

CITY OF HOOD RIVER PLANNING DEPARTMENT
LEGISLATIVE STAFF REPORT

In the Matter of the Adoption of Amendments to the
2011 Transportation System Plan, File No. 2020-25

STAFF FINDINGS

I. GENERAL INFORMATION:

A. REQUEST: Amendments to the 2011 Hood River Transportation System Plan (TSP) including:

- Description of the 2021 TSP amendment process (Chapter 1)
- Updated funding policies (Chapter 2)
- Changes to modal plans, including new projects, updated project descriptions, new bicycle facility types, and new street design/cross sections (Chapter 3)
- Updated figures, including for the pedestrian and bicycle systems, street connectivity, motor vehicle improvements, street cross sections, and street functional classification (Chapter 3)
- Updated funding assumptions, project costs for the financially constrained plan, and SDC rates and SDC funding section (Chapter 4)

A summary of the complete proposed amendments to the TSP is included in this report as Attachment A.

B. APPLICANT: City of Hood River

C. APPLICABLE HOOD RIVER MUNICIPAL CODE (HRMC) CRITERIA:

- **17.08.020 – Legislative Zone Changes and Plan Amendment Criteria**
- **17.08.050 – Legislative Actions**

D. NOTICE: The Oregon Department of Land Conservation and Development (DLCD) and the Oregon Department of Transportation (ODOT) were notified of this request. No comments were submitted prior preparation of the findings and conclusions.

E. AGENCY COMMENTS: The Oregon Department of Land Conservation and Development (DLCD) and the Oregon Department of Transportation (ODOT) were notified of this request. No comments were submitted prior preparation of the findings and conclusions.

F. HISTORY:

1. Westside Area Concept Plan Report, published December 29, 2017
2. Planning Commission work session and 17 public hearings for refinement of Westside Area Concept Plan Report frameworks, held between February 20, 2018 and August 19, 2019 (File No. 2018-07)
3. City Council and Planning Commission work session and project update for refinement of the Westside Area Concept Plan Report frameworks, October 10, 2018

4. Planning Commission Recommendations for Westside Area Concept Plan Frameworks (File No. 2018-07) forwarded to Mayor and City Council August 19, 2019
5. Following a work session on September 9, 2019, City Council directed staff to prepare updates to the Transportation System Plan based on the Westside Area Concept Plan Report's Streets Framework, Pedestrian & Bicycle Framework, and recommendations of the Planning Commission in a memo dated August 19, 2019
6. City Council 2020 Work Plan included a strategy to update the Transportation System Plan to incorporate input from the Westside planning process
7. Notice of Proposed Amendment submitted to the Department of Land Conservation and Development on January 22, 2021
8. Virtual "open house" with preview of proposed TSP amendments and bilingual survey held February 10-28, 2021 at hoodrivertsp.com
9. Planning Commission hearing on proposed legislative amendments initiated on March 1, 2021

G. ATTACHMENTS:

- Attachment "A" – Summary of 2021 TSP Amendments
- Attachment "B" – Transportation Analysis: Technical Memorandum 8, Hood River Westside Area Concept Plan – Task 6.4 Second Transportation Analysis with Updated Assumptions, September 29, 2017
- Attachment "C" – Transportation Analysis: Hood River TSP Amendment - Traffic Analysis of New Westside Street Network Scenario, November 11, 2020
- Attachment "D" – Exit 62 Funding Letters (City and ODOT)
- Attachment "E" – Proposed Revisions to City of Hood River Transportation System Plan (2021)
- Attachment "F" – Revised Transportation System Plan Figures 2, 4, 5, 7, 8, and 6C, (Minor Arterial), 6D (Neighborhood Connector) and 6E (Local Street)

II. BACKGROUND

The City applied for a state Transportation Growth Management grant in 2015 to prepare a land use and transportation plan for west side of Hood River. The project study area focused on approximately 450 acres between Frankton Road to the west, Interstate 84 (I-84) to the north, Rand Road to the east, and Belmont Avenue to the south. The resulting Westside Area Concept Plan Report addressed workforce and affordable housing needs, future neighborhoods and commercial districts, streets, bikeways, pedestrian paths, parks, transit, utilities, and infrastructure funding. The Concept Plan Report, published on December 29, 2017, included recommendations for changes to street cross sections that can be used citywide.

During public hearings in the Spring and Summer of 2019, the Planning Commission sought public feedback regarding the Concept Plan Report's Streets & Transit Framework, Pedestrian &

Bicycle Framework, and Park & Open Space Framework. The result of this feedback and subsequent deliberation was a set of refined transportation improvements recommended by the Planning Commission to the Mayor and City Council on August 19, 2019. The Planning Commission recommended that staff should critique the Pedestrian/Bicycle Trail/Path list and provide further recommendations, and the proposed intersection controls at the Mt. Adams Avenue/Wine Country Avenue intersection necessitated additional traffic analysis (Attachment C).

The need for intersection improvements in the vicinity of the I-84 Exit 62 interchange is also addressed as part of the TSP amendments. Needed Exit 62 and citywide improvements were identified in the I-84 Exit 62 Interchange Area Management Plan and City of Hood River Transportation System Plan (2011), and were reaffirmed as part of the Westside Area Concept Plan Report. Four study intersections fail to comply with operating standards by 2040, regardless of whether allowed land uses in the area are modified:

- Cascade Avenue/I-84 Westbound Ramps (unsignalized)
- Cascade Avenue/I-84 Eastbound Ramps (unsignalized)
- Cascade Avenue/Mt. Adams Avenue (signalized)
- Rand Road/27th Street/May Street (unsignalized)

The Oregon Department of Transportation (ODOT) committed to provide \$5 million (2017 dollars) by 2040 for Exit 62 interim improvements. These projects are (MV1/MV2 Interim Improvements, in the (revised) TSP Table 13: Motor Vehicle System Projects – Preferred Plan). The improvements are also listed in a letter from ODOT with a commitment of funding, and include a traffic signal at the Cascade Avenue/I-84 Westbound Ramps and additional lanes at Cascade Avenue/I-84 Eastbound Ramps (Attachment D). This funding is contingent upon the City of Hood River's commitment to implementing recommendations of the Westside Area Concept Plan Report, including being responsible for an estimated \$1.83-\$3.3 million (2017) transportation funding gap (by 2040) identified in the Concept Plan.

The currently proposed action is to amend the 2011 TSP to include improvements that will provide the multimodal connectivity needed to support growth in Hood River through the year 2040. This action can be considered a refinement to the existing TSP, which is the adopted transportation element of the Hood River Comprehensive Plan. The proposed amendments are summarized in Attachment A. The amendments provide details specific to urbanizing areas, update cost estimates for needed transportation improvements city-wide, and update and replace several local street cross-sections.

The proposed refinement is not associated with a specific land use action and is not driven by vehicular capacity needs. However, the resulting TSP supports growth and responds to public feedback obtained during preparation of the Westside Area Concept Plan Report and subsequent hearings. The proposed action is an update to the City's long-range transportation policy and network and is responsive to the community's desire to achieve and fund a complete multimodal transportation network including for an area that contains most of the City's vacant and developable land. Now refined, the package of amendments being considered as part of this action are needed now to guide planning and future funding for local street improvements.

APPLICABLE REVIEW CRITERIA:

Statewide Planning Goals

Oregon Transportation Plan

Oregon Highway Plan

OAR 660 Division 12 Transportation Planning Rule

Hood River Comprehensive Plan

Goal 1 Citizen Involvement

Goal 2 Land Use Planning

Goal 5 Open Spaces, Scenic and Historic Areas, and Natural Resources

Goal 6 Air, Water, and Land Resources Quality

Goal 9 Economy

Goal 11 Public Facilities and Services

Goal 12 Transportation

Goal 14 Urbanization

Hood River Municipal Code (HRMC) Title 17 – Zoning

17.08.010 Legislative Zone Changes and Plan Amendments

17.08.020 Legislative Zone Changes and Plan Amendments Criteria

17.08.050 Transportation Planning Rule (Legislative and Quasi-Judicial)

17.09.050 Legislative Actions

17.09.060 Quasi-Judicial and Legislative Public Hearings

17.09.100 Criteria for Approval

III. STAFF RECOMMENDATION

Approve the request to amend the Hood River Transportation System Plan to include the proposed amendments, summarized in Attachment A and shown in underline/~~strike out~~ text in the plan document, Attachment E. The proposed action amends Goal 12 Transportation in the City of Hood River Comprehensive Plan to be consistent with the proposed changes to transportation policies and action items. The Planning Commission action is in the form of a recommendation to the City Council.

FINDINGS AND CONCLUSIONS:

Statewide Planning Goals

The City is proposing to amend the Hood River Transportation System Plan, thereby amending the state-acknowledged Hood River Comprehensive Plan. The following findings demonstrate that the adoption of the proposed amendments are consistent with the Statewide Planning Goals.

Goal 1: Citizen Involvement

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

Response: Amendments to the City’s TSP have been drafted to address recommendations that resulted from over 18 months of input and public hearings. Between March 19, 2018 and November 4, 2019, the Planning Commission held 17 public hearings to review and refine recommendations from the Westside Area Concept Plan Report. During public hearings on April 15, May 20, June 3, June 17, July 1, and July 29, 2019, the Planning Commission sought feedback from the public regarding the Westside Area Concept Plan Report’s Streets & Transit Framework, Pedestrian & Bicycle Framework, and Park & Open Space Framework prior to deliberation.

Information about the TSP amendment process was made available through the City’s website. A news release and public service announcements in both English and Spanish provided information on the proposed action and were distributed to media outlets including Hood River News/Columbia Gorge News and Radio Tierra KZAS-LP. Due to social distancing requirements during the COVID-19 pandemic, the City opened a virtual “open house” to share the draft TSP amendments and gather additional input from the community through a bilingual survey available February 10-28, 2021 at hoodrivertsp.com . Feedback from this community event will be shared with the Planning Commission and City Council prior to deliberations on the proposed TSP amendments.

Public hearings before the Planning Commission and City Council will be held prior to adoption of TSP amendments. Notice of public hearings on the proposed changes to the City of Hood River Comprehensive Plan was published in the Hood River News/Columbia Gorge News pursuant to City code requirements (HRMC 17.09.050). Scheduled hearings will provide opportunities for public comment on the proposed changes.

Goal 2: Land Use Planning

This goal requires that a land use planning process and policy framework be established as a basis for all decisions and actions relating to the use of land. All local governments and state agencies involved in the land use action must coordinate with each other. City, county, state and federal agencies and special districts’ plans and actions related to land use must be consistent with the comprehensive plans of cities and counties.

Response: The Hood River TSP is an element of the adopted Comprehensive Plan. The 2011 adoption process documented the consistency between the TSP and state, regional, and local plans, policies, standards, and requirements. The planning process and policy framework for the recommended TSP amendments started with planning for the Westside Area, an effort that included state grant funding and active participation from – and coordination between – state, county, and local

agencies. Proposed TSP refinements are consistent with the adopted Comprehensive Plan, as demonstrated by associated findings in this report.

Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces

This goal requires that local governments adopt programs that will protect natural resources and conserve scenic, historic, and open space resources.

Response: The proposed TSP amendments include updating the project descriptions and cost estimates for the Historic Columbia River Highway Trail and Westcliff Drive Pedestrian Path (see TSP Table 3: Off-Street Bicycle & Pedestrian Facility Projects – Preferred Plan, Attachment E). Improving the ways residents and visitors access and experience these facilities is consistent with Goal 5.

Goal 8: Recreational Needs

Goal 8 requires local governments to plan for the recreation needs of their residents and visitors. The goal places priority on non-motorized forms of recreation, as well as recreation areas that are free or available at a low cost to the public.

Response: The proposed action will modify the Pedestrian System Plan and the Bicycle System Plan of the City's 2011 TSP to extend and include new off-street trails in the Westside Area. Goal 8 objectives are met through proposed trail projects, including extending the Westside Community Trail and Henderson Creek Trail improvements, which will enhance recreational opportunities in Hood River consistent with the Hood River Valley Park and Recreation District's master plan.

Goal 9: Economic Development

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

Response: Proposed transportation connections and improvements provide a vital function in supporting local and regional economic development goals and plans. Local traffic, including commercial vehicles, must have safe and efficient access to the interstate; to and from the downtown; and to commercial and employment areas around Exit 62. Proposed TSP refinements identify transportation improvements that support the planned uses in the Westside Area, including employment areas in the western part of Hood River, consistent with Goal 9.

Goal 10: Housing

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

Response: The Westside Area Concept Plan Report examined approximately 450 acres and 577 lots/parcels that include developed neighborhoods, vacant lands, and partially vacant lands. About 55% of the project area was vacant or partially vacant land within residential zones. One goal of this integrated land use and transportation plan was to facilitate an increased amount of workforce and affordable housing choices by increasing housing density and providing a greater mix of housing types within the Westside Area.

The transportation analysis included in the Concept Plan Report (Attachment B) documents future transportation needs based on both the existing “Base Case” (the existing Comprehensive Plan/Zoning that applies in the Westside Area today) and a proposed Land Use Framework scenario. The analysis shows that the transportation network needed under either land use scenario is basically the same. The differences are largely found in how the streets are aligned (e.g., “shifts” in location) and the placement of needed improvements, such as traffic signals, in the Concept Plan. The conclusion is that the proposed TSP amendments include refinements that can support additional housing in the Westside Area, but that the improvements are needed for currently projected housing and other currently allowed uses. The TSP improvements are needed to accommodate estimated future travel demand based on population, housing, and employment forecasted for the year 2040.

Goal 11: Public Facilities and Services

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

Response: Transportation facilities, including roadways, bikeways, and sidewalks, are considered a primary type of public facility. The proposed amendments accommodate current and future transportation needs in the City. The most immediate needs are for adopted plan elements that include the standards and locations of improvements that complete the multi-modal network in the Westside Area. The proposed refinement to the TSP also provides more realistic cost estimates for all planned projects in the Hood River, which will help ensure that the planned system can be built.

Existing City policy states that the TSP and Public Facilities Plan should be coordinated, particularly with respect to recommended capital improvements (Comprehensive Plan Policy 1.4.1.21). The amendments identify planning level costs estimates for the needed improvements as a first step to planning for and securing project funding. Later, more advanced planning for project funding will help implement needed improvements in a timely manner that supports development opportunities, particularly in the Westside Area.

Goal 12: Transportation

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

Response: The purpose of the proposed amendments is to refine the City’s transportation planning framework to accommodate changes to a planning horizon of 2040 in the Westside Area; complete the City’s multi-modal network in growth areas; provide roadway standards that meet the entire City’s needs; and update planning-level cost estimates for needed improvements. The transportation analysis in Attachments B and C document future transportation needs in the Westside Area and support TSP project list additions and, in some cases, the updated descriptions and cost estimates for projects already in the TSP. As described in Goal 10 findings, the transportation analyses document needs

based on the existing Comprehensive Plan/Zoning, as well as a potential Land Use Framework scenario recommended in the Concept Plan Report but not yet adopted. The proposed TSP amendments are needed to accommodate estimated future travel demand based on population, housing, and employment forecasted for the year 2040 in the Westside Area.

The Westside Area Concept Plan Report also generated a Bicycle & Pedestrian Framework and Streets & Transit Framework that was expected to be implemented as a refinement and update to the City's 2011 Transportation System Plan. Elements in these "frameworks" were the subject of public hearings in 2019, as noted under Goal 1 findings. As a result of public comment and Planning Commissioner deliberations, a set of recommended TSP improvements was forwarded to City Council August 2019.

Attachment A is a summary of the proposed TSP amendments; the draft text amendments are in Attachment E. Many of the 2019 Planning Commission recommendations are part of the proposed amendments to the TSP, including new or modified pedestrian and bicycle improvements within the Westside Area. The proposed TSP amendments also include new descriptions of bicycle facility types that can be implemented in Hood River and new cross sections for Minor Arterial streets, Neighborhood Connector streets, and Local streets. In a departure from recommendations in the Concept Plan, proposed TSP project MV3 includes a new traffic control solution proposed at the Mt. Adams Avenue/Wine Country Avenue intersection. Attachment C describes the benefits of a roundabout at this location. Other proposed modifications, based on staff recommendations, include provision of a physically separated bike path on only one side of the proposed Minor Arterial cross section in order to reduce needed right-of-way width and expense, as well as refinement of off-street trail/path locations due to topographical constraints. In addition, implementation of Advisory Shoulders is not recommended as a preferred treatment for bicycle facilities because it is new treatment type in the United States, no performance data has yet been collected, and it appears to conflict with state law prohibiting vehicles from traveling in bicycle lanes (ORS 811).

See additional transportation-related findings in this report under OAR 660, Division 12 Transportation Planning Rule.

Goal 14: Urbanization

Jurisdictions must provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities. Within an urban growth boundary (UGB), a city must plan to include a twenty-year supply of land for housing, employment, industry, open space and recreational needs.

Response: The goal of planning for the Westside Area has been to develop and implement an integrated land use and transportation plan for the 450-acre project area located within the City of Hood River and Hood River County. About 160 acres of the project area are located outside the city limits but within the Urban Growth Boundary. An intergovernmental agreement between City and County addresses the County's management of land use activities in this Urban Growth Area ("UGA") consistent with City standards until such time that annexation occurs. The City and County were co-applicants for the grant that funded the Westside Concept Plan Report and continue to coordinate on planning in the area, including provision for needed transportation facilities. TSP amendments will ensure that the City has a plan to provide for urban transportation needs over the planning time horizon.

Oregon Transportation Plan (2006)

The Oregon Transportation Plan (OTP) is the state's long-range, multimodal transportation plan. The OTP is the overarching policy document for a series of modal and topic plans that together form the state TSP. A local TSP must be consistent with applicable OTP goals and policies. Findings of compatibility will be part of the basis for ensuring the Hood River TSP amendments support state transportation policy. The following demonstrates how the TSP amendments comply with state transportation policy:

POLICY 1.2 – Equity, Efficiency and Travel Choices

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

Response: Proposed revisions to street design will better accommodate all modes of transportation and will enhance safety and comfort for cyclists and pedestrians, making these modes a more attractive choice for travelers. New cross sections for Minor Arterial and Neighborhood Connector streets can be found in Attachment F, Figures 6C, 6D and 6E. The proposed Minor Arterial cross sections address circumstances where a physically-separated bike lane can be provided on new streets or, alternatively, for provision of buffered on-street bike lanes on both sides of the street when a physically separated bike lane cannot be accommodated. The new Neighborhood Connector designation and cross section is proposed to promote a highly connected local street network in urbanizing areas and provides for slightly narrower sidewalks (5') and on-street parking (7'), but slightly wider planting strips (7.5') than the Neighborhood Collector designation. Proposed revisions include a planting strip between the sidewalk and street on all Local Street cross sections. The revised street design standards for each functional classification continue to accommodate all users with provisions for bike lanes, sidewalks, and landscaping.

Refinements to the Bicycle and Pedestrian System Plans identify a complete network of facilities for pedestrians and cyclists in the Westside Area. The TSP amendments include priority improvements to fill network gaps, trail alignments, and future crossing improvements associated with trail projects. Proposed text describes new bicycle facility types that can be applied in Hood River, including separated bike lanes, buffered bike lanes, and advisory shoulders, and includes added descriptions of previously used bicycle treatments, such as on-street bike lanes and shared lane markings. The proposed non-motorized networks include sidewalks and bike lanes or alternative treatments to provide bicycle and pedestrian connectivity on major roads in Hood River. Proposed revisions include changing terminology from referencing "bicycle boulevard" projects to instead reference "bicycle routes," with signage and bicycle treatments consistent with the roadway functional class. Additional and revised bicycle and pedestrian improvement projects are identified in TSP Figures 2 and 4 (Attachment F), and are addressed in detail in Tables 1, 2, 3 and 5 in Chapter 3: Modal Plans (Attachment E).

POLICY 2.1 - Capacity and Operational Efficiency

It is the policy of the State of Oregon to manage the transportation system to improve its capacity and operational efficiency for the long term benefit of people and goods movement.

