. New roadways constructed adjacent to the urban growth boundary may be modified by the City Engineer to include only 3/4-street improvements (e.g., no curb and sidewalk adjacent to the urban growth boundary). • Construct a traffic signal at the intersection of Mt. Adams Avenue/ May Street, two-way-stop-control at Mt. Adams Avenue/Fairview Drive, and a roundabout or traffic signal at Hutson Road/ Belmont Drive.	$11,940,000

Project ID	Location	Description	Planning Level Cost
MV5	Sherman Ave.: Rand Rd. to Mt. Adams Ave.	• Extend Sherman Ave. from Rand Rd. to Mt. Adams Ave. (middle segment of this extension exists)	$2,145,000
MV6	Rand Rd.: May St. to Belmont Ave.	• Extend Rand Rd./27th St. from the current stub south of May St. to Belmont Ave.	$3,220,000
MV7	Belmont Ave.: Rand Rd. to Frankton Rd.	• Extend Belmont Ave. to Frankton Rd., opposite Post Canyon Dr. The alignment of Belmont Ave. would fall within the southern UGB and avoid the National Scenic Area. Improvements within the National Scenic Area may be subject to review for consistency with National Scenic Area provisions. New roadways constructed adjacent to the urban growth boundary may be modified by the City Engineer to include only 3/4-street improvements (e.g., no curb and sidewalk adjacent to the urban growth boundary).	$8,605,000
MV8**	I-84 Exit 63 Interchange	<u>I-84 Westbound Ramps/Terminal</u> • Widen westbound off-ramp approach to include a right turn lane, shared through/left lane, and a left turn lane <u>I-84 Eastbound Ramps/Terminal</u> • Lengthen the I-84 Exit 63 off-ramp • Modify the eastbound approach to include a shared through/left turn lane and right turn lane <u>2nd Street</u> • Widen the 2nd St. overcrossings of I-84 and the Union Pacific Railroad to add a second southbound through lane. Widening is recommended to occur on the east side to fit available right of way and provide an opportunity to correct the existing sight distance problem for pedestrians on the southeast corner of the 2nd St./ I-84 eastbound intersection. • Remove parking on 2nd St. between Cascade Ave. and Oak St. and restripe the roadway to provide a second southbound through lane, dropping as a right turn lane at Oak St.	$8,600,000
MV9**	I-84 Exit 63 westbound off-ramp queue management	• Install queue detection devices on the I-84 Exit 63 westbound off-ramp, communications with ODOT's Traffic Management Operations Center, and surveillance cameras for viewing the off-ramp. This will allow for operators to post warning messages on the variable message sign on I-84 westbound entering Hood River when deemed warranted by conditions on the Exit 63 westbound off-ramp. *(This project is intended to be an interim improvement if recurring congestion and unsafe ramp queues become a problem before the improvements from project MV8 can be funded and constructed.)*	$230,000
MV10*	Cascade Ave. (HCRH) / Westcliff Dr.	• Construct traffic signal • Construct eastbound right turn lane	$950,000

Project ID	Location	Description	Planning Level Cost
MV11*	Mt. Adams Ave./ Cascade Ave.(HCRH)	• Construct traffic signal *(Assumes complimentary road improvements constructed as part of MV2 and MV3)*	$350,000
MV12*	Mt. Adams Ave./Country Club Rd.	• Construct traffic signal *(Assumes complimentary road improvements constructed as part of MV3 and MV4)*	$350,000
MV13*	Rand Rd./ Cascade Ave. (HCRH)	• Construct traffic signal • Modify northbound approach to include a left turn lane and a shared through/right turn lane • Modify southbound approach to include a left turn lane and a shared through/right turn lane • Construct eastbound right turn lane	$1,000,000
MV14**	2nd St./ Riverside Dr.	• In the future, the 2nd Street/ Riverside Drive intersection may no longer comply with mobility standards and restrictions on turning movements may be required. One identified solution involves the removal of stop signs on 2nd Street approaches and restriction of turning movements to allow only right-in and right-out turn movements. While this solution was found to provide acceptable operations, it could significantly reduce the accessibility of some properties and result in undesirable diversion of traffic through other areas of the Waterfront. Changes to the 2nd/Riverside intersection should be expected in the future. However, such changes shall occur only when necessary and left turn movement restrictions shall occur only if no other solution is found to be acceptable. Any solution to mitigating the 2nd Street/ Riverside Drive intersection must be compatible with the long-term ability to safely and efficiently accommodate traffic movements through the I-84 Exit 63 interchange. All property owners in the Waterfront area shall be noticed at the time improvements at the 2nd Street/ Riverside Drive intersection are being considered and shall be allowed the opportunity to participate in the process of developing and selecting appropriate improvements.	$310,000
MV15**	2nd St./ Portway Ave.	• All-way stop control (as needed based on implementation of turn restrictions at 2nd St./ Riverside Dr.)	$3,000

Project ID	Location	Description	Planning Level Cost
MV16**	OR 35/ State St.	• Construct traffic signal • Construct northbound left turn lane • Construct northbound shared through/right turn lane • Construct southbound left turn lane • Construct southbound through lane • Construct southbound right turn lane • Construct westbound left turn lane • Construct westbound shared through/right turn lane • Construct eastbound left turn lane • Construct eastbound through lane • Construct eastbound right turn lane separated from intersection (as existing)	$1,100,000
MV17	May St./ 13th St. (OR 281)	• Construct traffic signal • Construct eastbound right turn lane	$775,000
MV18	May St./17th St.	• Reconfigure the stop sign placement so that all southbound movements on 18th St. must stop, while May St. would not be required to stop	$3,000
MV19	May St./ 22nd St.	• Convert the intersection to two-way stop control by removing the stop signs on the May St. approaches	$3,000
MV20	Cascade Ave. (HCRH) / 20th St.	• Construct a traffic signal	$350,000
MV21	Belmont Ave./ 13th St. (OR 281)	• Construct a traffic signal	$350,000
MV22	Belmont Ave./ 12th St (OR 281)	• Add signs limiting the westbound approach to right out movements only	$5,000
MV23**	2nd St./ Oak St.(HCRH)	• Construct traffic signal	$350,000
MV24	2nd St./State St.	• Construct traffic signal	$350,000
		Total Cost	**$68,289,000**

* Included in Hood River I-84 Exit 62 Interchange Area Management Plan
** Included in Hood River I-84 Exit 63 & Exit 64 Interchange Area Management Plan
***Traffic projections have shown that a second 12-foot wide westbound travel lane will ultimately be required. Prior to construction of the outer westbound travel lane, the City of Hood River and ODOT will demonstrate the need for the lane based on updated traffic projections and will present the findings to the Historic Columbia River Highway Advisory Committee.