POLICY 2.2 – Management of Assets

It is the policy of the State of Oregon to manage transportation assets to extend their life and reduce maintenance costs.

Response: The roadway network proposed in the Westside Area and related transportation system improvements were developed to address access, safety, and operational efficiency issues resulting from existing uses and future demands from future growth. Access management standards help maintain mobility and enhance safety on roadways. Access spacing requirements for City streets are based on functional classification and posted speed and shown in TSP Table 8: City of Hood River Access Management Spacing Standards (Attachment E). This table is proposed to be updated to include standards for the new Neighborhood Connector designation. Updated TSP Figure 7, Local Street Connectivity, shows proposed street extensions consistent with adopted and proposed spacing standards.

State facility requirements are in TSP Table 9: Oregon Highway Plan Access Management Spacing Standards and TSP Table 10: I-84 Exit 62 Interchange Area Access Spacing Standards. State standards informed the needed improvements at Exit 62 (see Background and Attachments B and C). Adopted access management standards are intended to maintain and improve safety and mobility on the City's existing and future roadway system and ensure consistency with state requirements.

POLICY 3.1 – An Integrated and Efficient Freight System

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

POLICY 3.2 – Moving People to Support Economic Vitality

It is the policy of the State of Oregon to develop an integrated system of transportation facilities, services and information so that intrastate, interstate and international travelers can travel easily for business and recreation.

Response: I-84 is part of the National Highway System (NHS) and is a designated freight route on the State Highway Freight System between Portland and points east. The Exit 62 interchange provides vital links between I-84 and the employment areas in Hood River, particularly along the Waterfront, allowing vehicular traffic, including truck traffic, onto and off of the highway at these locations. Proposed TSP amendments include a refined Figure 7, Local Street Connectivity (Attachment F), which shows a street grid that provides access to employment areas in the western parts of Hood River, and access from the Westside Area businesses to Exit 62 and I-84. Revised Figure 8, Motor Vehicle System Plan, and Table 13: Motor Vehicle System Projects – Preferred Plan (Attachment F), show the improvements that will allow for better movement of people and goods on the westside and create better access to Highway 30 and I-84.

POLICY 4.1 - Environmentally Responsible Transportation System

It is the policy of the State of Oregon to provide a transportation system that is environmentally responsible and encourages conservation and protection of natural resources.

Response: The TSP amendments identify necessary improvements to the transportation system to accommodate existing and future growth. Land in the Westside Area is currently developed or is planned for urban-level development. Significant natural resources will be avoided or mitigated

through the implementation and construction of planned improvements. Improving the pedestrian and bicycle networks is generally considered to provide the greatest benefit for encouraging non-auto trips, thereby minimizing energy consumption and air quality impacts. Enhancements and modifications to the TSP include bicycle and pedestrian projects and more options for designing and accommodating bicycles, which will help create complete networks for these modes over time (see Attachment E for a summary of changes and the proposed Pedestrian System Plan and Bicycle System Plan in Attachment F).

POLICY 5.1 – Safety

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

Response: Proposed safety improvements include the reconsideration of traffic control improvements at the intersection of Cascade Avenue and Mt. Adams Avenue where a roundabout (new preferred option) or traffic signal will be needed. See projects MV2a, MV2b and MV3 in Table 13: Motor Vehicle System Projects – Preferred Plan (Attachment E).

The proposed TSP amendments include the addition of traffic calming measures on 30th Street between May Street and Sherman Avenue to mitigate cut-through traffic and pedestrian and bicycle crossing enhancements on Rand Road at Sherman Road to improve visibility of the crossing. Proposed new roadway cross sections that include planting strips between sidewalks and roadways and buffered or separated bike lanes. These treatments will improve bicycle and pedestrian safety by providing upgraded bikeways and walkways over time that meet City standards. Proposed text amendments provide more guidance for off-street bicycle and pedestrian path facilities, identifying the need for additional enhancements at road crossings to ensure drivers are aware of the off-street facility. Enhanced bicycle and pedestrian crossing improvements are also identified as part of future trail projects (see amendments under Shared Pedestrian and Bicycle Improvements, Attachment E).

POLICY 7.1 – A Coordinated Transportation System

It is the policy of the State of Oregon to work collaboratively with other jurisdictions and agencies with the objective of removing barriers so the transportation system can function as one system.

Response: A proposed refinement to Chapter 3 Modal Plans is the inclusion of the Westside Area Concept Plan Report as a guidance document for the development of the different modal plans. As stated in the adopted TSP, the projects and standards presented in the modal plans were developed through the planning process with input from the City of Hood River, ODOT, and other stakeholders. Hood River County and ODOT staff participated in the Westside Area planning efforts, and the Historic Columbia River Highway Advisory Committee and County Hood River County Board of Commissioners were included in briefings. The Concept Plan Report is identified as an “interim” planning step, as the City intends to continue to refine and implement components of plan.

The commitments that the City and ODOT have made related to funding needed improvements at Exit 62 (Attachment D) are the result of close collaboration between planning for the needs of future uses in the Westside Area through the TGM-funded planning project and, before that, the Exit 62 Interchange Area Management Plan (IAMP).

POLICY 7.3 – Public Involvement and Consultation

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

POLICY 7.4 - Environmental Justice

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

Response: Findings under Goal 1 in this report provide a summary of the public hearing process that reviewed Westside Area Concept Plan Report transportation recommendations as well as the subsequent outreach specific to these proposed TSP amendments, which are based on and refine the earlier recommendations from the concept planning project. Due to the COVID-19 pandemic, traditional methods of public outreach such as in-person meetings could not be implemented, however on-line and media outlets were employed to get the word out. Various methods were used to gather public input about the proposed TSP amendments, including print and radio announcements in Spanish and English, and an online open house that included a bilingual survey regarding proposed changes. Opportunities for public comment and input were provided equally to all, regardless of race, culture or income.

Oregon Highway Plan

The Oregon Highway Plan (OHP) establishes policies and investment strategies for Oregon’s state highway system over a 20-year period and refines the goals and policies found in the OTP. Policies in the OHP emphasize the efficient management of the highway system to increase safety and to extend highway capacity, partnerships with other agencies and local governments, and the use of new techniques to improve road safety and capacity. These policies also link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and local road, bicycle, pedestrian, transit, rail, and air systems. The TSP amendments meet the state policies as follows:

***Policy 1A (Highway Classification)** defines the function of state highways to serve different types of traffic and to guide ODOT priorities for system investment and management.*

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

Response: The state facilities in Hood River provide district, statewide, and regional connectivity; in the Westside Area, I-84 and the Historic Columbia River Highway are part of the Interstate Highway (NHS) and a State Freight Route system. Cascade Avenue, a section of the Historic Columbia River Highway (US 30), is owned by ODOT and is the crossroad within the I-84 Exit 62 interchange. Cascade Avenue provides both a connection to the interstate freeway system and access to local businesses and residences in the City. The improvements at Exit 62 (MV1/MV2 Interim, Table 13: Motor Vehicle System Projects – Preferred Plan), which have been refined in the proposed TSP amendments, will improve freight mobility through the area by addressing safety, capacity, and efficiency issues.

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

Response: As has been described previously in this report, and particularly in response to Statewide Goals 1 and 2, and OTP Policy 7.1, development of the proposed TSP amendments has involved close coordination between the City, ODOT, the County and other affected stakeholders.

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

Response: The TSP identifies transportation projects to improve intersection performance for intersections near Cascade Avenue/US 30 and I-84 that were identified as exceeding applicable performance targets. The proposed TSP amendments are supported by traffic operations analysis at signalized and un-signalized intersections for existing conditions and forecasted future travel demand. The future traffic operations at study intersections in the Westside Area were determined for the weekday p.m. peak hour. The level of service (LOS) and volume to capacity (v/c) ratio of each study intersection was determined for both the Base Case and Revised Land Use Framework (Attachment B, Table 2: Future Study Intersection Operations 2040 Weekday P.M. Peak Hour). Cascade Avenue/I-84 Westbound Ramps (unsignalized), Cascade Avenue/I-84 Eastbound Ramps (unsignalized), and Cascade Avenue/Mt. Adams Avenue (signalized) all exceed mobility standards. The highway improvements in the vicinity of Exit 62 (MV1/MV2 Interim, Table 13: Motor Vehicle System Projects – Preferred Plan), which have been refined in the proposed TSP amendments, address these deficiencies. Hood River and ODOT funding commitments related to these improvements are in TSP Table 13 and in letters exchanged between the City and ODOT (Attachment D).

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

Response: Proposed transportation improvements in the Westside Area are primarily required to enhance multimodal connectivity and provide access to areas that will see new growth. Only in the case of Cascade Avenue is a capacity improvement eventually necessary to accommodate future traffic demand, and this is due to realignment of Country Club Road to connect to Mt. Adams Avenue as required by ODOT. South of Exit 62, Cascade Avenue will ultimately need to be widened to include two travel lanes in each direction between I-84 and the intersection with Mt. Adams Avenue to accommodate increased traffic from the realigned Country Club Road and Mt. Adams Avenue. The Country Club Road realignment was a critical improvement for the Exit 62 interchange area that significantly improved intersection spacing and allows other elements of the transportation system to function adequately.

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

Response: The City currently includes access management standards in TSP Table 8: City of Hood River Access Management Spacing Standards. This table is proposed to be updated to include standards for the new Neighborhood Connector designation. Updated TSP Figure 7, Local Street

Connectivity, shows proposed street extensions consistent with adopted and proposed spacing standards. Proposed TSP refinements will enhance local street connectivity and help ensure that a local street network will carry local trips and provide access to locations and properties in Hood River, thereby potentially reducing local trips on Cascade Avenue, which is part of the state highway system.

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

Response: As detailed in Policy 1F and Policy 1G findings, the proposed TSP refinements include needed intersection improvements in the vicinity of Exit 62. The proposed improvements at the intersection of Mt. Adams Avenue and Cascade Avenue are safety related. Revised project descriptions and cost estimate are in TSP Table 13: Motor Vehicle System Projects – Preferred Plan (Attachment E).

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

Response: As described in the response to OHP Policy 2B, the TSP includes access management standards that maintain and enhance the integrity (i.e., capacity, safety, and level of service) of roadways in Hood River. Standards included in the 2011 TSP refer to state access management standards for state facilities (Table 9: Oregon Highway Plan Access Management Spacing Standards and Table 10: I-84 Exit 62 Interchange Area Access Spacing Standards). These standards apply to new development or redevelopment; existing accesses are allowed to remain if the land use does not change. The desired access spacing will gradually be obtained over time, increasing efficiency and safety, as redevelopment occurs. There are no proposed changes to the TSP related to access spacing standards for approaches to the state highway system.

Policy 4A (Efficiency of Freight Movement) It is the policy of the State of Oregon to maintain and improve the efficiency of freight movement on the state highway system and access to intermodal connections. The State shall seek to balance the needs of long distance and through freight movements with local transportation needs on highway facilities in both urban areas and rural communities.

Response: I-84 and the Historic Columbia River Highway in the Westside Area are part of the Interstate Highway (NHS) and a State Freight Route system. Proposed TSP refinements include updated descriptions and cost estimates for improvements on Cascade Avenue, a section of the Historic Columbia River Highway (US 30). Through earlier planning efforts, specifically the I-84 Exit 62 IAMP, the City and ODOT worked collaboratively to balance state and local mobility needs on Cascade Avenue; improvements in the adopted TSP enhance the connection to the interstate, improve safety, and provide access to local businesses and residences in the City. The improvements at Exit 62 have been refined in the proposed TSP amendments and will improve freight mobility through the area (MV1/MV2 Interim, Table 13: Motor Vehicle System Projects – Preferred Plan).

OAR 660 Division 12 Transportation Planning Rule (TPR)

The purpose of the Transportation Planning Rule (TPR) is “to implement Statewide Planning Goal 12 (Transportation) and promote the development of safe, convenient and economic transportation systems that are designed to reduce reliance on the automobile so that the air pollution, traffic and other livability problems faced by urban areas in other parts of the country might be avoided.” A major purpose of the

TPR is to promote more careful coordination of land use and transportation planning, to ensure that planned land uses are supported by and consistent with planned transportation facilities and improvements.

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

Response: These sections of the TPR contain policies for preparing and implementing a transportation system plan. The proposed amendments updates sections of the City’s existing transportation system plan and most of these TPR sections are not applicable. The TPR requires that local governments adopt land use regulations consistent with state and federal requirements "to protect transportation facilities, corridors, and sites for their identified functions (OAR 660-012-0045(2))." Section -0045 of the TPR requires that local jurisdictions amend their land use regulations to implement the TSP. Elements of the TSP are implemented in the requirements of the Hood River Municipal Code (HRMC) Title 17 – Zoning. The Zoning Code regulates land uses and development within the City and implements the long-range vision of the Comprehensive Plan, of which the TSP is part. No amendments to Title 17 are proposed as part of this action.

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

Response: The City of Hood River TSP was acknowledged by the Land Conservation and Development Department in 2003 and was updated 2011. The proposed package of amendments update specific elements of the 2011 TSP to better prepare for expected growth in the Westside Area and refine certain elements, including updating and adding to the local roadway cross section options.

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

Response: Part (1) in this section requires that where an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation would significantly affect an existing or planned transportation facility, the local government must put in place measures to ensure that allowed land uses are consistent with the identified function, capacity, and performance standards of the facility. The proposed refinements to the TSP, an element of the adopted Comprehensive Plan, ensure that the transportation system can meet the needs of current and future planned land uses; proposed modifications do not trigger a “significant affect” on specific existing or planned transportation facilities. Consistent with the purpose of the TPR, new projects in the vicinity of Exit 62 are part of the proposed TSP amendments to ensure that the land use and transportation systems are balanced in the Westside Area. The transportation analysis (Attachment B) demonstrates that the transportation facilities will meet the performance standards identified in the TSP if the City and ODOT implement the projects identified in the analysis. The solutions for Exit 62 are shown in modifications to TSP Table 13: Motor Vehicle System Projects – Preferred Plan, MV1/MV2 Interim; funding commitments for these improvements are found in Attachment D.

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

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

- How to bring existing and future approaches into compliance with access spacing standards, and ensure the safe and efficient operation of the highway;

- The purpose and components of an access management plan; and
- Requirements regarding mitigation, modification and closure of existing approaches as part of project development.

Response: As described in the response to OHP Policies 3A and 3B, access management standards for state highways in Hood River are consistent with state access standards. Improvements on Cascade Avenue and the Westcliff Drive/Cascade Avenue intersection improvement will be consistent with the access management plan component of the I-84 Exit 62 IAMP (TSP Table 20).

City of Hood River Transportation System Plan

The City of Hood River, in cooperation with Hood River County and ODOT, completed a thorough review of the City’s transportation system that concluded with the City’s adoption of the 2011 TSP. The development of an updated to the TSP took place concurrently with the development and completion of the I-84 IAMP’s for Exit 62, Exit 63 and Exit 64. The 2021 TSP amendments include additional actions to support growth in west Hood River through the year 2040; upon adoption, the amended TSP will include projects and performance results based on a planning horizon year of 2031 for some areas and on a planning horizon year of 2040 for others (see revised TSP Table 14). Findings of consistency with the 2011 TSP goals, policies, and actions applicable to the adoption of the TSP revisions are below.

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

Response: New proposed street design standards will allow the City to better provide for all modes of transportation when existing streets are improved, and new streets are constructed. As proposed, all local street cross sections include a planting strip between the sidewalk and street. The revised street design standards for each functional classification continue to accommodate all users with provisions for bike lanes, sidewalks, and landscaping. The new Neighborhood Connector designation and cross section is a new street classification in the Westside to promote a highly connected local street network within this area.

New cross sections for Minor Arterial and Neighborhood Connector streets can be found in TSP Figures 6C and 6D (Attachment F). The proposed Minor Arterial cross sections include options for buffered on-street bike lanes on both sides of the street, as well as an option where a physically separated bike lane is on one-side of the street and a buffered on-street bike lane is on the other side.

A proposed Policy 3 refinement is to replace references to “bicycle boulevard” with “bike routes” as well as to introduce the concept of the “neighborway.” Neighborways are locations where traffic calming measures will be implemented. No neighborways are designated in the TSP amendment, but the policy change provides the ability for the City to designate these routes in the future.

Consistent with Policy 3, proposed refinements to the Bicycle and Pedestrian System Plans identify a complete network of facilities for pedestrians and cyclists in the Westside Area. The TSP amendments include priority improvements to fill network gaps, trail alignments, and future crossing improvements associated with trail projects. Proposed text describes new bicycle facility types that can be applied in Hood River, including separated bike lanes, buffered bike lanes, and advisory shoulders, and includes added descriptions of previously used bicycle treatments, such as on-street bike lanes and shared lane markings. The proposed non-motorized networks include sidewalks and bike lanes or alternative treatments to provide bicycle and pedestrian connectivity on major roads in the City. New and revised bicycle and pedestrian improvement projects are identified in TSP Tables 1, 2 and 3 in Chapter 3: Modal Plans, and shown in Figure 2 and 4 (Attachment E).

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.*
- 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.*
- 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.*

Response: The proposed action to update the 2011 TSP will ensure that the roadway system’s design, modification, and extension into developing areas of the City will be efficient, equitable, and multi-modal. Refinements to the Pedestrian System Plan and the Bicycle System Plan will extend and include new off-street trails in the Westside Area. Proposed trail projects, including extending the Westside Community Trail and the Henderson Creek Trail improvements, which will enhance recreational opportunities in Hood River. Proposed TSP text amendments provide more guidance for off-street bicycle and pedestrian path facilities, identifying the needed additional enhancements at road crossings to ensure drivers are aware of the off-street facility. Enhanced bicycle and pedestrian crossing improvements are also identified as part of future trail projects (see amendments under Shared Pedestrian and Bicycle Improvements, Attachment E).

The proposed TSP refinements include updating the project descriptions and cost estimates for the Historic Columbia River Highway Trail and Westcliff Drive Pedestrian Path (see TSP Table 3: Off-Street Bicycle & Pedestrian Facility Projects – Preferred Plan, Attachment E), as well as updated roadway improvements enhancing safety and mobility on Highway 30. Improving the ways residents and visitors access and experience the historic highway is consistent with Goal 2.

GOAL 3: A safe transportation system.

POLICIES:

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

Response: The actions under Goal 3 include the charge to maintain a functional classification system for Hood River that meets the City's needs. With the approval of the proposed action, the City will have a new street classification, new street cross sections, an updated local street connectivity map (TSP Figure 7), and updated project descriptions and cost estimates – all of which ensures that the planned transportation system will serve existing and future urban land uses and will enhance multimodal safety, access, and mobility. Findings under TSP Goal 1 describe the refined and new street design standards and refinements to the Bicycle and Pedestrian System Plans. In addition, proposed TSP text amendments provide more guidance for off-street bicycle and pedestrian path facilities, identifying the need for additional enhancements at road crossings to ensure drivers are aware of the off-street facility. Enhanced bicycle and pedestrian crossing improvements are also identified as part of future trail projects (see amendments under Shared Pedestrian and Bicycle Improvements, Attachment E).

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

POLICIES:

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

Response: As detailed in previous findings, including those under TSP Goal 1, proposed TSP refinements ensure that the planned roadway network in the Westside Area provides for all modes of transportation in an efficient, safe manner. The proposed amendments are based on identified future needs over an extended planning time horizon (2040) and provide detail for developing neighborhoods. As described in TSP Goal 2, proposed refinements are also consistent with the action item under Policy 2, which is to provide bicycle and pedestrian connections in areas where connectivity is needed but access for all modes is not feasible or appropriate.

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.

Response: Proposed TSP refinements include updating the roadway design options (cross sections) for Arterials to accommodate efficient and safe bicycle movement. Transportation improvements in the vicinity of I-84 Exit 62 are also addressed as part of the TSP amendments. Needed Exit 62 and city-wide improvements were identified in the I-84 Exit 62 Interchange Area Management Plan Agreement and included in the 2011 TSP. Reaffirmed as part of the Westside Area Concept Plan.

Refinements, improvements to the Exit 62 westbound and eastbound ramps and at Cascade Avenue intersections are in the revised TSP Table 13: Motor Vehicle System Projects – Preferred Plan (Attachment X).

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 financial 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.

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 and make safety improvements required by increased land use development.

Response: The recommended action is City adoption of proposed amendments to the adopted TSP. The transportation projects and future development actions included in the improvement package (Attachment A) have been developed in consultation with affected governmental agencies – in particular ODOT and Hood River County, as well as the Historic Columbia River Highway Advisory Committee, as part of their Westside Area Concept Plan participation.

Proposed modifications to Goal 7 include adding a new action to Policy 4 to update City System Development Charge (SDC) and Traffic Impact Fee (TIF) methodology to provide revenues for Hood River’s portion of needed transportation improvements. A new Policy 6 commits the City to monitor and fund transportation improvements in the Westside Area, as needed. Specific actions include evaluating the specific transportation needs with each CIP update and identifying new funding sources for non-SDC funded projects within the Westside Area.

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: 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.

Response: Interim Exit 62 improvements will be included in the TSP as a result of this action (MV1/MV2 Interim, Table 13: Motor Vehicle System Projects – Preferred Plan). The needed improvements on the Cascade Avenue/I-84 Westbound Ramps and Cascade Avenue/I-84 Eastbound Ramps were developed in a collaborative process with ODOT, consistent with TSP Goal 8.

City of Hood River Comprehensive Plan

GOAL 1 - CITIZEN INVOLVEMENT: Maintain a citizen involvement program that ensures the opportunity for citizens to be involved in all phases of the planning process.

Response: The proposed adoption action is a legislative amendment to the City’s TSP, an element of the adopted Comprehensive Plan. As documented in the Statewide Land Use Planning Goal 1 findings, Hood River citizens have had opportunities to be involved in developing and refining the proposed TSP amendments. Focused public discussion on the needs of the western part of town began with preparation of the Westside Area Concept Plan Report and continued with public hearings on the transportation-related “frameworks” in 2018 and 2019. Planning Commission recommendations and further proposed refinements to the 2011 TSP have been presented through a virtual “open house” and a bilingual survey has gathered additional input from the community. News releases and public service announcements in both English and Spanish provided information on the proposed action and were distributed to media outlets.

Scheduled hearings will provide opportunities for public comment on the proposed changes. Public hearings before the Planning Commission and City Council will be held prior to adoption of TSP amendments. Notice of public hearings on the proposed changes to the City of Hood River Comprehensive Plan were posted, pursuant to City code requirements. The City’s established procedures for conducting notice and public hearings for legislative actions found in HRMC Section 17.09.050. All applicable notice and public hearing procedures have been followed to process this legislative ordinance amendment. Notice of the City Council’s first public hearing will be published in the Hood River News on February 24, 2021, more than 20 days in advance of the City Council’s first public hearing consistent with City requirements and in advance of the Planning Commission’s first public hearing on the matter. The proposed amendment and staff report are available on the City’s web site and at City Hall. Findings and conclusions have been prepared. Staff has updated the Planning Commission on this work regularly, most recently on January 19, 2021.

GOAL 2 - LAND USE PLANNING: To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions.

Response: Policies under Goal 2 include those that address procedures for legislative revisions to the Comprehensive Plan. The City Council and Planning Commission are both eligible to initiate a legislative amendment. The requested action is to amend the Hood River TSP, an element of the City’s Comprehensive Plan. The transportation analysis in Attachment B documents future transportation needs in the Westside Area and supports TSP project list additions and modifications. As described in Goal 10 findings, the transportation analysis documents needs based on the existing Comprehensive Plan/Zoning, as well as a potential Land Use Framework scenario recommended in the Concept Plan Report but not yet adopted. The proposed TSP amendments are needed to accommodate estimated future travel demand based on population, housing, and employment forecasted for the year 2040 in the Westside Area.

GOAL 3 - AGRICULTURAL LANDS: To preserve and maintain agricultural lands.

Response: Not applicable. There are no lands in the vicinity of the proposed improvements that are designated or used for agricultural purposes.

GOAL 4 - FOREST LANDS: To conserve forest lands for forest uses.

Response: Not applicable. There are no lands in the vicinity of the proposed improvements that are designated forest land.

GOAL 5 - OPEN SPACES, SCENIC AND HISTORIC AREAS, AND NATURAL RESOURCES: To conserve open space and protect natural, historic, and scenic resources.

Response: Adoption of the proposed TSP refinements will not adversely impact any Goal 5 resources. As detailed in the Statewide Planning Goals findings in this report, a section of the Historic Columbia River Highway (Cascade Avenue) will eventually need to be widened to accommodate increased traffic demand due to the proposed Country Club Road realignment. The ultimate improvement for the Mt. Adams Avenue intersection has not been determined, but signalization or a roundabout (new preferred alternative) will be needed. Continued planning for this historic facility, as well as preferred construction design for the Mt. Adams Avenue intersection improvement, will be done in close consultation with the Historic Columbia River Highway Advisory Committee.

GOAL 6 - AIR, WATER AND LAND RESOURCE QUALITY: To maintain and improve the quality of the air, water, and land resources of the planning area to provide a relatively pollution free environment.

Response: The proposed legislative action will not impact any Goal 6 resources.

GOAL 7 - NATURAL DISASTERS: To protect life and property from natural disasters and hazards.

Response: Not applicable.

GOAL 8 - RECREATIONAL NEEDS: To satisfy the recreational needs of the citizens of the community and visitors to the area.

Response: Goal 8 is not directly applicable to this action, as the transportation improvements do not directly plan for recreational land or needs. However, as demonstrated in Statewide Planning Goal 8 and TSP Goal 2 findings, TSP refinements improve recreational opportunities for Hood River residents and visitors. This is most evident in proposed modifications to the Shared Pedestrian and Bicycle Improvements section, which updates the conceptual location and alignment of identified trail and path projects and includes new cross sections for multi-modal path design.

GOAL 9 - ECONOMY: To diversify and improve the economy of the Hood River planning area.

Response: Proposed transportation connections and updated projects and project descriptions will provide for the circulation needs of local vehicular traffic, including commercial traffic, in the Westside Area. Proposed TSP refinements will help ensure safe and efficient access for people and goods to the interstate, to downtown, and to commercial and employment areas around Exit 62.

GOAL 10 - HOUSING: To provide for the housing needs of the residents of Hood River.

Response: As explained in the Statewide Planning Goal 10 findings, the proposed TSP amendments support existing residential areas and future residential growth in the Westside Area. Future transportation needs were determined through transportation modeling that considered expected growth based on existing planned land uses, as well as an alternative scenario that could increase housing density in the Westside Area (Attachment B). The proposed transportation network and needed improvements will support either Westside Area land use scenario; the TSP improvements are needed to accommodate estimated future travel demand based on population, housing, and employment forecasted for the year 2040.

GOAL 11 - PUBLIC FACILITIES AND SERVICES: To plan and develop a timely, orderly, and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

Response: Goal 11 is applicable to this action because transportation facilities are key public facilities, provided and managed by public agencies such as the City of Hood River, Hood River County, and ODOT. City policy under this goal includes providing urban services (water, sewer, storm drainage and transportation) to residential, commercial and industrial lands within the City's Urban Growth Area (UGA). By adopting the proposed amendments, the City is ensuring that there is a plan for providing the transportation improvements necessary to support growth in Hood River, and the Westside Area specifically, over the next 20 years.

GOAL 12 - TRANSPORTATION: To provide and encourage a safe, convenient and economic transportation system, realizing maximum mobility for the citizens of the community.

Response: The proposed action, to be recommended by the Planning Commission and taken by the City Council, is to amend the adopted 2011 City of Hood River TSP. Proposed TSP refinements are supported by transportation analysis that was conducted in order to determine future demand, available capacity, deficiencies, and necessary improvements for the Westside Area (Attachments B and C). The analysis demonstrates that the proposed planned transportation facilities will be adequate to safely and efficiently serve future trips generated by planned land uses within the 20-year planning horizon. In addition, funding assumptions have been updated for planned improvements and, for Exit 62-related improvements, funding commitments have been documented by the City and ODOT (Attachment D).

GOAL 13 - ENERGY CONSERVATION: To conserve energy and encourage the use of renewable energy resources.

Response: Not applicable.

GOAL 14 - URBANIZATION: To provide for an orderly and efficient transition from rural to urban land use.

Response: Proposed TSP refinements identify necessary improvements to transportation facilities that will support expected future growth in Hood River. Specifically, the action will support coordinated land use and transportation planning for the Westside Area and expected urban growth within the Urban Growth Area. Consistent with the City's adopted urbanization policies, the proposed improvements support urban development within the City's Urban Growth Area; TSP amendments

will ensure that the City has a plan to provide for urban transportation needs over the planning time horizon.

Hood River Municipal Code (HRMC) Title 17 – Zoning:

17.08.010 Legislative Zone Changes and Plan Amendments

Legislative zone changes or plan amendments ("zone or plan changes") may be proposed by the Planning Commission or City Council. Such proposed changes shall be broad in scope and considered legislative actions. The City Council shall obtain a recommendation on the proposed changes from the Planning Commission. The recommendation of the Planning Commission shall be forwarded to the City Council within sixty (60) days after it is requested from the Planning Commission. The Planning Commission shall conduct at least one (1) public hearing to assist in formulating its recommendation. The City Council shall conduct its own public hearing. Public notice of the legislative zone or plan change hearing before the City Council shall be published in a newspaper of general circulation within the city at least twenty (20) days prior to the date of the hearing.

Response: The legislative action of adopting amendments to the 2011 TSP, the adopted transportation element of the Comprehensive Plan, is being initiated by City Council. Pursuant to this HRMC section, the Planning Commission will formulate a recommendation to be forwarded to the City Council during a public hearing held for this purpose. Public notice of this legislative adoption process was published in the Hood River News on February 24, 2021, more than 20 days prior to the City Council's first hearing date, consistent with City requirements and in advance of the Planning Commission's first public hearing on the matter.

17.08.020 Legislative Zone Changes and Plan Amendments Criteria

A. Legislative zone or plan changes may be approved if

- 1. The effects of the change will not be unreasonably harmful or incompatible with existing uses on the surrounding area; and*
- 2. Public facilities will be used efficiently; and*
- 3. No unnecessary tax burden on the general public or adjacent land owners will result.*

B. Legislative zone or plan changes may be approved if subsection (A) above is met and one or more of the following, as applicable, are met:

- 1. A mistake or omission was made in the original zone or plan designation.*
- 2. There is not an adequate amount of land designated as suitable for specific uses.*

C. The hearing body shall consider factors pertinent to the preservation and promotion of the public health, safety, and welfare, including, but not limited to

- 1. The character of the area involved;*
- 2. It's peculiar suitability for particular uses;*
- 3. Conservation of property values; and*
- 4. The direction of building development.*

Response: This legislative amendment is not related to a mistake or omission in a land use plan or zone designation and is not related to a specific development proposal. Proposed transportation improvements are the legacy of a previous collaborative planning process for the Westside Area involving public agencies, landowners, business owners, and special interests. Proposed TSP amendments are the result of public hearings, careful deliberation by the Planning Commission, additional analysis and professional recommendations, and the public comments gathered during the recent public outreach. Implementation of the updated TSP will enhance vehicular traffic movements, as well as improve pedestrian and bicycle mobility and safety, and is not expected to result in unreasonable harmful impacts on existing uses or the surrounding area in achieving this goal.

17.08.050 Transportation Planning Rule (Legislative and Quasi-Judicial)

A. Amendments to the comprehensive plan and land use regulations which significantly affect a transportation facility shall assure that allowed land uses are consistent with the function, capacity, and level of service of the facility identified in the Transportation System Plan. This shall be accomplished by one of the following:

- 1. Limiting allowed land uses to be consistent with the planned function of the transportation facility;*
- 2. Amending the Transportation System Plan to ensure that existing, improved, or new transportation facilities are adequate to support the proposed land uses consistent with the requirement of the Transportation Planning Rule; or,*
- 3. Altering land use designations, densities, or design requirements to reduce demand for automobile travel and meet travel needs through other modes.*

B. A plan or land use regulation amendment significantly affects a transportation facility if it

- 1. Changes the functional classification of an existing or planned transportation facility;*
- 2. Changes standards implementing a functional classification system;*
- 3. Allows types or levels of land use that would result in levels of travel or access that are inconsistent with the functional classification of a transportation facility; or,*
- 4. Would reduce the level of service of the facility below the minimum acceptable level identified in the Transportation System Plan.*

Response: The proposed improvements were developed to ensure that the local transportation system will continue to meet operational and safety standards and meet future population needs over the next 20+ years. The TSP documents how the City will ensure that planned and expected growth is supported by the existing and planned transportation system. Pursuant to HRMC Section 17.08.050, approval of land use changes that significantly affect a transportation facility would need to be supported by findings that show how the change can be made consistent with the planned transportation system, or its impacts mitigated through transportation improvements. The proposed action does not entail changes to planned land uses. The proposed Comprehensive Plan amendment is an update of its transportation element, the 2011 TSP, which is needed to support future 2040 growth in the Westside Area.

17.09.050 Legislative Actions

A. The Planning Commission, and where appropriate, the Historic Landmarks Review Board, review all requests processed as legislative actions and make a recommendation to Council to approve, approve with conditions, or deny the request. The Council makes the final decision per the provisions of this section. Legislative actions may be appealed to LUBA, subject to ORS 197.830.

B. Decision Types. Legislative actions are land use decisions that are broad in scope. Legislative actions include, but are not limited to, the following:

- 1. Legislative Zone Changes*
- 2. Legislative Ordinance Amendments*
- 3. Legislative Comprehensive Plan Map Amendments*
- 4. Legislative Amendments to the Comprehensive Plan*
- 5. Urban Growth Boundary Amendments*

C. Public Hearings.

- 1. The Planning Commission and/or Landmarks Review Board shall hold at least one (1) legislative public hearing to review legislative actions and make a recommendation to the Council to approve, approve with conditions, or deny.*
- 2. The City Council shall hold a legislative hearing on legislative actions within thirty (30) days of the date it receives the Planning Commission's recommendation.*

D. Notice of Hearing.

- 1. At least twenty (20) days before the first legislative hearing before the Council, notice of the hearing shall be published in a newspaper of general circulation.*
- 2. The notice shall:*
 - a. Explain the application and the proposed amendment(s), change(s), or use(s) which could be authorized;*
 - b. List the applicable Ordinance standards and/or criteria, Comprehensive Plan Policies, Oregon Planning Goals and Guidelines, Oregon Administrative Rules, and Oregon Revised Statutes that apply to the particular application;*
 - c. Set forth the geographical reference to the subject area;*
 - d. State that in order to preserve any potential appeal rights to LUBA, persons must participate either orally or in writing in the legislative action proceeding in question; and*
 - e. Include the name and telephone number of the planning staff to contact for additional information.*
 - f. Include the hearing dates for the Planning Commission, Landmarks Review Board, and City Council hearings.*

E. Additional Notice.

- 1. Written notice shall be provided to property owners when required by ORS 227.186.*
- 2. Written notice shall be provided to the Department of Land Conservation and Development as required by ORS 197.610.*
- 3. When a hearing body holds more than one (1) hearing or continues the hearing, additional notice will be made as follows:*
 - a. To a specific time and place. If notice of a subsequent hearing is made at a public hearing on the same legislative matter and the specific time and place of the subsequent hearing is stated, then no additional notice is required.*
 - b. Undetermined time and place. If a subsequent hearing has not been scheduled at the time of a previous hearing, as provided in subsection (a) above, then notice of the subsequent hearing must be mailed to all persons who responded to the matter in writing, testified at the previous hearing, or have requested notice. The notice should, but need not, be mailed at least twenty (20) days before the hearing.*

F. Decision on Legislative Actions. The Council's decision shall be by ordinance. The decision shall be based upon and accompanied by a brief statement that includes

1. An explanation of the criteria, standards, policies, and laws considered relevant to the decision;
2. A statement of basic facts relied upon in rendering the decision; and
3. Ultimate facts that explain and justify the reason for the decision based on the criteria, standards, policies, laws, and basic facts set forth.

Response: The Planning Commission will review this city-initiated request for a legislative amendment to the adopted City of Hood River Transportation System Plan pursuant to the requirements of this HRMC section.

17.09.060 Quasi-Judicial and Legislative Public Hearings

B. Legislative Hearing Procedure. The Historic Landmarks Boards, Planning Commission, and Council each have the authority to hold legislative hearings. All legislative hearings will be held in accordance with Oregon public meeting laws as described in ORS 192.610-192.710, "Public Meetings".

1. *At the start of each public hearing on legislative actions, the presiding officer shall ask if any member of the hearings body wishes to make any disclosure, or abstain from participating or voting on the matter being heard because of possible financial gain resulting from the legislative action.*
2. *A member with an actual conflict of interest shall not participate as a member in the hearing, but may vote if the member's vote is necessary to meet the minimum number of votes required to take official action.*

Response: The Planning Commission will conduct at least one legislative hearing to consider the city-initiated request for a legislative amendment to the adopted City of Hood River TSP pursuant to the requirements of this HRMC section.

17.09.100 Criteria for Approval

The burden of proof shall be upon the applicant seeking approval. For purposes of an appeal, the burden of proof is upon the appellant. For any application to be approved, it shall be established that the proposal conforms to the City Comprehensive Plan; Zoning Ordinance; Land Division Ordinance; Oregon Revised Statutes, as applicable; and other requirements as they relate to the specific proposal.

Response: The City, as applicant, has provided findings of fact establishing that the proposed adoption of the amendments to the City of Hood River TSP conforms to adopted City and state policy, rules, and requirements.

Attachment A

Summary of 2021 TSP Amendments

SUMMARY OF 2021 TSP AMENDMENT

DATE: February 19, 2021

TO: Kevin Liburdy, Dustin Nilsen | City of Hood River
Darci Rudzinski | APG

FROM: Rochelle Starrett, John Bosket | DKS

SUBJECT: Hood River TSP Amendment

Project #20127-000

The following memo summarizes the changes made to each chapter of the 2011 Hood River Transportation System Plan (TSP) to adopt transportation improvements identified in the Westside Area Concept Plan (WACP) and refined through the 2021 TSP Amendment.

CHAPTER 1: INTRODUCTION

- Added a description of the process used to develop the 2021 TSP amendment including a summary of the public involvement process that refined solutions previously identified through the WACP.
- Added a note to specify the areas of the city where the 2031 or 2040 planning horizon year was applied for the TSP amendment.

CHAPTER 2: TRANSPORTATION GOALS & POLICIES

- Goal 1 Policy 3: Replaced “bicycle boulevard” with “neighborway” in the policy language based on direction from Planning Commission and City staff. Their direction for the plan specified that “bicycle boulevards” should be renamed to “bicycle routes” with signage and bicycle treatments consistent with the roadway functional class. “Neighborways” were identified as locations where traffic calming measures will be implemented. No “neighborways” were designated in the TSP amendment, but the policy language change provides the ability for the City to designate these routes in the future.
- Goal 7:
 - Policy 4: Added a new action to update the City’s System Development Charge (SDC) and Traffic Impact Fee to provide revenues for the City’s portion of needed transportation improvements.
 - Policy 6 (New): Directed the City to monitor and fund transportation improvements in the Westside Area as needed. Specific actions include evaluating specific

transportation needs with each Capital Improvement Program update and identifying new funding sources for non-SDC funded projects within the Westside Area.