City of Hood River
Transportation System Plan

Figure 8

MOTOR VEHICLE SYSTEM PLAN

NORTH

0 0.25 0.5 Miles

May 2011

Legend

Proposed Improvements
- Arterial (New)
- Arterial (Widening)
- Collector (New)
- Collector (Widening)

Environmental Features
- Wetlands

Roadways
- Arterial
- Collector
- Local

- Civic/ Government
- City Limits
- Parks
- Railroad
- Schools
- Streams
- Waterbodies
- Parcels
- UGB

DKS Associates, Inc. and Alta Planning & Design, mapping 2010-2011 Real Urban Geographics www.realurban.com

Intersection Operations

Operations of key intersections on the street network within the city were analyzed and compared to City and ODOT standards for mobility. Table 14 shows the results of this analysis for the year 2031 under No Build conditions, as well as under conditions that assume all motor vehicle system plan projects are in place.

While there are many intersections that are projected to fail to comply with mobility standards in the future, nearly all will be mitigated through implementation of the Preferred Plan motor vehicle projects. One exception is the intersection on 2nd Street at Cascade Avenue, which is discussed in further detail below. The other exception is the intersection on 12th Street (OR 281) at Belmont Avenue, which will meet ODOT's mobility standard, but not the City's. At this intersection, the left turn from Belmont Avenue onto northbound 12th Street will experience high delays, but signalization would not be warranted. As delays increase, some of these trips may divert to other streets to the north (e.g., A Street, B Street, C Street, May Street).

Also of note are two intersections that will comply with Oregon Highway Plan standards, but not those from the Highway Design Manual. These include: 13th Street (OR 281) at May Street and 2nd Street at the I-84 eastbound ramps. Since the Oregon Highway Plan standards are to be used to identify when mitigation should be required, sufficient capacity will be provided at these locations to support projected growth in the city. The significance of not complying with the mobility standards from the Highway Design Manual is that approval of a design exception from ODOT would be needed to implement the recommended projects if they are funded and constructed by a public agency.

2nd Street at Cascade Avenue

Traditionally, interchange crossroads are designed as arterial or collector streets that are able to gradually distribute large volumes of traffic away from the freeway system to many destinations on the surface streets. To do this effectively generally requires that the crossroad be managed such that direct access is limited within several hundred feet of the interchange.

While 2nd Street is designated as a collector street, the close proximity of Hood River's downtown limits the ability of 2nd Street to safely and efficiently move traffic away from the interchange as desired. To facilitate this, the City of Hood River had previously placed a condition of approval on a land use action requiring that the intersection on 2nd Street at Cascade Avenue be restricted such that only right-in and right-out turning movements could be made to and from the Cascade Avenue approaches. However, given the potential impacts to traffic circulation in the surrounding area within the downtown that could create other safety and operational problems, this action is no longer desired.

Through discussions with ODOT regarding the management of the 2nd Street corridor south of I-84, the City of Hood River has determined that the best approach is to leave the 2nd Street at Cascade Avenue intersection in its current condition with no mitigation. As opposed to the previous plan to restrict turning movements, leaving the intersection as-is provides a better balance between facilitating interchange operations and preserving the function of the downtown. Within the downtown, there are a number of important issues that must be considered, such as the preservation of parking, provision of a safe and convenient walking environment, truck access to the industrial area north of Columbia Street, and reasonable motor vehicle circulation and access to businesses.

In leaving 2nd Street at Cascade Avenue intersection in its current configuration, it is acknowledged that it will be unable to comply with the City's mobility standard, which requires operation at a level of service D or better. Therefore, as part of an overall interchange and downtown management strategy, the City will allow for an exception from the mobility standard at this intersection.

Table 14: Weekday 2031 PM Peak Hour Intersection Operations

Intersection (North-South / East-West)	Mobility Standard **	2031 "No Build"			2031 TSP Preferred Plan Improvements		
		Delay	*LOS*	*V/C*	*Delay*	*LOS*	*V/C*
City of Hood River intersections							
Frankton Rd. / Country Club Rd.	D	27.8	A/D	0.78	12.6	A/B	0.34
Frankton Rd. / May St.	D	35.7	**A/E**	0.70	14.6	A/B	0.36
Rand Rd. / May St.	D	21.4	A/C	0.53	34.7	A/D	0.61
22nd St. / May St.*	D	16.4	C	0.64	33.2	A/D	0.54
18th St. / May St.	D	14.4	A/B	0.39	20.3	A/C	0.55
Indian Creek Rd. / Brookside Dr.	D	14.7	A/B	0.44	16.7	A/C	0.57
2nd St. / Portway Ave.	D	12.5	A/B	0.31	14.0	B	0.59
2nd St. / State St.	D	>200	**B/F**	1.68	43.0	D	0.85
2nd St. / Cascade Ave.	0.80/0.90	42.4	**A/E**	0.64	42.4	**A/E**	0.64
12th St. (North Leg) / May St.	D	30.4	A/D	0.63	19.4	A/C	0.37
ODOT intersections							
Cascade Ave. (HCRH) / Westcliff Dr.	0.80/0.90	*15.8*	A/C	0.22	29.9	C	0.36
Cascade Ave. (HCRH) / I-84 WB Ramps	0.65/0.85	>200	**A/F**	**4.53**	39.0	D	0.65
Cascade Ave. (HCRH) / I-84 EB Ramps	0.65/0.85	129.9	**A/F**	**1.11**	14.9	B	0.50
Cascade Ave. (HCRH) / Country Club Rd.	0.80/0.90	>200	**D/F**	**>5**	*NA*	*NA*	*NA*
Cascade Ave. (HCRH) / Rand Rd.	0.80/0.90	>200	**B/F**	**NA**	22.6	C	0.79
20th St. / Cascade Ave. (HCRH)	0.80/0.90	>200	**B/F**	**NA**	9.9	A	0.64
13th St. (OR 281) / Oak St.	0.80/0.90	61.5	**E**	**1.01**	28.0	C	0.74
13th St. (OR 281) / State St.	0.80/0.90	>200	**A/F**	**2.39**	32.7	A/D	0.30
13th St. (OR 281) / May St.	0.80/0.90	28.4	A/D	**1.02**	18.9	B	0.85***
12th St. (South Leg) (OR 281) / May St.	0.80/0.90	8.9	A	0.68	8.6	A	0.66
13th St. (OR 281) / Belmont Ave.	0.80/0.90	>200	**A/F**	**2.43**	10.5	B	0.67
12th St. (OR 281) / Belmont Ave.	0.80/0.90	85.2	**A/F**	0.83	67.7	**A/F**	0.80
12th St. (OR 281) / Brookside Dr.	0.80/0.85	10.2	B	0.67	9.4	A	0.62
2nd St. / Riverside Dr.*	0.80/0.90	26.1	D	**0.94**	15.7	C	0.26
2nd St. / I-84 WB On/Off Ramps	0.65/0.85	19.7	B	0.74	15.1	B	0.60
2nd St. / I-84 EB On/Off Ramps	0.65/0.85	35.2	D	**0.93**	16.7	B	0.74***
2nd St. / Oak St. (HCRH)	0.80/0.90	72.1	F	**1.10**	18.1	B	0.77
Button Bridge Rd. / Marina Wy.	0.80/0.80	10.7	B	0.57	12.7	B	0.58
Button Bridge Rd. / I-84 WB Ramps	0.65/0.80	7.9	A	0.46	7.9	A	0.49
Button Bridge Rd. / I-84 EB Ramps	0.65/0.85	12.5	B	0.46	16.9	B	0.59
Button Bridge Rd. / Historic Columbia River Hwy.*	0.70/0.80	30.1	D	**0.96**	20.8	C	0.64