CHAPTER 3: MODAL PLANS

- Updated all project cost estimates to 2021 dollars.
- Removed completed projects from project lists or modified as needed if project was partially completed.
- Added or modified new pedestrian/bicycle improvements within the Westside Area based on input from Planning Commission and City staff, including:
 - Recommended crossing improvements with additional language to support future crossing improvements with trail projects as needed.
 - Refined trail alignments.
 - Revised types of pedestrian/bicycle improvements (*i.e.* reducing redundancies between trail segments and adjacent on-street pedestrian/bicycle improvements).
 - Identified priority pedestrian/bicycle improvements to fill network gaps prior to planned roadway extensions.
 - Revised cost estimates for the Westside Community Trail to reflect the proportion funded by the City and Hood River Valley Parks and Recreation.
 - Introduced high-speed/high-volume trail cross-section for implementation on the Henderson Creek Trail.
- Included text describing different bicycle facility types that are available for application in Hood River based on direction from Planning Commission and City staff. This amendment introduced separated bicycle lanes, buffered bicycle lanes, advisory shoulders, and neighborway bicycle facilities which are now described in the TSP. This section also added descriptions for standard on-street bicycle lanes and shared lane markings which were previously used as bicycle treatments in the 2011 TSP.
- Changed previous bicycle boulevard projects to designated bicycle routes. This change was made to recognize that some of the bicycle boulevard projects identified in the 2011 TSP were on collector streets which would not be candidates for traffic calming measures, making these designations inconsistent.
- Added text in the motor vehicle system plan section which reiterated that this update used a 2040 planning horizon for the Westside Area.

- Introduced a Neighborhood Connector designation and cross-section. This designation was only applied to new street extensions in the Westside Area to promote a highly connected local street network.
- Replaced the 2011 TSP Minor Arterial cross-section with an option that included a physically separated bicycle lane on one-side and a buffered on-street bicycle lane on the other side for new minor arterials constructed in the Westside Area. This proposed section was a revision to the section preferred by Planning Commission based on input from City staff. An alternative cross-section with buffered bicycle lanes on both sides was also introduced for use citywide. This cross-section was based on the original minor arterial section designated in the WACP.
- Revised all 2011 TSP Local Street cross-sections to place the planting strip between the sidewalk and the street for use citywide per direction from City staff.
- Made minor text edits to Figure 6F and 6G per direction from City staff.
- Revised Table 8 (Access Management Spacing Standards) to include a new standard for Neighborhood Connector streets that matched the access spacing requirements for local streets.
- Added or modified motor vehicle projects within the Westside Area per direction from City staff or Planning Commission, including:
 - Introduced flexibility for all proposed intersection improvements by introducing roundabout options for all previously identified traffic signal improvements. This change was implemented citywide.
 - Introduced Exit 62 Interchange Interim Improvements with funding support from ODOT to address interchange congestion.
 - Identified specific transportation improvements within the Westside Area to support access to and from this area (via Cascade Avenue) and other local circulation needs.
 - Modified previous intersection control recommendations from WACP for Mt. Adams Avenue/Wine Country Avenue based on recommendations from Planning Commission and City staff. Traffic calming for 30th Street between May Street and Sherman Avenue was also recommended to mitigate impacts to local streets from this change. The supporting analysis for this was documented in the Task 2 memo.
 - Reaffirmed WACP functional classification for Alignment D/Westside Drive.
 - Introduced a study to refine the Exit 62 Interchange Area Management Plan to be consistent with recommendations from the WACP.
- Updated traffic operations (Table 14) based on WACP results.

CHAPTER 4: PLAN IMPLEMENTATION

- Updated funding assumptions to reflect projected revenues between 2021 and 2040, including:
 - State Transportation Improvement Program (STIP) funding for the Exit 62 Interchange Interim Improvements which replaced the previous STIP funding for the completed Country Club Road realignment.
 - Updated projected SDC revenue based on the preferred land use scenario from the WACP.
 - Retained previous assumptions for other transportation revenue sources. This was not assumed to affect the transportation revenues for new projects since previous funding from these sources went solely to maintenance and other expenses.
- Added note specifying that improvements from the WACP were added to the financially constrained plan without dedicated funding since the City has committed to identifying funding for these projects to support development in the Westside Area. This includes:
 - New trail projects within the Westside Area.
 - New bicycle projects within the Westside Area.
 - Motor vehicle projects within the Westside Area.
- Updated project costs for the financially constrained plan and refined the financially constrained project lists to remove completed projects.
- Updated SDC rates and SDC funding section based on the latest available data from the City and other sources.
- Added text to the ODOT Contributions funding section to clarify what was required by ODOT for compliance with the Transportation Planning Rule.
- Added reference to the Heights Urban Renewal District (URD) to the URD funding section since this has been created since the 2011 TSP.

Attachment B

**Transportation Analysis: Technical Memorandum 8, Hood River Westside Area
Concept Plan – Task 6.4 Second Transportation Analysis with Updated Assumptions,
September 29, 2017**



720 SW Washington St., Suite 500
Portland, OR 97205
503.243.3500
www.dksassociates.com

TECHNICAL MEMORANDUM 8

DATE: September 29, 2017

TO: Joe Dills and Andrew Parish, Angelo Planning Group

FROM: John Bosket and Jasmine Pahukula

SUBJECT: Hood River Westside Area Concept Plan – Task 6.4 Second Transportation Analysis with Updated Assumptions

The goal of the Westside Area Concept Plan is to develop an integrated land use and transportation plan for a site of approximately 450 acres located within the City of Hood River and Hood River County. A key outcome will be efficient and orderly land use comprised primarily of residential development. The purpose of this memorandum is to address OAR 660-012-0060 Transportation Planning Rule (TPR) requirements by evaluating the transportation impacts of the proposed plan and identifying any mitigation needed to ensure adequate transportation facilities will be in place to support planned growth.

INTRODUCTION

Updated Transportation Analysis and Assumptions

Following the completion of the initial transportation analysis for this project¹, subsequent meetings with stakeholders led to refinements in the Revised Land Use Framework – July, 2017 for the Westside Area. This created a need to update the transportation analysis, but also provided an opportunity to incorporate new information that became available after the original work plan had been established. This updated transportation analysis includes the following modifications:

- Decreased 2040 population growth estimates. This change was made to align with new population forecasts from Portland State University, which assume an annual population growth rate of 1.4 percent to the year 2035, and 0.9 percent thereafter. The previous assumption was that the population would grow at an average rate of 2.0 percent per

¹ Hood River Westside Area Concept Plan – Transportation Analysis Memorandum, DKS Associates, May 5, 2017.

year.

- The assumed number of people per household was changed from 2.25 to 2.39 to better align with assumptions made in the City’s 2015 Housing Needs Analysis.
- Reduced trips within the city limits to account for a mode shift from auto to transit. This reduction was based on the assumption that by 2040, the City of Hood River would have established a transit system comparable to what the City of Sandy has today. According to census data, as much as three percent of Sandy area commute trips are currently made by transit.
- A revised land use plan within the Westside study area (i.e., decreased household growth). In this memo, the revised plan is called the Revised Land Use Framework – July, 2017.
- Two additional study intersections were added (2nd Street/I-84 Westbound Ramps and 2nd Street/I-84 Eastbound Ramps) to assess potential impacts at the I-84 Exit 63 Interchange.

The combined impact of these changes reduced citywide population and household growth assumptions (note: employment growth assumptions were not changed) as shown in Table 1.

Table 1: Changes in Population and Household Growth Resulting from Updated Analysis Assumptions

Category	Scenario C - Strong increase in Workforce and Affordable Housing ²	Revised Land Use Framework – July, 2017	Difference (Revised – Scenario C)
City of Hood River Total Population Estimate	15,583	13,352	-2,231
City of Hood River Total Household Estimate	6,520	5,586	-934
Number of New Households within the Westside Area (2017 to 2040)	2,271	1,703	-568

² Hood River Westside Area Concept Plant – Transportation Analysis Memorandum, DKS Associates, May 5, 2017.

Study Area

The study area is bound by I-84 to the north, Rand Road/27th Street to the east, Belmont Drive and the urban growth boundary (UGB) to the south, and Frankton Road to the west. The following intersections were selected for traffic operations analysis and an evaluation of potential impacts from the proposed land use action.

1. Cascade Avenue/Westcliff Drive.
2. Cascade Avenue/I-84 Westbound Ramps
3. Cascade Avenue//I-84 Eastbound Ramps
4. Cascade Avenue/Mt. Adams Avenue
5. Cascade Avenue//Rand Road
6. Country Club Road/Frankton Road
7. Frankton Road/May Street
8. May Street/30th Street
9. Rand Road/27th Street/May Street
10. Frankton Road/Post Canyon Road/Belmont Avenue
11. Belmont Avenue/30th Street
12. Belmont Avenue/27th Street
13. 2nd Street/I-84 Westbound Ramps
14. 2nd Street/I-84 Eastbound Ramps

The study area and selected study intersections are shown in Figure 1.



Figure 1: Study Area



Scenarios

This analysis evaluates the following two alternatives during the weekday p.m. peak hour in the year 2040:

- Transportation Base Case – includes land use consistent with the current Comprehensive Plan/Zoning and transportation improvements identified in the adopted City of Hood River Transportation System Plan (TSP) Motor Vehicle Financially Constrained Plan.³
- Revised Land Use Framework – July, 2017 – includes land use within the Westside Area Plan boundary which are based on the Draft Preferred Land Use Framework⁴ as revised to incorporate many of the transect ideas presented to the Project Advisory Committee on June 28, 2017, and the same transportation improvements assumed for the Transportation Base Case, with some minor changes as described in the Transportation Network Assumptions section.

Land use and transportation network assumptions for each alternative are described in more detail in the following sections.

Land Use Assumptions

The Transportation Base Case represents the existing Comprehensive Plan/Zoning that applies in the Westside Area. In other words, it does not change existing zoning to provide a baseline for use in comparing the alternatives.

The Transportation Base Case was developed by modifying population and housing growth assumptions previously used for the City's TSP update. This included using Portland State University's recent annual population growth rates of 1.4 percent through 2035, and 0.9 percent from 2035 to 2040, as well as changing the assumed number of people per household from 2.25 to 2.39 to better align with assumptions made in the City's 2015 Housing Needs Analysis⁵. Employment growth assumptions were taken from the City's 2011 Economic Opportunities Analysis⁶.

The Revised Land Use Framework – July, 2017 represents changes to the Comprehensive Plan/Zoning to accommodate an increased amount of workforce and affordable housing choices by increasing housing density and providing a greater mix of housing types within the Westside Area. This scenario changes selected undeveloped residential land within the study area to "R-2A" and R-3 type land uses, which increases the opportunities for small lot, duplex/triplex, townhome, cluster developments, and apartment housing. It retains developed R-2 lands in their current zoning and R-1 lands in the south and western parts of the study area. The current R-2 lands are also retained in the southern part of the study area near Westside Elementary School. Overall, these changes increase opportunities for workforce and affordable housing and create

³ City of Hood River Transportation System Plan, 2011.

⁴ As reviewed by the Project Advisory Committee on April 26, 2017 and the joint Planning Commission/City Council meeting on May 22, 2017

⁵ City of Hood River Housing Needs Analysis, September 2015, ECONorthwest.

⁶ Hood River Economic Opportunities Analysis, June 2011, FSC Group.

a transect of land use densities across the study area and within neighborhoods.

The City's transportation model uses a control total for land use that is coordinated with Hood River County and ODOT. The overall housing and employment assumptions within the City of Hood River UGB were held constant between the two alternatives. The only difference was where the growth was assumed to occur. This is a technical modeling assumption and not a land use policy change.

Transportation Network Assumptions

According to the TPR, in determining whether a proposed land use regulation amendment has a "significant effect" on the existing or planned transportation system, the evaluation must rely only on existing transportation facilities and planned facilities that are either funded or for which the state/local agency provides a written statement that the facility is reasonably likely to be funded by the end of the planning period.⁷ The projects identified in the Motor Vehicle Financially Constrained Plan of the City's TSP were used to represent assumed transportation network conditions for the Transportation Base Case. The Financially Constrained Plan is a subset of all TSP projects that aligns with anticipated funding. Therefore, it is assumed that these projects are reasonably likely to be funded by 2040. The Motor Vehicle Financially Constrained Plan improvements within the Westside Area Plan boundary are listed below and shown in Figure 2.

Elements of each project that have already been constructed are not mentioned. The project ID numbers (e.g., MV3) are consistent with those used in the City's TSP.

- MV3 – Cascade Avenue/Mt. Adams Avenue:
 - Cascade Avenue at Mt. Adams Avenue: Construct a second northbound left turn lane and install yield control for eastbound right turn lane.
 - Mt. Adams Avenue at Wine Country Avenue: Construct northbound left turn lane, northbound shared through/right turn lane, channelized southbound right turn lane under yield control, southbound through lane, southbound left turn lane, eastbound left turn lane, eastbound shared through/right turn lane, east approach for property access including a westbound left turn lane, and a shared westbound through/right turn lane.
- MV4 – Mt. Adams Avenue (Wine Country Avenue to Fairview Drive): Construct Mt. Adams Avenue as a 3-lane minor arterial and construct a traffic signal at May Street/Mt. Adams Avenue/30th Street (30th Street north of May Street would be disconnected and cul-de-saced).
- MV11 – Mt. Adams Avenue/Cascade Avenue – Construct a traffic signal.
- MV12 – Mt. Adams Avenue/Wine Country Avenue - Construct a traffic signal.
- MV13 – Rand Road/Cascade Avenue - Construct a traffic signal, eastbound right turn lane and modify the northbound and southbound approach to include a left turn lane and a shared through/right turn lane.

⁷ OAR 660-012-0060(4)



Figure 2: Transportation Base Case Transportation Network Assumptions

A select group of street extension projects from the City TSP that are not on the Financially Constrained Plan were included as well. While projects for which no reasonable funding source has been identified would not typically be assumed to be in place for TPR analysis, these streets were included because they would be necessary to access new development as it occurs within the Westside Area Plan boundary. A portion of the cost for each of these new streets would be the responsibility of developers. However, means for funding the remainder of these new streets as the area develops must be identified to satisfy TPR requirements. These projects are also shown in Figure 2 and listed below.

- MV4 – Mt. Adams Avenue (May Street to Fairview Drive): includes improvements south of May Street.⁸
- MV5 – Sherman Avenue (Rand Road to Mt. Adams Avenue) – Extend Sherman Avenue from Rand Road to Mt. Adams Avenue.
- MV6 – Rand Road (May Street to Belmont Avenue) – Extend Rand Road/27th Street from the current stub south of May Street to Belmont Avenue.
- MV7 – Belmont Avenue (Rand Road to Frankton Road) – Extend Belmont Avenue to Frankton Road.

⁸ Note: The portion of project MV4 from May Street to the north was included in TSP Financially Constrained Plan. Project MV4 is split into two “phases” for budgeting purposes.

The Revised Land Use Framework – July, 2017 has the same network assumptions as the Transportation Base Case with the following exceptions, which are shown in Figure 3:

- A shift in location for Project MV4, the portion of the Mt. Adams Avenue extension between Wine Country Avenue (formally referred to as Country Club Road in the TSP) and May Street is shifted to the west. This western alignment is hereafter referred to as “Alignment D” (project MV4.2 in Figure 3).
- A shift in location for Project MV12, the traffic signal on Mt. Adams Avenue at Wine Country Avenue is moved west to the new intersection of Wine Country Avenue at Alignment D (now project MV12.1)⁹. The Wine Country Avenue/Alignment D intersection includes a westbound through lane, a westbound left turn lane, an eastbound shared through-right lane, a northbound right turn lane, and a northbound left turn lane.
- Sherman Avenue is extended further to the west, all the way to Alignment D. A neighborhood collector street further to the south would provide a connection between Alignment D and Frankton Road.
- A shift in the location for the traffic signal on May Street at 30th Street. The signal is moved west to the new intersection with Alignment D (now project MV4.3).

Alignment D and the associated intersection improvements on Wine Country Avenue and May Street are not on the TSP Financially Constrained Plan. However, since they would replace the portion of project MV4 that is on the Financially Constrained Plan, the future funds allocated for those improvements would be transferred to the new Alignment D project.

Two alternative alignments of the Mt. Adams Avenue extension, including Alignment D, were proposed (refer to the Alternatives Analysis Report¹⁰) instead of the alignment identified in the City’s TSP. Under the Revised Land Use Framework – July, 2017, the two alignments would be functionally equivalent from a transportation standpoint if appropriate intersection improvements are included at key locations where the alignments differ.

To move forward with the transportation analysis, the alignment shown in Figure 3 (Alignment D) was assumed to be in place as part of the Revised Land Use Framework – July, 2017. To be clear, this is not a final decision between the two proposed alignments. There are other factors including construction costs, grades, and other utilities that will be used to evaluate the two alignments before a decision is made. At the time of this writing, the project committees have supported the inclusion of Alignment D in the Draft Concept Plan. However, this will not be a final decision until the City adopts the plan.

⁹ The Streets Framework plan identifies two north-south connections between Wine Country Avenue and Sherman Avenue via the Mt. Adams Avenue extension and the 30th Street extension. Assuming these two roadway extensions are intended to provide local/neighborhood access only, it is recommended that both access points are limited to right-in, right-out only at the Wine Country Avenue/Mt. Adams Avenue intersection.

¹⁰ Hood River Westside Area Concept Plan Alternatives Analysis Report DRAFT, January 2017.

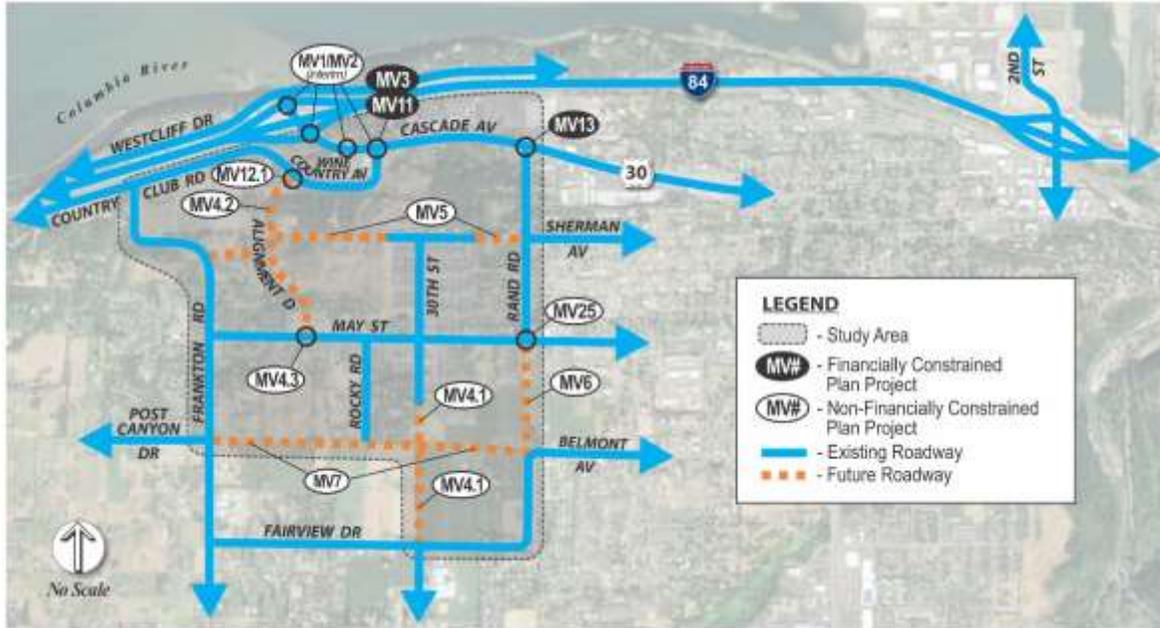


Figure 3: Revised Land Use Framework – July, 2017 Transportation Network Assumptions

TRANSPORTATION ANALYSIS

Future Traffic Volume Development

To determine future year intersection traffic operations, year 2040 motor vehicle traffic volumes were forecasted at the study intersections. These volumes were forecasted by applying each alternative's land use and transportation network assumptions to the Hood River Travel Forecast Tool created for network analysis when the 2011 TSP was developed. In addition, all citywide internal trips (i.e., those beginning and ending within the city) were reduced by three percent to account for a mode shift of some trips from auto to transit. Future volumes at the study intersections are provided in Appendix A.

Future Traffic Operations

Future intersection operations analysis was performed for the 14 study area intersections to identify potential transportation impacts from the proposed rezones associated with the Revised Land Use Framework – July, 2017. Intersections are the focus of the analysis because they are typically the controlling bottlenecks of traffic flow and the ability of a roadway system to carry traffic efficiently is nearly always diminished in their vicinity. Included are descriptions of the intersection performance measures, jurisdictional operational standards, and future traffic operational analysis.

Intersection Performance Measures

Level of service (LOS) ratings and volume-to-capacity (v/c) ratios are two commonly used performance measures that provide a good picture of intersection operations. In addition, they are often incorporated into agency mobility standards.

- Level of service (LOS): A “report card” rating (A through F) based on the average delay experienced by vehicles at the intersection. LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. LOS D and E are progressively worse operating conditions. LOS F represents conditions where average vehicle delay has become excessive and demand has exceeded capacity. This condition is typically evident in long queues and delays.
- Volume-to-capacity (v/c) ratio: A decimal representation (typically between 0.00 and 1.00) of the proportion of capacity that is being used at a turn movement, approach leg, or intersection. It is determined by dividing the peak hour traffic volume by the hourly capacity of a given intersection or movement. A lower ratio indicates smooth operations and minimal delays. As the ratio approaches 0.95, congestion increases and performance is reduced. If the ratio is greater than 1.00, the turn movement, approach leg, or intersection is oversaturated and usually results in excessive queues and long delays.

Jurisdictional Operating Standards

All study intersections are subject to the adopted operating standards of either the City of Hood River or ODOT. Having all intersections meet those standards is desired, but for TPR compliance they can fail to meet operating standards if the proposed land use action does not make conditions worse than they were otherwise, except for intersections within and adopted Interchange Area Management Plan (IAMP). The Transportation Base Case serves as the baseline benchmark for operational performance for non-IAMP intersections. However, IAMP intersections must meet the operating standards under the proposed land use action. The IAMP intersections are identified in Table 2.

Intersection performance measures used for operating standards vary by roadway jurisdiction. The study intersections under ODOT jurisdiction must comply with the v/c ratio targets in the Oregon Highway Plan (OHP), which specifies a v/c ratio target of 0.95 or less for the study intersections along Cascade Avenue.¹¹ The OHP specifies a more restrictive v/c target of 0.85 or less for ramp terminals.¹²

The study intersections under City of Hood River jurisdiction must comply with the LOS targets in the City's TSP, which requires a LOS D or better for city-owned streets.¹³

Intersection Operations

The future traffic operations at the study intersections were determined for the weekday p.m. peak hour based on the Synchro⁹ software analysis using 2000 Highway Capacity Manual methodology¹⁴ for signalized intersections and 2010 Highway Capacity Manual methodology¹⁵ for unsignalized intersections. The level of service (LOS) and volume to capacity (v/c) ratio of each study intersection are listed in Table 2. Detailed intersection analysis worksheets are included in Appendix B.

As shown, four study intersections fail to comply with operating standards by 2040 under the Transportation Base Case. These include:

- Cascade Avenue/I-84 Westbound Ramps (unsignalized)
- Cascade Avenue/I-84 Eastbound Ramps (unsignalized)
- Cascade Avenue/Mt. Adams Avenue (signalized)
- Rand Road/27th Street/May Street (unsignalized)

Under the Revised Land Use Framework – July, 2017, conditions worsen at the Cascade Avenue/Mt. Adams Avenue and Rand Road/27th Street/May Street intersections. Although conditions improve at the Exit 62 (Cascade Avenue/I-84) interchange under the Revised Land Use Framework – July, 2017, the Exit 62 interchange is part of an adopted IAMP. Therefore, those intersections must meet operating standards or mitigation will be required at all four of these intersections to achieve TPR compliance.

¹¹ Table 7, Oregon Highway Plan, Oregon Department of Transportation, December 2011. Based on a District Highway, Non-MPO Outside of STAs where non-freeway posted speed <= 35 mph.

¹² Oregon Highway Plan, Oregon Department of Transportation, December 2011, page 76.

¹³ City of Hood River Transportation System Plan, October 2011.

¹⁴ *2000 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2000.

¹⁵ *2010 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2010.

Table 2: Future Study Intersection Operations 2040 Weekday P.M. Peak Hour

Intersection		Operating Standard	Transportation Base Case			Revised Land Use Framework – July, 2017		
			LOS	Delay (sec)	v/c	LOS	Delay (sec)	v/c
1	Cascade Avenue/Westcliff Drive	0.95 v/c (IAMP)	A/B ¹	12.6 ¹	0.12 ¹	A/B ¹	12.3 ¹	0.10 ¹
2	Cascade Avenue/ I-84 Westbound Ramps	0.85 v/c (IAMP)	A/F	>1000	3.40	A/F	759.2	2.59
3	Cascade Avenue/ I-84 Eastbound Ramps	0.85 v/c (IAMP)	A/F	99.0	1.07	A/F	56.0	0.92
4	Cascade Avenue/Mt. Adams Avenue	0.95 v/c (IAMP)	F	168.7	1.74	F	196.4	1.88
5	Cascade Avenue/Rand Road	0.95 v/c (IAMP)	C	25.2	0.65	C	30.9	0.79
6	Country Club Road/Frankton Road	D	A/B	12.2	0.27	A/B	11.8	0.27
7	Frankton Road/May Street	D	A/C	15.3	0.38	A/C	17.4	0.42
8	May Street/30 th Street	D	C	26.5	0.57	A/C	17.5	0.29
9	Rand Road/27 th Street/May Street	D	A/F	162.7	1.22	A/F	387.8	1.71
10	Frankton Road/Post Canyon Road/Belmont Avenue	D	A/C	15.6	0.20	A/C	18.9	0.24
11	Belmont Avenue/30 th Street	D	A/D	29.1	0.20	A/C	23.4	0.32
12	Belmont Avenue/27 th Street	D	A/B	13.9	0.13	A/B	12.3	0.10
13	2 nd Street/I-84 Westbound Ramps	0.85 v/c (IAMP)	C	22.3	0.77	C	23.3	0.79
14	2 nd Street/I-84 Eastbound Ramps	0.85 v/c (IAMP)	B	18.7	0.82	B	18.9	0.81
-	Alignment D/May Street	D	-	-	-	D	52.5	0.44
<p>Bolded Red and Shaded values do not meet operating standards. Two-Way Stop Controlled intersections: LOS = Level of Service of Major Street/Minor Street (i.e., A/F) V/C = Volume-to-Capacity Ratio of Worst Movement</p>								

Delay = Seconds of Delay of Worst Movement

¹ Due to the atypical traffic control at this intersection, the future operations were determined using 2000 Highway Capacity Manual methodology for unsignalized intersections.

Why do conditions at the I-84 Exit 62 ramp intersections improve under the Revised Land Use Framework – July, 2017?

Future traffic volume forecasts for each alternative use a shortest path analysis, where “short” is defined by how much time it takes to arrive at a destination. Therefore, excessive congestion can result in routing changes across the city. In this case, the unimproved Exit 62 interchange operates very poorly under the Transportation Base Case and drivers will experience very long delays. The increased housing density in the Westside Area associated with the Revised Land Use Framework – July, 2017 creates more vehicle trip demand for the Exit 62 interchange area. However, the shift of the Mt. Adams Avenue extension to Alignment D, approximately 900 feet to the west, makes Alignment D less attractive for some trips (because the trips take more time). About half of the diverted trips will choose to enter Hood River from Exit 63 and travel westbound down Cascade Avenue instead of using the Exit 62 interchange. The remaining diverted trips enter the city from the south via OR35 and from the east via State Street and will also choose to travel westbound down Cascade Avenue instead of using the Exit 62 interchange. The net result is fewer trips in the Exit 62 interchange and less delay under the Revised Land Use Framework – July, 2017, though congestion may be increased elsewhere.

Mitigation for the Exit 62 interchange is assumed to include the improvements recommended at this location in the City’s TSP. The Exit 62 improvements in the City’s adopted TSP (MV1) include:

Cascade Avenue/ I-84 Westbound Ramps:

- Construct traffic signal
- Construct northbound left turn lane (full length of the bridge)
- Construct second southbound through lane
- Construct westbound left turn lane
- Construct shared westbound through/left turn lane
- Construct westbound right turn lane

Cascade Avenue/ I-84 Eastbound Ramps:

- Construct traffic signal
- Construct northbound right turn lane (drop lane from Cascade Avenue to I-84 eastbound)
- Construct second southbound through lane
- Construct southbound left turn lane
- Construct eastbound right turn lane

Mitigation for the Cascade Avenue/Mt. Adams Avenue intersection is assumed to include the remainder of the improvements recommended at this location in the City's TSP. These include:

- Widen Cascade Avenue between Mt. Adams Avenue and Rand Road to include one travel lane in each direction and a center turn lane (MV2b)

To accommodate the construction of new turn lanes at the Exit 62 interchange and Cascade Avenue/Mt. Adams Avenue intersection, the additional improvements, also included in the City's adopted TSP (MV2a), will be required on Cascade Avenue between the interchange and Mt. Adams Avenue:

- Construct second eastbound lane from I-84 eastbound ramp terminal to Mt. Adams Avenue
- Construct a second westbound lane from Mt. Adams Avenue to I-84 eastbound ramp terminal (ends as right turn lane)

To summarize, the above-listed improvements at and near Exit 62 are included in the City's currently adopted TSP and are necessary to accommodate Hood River's growth under either the Transportation Base Case or Revised Land Use Framework – July, 2017.

The City's TSP does not identify any improvements for the intersection of Rand Road/27th Street/May Street. If a traffic signal were constructed, operating conditions could be improved to a LOS B, which would meet adopted standards (see Table 3). Alternatively, the City could consider constructing a mini-roundabout at this location to fit within available right-of-way at a significantly lower cost. Refer to Appendix C for an example of a mini-roundabout. This project (MV25) is the only new improvement that would be added to City's TSP to accommodate growth under the proposed Revised Land Use Framework – July, 2017.

With these mitigations in place, conditions at the four identified intersections will comply with operational standards under the Transportation Base Case and Revised Land Use Framework – July, 2017 and would meet TPR requirements.

Note: Under the Mitigated Transportation Base Case, conditions worsen at Belmont Avenue/30th Street. However, under the Mitigated Revised Land Use Framework – July, 2017, conditions at Belmont Avenue/30th Street will comply with operations standards and would meet TPR requirements.

Table 3: Future Study Intersection Operations 2040 Weekday P.M. Peak Hour - Mitigated

Intersection		Operating Standard	Transportation Base Case			Revised Land Use Framework – July, 2017		
			LOS	Delay (sec)	v/c	LOS	Delay (sec)	v/c
1	Cascade Avenue/Westcliff Drive	0.95 v/c	B	14.8	0.11	B	18.2	0.11
2	Cascade Avenue/ I-84 Westbound Ramps	0.85 v/c	C	27.6	0.73	C	27.0	0.67
3	Cascade Avenue/ I-84 Eastbound Ramps	0.85 v/c	C	26.0	0.65	C	22.9	0.66
4	Cascade Avenue/Mt. Adams Avenue	0.95 v/c	B	16.7	0.87	B	19.1	0.83
5	Cascade Avenue/Rand Road	0.95 v/c	C	23.1	0.72	C	28.1	0.85
6	Country Club Road/Frankton Road	D	A/B	12.7	0.31	A/B	11.8	0.26
7	Frankton Road/May Street	D	A/B	14.7	0.31	A/C	16.3	0.39
8	May Street/30 th Street	D	C	20.6	0.51	A/B	14.1	0.22
9	Rand Road/27 th Street/May Street	D	B	10.9	0.59	B	19.1	0.77
10	Frankton Road/Post Canyon Road/Belmont Avenue	D	A/C	17.4	0.23	A/C	18.2	0.23
11	Belmont Avenue/30 th Street	D	A/E	43.9	0.35	A/C	23.6	0.32
12	Belmont Avenue/27 th Street	D	A/B	15.5	0.14	A/B	15.8	0.21
13	2 nd Street & I-84 Westbound Ramps	0.85 v/c	C	20.3	0.73	C	22.2	0.77
14	2 nd Street & I-84 Eastbound Ramps	0.85 v/c	B	18.5	0.80	B	19.1	0.81
-	Alignment D/May Street	D	-	-	-	D	48.1	0.42
<p>Bolded Red and Shaded values do not meet operating standards. Two-Way Stop Controlled intersections:</p>								



LOS = Level of Service of Major Street/Minor Street (i.e., A/F) V/C = Volume-to-Capacity Ratio of Worst Movement Delay = Seconds of Delay of Worst Movement

Interchange Ramp Queues

In addition to intersection operations, projected vehicle queues on the I-84 Exit 62 and Exit 63 off-ramps were also compared between alternatives to identify potential safety issues. Safety concerns arise if ramp queues exceed the provided storage area and spill back into the portion of the ramp needed to slow to a stop from exiting freeway speeds. The result is an increased risk for high-speed rear-end collisions. This is not a new issue. In 2011, the Exit 62 Interchange Area Management Plan previously analyzed ramp queues and identified the need for ramp capacity improvements.

SimTraffic modeling software was used to estimate the 95th percentile vehicle queues for the I-84 Exit 62 and Exit 63 westbound and eastbound off-ramps, without mitigating improvements, so as to assess the level of mitigations required. This analysis estimates the queue length that would not be exceeded in 95 percent of the queues formed during the peak hour.

Vehicle queues at the Cascade Avenue/I-84 Westbound Ramps are very long and would extend back into the freeway mainline under the Transportation Base Case. Conditions improve under the Revised Land Use Framework – July, 2017; however, the queues still would extend back into the freeway mainline. This change is due to the diversion of trips to the Exit 63 interchange and westbound Cascade Avenue to avoid excessive delays at the Exit 62 interchange. Detailed queuing results for the westbound and eastbound ramps at the I-84 Exit 62 and Exit 63 interchanges in their current unimproved states are included in Appendix D.

Table 4 identifies the 95th percentile queue lengths for the westbound and eastbound ramps at the I-84 Exit 62 and Exit 63 interchanges with the proposed mitigations. Operating standards at the intersections would be met under both alternatives. Queue lengths can be accommodated during the design to ensure the vehicle queues don't extend into the deceleration area.

Table 4: 2040 Weekday P.M. Peak Hour Motor Vehicle 95th Percentile Queuing - Mitigated

Intersection	Movement	95 th Percentile Vehicle Queue Length (ft.)	
		Transportation Base Case	Revised Land Use Framework – July, 2017
2 Cascade Avenue/ I-84 Westbound Ramps	Left	275	250
	Left/Through	325	275
	Right	125	75
3 Cascade Avenue/ I-84 Eastbound Ramps	Left/Through	100	100
	Right	250	225
13 2 nd Street & I-84 Westbound Ramps	Left/Through	425	375
	Right	200	175
14 2 nd Street & I-84 Eastbound Ramps	Left/Through	250	300
	Right	150	200

Alternative Interim Improvements for TPR Compliance

The proposed mitigation at the Exit 62 interchange, which includes significant interchange reconstruction, is not reasonably likely to be funded by 2040. As an alternative to full interchange reconstruction, which was estimated to cost approximately \$35 million, a set of interim improvements are offered for consideration that would cost approximately \$5 million. Congestion would still be present, but ramp queues would be maintained at a safe length so stopped vehicles would not queue back onto the freeway mainline or within the portion of the off-ramps needed to decelerate to a stop from freeway speeds. These improvements (MV1/MV2 Interim) include:

Cascade Avenue/ I-84 Westbound Ramps

- Construct a traffic signal
- Install queue detection devices on the off-ramp and ability to pre-empt signal timing to allow the off-ramp queues to be cleared during times when queue lengths become excessive

Cascade Avenue/ I-84 Eastbound Ramps

- Construct an eastbound shared through/left turn lane to create an exclusive lane for the heavier right turn movement



Cascade Avenue

- Construct second eastbound lane from the I-84 eastbound ramp terminal to Mt. Adams Avenue (would tie into the existing eastbound right turn lane at Mt. Adams Avenue)

Westcliff Drive/Cascade Avenue

- Install a stop sign on the eastbound approach
- Remove the stop sign for the northbound right turn lane

Tables 5 and 6 show the intersection operations and Exit 62 queuing with the above improvements in place (also includes all other improvements previously discussed). As noted, the interim improvements do not meet the operating standards (v/c ratio targets), but they do prevent ramp queues from backing onto the mainline or obstructing vehicles exiting from the freeway. Although the Exit 62 interchange ramp intersections do not meet the operating standards under the Revised Land Use Framework – July 2017, the v/c ratios are less than 1.0, which is a significant improvement. While this analysis was completed for the year 2040, ODOT is advised to implement the identified safety improvements (MV1/MV2 Interim) in the near term rather than waiting until 2040.

Table 5: Future Study Intersection Operations 2040 Weekday P.M. Peak Hour – Mitigated with Interim Improvements

Intersection		Operating Standard	Transportation Base Case			Revised Land Use Framework – July, 2017		
			LOS	Delay (sec)	v/c	LOS	Delay (sec)	v/c
1	Cascade Avenue/Westcliff Drive	0.95 v/c (IAMP)	A/B ¹	12.0 ¹	0.09 ¹	A/B ¹	12.2 ¹	0.12 ¹
2	Cascade Avenue/ I-84 Westbound Ramps	0.85 v/c (IAMP)	D	49.9	1.05	D	35.7	0.93
3	Cascade Avenue/ I-84 Eastbound Ramps	0.85 v/c (IAMP)	A/F	115.6	1.11	A/E	46.4	0.87
4	Cascade Avenue/Mt. Adams Avenue	0.95 v/c (IAMP)	B	17.7	0.88	B	19.1	0.83
5	Cascade Avenue/Rand Road	0.95 v/c (IAMP)	C	23.1	0.72	C	28.1	0.85
6	Country Club Road/Frankton Road	D	A/B	12.7	0.31	A/B	11.8	0.26
7	Frankton Road/May Street	D	A/B	14.7	0.31	A/C	16.3	0.39
8	May Street/30 th Street	D	C	20.6	0.51	A/B	14.1	0.22
9	Rand Road/27 th Street/May Street	D	B	10.9	0.59	B	19.1	0.77
10	Frankton Road/Post Canyon Road/Belmont Avenue	D	A/C	17.4	0.23	A/C	18.2	0.23
11	Belmont Avenue/30 th Street	D	A/E	43.9	0.35	A/C	23.6	0.32
12	Belmont Avenue/27 th Street	D	A/B	15.5	0.14	A/B	15.8	0.21
13	2 nd Street/I-84 Westbound Ramps	0.85 v/c (IAMP)	C	20.3	0.73	C	22.2	0.77
14	2 nd Street/I-84 Eastbound Ramps	0.85 v/c (IAMP)	B	18.5	0.80	B	19.1	0.81
-	Alignment D/May Street	D	-	-	-	D	48.1	0.42

Bolded Red and Shaded values do not meet operating standards.

Two-Way Stop Controlled intersections:
 LOS = Level of Service of Major Street/Minor Street (i.e., A/F)
 V/C = Volume-to-Capacity Ratio of Worst Movement
 Delay = Seconds of Delay of Worst Movement
¹ Due to the atypical traffic control at this intersection, the future operations were determined using 2000 Highway Capacity Manual methodology for unsignalized intersections.

Table 6: 2040 Weekday P.M. Peak Hour Motor Vehicle 95th Percentile Queuing – Mitigated with Interim Improvements

	Intersection	Movement	95 th Percentile Vehicle Queue Length (ft.)	
			Transportation Base Case	Revised Land Use Framework – July, 2017
2	Cascade Avenue/ I-84 Westbound Ramps	Left /Through/Right	1,300	400
3	Cascade Avenue/ I-84 Eastbound Ramps	Left /Through	225	150
		Right	300	250

SUMMARY OF KEY FINDINGS & RECOMMENDATIONS

Both the proposed land uses and minor transportation network changes associated with the Revised Land Use Framework – July, 2017 will have a “significant effect”, as defined by the Transportation Planning Rule, on the operational performance of the intersections at the Exit 62 interchange, Cascade Avenue/Mt. Adams Avenue, and Rand Road/27th Street/May Street. All four identified intersections will fail to meet adopted operational standards by 2040 under the Transportation Base Case and Revised Land Use Framework – July, 2017.