Signalized & All Way Stop Intersection:
Delay = Average Intersection Delay (sec.)
LOS = Level of Service
V/C = Volume to Capacity Ratio
Shaded values do not meet standards

Unsignalized Intersection:
Delay = Critical Movement Approach Delay (sec.)
LOS = Major Street LOS / Minor Street LOS
V/C = Critical Movement Volume-to-Capacity Ratio
Shaded values do not meet standards

*all way stop control
** (HDM/OHP) shown for ODOT intersections
*** HDM standard not met, however OHP standard is met

Transportation Demand Management

Transportation Demand Management (TDM) is the general term used to describe any action that removes single occupant vehicle trips from the roadway network during peak travel demand periods. TDM focuses on reducing vehicle miles traveled (VMT) and promoting alternative modes of travel. By shifting peak travel demands on roadways, the roadway capacity can be used more efficiently, and may avoid or delay the need for building new or expanding existing roads or for operational improvements such as signalization.

A wide variety of TDM strategies exist, however many are tailored to larger urban areas. Strategies for rural or smaller communities require special development and planning. Below in Table 15 is a list of potential TDM strategies that the City of Hood River could consider for future implementation.

Table 15: Potential Transportation Demand Management Strategies

Strategy	Description	Potential Trip Reduction
Telecommuting	Employees perform regular work duties at home rather than commuting from home to work. This may be full time or on selected work days. This can require computer equipment to be most effective.	82-91% (Full Time) 14-36% (1-2 Days/Week)
Compressed Work Week	Schedule where employees work their regular scheduled number of hours in fewer days per week.	7-9% (9 day/80 hr) 16-18% (4 day/40 hr) 32-36% (3 day/36 hr)
Transit Pass Subsidy	For employees who take transit to work on a regular basis, the employer pays for all or part of the cost on a monthly transit pass.	19-32% (Full subsidy of cost, high transit service) 4-6% (Full subsidy of cost, medium transit service) 0.5-1% (Full subsidy of cost, low transit service) 10-16% (Half subsidy of cost, high transit service) 2-3% (Half subsidy of cost, medium transit service) 0-0.5% (Half subsidy of cost, low transit service)
Reduced Cost or Preferential Parking for HOVs	Parking costs charged to employees are reduced for carpools and or vanpools. Employer provides reserved prime location parking spots for HOV commuters.	1-3%
Alternate Mode Subsidy	For those employees that commute to work by a mode other than driving alone, the employer provides a monetary bonus to the employee.	21-34% (Full subsidy, high transit service) 5-7% (Full subsidy, medium transit service) 1-2% (Full subsidy, low transit service) 10-17% (Half subsidy, high transit service) 2-4% (Half subsidy, medium transit service) 0.5-1% (Half subsidy, low transit service)

On-Site Services	Provide services at the work site that are frequently used by the employees of that work site. Examples include cafes/restaurants, dry cleaners, day care centers, and bank machines.	1-2%
Bicycling Program	Provides support services to those employees that bicycle to work. Examples include: safe/secure bicycle storage, shower facilities, and subsidy of commute bicycle purchase.	0-10%
On-Site or Public Rideshare Matching for Carpools and Vanpools	On-Site: Employees who are interested in carpooling or vanpooling provide information to a transportation coordinator on staff regarding their work hours, availability of a vehicle and place of residence. The coordinator then matches employees who can reasonably rideshare together. Public: Public entity (city, transit agency, region, state) provides an interactive website for carpool matching.	1-2% (Without support strategies) 6-8% (With support strategies)
Provide Vanpools	Employees that live near each other are organized by their employer into a vanpool for their trip to work. The employer may subsidize the cost of operation and maintain the van.	15-25% (Company-provided vans with a fee) 30-40% (Company-subsidized vans)
Gifts/Awards for Alternative Mode Use	Employees are offered the opportunity to receive a gift or an award for using modes other than driving alone.	0-3%
Employer Bus	Employer provides a bus service specifically to transport employees to work.	3-11%
Walking Program	Provide support services for those who walk to work. This could include buying walking shoes or providing lockers and showers.	0-3%
Time Off with Pay for Alternative Mode Use	Employees are offered time off with pay as an incentive to use alternative modes.	1-2%
Company Cars for Business Travel	Employees are allowed to use company cars for business-related travel during the day.	0-1%
Guaranteed Ride Home Program	A company owned or lease vehicle or taxi fare is provided in the case of an emergency for employees that use alternative modes.	1-3%

Source: *Employee Commute Options (ECO) Sample Trip Reduction Plan, Oregon Department of Environmental Quality*, October 2006.

Hood River County has a Coordinated Transportation Plan that was prepared by the Mid-Columbia Economic Development District (MCEDD) for 2009-2012.[2] The plan looks at the existing transportation service options in Hood River County, which includes the TDM strategies of carpool/rideshare and vanpools. Several interviews were conducted by MCEDD to evaluate the existing service and to identify common origins and destinations throughout Hood River

[2] *Hood River County Coordinated Transportation Plan, 2009-2012*. Mid-Columbia Economic Development District. Hood River County, Oregon.