The following set of improvements are recommended to supplement the Financially Constrained Plan improvements and mitigate the impacts of the proposed land use action, allowing for TPR compliance. This includes the interim Exit 62 interchange improvements in lieu of the full set of interchange improvements included in the City’s TSP. However, to comply with the TPR, ODOT must be willing to provide a letter stating that these improvements are sufficient and reasonably likely to be funded by 2040.

Note: There is an identifier for each improvement highlighting the project source. Most required projects are already identified in the City’s adopted TSP. There is one new project recommended for the TSP that is necessary to accommodate growth under the proposed land use plan. There are four new interim projects recommended to satisfy TPR requirements.

Cascade Avenue/ I-84 Westbound Ramps (MV1/MV2 Interim)

- Construct a traffic signal (currently in the adopted TSP)
- Install queue detection devices on the off-ramp and ability to pre-empt signal timing to allow the off-ramp queues to be cleared during times when queue lengths become excessive (new interim project recommended for the TSP)

Cascade Avenue/ I-84 Eastbound Ramps (MV1/MV2 Interim)

- Construct an eastbound shared through/left turn lane to create an exclusive lane for the heavier right turn movement (currently in the adopted TSP)

Cascade Avenue (MV1/MV2 Interim)

- Construct second eastbound lane from the I-84 eastbound ramp terminal to Mt. Adams Avenue that would tie into the existing eastbound right turn lane at Mt. Adams Avenue (currently in the adopted TSP)

Westcliff Drive/Cascade Avenue (MV1/MV2 Interim)

- Install a stop sign on the eastbound approach (new interim project recommended for the TSP)
- Remove the stop sign for the northbound right turn lane (new interim project recommended for the TSP)

Rand Road/27th Street/May Street: (MV25)

- Construct a traffic signal; or (new project recommended for the TSP)
- Construct a mini-roundabout (new project recommended for the TSP, pending further design review)

Funding must also be identified for the following improvements currently in the City's TSP to ensure adequate facilities will be in place to support development in the Westside Area:

- MV2a – Cascade Avenue widening – Construct a second westbound lane from Mt. Adams Avenue to I-84 eastbound ramp terminal that ends as right turn lane
- MV2b – Cascade Avenue widening - Widen Cascade Avenue between Mt. Adams Avenue and Rand Road to include one travel lane in each direction and a center turn lane
- MV4.1 – 30th Street (May Street to Fairview Drive) – Extend 30th Street from May Street to Fairview Drive
- MV5 – Sherman Avenue (Rand Road to Alignment D) – Extend Sherman Avenue from Rand Road to Alignment D
- MV6 – Rand Road (May Street to Belmont Avenue) – Extend Rand Road/27th Street from the current stub south of May Street to Belmont Avenue
- MV7 – Belmont Avenue (Rand Road to Frankton Road) – Extend Belmont Avenue to Frankton Road

If the Mt. Adams Avenue alignment further to the west (Alignment D) is selected, additional refinements to the current TSP include:

- May Street/30th Street Intersection – remove project to construct a traffic signal at this intersection
- May Street/Alignment D – construct a traffic signal or roundabout (MV4.3 - this is essentially the above-listed project shifted to the west)
- Mt. Adams Avenue/Country Club Road – remove project (MV12) to construct a traffic signal at this location
- Wine County Avenue/Alignment D – construct a traffic signal, a westbound left turn lane and a northbound left turn lane (MV12.1 - this is essentially the above-listed project shifted to the west)
- New Neighborhood Collector – Construct a Neighborhood Collector street between Alignment D and Frankton Road to the south of the Sherman Avenue alignment

Funding must also be identified for these improvements; however, some would come from funding assumed for the Financially Constrained Plan project to construct the Mt. Adams Avenue extension from Cascade Avenue to May Street.

Table 7 summarizes the transportation improvements listed above. It makes a distinction between transportation improvements already identified in the City's TSP and new transportation improvements needed to support the Revised Land Use Framework – July 2017.



Table 7: Summary of the Transportation Improvements

ID	Project	Total Cost Estimate	Project Description	On the 2011 TSP Financially Constrained Project List?	On the 2011 TSP Non-Financially Constrained Project List?	Interim Improvement	New project to add to the TSP	Only Needed if Revised Land Use Framework - July 2017 is approved	Pedestrian/Bicycle Only Improvement ^a
MV1/MV2 Interim	I-84 Exit 62 Interchange	\$ 5,000,000	I-84 Westbound Ramp/Terminal - Construct traffic signal		x	x			
			I-84 Westbound Ramp/Terminal - Install queue detection devices on the off-ramp and ability to pre-empt signal timing to allow the off-ramp queues to be cleared during times when queue lengths become excessive			x	x		
			I-84 Eastbound Ramp/Terminal Construct an eastbound shared through/left turn lane to create an exclusive lane for the heavier right turn movement		x	x			
			Cascade Avenue - Construct second eastbound lane from the I-84 eastbound ramp terminal to Mt. Adams Avenue (would tie into the existing eastbound right turn lane at Mt. Adams Avenue)		x	x			
			Westcliff Drive/Cascade Avenue - Install a stop sign on the eastbound approach - Remove the stop sign for the northbound right turn lane			x	x		
MV2a	Cascade Avenue	\$1,306,000	- Construct a second westbound lane from Mt. Adams Avenue to I-84 eastbound ramp terminal that ends as right turn lane (currently in the adopted TSP)		x				
MV2b	Cascade Avenue	\$906,000	- Widen Cascade Avenue between Mt. Adams Avenue and Rand Road to include one travel lane in each direction and a center turn lane		x				

ID	Project	Total Cost Estimate	Project Description	On the 2011 TSP Financially Constrained Project List?	On the 2011 TSP Non-Financially Constrained Project List?	Interim Improvement	New project to add to the TSP	Only Needed if Revised Land Use Framework - July 2017 is approved	Pedestrian/Bicycle Only Improvement ^a
MV3	Cascade Ave at Mt. Adams Ave	\$844,000	-Construct a northbound left turn lane -Install yield control for eastbound right turn lane	x					
MV4.1	30 th Street (May Street to Fairview Drive)	\$7,120,000	Construct 30 th Street as a 3-lane minor arterial from the current stub south of May Street to Fairview Dr. the south/west edge of the urban growth boundary (UGB). 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).		x				
MV4.2	Alignment D (Wine Country Avenue to May Street)	\$13,602,000	Construct Alignment D as a 3-lane minor arterial from Country Club Road to May Street.	x*					
MV4.3	May Street/Alignment D	\$350,000	Construct a traffic signal	x*					
MV5	Sherman Avenue (Rand Road to Alignment D)	\$7,814,000	Extend Sherman Avenue from Rand Road to Alignment D (middle segment of this extension exists)		x*				
MV6	Rand Road (May Street to Belmont)	\$2,971,463	Extend Rand Road/27 th Street from the current stub south of May Street to Belmont Avenue.		x				

ID	Project	Total Cost Estimate	Project Description	On the 2011 TSP Financially Constrained Project List?	On the 2011 TSP Non-Financially Constrained Project List?	Interim Improvement	New project to add to the TSP	Only Needed if Revised Land Use Framework - July 2017 is approved	Pedestrian/Bicycle Only Improvement ^a
MV7	Belmont Avenue (Rand Road to Frankton Road)	\$9,807,992	Extend Belmont Avenue to Frankton Road, opposite Post Canyon Drive. The alignment of Belmont Avenue 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)		x				
MV11	Mt Adams Avenue/Cascade Avenue	\$398,931	Construct a traffic signal	x					
MV13	Rand Road/Cascade Avenue	\$1,750,000	Construct a 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, and construct an eastbound right turn lane	x					
MV12.1	Wine Country Avenue/Alignment D	\$498,000	Construct a traffic signal	x					
			Construct a westbound left-turn lane		x*				
MV25	Rand Road/27 th Street/May Street	\$350,000	Construct a traffic signal				x	x	
P1.1	Historic Columbia River Highway Trail	\$6,933,000	Construct an asphalt path along Westcliff Drive east to Westside Community Trail (via Wasco Street)		x*				x
P13	Historic Columbia River Highway Trail, south side of Cascade Avenue	\$1,185,000	Construct an asphalt or concrete path on the south side of Cascade Avenue.				x		x
P14	30 th Street North Extension	\$359,000	Construct 6-foot bike lanes and 5- foot sidewalks between 30th Street to Mt. Adams Avenue/Wine Country Avenue				x		x

ID	Project	Total Cost Estimate	Project Description	On the 2011 TSP Financially Constrained Project List?	On the 2011 TSP Non-Financially Constrained Project List?	Interim Improvement	New project to add to the TSP	Only Needed if Revised Land Use Framework - July 2017 is approved	Pedestrian/Bicycle Only Improvement ^a
P15	Westside Community Trail extension to Cascade Avenue	\$67,000	Extend the Westside Community Trail north between Sherman Avenue and Cascade Avenue				x		x
P4	Westside Community Trail	-	Extend Westside Community Trail east to connect with the existing trail at 20th Street.	x					x
BL7	Rand Road	\$239,358	Construct bike lanes (portion within the Westside Area only)		x				x
BL6	May Street	\$515,921	Construct bike lanes (portion within the Westside Area only)	x					x
P16	Upper Terrace Neighborhood Trail	\$793,000	Construct Upper Terrace Neighborhood Trail between May Street and Fairview Drive				x		x
P17	Post Canyon Drive Bike Lanes and Sidewalks	\$778,000	Construct 6-foot bike lanes and 5- foot sidewalks between Frankton Road and West UGB Boundary				x		x
P18	West Community Trail extension west to Frankton Road	\$103,000	Extend the Westside Community Trail west between Rocky Road and Frankton Road				x		x
P19	Trail from Sherman Avenue to Frankton Road	\$112,000	Construct a trail from Alignment D to Frankton Road				x		x
BL2	Frankton Bike Lanes	\$387,533	Construct bike lanes		x				x
BL1	Country Club Bike Lanes	\$416,028	Construct bike lanes		x				x
	Total Cost	\$64,607,225							

^a The pedestrian and bicycle improvements are not discussed in this memo. Refer to the Bicycle/Pedestrian Framework and Technical Memo 6.1:Funding Review and Funding Toolkit for more information.

* This project is a modified version of another project that is already included in the TSP.



APPENDIX

- A – 2040 Traffic Volumes
- B – 2040 HCM Reports
- C – Mini Roundabout Example
- D – 2040 Queuing Reports

Attachment C

**Transportation Analysis: Hood River TSP Amendment - Traffic Analysis of New
Westside Street Network Scenario, November 11, 2020**



TECHNICAL MEMORANDUM

DATE: November 11, 2020

TO: Dustin Nilsen, Kevin Liburdy | City of Hood River

FROM: Rochelle Starrett, John Bosket | DKS

SUBJECT: Hood River TSP Amendment | Traffic Analysis of New Westside Street Network Scenario Project #20127-000

The Hood River Westside Area Concept Plan (WACP) previously identified a preferred street network. The preferred street network recommended turn restrictions with median barrier at the intersection of Mt. Adams Avenue/Wine Country Avenue with a parallel minor arterial roadway to the west, referred to as Alignment D¹. The recommendations were designed, in part, to mitigate adverse impacts to existing residential neighborhoods adjacent to 30th Street. In support of the anticipated pedestrian-oriented district near this intersection, Hood River's Planning Commission recommended alternative intersection controls at this location². This memorandum summarizes additional traffic analysis to understand the potential traffic impacts of allowing all turning movements at the Mt. Adams Avenue/Wine Country Avenue intersection on the surrounding neighborhoods in coordination with reclassifying Alignment D as a collector along with other minor street network changes. The traffic analysis included vehicle diversion estimates, appropriateness of proposed functional classification changes, and intersection operations for Mt. Adams Avenue/Wine Country Avenue.

STREET NETWORK SCENARIOS

The Hood River travel forecasting tool developed for Hood River's Transportation System Plan and updated for the 2040 WACP Preferred Alternative, which includes future land use and street network consistent with the recommended land use and transportation frameworks from the WACP, was used as the 2040 Baseline Scenario for this analysis. All turn restrictions recommended in the WACP at Mt. Adams Avenue/Wine Country Avenue remain through the assumption that a raised

¹ Hood River Westside Area Concept Plan. 2017.

² Hood River Planning Commission. Recommendations for Westside Area Concept Plan Frameworks (File No. 2018-07). 2019.

median barrier would be constructed that would restrict the southbound and westbound approaches to only right turns and restrict the northbound approach to only through movements and right turns. No turn restrictions would be placed on the eastbound approach. The recommended turn restrictions for this intersection are illustrated below in Figure 1.

The travel forecasting tool was then used to create a new "2040 Alternative Scenario" reflecting a set of requested street network changes from the 2040 Baseline Scenario, which included:

- *Changing the WACP east-west neighborhood connector between the Mt. Adams Avenue/Wine Country Avenue and Rand Road/Sierra Lane intersections to a collector.* This improvement was modeled by increasing the speed from 20 mph to 25 mph on this roadway in the travel forecasting tool.
- *Changing the WACP north-south neighborhood connector between the new east-west collector described above and the Sherman Avenue/Maxs Place intersection to a collector.* This improvement was modeled by increasing the speed from 20 mph to 25 mph on this roadway in the travel forecasting tool.
- *Changing the WACP Alignment D minor arterial to a collector.* This change was modeled by reducing the speed to 30 mph on this roadway and removing left turn pockets at intersections, consistent with Hood River's typical collector street cross section, in the travel forecasting tool.
- *Allowing all turning movements at the Mt. Adams Avenue/Wine Country Avenue intersection.* This intersection was modelled as a roundabout.

The street networks and intersection configuration at the Mt. Adams Avenue/Wine Country Avenue intersection for both the 2040 Baseline Scenario and the 2040 Alternative Scenario are shown below in Figure 1 and Figure 2, respectively. Key changes include updated intersection control at Mt. Adams Avenue/Wine Country Avenue and revised functional classifications for Alignment D and the proposed neighborhood connectors north of Sherman Avenue and east of Mt. Adams Avenue as described above.

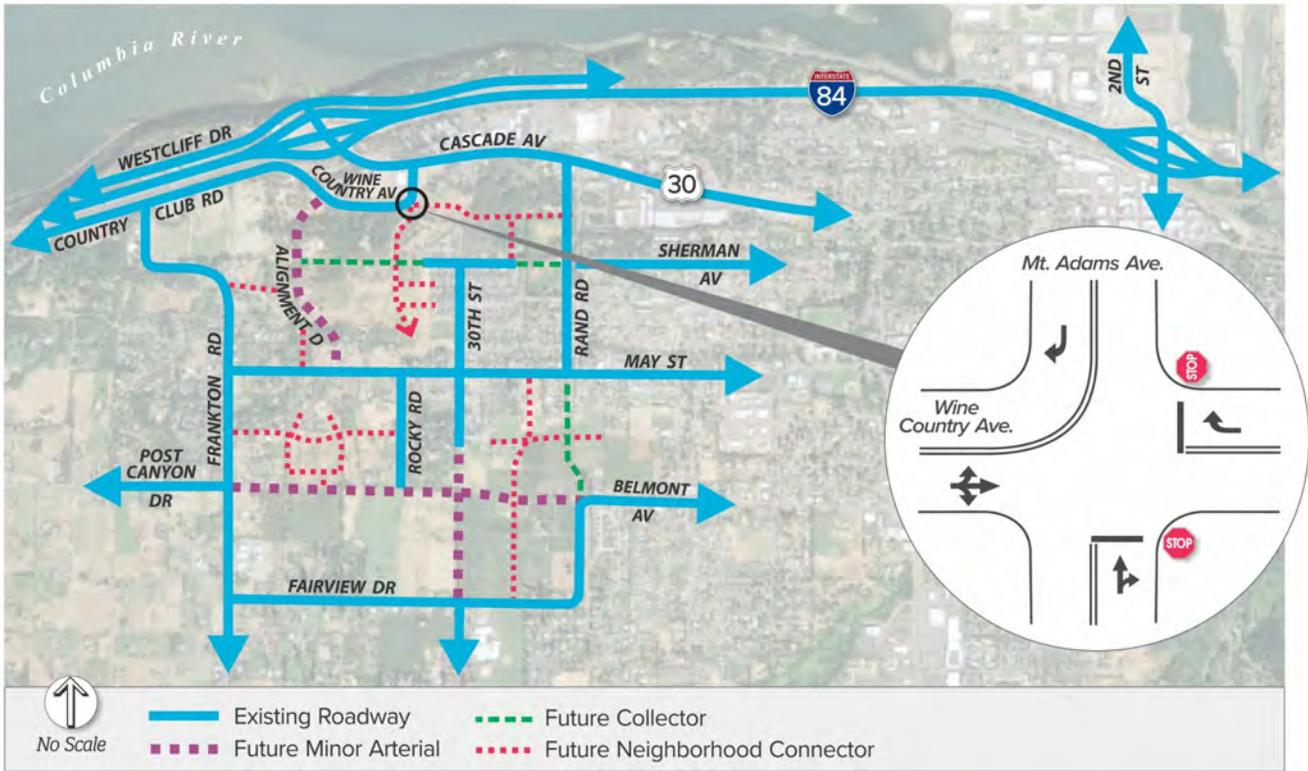


FIGURE 1: 2040 BASELINE SCENARIO STREET NETWORK

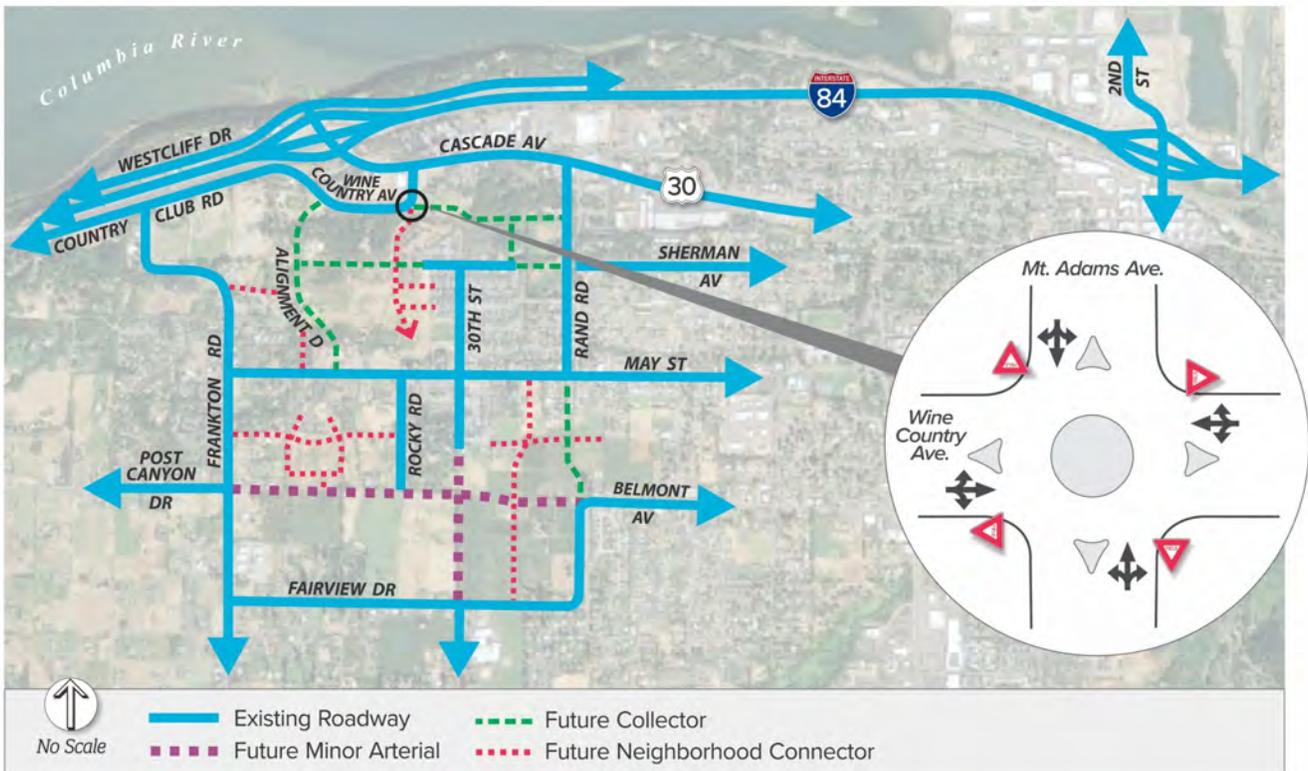


FIGURE 2: 2040 ALTERNATIVE SCENARIO STREET NETWORK

MODELLING RESULTS

The outputs from the travel forecasting tool scenarios were analyzed and compared to identify the impacts of the proposed street network changes. Because the travel forecasting tool routes trips through the city street network by choosing the fastest path available, changes to the street network that affect congestion, connectivity, or travel speeds can divert trips. The impacts of these diversions were evaluated and the findings are described below. Note that travel forecasting tool projects conditions during a weekday p.m. peak hour, but in some cases an average daily traffic volume was estimated.