County. This information could be useful in determining corridors were transit routes may be feasible.

Another report was also released by the Gorge TransLink Coordination Project[3] in 2008, which evaluates the transit provided in Skamania, Klickitat, Hood River, and Wasco counties. In addition to the available transit service in these areas, vanpools were identified as a strategy to help move people more efficiently through the area instead of fixed route services. The report identified corridors that could be serviced by vanpools. The corridors pertaining to Hood River were:

- Hood River to The Dalles
- Bingen to White Salmon, Hood River, and The Dalles
- Klickitat County into Goldendale and out to Yakima, The Dalles, and Hood River

The report contains information regarding the organizational types of vanpools, an extensive benefits list, and discusses different subsidy options for vanpool service. This report is a good resource when considering additional expansion of vanpool services. Currently three vanpools exist in the Gorge TransLink service area and all have stops in Hood River. The three existing vanpool programs are listed below:

- **Army Corps of Engineers Vanpool**: There are three vanpools serving the Army Corps of Engineers John Day Dam in Rufus. They begin in different locations including: Goldendale, The Dalles, and Hood River. The vanpool is operated by VPSI, a local private vanpool provider.

- **Hood River-Lloyd District, Portland**: A vanpool operated between Hood River and the Lloyd District. It is organized through Metro, Portland's regional governmental organization, and operated by Enterprise Van, a private operator.

- **Google Shuttles**: Google subsidizes two vanpools that bring employees to its facility in The Dalles. One begins in Beaverton and the other in Hood River.

As part of a strategy to reduce single occupant motor vehicle trips in Hood River, the City shall support existing and future vanpooling programs. An example of a future program could be Carpool NW, which may be available statewide in the future.

[3] *Gorge TransLink Coordination Project Final Report January 2008*. Community Transportation Association of America. 2008. Nelson/Nygaard Consulting Associates.

Other Modal Plans

This section addresses transportation for the other modes of transit, rail, air, pipeline, and water. The City may have some limited influence over these modes but does not have direct ownership or authority.

Transit Plan

The City of Hood River is currently provided public transit service by Columbia Area Transit (CAT), which is operated by the Hood River County Transportation District. The Transit District was formed in 1993 and provides services throughout the county primarily through Dial-A-Ride service and limited intercity routes. Approximately 6 percent of the total ridership from July 2009 to June 2010 utilized the intercity route service. The Transit District also provides regional services transporting passengers to the Portland Metropolitan area. CAT has 10 American with Disabilities Act (ADA) accessible service vehicles and annually services 34,000 one-way trips. CAT recently completed construction of a transit center on Wasco Loop, which includes administrative offices, maintenance, storage facilities for CAT's 10 service vehicles with capacity to store two additional vehicles. In addition, CAT has plans to build a Park and Ride lot next to the transit center with room for 16-17 motor vehicles. The different services provided by CAT are outlined below:

CAT HR-TD-HR Intercity Route

In 2008, CAT established an intercity route that travels from Hood River to The Dalles and back to Hood River Monday through Friday. This service runs three times a day (Morning, Mid-Day, and Evening) with twelve stops located along the route.

CAT PDX Intercity Route

CAT also operates an intercity route service on Thursdays that travels from The Dalles to Hood River and to Portland. This service then returns to Hood River and The Dalles after a three and a half hour layover in Portland. This route has six stops.

CAT Dial-A-Ride

CAT provides a Dial-A-Ride door to door service throughout Hood River County. CAT is available Monday through Friday and serves Hood River, Odell, Parkdale, and Cascade Locks. Rides can be reserved from 24 hours up to fourteen days in advance and scheduled between 8 a.m. and 4:30 p.m.

CAT also provides a Dial-A-Ride for a once a month trip to Portland, which occurs the second Friday of each month. The bus leaves Hood River at 9 a.m. and then leaves Portland on the return trip to Hood River at 3 p.m. Typically, the Portland destination is the Clackamas Town Center. Reservations are required for this monthly Portland trip.

Greyhound

CAT had previously been the local agent for Greyhound, but this service was discontinued as of May 31, 2010.[4] Greyhound reservations can now be made directly with Greyhound, either online or over the telephone. The Greyhound bus depot in Hood River is located near the Mt. Hood Railroad terminal at the intersection of 1st Street and Cascade Avenue. Greyhound provides service through Hood River from Portland, OR to The Dallas and on to Stanfield, OR along I-84. Traveling to Portland, Greyhound services Hood River three times a day on Monday through Sunday, departing at 4:25 a.m., 3 p.m., and 5 p.m. Traveling to Stanfield, Greyhound services Hood River twice daily on Monday through Sunday departing at 12:55 a.m. and 1:55 p.m. Once reaching either Portland or Stanfield, travelers can then select north-south routes along I-5, I-84, or I-90.

Bicycle and Pedestrian Access to Transit

Columbia Area Transit operates a variety of services for Hood River residents. However, short-term bicycle parking, ADA-compliant curb ramps, benches and shelters are key improvements lacking at bus stops that would improve safety, comfort, and convenience to bicyclists and pedestrians accessing transit.

Transit Needs

Based on the existing transit facilities inventory, the following issues were identified:

- Consistent and increased annual funding could allow for local intercity route and/or flex-route transit service within the City, yet allow CAT to maintain its current dial-a-ride and regional system.

- Improvements are needed near transit stops to provide short-term bicycle parking, ADA-compliant curb ramps, benches, and shelters. These improvements would make transit more attractive and convenient for Hood River residents.

The City of Hood River is committed to supporting regional efforts to provide and expand transit services in the City. While the city is not currently able to financially support transit service, it is committed to participating in regional planning efforts.

- Participate in regional planning efforts such as Mid-Columbia Economic Development District's Hood River Bridge Crossing Task Force.

- Support development of intercity transit between Hood River and Bingen/White Salmon, as well as between Hood River and Odell/Parkdale.

- Support development of transit service through identified commuter corridors.

[4] Columbia Area Transit. http://community.gorge.net/hrctd/, accessed June 1, 2010.

- Consider development of local and/or intercity transit facilities as a means of addressing parking shortages in Hood River.
- Help to facilitate development of transit facilities in appropriate locations (e.g., park and rides near other transit facilities, major employment centers and/or major population centers).
- Ensure zoning standards allow development of transit facilities, and require appropriate transit supportive facilities through the development review process.
- Support applications for grant funding associated with transit service in Hood River.
- Consider amendments to the Transportation System Development Charge (TSDC) methodology in order to allow use of TSDC funds for transit facilities.
- Support development of a transit system refinement plan to determine the scope of appropriate local and/or intercity transit service, cost estimates, funding solutions, and implementation measures.