TRAFFIC DIVERSION

The first step in the evaluation was to understand how traffic volumes on area streets might change in response to the proposed street network modifications described as part of the 2040 Alternative Scenario. The most significant changes in traffic volumes are described below.

ALIGNMENT D AND 30TH STREET

Between 75 and 100 southbound vehicles shift away from Alignment D during the weekday p.m. peak hour. The most significant contributing factor to this reduction in demand is likely the ability to make all turning movements at the intersection at Mt. Adams Avenue/Wine Country Avenue. Specifically, this change creates a more direct route for vehicles travelling between Cascade Avenue and residential neighborhoods to the south of May Street, which shifts approximately 80 vehicles away from Alignment D to the parallel north-south neighborhood connector (between Wine Country Avenue and Sherman Avenue) and 30th Street. As discussed in the section below, this increase in through trips on 30th Street could negatively impact livability in that neighborhood if not mitigated through some means such as traffic calming. Stop sign reorientation and additional all-way stop control intersections were tested in the travel forecasting tool as a proxy for additional traffic calming measures but this did not create a sufficient amount of delay to significantly deter traffic from cutting through the residential neighborhoods surrounding 30th Street. Therefore, measures that alter connectivity through the neighborhood, such as using a diverter so 30th Street no longer connects Sherman Avenue to May Street, may be necessary.

COUNTRY CLUB ROAD/FRANKTON ROAD

With fewer trips using Alignment D as noted above, it may become faster for some drivers that were using Country Club Road and Frankton Road to reach areas south of May Street to instead turn down Alignment D and cut back to Frankton Road using the neighborhood connector just south of Sherman Avenue. While the travel forecasting tool suggests that as many as 50 p.m. peak hour trips might make this change, the travel times for these competing routes are nearly identical. Therefore, if cut through trips on that neighborhood connector became a concern, traffic calming applications may be sufficient mitigation.

CASCADE AVENUE

Upgrading the future street between the Mt. Adams Avenue/Wine Country Avenue and Rand Road/Sierra Lane intersections to a collector and allowing for all turning movements at the Mt. Adams Avenue/Wine Country Avenue intersection makes the new collector more attractive and may draw some trips off of Cascade Avenue in the segment between Mt. Adams Avenue and Rand Road. The potential diversion from Cascade Avenue to the new collector may include at least 50 trips in each direction during the weekday p.m. peak hour (or about 500 per day in each direction) and are largely trips destined for areas to the west and south.

FUNCTIONAL CLASSIFICATION CHANGES

The projected volumes from the 2040 Alternative Scenario travel forecasting tool were used to assess the appropriateness of the proposed functional classification for each roadway whose functional classification was changed or was impacted by a shift in traffic volumes resulting from the street network modifications. The Hood River TSP provides guidance on the appropriate volumes and speeds for roadways of different functional classes. In Hood River, local streets typically serve less than 2,000 vehicles per day although livability can become challenged if a local street serves more than 1,200 vehicles per day. Collectors are designed to serve between 1,000 and 10,000 vehicles per day³. In light of this, the following changes are recommended:

ALIGNMENT D

Alignment D is projected to carry between 6,000 and 8,000 vehicles per day in the 2040 Alternative Scenario. The projected volume is consistent with a collector designation in Hood River although the projected volumes are similar to the average daily traffic on Oak Street east of 13th Street, which is a minor arterial. Furthermore, due to the topography in the area, turn lanes are recommended to be provided at intersections for safety reasons which is more consistent with Hood River's minor arterial cross section. Therefore, it is recommended that the minor arterial classification be maintained for this roadway.

PROPOSED NEIGHBORHOOD CONNECTOR (FRANKTON ROAD TO ALIGNMENT D)

Between 1,500 and 2,500 vehicles are projected to use the new neighborhood connector between Frankton Road and Alignment D each day, which is more than would be desired for this type of street. The use of traffic calming devices should be considered to minimize cut-through trips that would otherwise find this route faster than using Country Club Road and Frankton Road or Alignment D and May Street.

³ City of Hood River Transportation System Plan. 2011.

PROPOSED NEIGHBORHOOD CONNECTOR (WINE COUNTRY AVENUE TO SHERMAN AVENUE)

Approximately 1,250 vehicles per day are projected to use the new neighborhood connector between Wine Country Avenue and Sherman Avenue, including the additional 1,100 vehicles each day who will use this connection if turn restrictions are removed from the Mt. Adams Avenue/Wine Country Avenue intersection. Neighborhood connectors in Hood River are designed to be both low-volume and low-speed roadways where multimodal travel is prioritized. The projected traffic volume for this neighborhood connector is consistent with its current functional classification in the WACP, so no functional class changes are needed if the provision of full turn movements at Mt. Adams Avenue/Wine Country Avenue is desired.

30TH STREET (SHERMAN AVENUE TO MAY STREET)

Between 1,200 and 1,350 vehicles per day are projected to use 30th Street between Sherman Avenue and May Street if turn restrictions are removed from the Mt. Adams Avenue/Wine Country Avenue intersection, which includes an increase of approximately 800 vehicles. Although these volumes are acceptable for a local street, the livability of the surrounding neighborhood could be degraded from the addition of "through" trips that may have a propensity for speeding on this straight stretch of road. Therefore, the use of traffic calming devices to discourage speeding and through trips is recommended.

PROPOSED EAST-WEST COLLECTOR (MT. ADAMS AVENUE TO RAND ROAD)

This roadway is expected to carry between 3,500 and 4,000 vehicles per day. The projected vehicle volumes and travel speeds are consistent with Hood River's collector street designation. The collector designation recommended by Hood River's planning commission is appropriate if full movements are allowed at the Mt. Adams Avenue/Wine Country Avenue intersection.

PROPOSED NORTH-SOUTH COLLECTOR (SHERMAN AVENUE TO MAXS PLACE)

This roadway is expected to carry less than 100 vehicles per day and provides limited system connectivity, inconsistent with the intended function of a collector roadway. The neighborhood connector designation from the WACP is more appropriate.

INTERSECTION OPERATIONS

Intersection operations, summarized below in Table 1, were analyzed using Sidra for the intersection of Mt. Adams Avenue/Wine Country Avenue for both the 2040 Baseline and 2040 Alternative scenarios⁴. This intersection is expected to meet Hood River's mobility standard in both

⁴ The proposed two-way stop control configuration for the 2040 Baseline scenario is non-standard and can only be approximated using Synchro

scenarios and will operate with minimal delay for vehicles regardless of the configuration chosen⁵. However, constructing this intersection as a roundabout will increase vehicle delay for the primary movements (southbound right turn and eastbound left turn) due to new conflicting turn movements and additional geometric delay. These movements would otherwise operate with no delay. Although a roundabout would marginally increase delay for most vehicles, a roundabout could also provide safer crossing opportunities for bicyclists and pedestrians without additional enhancements in the future.

TABLE 1: 2040 INTERSECTION OPERATIONS FOR MT. ADAMS AVENUE/WINE COUNTRY AVENUE

Scenario	Intersection Control	Mobility Standard	V/C	Delay	LOS
2040 Baseline	Two-Way Stop Control with turn restrictions ¹	LOS D	0.56/0.09	0.0/14.7	A/B
2040 Alternative	Roundabout ²	LOS D	0.61	11.4	B

1. Intersection operations reported for worst case major street approach/worst case minor street approach at TWSC intersections
2. Intersection operations reported for worst case approach at roundabout intersections

⁵ City of Hood River Transportation System Plan. 2011.

APPENDIX

CONTENTS

SECTION 1. INTERSECTION OPERATIONS



720 SW WASHINGTON STREET, SUITE 500, PORTLAND, OR 97205 • 503.243.3500 • DKSASSOCIATES.COM

SECTION 1. INTERSECTION OPERATIONS



MOVEMENT SUMMARY

 Site: 101 [Wine Country/Mt Adams TWSC]

New Site
 Site Category: (None)
 Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: New Neighborhood Collector												
8	T1	5	2.0	0.027	16.2	LOS C	0.1	2.5	0.12	0.06	0.12	21.1
18	R2	11	2.0	0.027	8.7	LOS A	0.1	2.5	0.12	0.06	0.12	18.9
Approach		16	2.0	0.027	11.2	LOS B	0.1	2.5	0.12	0.06	0.12	19.5
East: New Collector												
16	R2	38	2.0	0.093	14.7	LOS B	0.3	8.9	0.64	0.63	0.64	22.4
Approach		38	2.0	0.093	14.7	LOS B	0.3	8.9	0.64	0.63	0.64	22.4
North: Mt Adams												
14	R2	799	2.0	0.555	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	30.6
Approach		799	2.0	0.555	0.1	NA	0.0	0.0	0.00	0.00	0.00	30.6
West: Wine Country												
5	L2	707	5.0	0.469	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	37.6
2	T1	33	2.0	0.469	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	38.8
Approach		739	4.9	0.469	0.1	NA	0.0	0.0	0.00	0.00	0.00	37.7
All Vehicles		1592	3.3	0.555	0.5	NA	0.3	8.9	0.02	0.02	0.02	33.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
 LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
 Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
 HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
 Gap-Acceptance Capacity: Traditional M1.
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 Site: 101 [Wine Country/Mt Adams Roundabout]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: New Neighborhood Connector												
3	L2	5	3.0	0.105	7.0	LOS A	0.4	10.3	0.62	0.61	0.62	25.6
8	T1	49	2.0	0.105	7.0	LOS A	0.4	10.3	0.62	0.61	0.62	24.8
18	R2	11	2.0	0.105	7.0	LOS A	0.4	10.3	0.62	0.61	0.62	21.8
Approach		65	2.1	0.105	7.0	LOS A	0.4	10.3	0.62	0.61	0.62	24.3
East: New Collector												
1	L2	5	2.0	0.365	10.9	LOS B	1.7	45.1	0.70	0.76	0.83	20.0
6	T1	190	2.0	0.365	10.9	LOS B	1.7	45.1	0.70	0.76	0.83	26.9
16	R2	33	2.0	0.365	10.9	LOS B	1.7	45.1	0.70	0.76	0.83	25.0
Approach		228	2.0	0.365	10.9	LOS B	1.7	45.1	0.70	0.76	0.83	26.4
North: Mt Adams												
7	L2	38	2.0	0.611	11.4	LOS B	5.4	138.9	0.63	0.50	0.69	26.3
4	T1	65	2.0	0.611	11.4	LOS B	5.4	138.9	0.63	0.50	0.69	22.0
14	R2	560	2.0	0.611	11.4	LOS B	5.4	138.9	0.63	0.50	0.69	30.3
Approach		663	2.0	0.611	11.4	LOS B	5.4	138.9	0.63	0.50	0.69	29.0
West: Wine Country												
5	L2	652	5.0	0.580	10.1	LOS B	4.2	111.1	0.43	0.25	0.43	31.7
2	T1	33	2.0	0.580	10.0	LOS A	4.2	111.1	0.43	0.25	0.43	27.3
Approach		685	4.9	0.580	10.0	LOS B	4.2	111.1	0.43	0.25	0.43	31.5
All Vehicles		1641	3.2	0.611	10.6	LOS B	5.4	138.9	0.56	0.44	0.60	29.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Organisation: DKS ASSOCIATES | Processed: Tuesday, October 13, 2020 14:56:27

Project: X:\Projects\2020\P20127-000 (Hood River TSP Ammendment)\Task 2 Update Project List\HR TSP Alt_v1 Vols Rev_v1.sip8

Attachment D

Exit 62 Funding Letters



Kate Brown, Governor

Department of Transportation

Region 1 Headquarters
123 NW Flanders Street
Portland, Oregon 97209
(503) 731.8200
FAX (503) 731.8531

June 13, 2018

Steve Wheeler, City Manager
City of Hood River
211 2nd Street
Hood River, OR 97031

Subject: I-84, Exit 62, Westside Area Concept Plan, Funds Reasonably Likely by 2040

Dear Mr. Wheeler,

This letter acknowledges receipt of your letter dated June 8, 2018 (attached) confirming that the City of Hood River will be responsible for the estimated \$1.83-\$3.3 million (2017) transportation funding gap (by 2040) identified in the Westside Area Concept Plan (WACP). Your letter also acknowledges supporting ODOT's request for limiting auto-oriented land uses and functions along Cascade Avenue within the WACP area.

This letter also documents ODOT's commitment to provide \$5 million (2017 dollars) by 2040 for Exit 62 interim improvements referenced as MV1 and MV2 Interim¹ contingent upon the City of Hood River's commitment to:

- be responsible for the estimated \$1.83-\$3.3 million (2017) transportation funding gap as noted above;²
- implement the Westside Area Concept Plan (WACP);
- pursue legislation to prohibit new drive-up and drive-through uses and facilities in the Westside area and limit expansion of existing facilities;
- pursue legislation to prohibit uses which are auto-oriented and do not contribute to an active pedestrian environment (e.g. car washes, new gas stations). (Existing such uses would be "grandfathered"); and
- continue to actively obtain needed right-of-way and developer improvements along Cascade Avenue, a state facility.³

¹ ODOT's commitment is consistent with the TPR subsection OAR 660-012-0060(4)(b)(D). This provision allows transportation providers to determine if improvements identified in the local transportation system plan or comprehensive plan can be "reasonably likely" addressed by the end of the plan period in order to avoid further degradation of the transportation.

² The \$1.8-\$3.3 million range is based on the range in development expressed in Scenarios A-C. Scenarios A-C range from 1,579 to 1,713 new housing units plus a minor amount of non-residential land use (Tables 3-9, Concept Plan Report, pages 57-63). The proposed TSP amendments and the city and ODOT's "reasonably likely letters" satisfy the TPR for potential, Scenarios A-C.

³ This letter does not preclude Agreement #28054 between ODOT and the City of Hood River which stipulates that the city is responsible for a westbound left turn from Cascade to Mt. Adams Avenue (or equivalent investment).

The specific Exit 62 improvements for which ODOT is committed to provide \$5 million (2017) dollars are listed below. Needed Exit 62 and city wide improvements were identified in the Interstate 84 Exit 62 Interchange Area Management Plan Agreement and City of Hood River Transportation System Plan (2011), and were reaffirmed as part of the Westside Area Concept Plan.⁴

I-84 Exit 62 MV1/MV2 Interim improvements estimated to cost \$5 million (2017) dollars include:

Project MV1/MV2 Interim Improvements

Cascade Avenue/ I-84 Westbound Ramps:

- Construct a traffic signal
- Install queue detection devices on the off-ramp and ability to pre-empt signal timing to allow the off-ramp queues to be cleared during times when queue lengths become excessive

Cascade Avenue/ I-84 Eastbound Ramps:

- Construct an eastbound shared through/left turn lane to create an exclusive lane for the heavier right turn movement

Cascade Avenue:

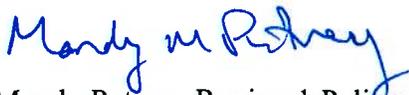
- Construct second eastbound lane from the I-84 eastbound ramp terminal to Mt. Adams Avenue (would tie into the existing eastbound right turn lane at Mt. Adams Avenue)

Westcliff Drive/Cascade Avenue

- Install a stop sign on the eastbound approach
- Remove the stop sign for the northbound right turn lane

We are pleased that the interim improvements will provide safe and efficient operation for all users of the interchange.

Sincerely,



Mandy Putney, Region 1 Policy and Development Manager, ODOT

Enc.: City of Hood River letter dated June 8, 2018

cc: Gail Curtis, Senior Planner, ODOT Region 1
Kevin Liburdy, Senior Planner, City of Hood River
Jon Makler, Planning Manager, ODOT Region 1
John Roberts, Planning Director, Hood River County

⁴ The needed state and city transportation projects are outlined in the September 29, 2017 *Second Transportation Analysis with Updated Assumptions*, WACP, Appendix B.2. State projects are collectively referred to as *MV1/MV2 Interim*. See Appendix B.2 section titled *Alternative Interim Improvements for TPR Compliance*, pp. 16-17, and Table 7 summary.



CITY OF HOOD RIVER

CITY MANAGER'S OFFICE

211 2nd Street, Hood River, OR 97031 Phone: 541-386-1488

June 8, 2018

Mandy Putney, Region 1 Policy and Funding Manager
Oregon Department of Transportation, Region 1
123 NW Flanders
Portland, OR 97209

Subject: Reasonably likely city transportation funds by 2040 for TPR compliance

Dear Ms. Putney,

The purpose of this letter is to confirm that the City of Hood River finds it reasonably likely that the city will, by 2040, provide \$1.8-\$3.3 million for local transportation improvements needed for the Westside Area Concept Plan (WACP) implementation.¹ Fulfilling this funding commitment is necessary if the City of Hood River amends zoning consistent with the Westside Area Concept Plan and updates the city's transportation system plan to include the WACP transportation projects.²

The Westside Area Concept Plan is an integrated land use and transportation concept plan for the Westside area of Hood River, funded by a grant from the Transportation and Growth Management Program. The transportation analysis for the concept plan demonstrates that transportation facilities will meet performance standards identified in the City's Transportation System Plan (TSP) if the City and ODOT implement projects identified in the analysis. These include projects listed in the existing TSP, refinements to existing TSP projects based on the concept plan and transportation analysis (e.g. relocation of a future segment of Mt. Adams Ave. to "Alignment D"), and new projects.

Amendments to project lists in the TSP have been drafted to implement the concept plan including a set of interim improvements at Interstate 84 Exit 62 (MV1/MV2 Interim). The City concludes that the proposed interim improvements are a priority and an adequate solution to ensure that Exit 62 will meet performance standards within the planning period (2040). The following projects are collectively the interim solution for Interstate 84 Exit 62:

1. Cascade Avenue/I-84 Westbound Ramps (MV1/MV2 Interim)
 - Construct a traffic signal

¹ Needed state and city transportation projects are outlined in the September 29, 2017 *Second Transportation Analysis with Updated Assumptions*, WACP Appendix B.2, Table 7. State projects are referred to as *MV1/MV2 Interim* (see Appendix B.2 section titled *Alternative Interim Improvements for TPR Compliance*, pp. 16-17, and Table 7 summary). A \$1.8-\$3.3 million city transportation funding gap is identified in WACP Appendix B.7, Dec. 20, 2017 *Tech Memo 6.1: Funding Review and Funding Toolkit*, Exhibit 2, based on local transportation improvement projects MV3, MV4.2, MV4.3, MV5, MV11, MV12.1, MV13, MV25 and BL6a as described in Exhibit B.5, possibly including MV6 and MV7 as described in Exhibit B.6.