Rail Plan

Hood River is provided freight rail service by a Union Pacific Rail Road (UPRR) main line, which follows I-84 though the Columbia River Gorge. Typically 20-30 UPRR trains a day pass through Hood. Passenger service along the UPRR main line in Hood River is not provided. AMTRAK, the federally subsidized passenger rail service, operated a passenger rail station in Hood River until May 10, 1997, when the Pioneer Route was discontinued due to lack of federal funding. However, the train station remains and is currently utilized as administrative offices for the Hood River Rail Road. If federal funding for AMTRAK were to be reinstated, it would be easy to once again supply service to the City of Hood River. However, at this time no plans for reinstating passenger service exist. [5]

The Mount Hood Railroad is a short line railroad (approximately 21.1 miles) that spurs off of the UPRR main line in Hood River. The Mount Hood Railroad is mainly used for tourism with active passenger service from April through December.[6] The line also operates year round service when chartered and services 60,000 passengers annually. The rail line runs from Hood River south to Parkdale through the cities of Pine Grove, Odell, and Dee. The line also carries 500 freight loads annually, mainly fruit and forest products.[7] OR 35 crosses the Hood River rail line at two grade-separated locations. The route then moves west and follows OR 281 south. There are two at-grade crossings of OR 281.

[5] Meriwether, Pat. Telephone Interview. 7 June 2010.
[6] Mount Hood Railroad. http://www.mthoodrr.com/, accessed June 2, 2010.
[7] Kaufman, Ron. Telephone Interview. 7 June 2010.

Rail Service Needs

Based on the existing rail facilities inventory and operational analysis, the following issues were identified:

- Addition of passenger rail service along the Union Pacific Rail Road main line would increase mobility for City residents and provide another option for tourists and recreationists visiting Hood River and Mt. Hood from Portland. Improving the commute between Portland and Hood River could support additional housing growth in Hood River.

Air Plan

The Ken Jernstedt Airfield is located approximately four miles south of downtown Hood River outside of the UGB. The airport is owned and operated by the Port of Hood River, is classified as a Category 4 airport in the *Oregon Aviation Plan,* and is one of Oregon's Core System Airports[8]. Category 4 airports are characterized as a Community General Aviation Airport and accommodate general aviation users and local business activities. These airports typically have 2,500 or more annual operations and more than 10 based aircraft. The Ken Jernstedt Airfield is open to the public, has 91 aircraft based on the field, and averages 39 flights a day. [9, 10] The runway has basic markings and is in good condition.[10]

The Ken Jernstedt Airfield has one 3,040-foot paved runway. When approaching from the east it is referred to as Runway 25 and when approaching from the west it is referred to as Runway 7. In May of 2009, the Port of Hood River adopted the *Ken Jernstedt Airfield Airport Master Plan*, which developed a preferred alternative that among other things includes closing Orchard Road near the end of Runway 25 to accommodate a runway shift. The plan calls for shifting runway 7/25 550 feet east to improve obstruction clearance. The plan also called for continuing to work toward upgrading the airport to B-II design standards. Currently, vacation of Orchard Road is awaiting approval before the recommended alterative can move forward.[11] The list of the adopted improvement elements follows.

Planned Airport Improvements

Based on the existing air field facilities inventory, the following items were identified as future projects:

- Close Orchard Road near the end of Runway 25 to accommodate runway shift;

[8] *Oregon Aviation Plan*, Oregon Department of Transportation Aeronautics Division, February 2000.
[9] The flight operations averaging 39 flights per day is for a 12-month period ending July 10, 2007.
[10] Information obtained from http://www.airnav.com/airport/4S2 on June 5, 2010
[11] Doke, Mike, Telephone Interview. 6 June 2010.

- Shift Runway 7/25 550 feet east to improve obstruction clearance at both ends; maintain existing runway length (3,040 feet); and use chevron stripping on abandoned 550 feet west of Runway 7 to provide additional safety area in the event a pilot requires additional landing area. The Port has the option of removing existing sections of closed runway and parallel taxiway pavement, should it be required by Hood River County;
- Maintain long-term plan to upgrade to B-II design standards;
- Relocate north parallel taxiway to 240 feet from runway centerline (B-II standard);
- Reconfigure/expand north apron tiedown;
- Develop area on north side of north apron for conventional hangars and FBO (reserve);
- Extend taxiway access to serve facilities on north side of north apron;
- Relocate FBO and aircraft fuel to north apron;
- Redevelopment of the south apron to accommodate small/medium conventional hangars once the south parallel taxiway is relocated and the FBO/fuel is relocated to the north side of the runway;
- Property acquisition is recommended, with willing sellers, to accommodate aviation-related development on the north side of the airport;
- Additional property acquisition is recommended as feasible (with willing sellers) along the southeast corner of the airport, to increase runway clear areas and development setbacks necessary to meet B-II design standards and airspace associated with planned airfield configuration.

Pipeline Plan

Hood River is provided with natural gas service via a Northwest Pipeline Corporation transmission pipeline that extends south from Washington and crosses the Columbia River near the I-5 Interstate Bridge. All existing pipelines within and passing through Hood River are outside of the maintenance responsibilities of the City. As such, no policies or recommendations in this area of transportation are provided for Hood River.

Water Plan

The Port of Hood River has extensive property holdings along the waterfront, in downtown Hood River, and west of Odell. The waterfront property consists of 75 acres along the Columbia River in the northeastern portion of the City of Hood River. This property is used for recreational, industrial, and commercial activities, including servicing of barges and other large commercial vessels. It includes an extensive marina park and an industrial park. The Marina Park is the regional center for sailing, boating, and swimming. The industrial park is largely undeveloped, but plans call for building mixed-use development with a public park. Other Port of Hood River holdings include a 21-acre site in downtown Hood River and a 29-acre industrial

park immediately west of Odell. The Port has improved both of these sites and its Hood River property is included in the City's urban renewal district. The Port also owns and operates the Hood River/White Salmon Bridge and the Hood River Airport.

The Port's capacity to handle commercial shipping may increase depending on the source of development decided upon in the waterfront planning process currently underway. An increase in passenger travel could be accommodated by the marina. Any new passenger travel is likely to serve tourism since the City of Hood River's upward trending of tourism economy is expected to continue. No additional water transportation facilities are proposed in this TSP.

Chapter 4: Plan Implementation

This chapter discusses the financial and regulatory needs associated with the implementation of this Transportation System Plan.

Projected Funding for Transportation Improvements

Projecting the revenue assumed to be available for future capital projects helps to provide an understanding of the City's capacity for constructing the transportation improvement projects identified to be needed to support future growth. Future projections for the City of Hood River's transportation funding through the year 2031 are described in the appendix. These projections were based on the amount of revenue collected in the past from current funding sources and assumptions for growth in land development through the planning horizon. Table 16 provides a summary of revenue assumed to be available for transportation funding for the City of Hood River, with future revenue divided between maintenance and other expenses and capital projects. As shown, the City may have approximately $6.8 million available for capital improvements through 2031. It should be noted that this includes $3 million of ODOT Statewide Transportation Improvement Program (STIP) funds that have been dedicated for the realignment of Country Club Road and that the City's regular revenue streams are only projected to generate approximately $3.8 million through 2031.

Table 16: Transportation Revenue from Current Sources

Funding Source	2010 Revenue	Estimated Revenue for Next 21 Years (2011-2031)*		
		Total	Maintenance and Other Expenses	Capital Projects
State Fuel Apportionment	$290,000	$ 6,090,000	$ 6,090,000	$0
State Vehicle License Fees	$10,000	$210,000	$210,000	$0
State Match Funds (STIP)**	-	$3,000,000		$3,000,000
City Gas Tax	$280,000	$ 5,880,000	$ 5,880,000	$0
Street Systems Development Charges	$170,500	$ 3,805,500***	-	$3,805,500
Total	**$750,500**	**$ 18,985,500**	**$ 12,264,000**	**$ 6,805,500**

Note: A portion of the projected revenue will be required for the maintenance of existing facilities, street lighting, staff salaries, as well as other miscellaneous transportation expenses, and thus not available for capital projects.

*Forecast revenue is 2010 dollars, ** includes funds for Country Club Road realignment, ***includes existing balance of $225,000

Financially Constrained Plan

The Preferred Plan consists of all transportation improvements identified to meet future needs through the year 2031. The Financially Constrained Plan is a subset of this plan that aligns with anticipated funding. The Financially Constrained Plan is a common source for populating the City's Capital Improvement Program (CIP), however, any project from the Preferred Plan is also eligible for inclusion.

Table 17 summarizes the total cost of the Preferred and Financially Constrained Plans, with individual financially constrained projects listed in Tables 18 through 22. The costs associated with each plan are listed by travel mode (i.e., pedestrian, bicycle, and motor vehicle).

Table 17: Transportation Improvement Costs - Preferred vs. Financially Constrained Plans*

Transportation Mode	Planning-Level Costs (2010 Dollars)	
	Preferred Plan	Financially Constrained Plan
Pedestrian	$9.6 million	$1.7 million
Shared Pedestrian/Bicycle	$5.4 million	$85,000
(Crossings)	*($445,000)*	*($85,000)*
(Off Street Facilities)	*($3.1 million)*	*($0)*
(Programs)	*($1.8 million)*	*($0)*
Bicycle	$3.7 million	$1.4 million
Motor Vehicle	$68.3 million	$11.0 million
Total Cost	**$87 million**	**$14.2 million**
Difference between Preferred and Financially Constrained Plans		**$72.8 million**

*From the year 2011 to the year 2031

As listed in Table 17, the difference in costs to fund the Preferred Plan ($87 million) and Financially Constrained Plan ($14.2 million) is approximately $72.8 million. Furthermore, there is a significant gap between what the City can fund ($6.8 million) compared to what is needed to fund even the Financially Constrained plan ($14.2 million). While the City is not required to be able to fund the entire Preferred Plan list of projects, a reasonable approach to funding the entire Financially Constrained Plan must be established. With the Financially Constrained Plan shown to cost approximately $14.2 million (Table 17) and current revenue projected to reach only $6.8 million (Table 16), a means of generating an additional $7.4 million must be pursued.

As an example, the City of Hood River currently has a Transportation System Development Charge (SDC) rate of approximately $666 per single-family residence and $69.60 per daily trip for all other uses. By comparison, the SDC rates for many cities in and surrounding the Portland Metropolitan Area average approximately $6,500 per p.m. peak hour trip (or approximately $570 per daily trip). Sandy has a transportation SDC rate of $1,943 per p.m. peak hour trip, while The Dalles has an SDC rate of $1,500 per p.m. peak hour trip. An increase in Hood River's

SDC rate to $1,373 for single-family households (from $666 to $2,039) and $143 per daily trip for all other trip types (from $69.60 to $213) would be sufficient to cover the remaining $7.4 million of projected costs in the Financially Constrained Plan. Alternatively, a lesser SDC rate increase could be applied, with the remainder funded through other revenue sources.

The Financially Constrained Plan projects can be relied upon to support future growth that conforms to the City's current Comprehensive Plan, even if the full funding approach has not been enacted. However, all funding sources must be in place before those projects can be relied upon to support comprehensive plan amendments. The inclusion of proposed projects and actions in this plan does not imply obligations of funds by any jurisdiction for project-level planning or construction, rather their inclusion, serves as an opportunity for the project to be programmed into the ODOT STIP and the City of Hood River CIP.

Individual projects in the Financially Constrained Plan are identified in Table 18 through Table 22. Potential funding sources have also been identified. However, this does not create an obligation or commitment for funding by any party.

Table 18: Pedestrian System Financially Constrained Plan – Sidewalk Infill Corridors

Project ID	Name/Location	Cost Estimate (High)	Cost Estimate (Low)	Potential Funding Sources
SW7	Serpentine Road/Eugene Street	$270,000	$270,000	**City of Hood River**
SW8	May Street	$1,245,000	$470,000	**City of Hood River**
SW14	Cascade Avenue/HCRH (between Mt. Adams and Rand)	$225,000	$90,000	**City of Hood River, ODOT**
	Financially Constrained Plan	**$1,740,000**	**$830,000**	

Table 19: Shared Pedestrian/Bicycle System Financially Constrained Plan – Point/Crossing Locations

Project ID	Name/ Location	Cost Estimate	Potential Funding Sources
CR7	*OR 281-13th Street & Montello Avenue	$5,000	City of Hood River, ODOT, Heights Urban Renewal
CR9	*OR 281-13th Street & May Street	$55,000 ($30,000 if RRFB is not included)	City of Hood River, ODOT, Heights Urban Renewal, developer
CR11	*OR 281-13th Street & Belmont Avenue	$15,000	City of Hood River, ODOT, Heights Urban Renewal, developer
CR18	OR281-13th Street & Oak Street-HCRH	$5,000	City of Hood River, ODOT, Heights Urban Renewal, developer
CR20	(Future) Westside Community Trail & Belmont Drive	$5,000	City of Hood River
	Financially Constrained Plan Cost	**$85,000**	

Table 20: Shared Pedestrian/Bicycle System Financially Constrained Plan – Off-street Pedestrian and Bicycle Facilities

Project ID	Name/Location	Cost Estimate	Potential Funding Sources
P4	Westside Community Trail	Project already funded by Hood River Valley Parks & Recreation	HR Valley Park & Rec
P8	Indian Creek Trail, Segment 2	Pending future easement, project will be funded by Hood River Valley Parks & Recreation	HR Valley Park & Rec
	Financially Constrained Plan Cost	**$0**	

Table 21: Bicycle System Financially Constrained Projects

Project ID	Name/Location	Facility Type	Cost Estimate	Potential Funding Sources
BL3	Cascade Avenue-Oak Street-HCRH	Bike Lanes	$135,000	City of Hood River, ODOT, may be candidate for urban renewal
BL6	May Street	Bike Lanes	$890,000	City of Hood River
BL13	OR 281/13th Street	Bike Lanes	$70,000	City of Hood River, ODOT, Heights Urban Renewal
BLSLM1	Serpentine Road/6th Street/Eugene Street	Uphill Bike Lane/ Downhill Shared Lane Markings	$40,000	City of Hood River
SLM1	Wasco Street/7th Street	Shared Lane Markings	$35,000	City of Hood River
SLM5	State Street	Shared Lane Markings	$20,000	City of Hood River, urban renewal
BLVD3	Montello Avenue/Eugene Street	Bike Boulevard	$115,000	City of Hood River
BLVD7	8th Street	Bike Boulevard	$60,000	City of Hood River
Financially Constrained Plan Cost			**$1,365,000**	

Table 22: Motor Vehicle Financially Constrained Plan

Project ID	Location	Planning Level Cost	Potential Funding Sources
MV3*	Country Club Rd. Realignment/ Mt. Adams Ave.	$3,700,000	City of Hood River, ODOT, developer
MV4	Mt. Adams Ave.: Country Club Rd. to Fairview Dr.	$11,940,000	City of Hood River, Financially Constrained Plan includes segment from Country Club Road to May Street: $5,815,000
MV11*	Mt. Adams Ave./ Cascade Ave.(HCRH)	$350,000	Proportional share district exists – no cost included
MV12*	Mt. Adams Ave./Country Club Rd.	$350,000	City of Hood River, developer
MV13*	Rand Rd./ Cascade Ave. (HCRH)	$1,000,000	Proportional share district exists – no cost included
MV17	May St./ 13th St. (OR 281)	$775,000	City of Hood River, ODOT, Heights Urban Renewal, developer
MV18	May St./17th St.	$3,000	City of Hood River
MV21	Belmont Ave./ 13th St. (OR 281)	$350,000	City of Hood River, ODOT, Heights Urban Renewal, developer
MV23**	2nd St./ Oak St.(HCRH)	$350,000	Assumed to be candidate for proportional share improvement – no cost included
Financially Constrained Plan Cost		**$10,993,000**	

* Included in Hood River I-84 Exit 62 Interchange Area Management Plan

** Included in Hood River I-84 Exit 63 & Exit 64 Interchange Area Management Plan

Potential New Funding Sources

Consideration of new funding sources to increase revenue for transportation improvements is recommended to facilitate the implementation of needed projects. Any potential funding source is constrained based on a variety of factors, including the willingness of local leadership and the electorate to burden citizens and businesses, the availability of local funds to be dedicated or diverted to transportation issues from other competing City programs, and the availability and competitiveness of state and federal funds. Nonetheless, it is important for the City to consider all of its options and its ability to provide and enhance funding for its transportation programs.

This section describes several potential transportation funding sources, including State and County contributions, City sources (i.e., residents, businesses, and/or developers), grants, and debt financing. Many of these sources have been used in the past by other agencies in Oregon, and in most cases, when used collectively, are sufficient to fund transportation improvements for a local community.

State and County Contributions

In the City of Hood River there are multiple roadways that are the responsibility of either ODOT or Hood River County. The City should seek contributions (i.e., funding partnerships) from ODOT and Hood River County for projects located on their respective roadways. In addition, direct appropriations are another potential funding source.

ODOT Contributions

ODOT funds projects on state highways under three primary programs: modernization, preservation and maintenance, and grants (see *Grant Programs* below). Programmed projects are included in the four-year Statewide Transportation Improvement Program (STIP), which is updated every two years. ODOT maintenance districts (District 2C for Hood River) also have available funds that may be used for small-scale projects such as in-fill sidewalks or culvert repair on a state highway.

When considering proposed land use actions, such as subdivisions or site development, the City should not assume that TSP projects on Cascade Avenue (US 30), OR 35, or 12th Street/ 13th Street (OR 281) will be in place to support the proposed development unless the project is programmed in the current STIP. Construction of projects which have been previously required through the City land use or ODOT approach permit approval process may be assumed if construction of the development is in process. For proposed comprehensive plan amendments, which must consider the long-term adequacy of the transportation system for TPR 660-012-0060 compliance, ODOT must be consulted to determine whether a highway project is "reasonably likely to be funded" based on current funding projections.

Direct Appropriations

The City can also seek direct appropriations from the State Legislature and/or the United States Congress for transportation capital improvements. The City may want to pursue these special, one-time appropriations, particularly for projects that support economic development.

City Sources

The City can also look to local residents, business owners, and developers to raise additional funds designated for transportation-related improvements. Optional sources include developer exactions, Urban Renewal District (URD), SDC increases, local improvement district (LID), General Fund revenue transfers, special assessments, and employment taxes.

Developer Exactions

Exactions are roadway and/or intersection improvements that are partially or fully funded by developers as conditions of development approval. Typically, all developers are required to improve the roadways along their frontage upon site redevelopment. In addition, when a site develops or redevelops, the developer may be required by the City or ODOT (through a highway approach permit) to provide off-site improvements depending upon the expected level of traffic generation and the resulting impacts to the transportation system.

Urban Renewal District (URD)

A URD is a tax-funded district within the City. The URD is funded with the incremental increases in property taxes that result from the construction of applicable improvements. As desired, the funds raised by a URD can be used for, but are not limited to, transportation projects located within the URD boundaries.

The City has created both the Waterfront URD and a URD for its downtown core. Transportation projects within these areas could be considered for funding through the URD. However, because these funds may be used for other purposes than transportation improvements, no URD funds were assumed in the revenue projections. The City may desire to pay off the debt on the existing URDs before creating additional URDs (such as in the Heights).

Transportation System Development Charges (SDCs)

Transportation SDCs are a funding source collected from new development that is designated for projects that increase the transportation system's capacity (not for projects that target maintenance or operations). While the methodologies for determining the SDC rate may vary, a commonly used method is to base the rate on the estimated p.m. peak hour vehicle trips generated by a proposed development. Because a single-family home generates approximately one p.m. peak hour vehicle trip, it is often considered the base unit.

The City of Hood River has a current SDC rate of approximately $666 per single-family residence and $69.60 per daily trip for all other uses. To help fund transportation improvements needed to support future growth, the City could consider increasing the SDC rate. For every increase in SDC rates of $100 for single-family households and $10 per daily trip for all other trip types, there would be an additional $514,000 available for transportation improvements over a 21-year period.

Additionally, the City of Hood River intends to rewrite their SDC ordinance so that SDC funds can also be used to make improvements to the pedestrian and bicycle system, which is not currently allowed.

Local Improvement District (LID)

The City may set up Local Improvement Districts (LIDs) to fund specific capital improvement projects within defined geographic areas, or zones of benefit. LIDs impose assessments on properties within its boundaries and may only be spent on capital projects within the geographic area. Since LIDs may not fund ongoing maintenance costs, they require separate accounting. Furthermore, because citizens representing 33 percent of the assessment can terminate a LID and overturn the planned projects, LID projects and costs must obtain broad approval of property owners within the LID boundaries.

Street Utility Fee

A number of Oregon cities supplement their street funds with street utility fees. Establishing user fees to fund applicable transportation activities and/or capital construction ensures that those who create the demand for service pay for it proportionate to their use. The street utility fees are recurring monthly or bi-monthly charges that are paid by all residential, commercial, industrial, and institutional users. The fees are charged proportionate to the amount of traffic generated; a retail commercial user pays a higher rate than a residential user. Typically, there are provisions for reduced fees for those that can demonstrate they use less than the average rate, for example, a residence where no cars or trucks are registered.

From a system health perspective, forming a utility fee also helps to support the ongoing viability of the program by establishing a source of reliable, dedicated funding for that specific function. Fee revenues can be used to secure revenue bond debt used to finance capital construction. A transportation utility can be formed by Council action and does not require a public vote.

The General Fund Revenues

At the discretion of the City Council, the City can allocate General Fund revenues to pay for its transportation program. General Fund revenues primarily include property taxes, user taxes, and any other miscellaneous taxes and fees imposed by the City. Allocation is done through the

City's annual budget process, but the funding potential of this source is constrained by competing community priorities set by the City Council. General Fund resources could fund any aspect of the transportation program, from capital improvements to operations, maintenance, and administration.

Special Assessments

A variety of special assessments are available in Oregon to defray the costs of sidewalks, curbs, gutters, street lighting, parking, and central business district (CBD) or commercial zone transportation improvements. These assessments would likely fall within the Measure 50 limitations. One example is the 50/50 program. This is a match program for sidewalk infill projects where property owners pay half the cost of a sidewalk improvement and the City matches the investment to complete the project.

Employment Taxes

Employment taxes may be levied to raise additional funds. For example, in the Portland region, payroll and self-employment taxes are used to generate approximately $145 million annually. The City of Portland has chosen to earmark these funds for TriMet transit operations.

Grants

The City of Hood River should actively pursue State and Federal grants, in particular to complete desired pedestrian and bicycle projects. Grant opportunities include funding for pedestrian, bicycle, Intelligent Transportation System (ITS), and Safe Routes to School (SRTS) improvements. Current grant programs include:

Federal Funding Sources

- Highway Safety Improvement Program
- Transportation Enhancements
- Recreational Trails Program
- Safe Routes to School (SRTS)
- New Freedom Initiative
- Community Development Block Grants
- Land and Water Conservation Fund
- Transportation, Community and System Preservation Program

State Funding Sources

- Oregon Immediate Opportunity Fund
- Oregon Transportation Infrastructure Bank

- Oregon Special Transportation Fund
- Oregon Bicycle and Pedestrian Program Grants
- Oregon Pedestrian Safety Mini-Grant Program
- Oregon Business Energy Tax Credits (BETC)
- Oregon Safe Routes to School (OSRTS)

Other Funding Sources

- American Greenways Program
- Bikes Belong Grant Program

Debt Financing

While not a direct funding source, debt financing is another funding method. Through debt financing, available funds can be leveraged and project costs can be spread over the projects' useful lives. Though interest costs are incurred, the use of debt financing can serve not only as a practical means of funding major improvements, but it is also viewed as an equitable funding source for larger projects because it spreads the burden of repayment over existing and future customers who will benefit from the projects. One caution in relying on debt service is that a funding source must still be identified to fulfill annual repayment obligations. Two methods of debt financing are voter-approved general obligation bonds and revenue bonds.

Voter-Approved General Obligation Bonds

Subject to voter approval, the City can issue General Obligation (GO) bonds to debt finance capital improvement projects. GO bonds are backed by the increased taxing authority of the City, and the annual principal and interest repayment is funded through a new, voter-approved assessment on property throughout the City (i.e., a property tax increase). Depending on the critical nature of projects identified in the Transportation Plan and the willingness of the electorate to accept increased taxation for transportation improvements, voter-approved GO bonds may be a feasible funding option for specific projects. Proceeds may not be used for ongoing maintenance.

Revenue Bonds

Revenue bonds are municipal bonds that are secured by the revenue received by financing income-producing projects. In contrast to GO bonds, revenue bonds fund projects that generally only serve those in the community who pay for their services. Given the nature of revenue bonds, they may not be as applicable to transportation projects as are GO bonds and are most commonly used for other municipal projects such as sewer and water system upgrades where users pay a monthly fee for service. Interest costs for revenue bonds are slightly higher than for GO bonds due to the perceived stability offered by the "full faith and credit" of a jurisdiction.

Implementation

As part of the process to update the City of Hood River TSP, the City's Development Code was audited and regulatory language was recommended to implement the TSP, as well as ensure consistency with the state Transportation Planning Rule (OAR 660-12). The complete code analysis and recommended amendments are included in the appendix (TPR Evaluation and Proposed Code Amendments memorandum) for reference. The recommended code amendments can be adopted through a separate public hearing process or concurrently with the TSP.

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