² OAR660-012-0060(4)(b)(E): *Improvements to regional and local roads, streets or other transportation facilities or services that are included as planned improvements in a regional or local transportation system plan or comprehensive plan when the local government(s) or transportation service provider(s) responsible for the facility, improvement or service provides a written statement that the facility, improvement or service is reasonably likely to be provided by the end of the planning period.*

- Install queue detection devices on the off-ramp and ability to pre-empt signal timing to allow the off-ramp queues to be cleared during times when queue lengths become excessive
- 2. Cascade Avenue/I-84 Eastbound Ramps (MV1/MV2 Interim)
 - Construct an eastbound shared through/left turn lane to create an exclusive lane for the heavier right turn movement
- 3. Cascade Avenue (MV1/MV2 Interim)
 - Construct a second eastbound lane from the I-84 eastbound ramp terminal to Mt. Adams Avenue (would tie into the existing eastbound right turn lane at Mt. Adams Avenue)
- 4. Westcliff Drive/Cascade Avenue (MV1/MV2 Interim)
 - Install a stop sign on the eastbound approach
 - Remove the stop sign for the northbound right turn lane

Further, in order to reduce traffic volumes and improve safety, the concept plan recommends prohibiting new drive-up and drive-through uses as well as other uses which are auto-oriented and do not contribute to an active pedestrian environment (e.g. car washes, new gas stations), and limiting expansion of such existing facilities. These recommendations will require significant legislative action by the City Council and, while adoption cannot be guaranteed at this time, City staff agrees to fairly represent their rationale and benefits during the process of implementing the concept plan.

The City has an existing practice of evaluating and, as needed, requiring improvements as conditions of development and through development agreements. To supplement this practice and ensure the identified \$1.8-\$3.3 million gap is funded, the City proposes to adopt transportation funding policies committing to identify sources of funding for Westside area projects, and to consider adding Westside projects as the City's Transportation System Development Charge methodology is updated.

In addition to funding the \$1.8-\$3.3 million gap between anticipated SDC revenue and the cost of new transportation projects attributable to the concept plan, funding is needed for improvements on Cascade Avenue (Route 30, Historic Columbia River Highway) at Interstate 84 Exit 62 in order to avoid further degradation to the performance of the interchange, as well as for intersection improvements at Mt. Adams Avenue. The City anticipates requesting ODOT participation in the cost of signalization at the intersection of Cascade Avenue and Mt. Adams Avenue. If the City chooses to pursue a roundabout at this intersection, it is understood that the City likely will be responsible for additional costs associated with roundabout improvements.

At this time the City requests a letter verifying that ODOT will provide funding for the MV1/MV2 Interim project described above at I-84 Exit 62 (currently estimated at \$5 million) by the end of the planning period (2040).

Sincerely,



Steve Wheeler
City Manager

CC: Gail Curtis, Senior Planner, ODOT Region 1
Jon Makler, Planning Manager, ODOT Region 1
John Roberts, Community Development Director, Hood River County

Attachment E

Proposed Revisions, City of Hood River Transportation System Plan (2021)

Hood River Transportation System Plan



Prepared for:

City of Hood River

Oregon Department of Transportation

October 2011 (Amended December 2017 ~~February~~ 2021)

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~~ The October 2011 report was prepared through the collective effort of the following people:

City of Hood River

Cindy Walbridge, Planning Director
Kevin Liburdy, Senior Planner
Gary Lindemyer, Construction Inspector

Oregon Department of Transportation

Sonya Kazen, Senior Planner
Avi Tayar, PE Development Review Team Leader
Kristen Stallman, Scenic Area Coordinator

Consultant Team

John Bosket, DKS Associates
Garth Appanaitis, DKS Associates
Kristen Svicarovich, DKS Associates
Rory Renfro, Alta Planning + Design
Elliot Akwai-Scott, Alta Planning + Design
Darci Rudzinski, Angelo Planning Group
Shayna Rehberg, Angelo Planning Group
Justin Healy, Real Urban Geographics

Transportation System Plan Advisory Committee (TSPAC)

Dan Schwanz, Columbia Area Transit
Susan Henness, School District-May Street School
Mac Lee, Full Sail Brewing
Stephen Ford, Current Commercial Real Estate
Josette Griffiths, Hood River County Planning
Jonathan Graca, Hood River Valley Residents-Bike Commuter
Jack Trumbull, Heights Business Association-Anderson Tribute Center
Gary Fish, Department of Land Conservation and Development
Lori Stim, Hood River Valley Parks and Recreation District
David Barringer, Downtown Business Association-Naked Winery
Carrie Nelson, City Council
Alison McDonald, School District-Hood River Middle School
Scott Turnoy, Mid-Columbia Economic Development District

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Appendix (separate document)

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Appendix [CB](#): Existing Conditions Memorandum

Appendix [DC](#): Draft Technical Memorandum #2 Future Forecasting

Appendix [ED](#): Future Transportation System Needs

Appendix [FE](#): Final Technical Memorandum #3 Transportation System Solutions

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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

[MUTCD – Manual on Uniform Traffic Control Devices](#)

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

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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's 2011 TSP development process is summarized in Figure 1.](#)

2021 Amendment

[In 2015, when the City's Buildable Lands Inventory and Housing Needs Analysis was being completed, the City applied for a grant to prepare a land use and transportation plan that became known as the Westside Area Concept Plan. The study area focused on approximately 450 acres between Frankton Road to the west, I-84 to the north, Rand Road to the east and Belmont Avenue to the south, where most of Hood River's buildable land is located. The](#)

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Concept Plan Report was developed over a period of about 18 months to address workforce and affordable housing needs, future neighborhoods and commercial districts, streets, bikeways, pedestrian paths, parks, transit, utilities, and infrastructure funding. The Concept Plan Report was published on December 29, 2017, and included a number of proposed TSP amendments to implement the vision.

During public hearings on April 15, May 20, June 3, June 17, July 1, and July 29, 2019, the Planning Commission sought feedback from the public regarding the Westside Area Concept Plan Report's Streets & Transit Framework, Pedestrian & Bicycle Framework and Park & Open Space Framework prior to deliberation. The resulting recommendations from the Planning Commission refined many of the projects included in the Westside Area Concept Plan Report and included changes to street cross sections for use citywide. These recommendations, along with updates to project costs, were the basis of a set of TSP amendments adopted in 2021.

The 2011 plan included the actions and strategies needed to meet the City's transportation needs through the year 2031. The 2021 Amendment includes additional actions to support growth in west Hood River through the year 2040, consistent with the land use assumptions in the Westside Area Concept Plan. Therefore, this amended TSP includes projects and performance results based on a planning horizon year of 2031 for some areas and on a planning horizon year of 2040 for others (e.g., see Table 14).

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

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Figure 1: City of Hood River 2011 TSP Development Process



TSP Organization

This plan includes the actions and strategies needed to meet the City's transportation needs through the ~~year 2031~~ planning horizon year of 2031, or 2040 for areas of west Hood River. 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 in 2011, 2011, 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

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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~~neighborways, 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.

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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.

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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.*

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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.

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

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

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.

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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.*

Action: [Update the City's System Development Charge and Traffic Impact Fee so that revenues for City's portion of needed transportation improvements are available to support needed transportation improvements.](#)

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. Monitor, and take action as needed, the transportation needs of the Westside Area so that transportation revenues and facilities are available to support needed transportation improvements.

Action: Evaluate, as part of each Capital Improvements Plan update, the need for project funding and implementation so that transportation infrastructure is available to serve growth in the Westside Area.

Action: Identify sources of funding for projects that are not identified as SDC-funded on the Financially Constrained List of the Transportation System Plan for the Westside Area. Consider adding Westside Area projects to the Financially Constrained List as part of each update of the City's System Development Charge methodology.

~~6-7.~~ _____ 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.*

~~7-8.~~ _____ Provide funding for local match share of jointly funded capital projects with other public partners.

9. 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.

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- **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.*

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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:

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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)
- Hood River Westside Area Concept Plan -Report (not in appendix)

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

Hood River Transportation System Plan

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	\$1,630,000 \$1,179,010,000	\$745,000 \$537,460,000	Low estimate assumes sidewalks on east side of street only.
SW2	20th Street	\$680,000 \$4920,000	\$255,000 \$18155,000	Low estimate assumes sidewalks on west side of street only.
SW3	Cascade Avenue/HCRH-Westcliff Drive to Mt. Adams Avenue	\$205,000 \$14625,000	\$205,000 \$14625,000	Estimate includes 6' sidewalk on the north side of the roadway.
SW4	Sherman Avenue	\$1,735,000 \$1,25075,000	\$680,000 \$4920,000	Low estimate assumes sidewalks on north side of street only.
SW5	State Street	\$455,000 \$327280,000	\$230,000 \$14630,000	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	\$440,000 \$315270,000	\$440,000 \$315270,000	Community input indicated that sidewalks on only one side of this street would be sufficient.
SW8	May Street	\$1,510,000 \$1,2454,000	\$570,000 \$549470,000	Low estimate assumes sidewalks on south side of street only.
SW9	22nd Street	\$1,035,000 \$76470,000	\$510,000 \$36815,000	Low estimate assumes sidewalks on west side of street only.
SW10	18th Street	\$930,000 \$65751,000	\$390,000 \$2840,000	Low estimate assumes sidewalks on east side of street only.
SW11	Belmont Avenue	\$820,000 \$5905,000	\$400,000 \$28645,000	Low estimate assumes sidewalks on north side of street only.
SW12	Frankton Road	\$2,995,000 \$2,1661,855,000	\$505,000 \$36210,000	Low estimate assumes sidewalks on one side of street from May Street south to city limits (Post Canyon Road).
SW13	Country Club Road	\$1,140,000 \$823705,000	\$1,140,000 \$823705,000	Sidewalk proposed for south side of the street only.
SW14	Cascade Avenue/HCRH (between Mt. Adams Avenue and Rand Road)	\$365,000 \$26325,000	\$150,000 \$1905,000	Widen sidewalks to 6' on both sides of the road, as adjacent development occurs.

Hood River Transportation System Plan

Project ID	Name/Location	Cost Estimate* (High)	Cost Estimate* (Low)	Note
SW15	13th Street/OR281	\$165,000 \$1,170,000	\$165,000 \$1,170,000	This project is to complete a sidewalk gap present on the east side of the street only.
SW16	12th Street/OR 281	\$670,000	\$760,000	This project is to complete a sidewalk gap present on the east side of the street only.
SW17	OR 35 (near I-84)	\$100,000 \$760,000	\$100,000 \$760,000	This project is to complete a sidewalk gap present on the east side of the street only.
SW18	Cascade Avenue (15 th to 20 th)	\$650,000 \$400,67,000	\$650,000 —	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 15 th Street, with new crossings installed to use the concrete island at Cascade/Oak as a pedestrian refuge.
SW19	Post Canyon Drive (Franktown Road to West UGB)	\$655,000	\$655,000 —	Construct 5-foot sidewalks on north side of the street only.
Total Cost		\$119,515,015.51 0,000,000	\$67,585,790,000 4,816,25,000	

* 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.

Figure 2: Pedestrian System Plan

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 34: Bicycle Network, and are listed in Table 2 below.

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.

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.



[1] Transverse Crosswalk across 12th Street at June



[2] Continental Crosswalk across Belmont Street near Westside School

Hood River Transportation System Plan

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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Stripe crosswalks on all legs of intersection and add advance warning signage. 	\$10,000 \$65,000
CR3	**2nd Avenue (I-84 Eastbound)	<ul style="list-style-type: none"> 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. 	\$175,000 \$12395,000
CR4	6th Street & State Street	<ul style="list-style-type: none"> 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. 	\$185,000
CR5	Hood River Bicycle & Pedestrian Bridge	<ul style="list-style-type: none"> Pave approaches to bridge ramps on either side of bridge. 	\$185,000
CR6	**OR 281-13th Street & Sherman Avenue	<ul style="list-style-type: none"> Consider striped crosswalks on north and/or south legs of intersection across 13th Street and add advance warning signage. 	\$10,000 \$65,000
CR7	**OR 281-13th Street & Montello Avenue	<ul style="list-style-type: none"> Add advance warning signage to existing crosswalk. 	\$10,000 \$65,000
CR8	12th Street (North Leg) & May Street	<ul style="list-style-type: none"> Consider adding curb extensions on the east leg of the intersection to reduce pedestrian crossing distance. 	\$60,000 \$4135,000

Hood River Transportation System Plan

Project ID	Name/Location	Description	Cost Estimate*
CR9	**OR 281-13th Street & May Street	<ul style="list-style-type: none"> 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 signaling intersection (not included in cost estimate). 	\$ 906,455 ,000 (\$ 430,500 ,000 if RRFB is not included)
CR10	**OR 281-12th Street & Belmont Avenue	<ul style="list-style-type: none"> Stripe crosswalks on north and/or south legs of intersection across 12th Street and add advance warning signage. 	\$10,000 \$65,000
CR11	**OR 281-13th Street & Belmont Avenue	<ul style="list-style-type: none"> 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. 	\$25,000 \$158,000
CR12	17th Street & May Street	<ul style="list-style-type: none"> 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). 	\$453,000
CR13	Rocky Road & May Street	<ul style="list-style-type: none"> 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. 	\$10,000 \$56,000
CR14	Fairview Drive & Belmont Drive	<ul style="list-style-type: none"> 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. 	\$75,000 \$453,000

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Project ID	Name/Location	Description	Cost Estimate*
CR15	**OR 281-13th Street & State Street-HCRH	<ul style="list-style-type: none"> Consider striping crosswalks on east side of intersection across State Street. 	\$10,000 \$65,000
CR16	**OR 281-12th Street & Pacific Avenue	<ul style="list-style-type: none"> 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). 	\$10,000 \$65,000
CR17	**5th Street & Oak Street-HCRH	<ul style="list-style-type: none"> 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. 	\$25,000 \$158,000
CR18	OR 281-13th Street & Oak Street-HCRH	<ul style="list-style-type: none"> 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. 	\$10,000 \$65,000
CR19	2nd Street & State Street	<ul style="list-style-type: none"> Stripe crosswalks on east side of intersection across State Street and add advance warning signage. 	\$10,000 \$65,000
CR20	(Future) Westside Community Trail & Belmont Drive	<ul style="list-style-type: none"> 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. 	\$10,000 \$65,000
CR21	**Cascade Avenue-HCRH (midblock between Mt. Adams Avenue and Rand Road)	<ul style="list-style-type: none"> Consider installing midblock crosswalk with advance warning signage. Consider installing rectangular rapid flash beacons to improve motorist compliance if necessary after an observation period. 	\$45,000 \$295,000
CR22	**Cascade Avenue near-HCRH (midblock between Rand Road and 20th Street)	<ul style="list-style-type: none"> 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. 	\$45,000 \$295,000
<u>CR23</u>	<u>Sherman Road & Rand Road</u>	<ul style="list-style-type: none"> <u>Consider installing enhanced pedestrian/bicycle crossing treatments, which may include push-button actuated beacons and warning signage, to improve safety and mitigate sight distance limitations. Install enhanced pedestrian crossing to improve safety</u> 	\$80,000

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Project ID	Name/Location	Description	Cost Estimate*
Total Cost			\$44,720,524,000

* 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. The alignments of proposed off-street facilities seen in Figures 2: Pedestrian Network and Figure 4: Bicycle Network are conceptual. The City will work with developers to finalize the location and alignment of all identified trail and path projects. A typical cross section for path design is proposed in Figure 3a and a typical cross section for a high-speed and high-volume path is proposed in Figure 3b. Generally, these trails are located to minimize the overall length of trail parallel to street segments or relying on sidewalks. In locations where this is unavoidable, however, the proposed trail will be constructed as a multi-use path with parallel protected bike lanes.

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.
P1.1	Historic Columbia River Highway Trail	\$2,405,000 \$1,724,000	Construct an asphalt path sidewalk (6 feet wide) along the north side of Westcliff Drive from the west UGB east to Exit 62. The sidewalk is intended to serve pedestrians only, with bicycles sharing the roadway with motor vehicles. A future refinement plan may be completed to produce an alternative cross section for Westcliff Dr. west of Exit 62.

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Project ID	Name/Location	Cost Estimate*	Note
P1.2	Westcliff Dr. Pedestrian Path	\$3,555,000 \$2,151,000	Construct a path-sidewalk (6 feet wide) along Westcliff Drive from Exit 62 east to Westside Community Trail (via Wasco Street). - The sidewalk is intended to serve pedestrians only, with bicycles sharing the roadway with motor vehicles. -A future refinement plan may be completed to produce an alternative cross section for Westcliff Dr. east of Exit 62.
P2	Waterfront Path	\$1,820,000 \$1,314,125,000	Proposed path connecting Westcliff Drive to the existing paths along the Columbia River.
P3	Waterfront Path Access from US 30	\$375,000 \$269,300,000	Proposed alternative access to the Waterfront Path from east of downtown.
P4	Westside Community Trail	Off-street segments of p Project already funded by Hood River Valley Parks & Recreation; on-street segment along Rocky Road will cost \$1,220,000	Extend Westside Community Trail east to connect with the existing trail at 20th Street. 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	\$45,000 \$295,000	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	\$10,000 \$65,000	Soft surface trail improvements to formalize access to the Indian Creek Trail from Union Street.
P7P7	Cascade Avenue between Mt Adams Avenue and Westcliff Drive	\$255,000	Project removed during to be consistent with the Westside Area Concept Plan Report December 2017 amendment. 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.

Hood River Transportation System Plan

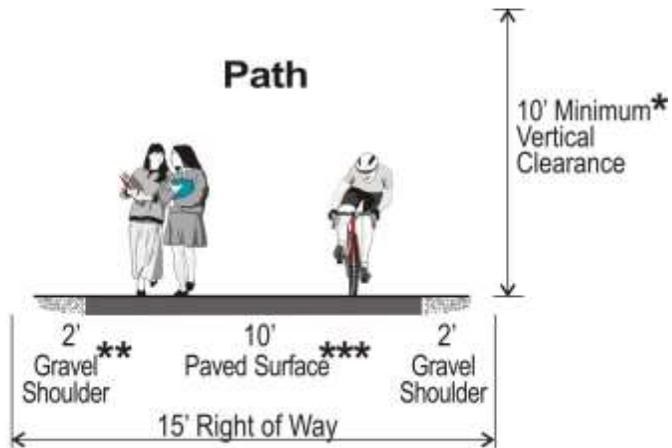
Project ID	Name/Location	Cost Estimate*	Note
P9	Indian Creek Trail Access from Sherman Avenue	\$585,000 \$423,600	Improvements to connection between 2 nd Street & State Street and the northern end of the Indian Creek Trail. Cost estimate assumes construction of a sidewalk on one side of the street along this route.
P10	Port of Hood River Path	\$309,265,000	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	\$1,070,000 \$771,660,000	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 <u>is an interim improvement</u> to construct a <u>10-foot wide</u> east-west path between Belmont Avenue and Frankton Road, aligned with Post Canyon Drive. The segment between Frankton Road and 30th Street could be constructed as an interim improvement or as a complimentary one is a priority interim improvement. 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 284)	\$215,000	Proposed path along an existing segment of the Indian Creek Trail to improve access across Indian Creek east of 12th Street/OR 284.
<u>P13</u>	<u>Historic Columbia River Highway Trail, south side of Cascade Avenue</u>	\$1,640,000 \$1,185,000	<u>Construct an asphalt or concrete path (120 feet wide) on the south side of Cascade Avenue between Westcliff Drive and Mt. Adams Avenue.</u>
<u>P14</u>	<u>30th Street North Extension</u>	\$75,000 \$359,000	<u>Construct 6-foot bike lanes and 5-foot sidewalks between 30th Street to Mt. Adams Avenue/Wine Country Avenue</u>
<u>P154</u>	<u>Westside Community Trail extension to Cascade Avenue</u>	\$65,000 \$67,000	<u>Extend the Westside Community Trail (about 4 feet wide) north between between Sherman Avenue Wine Country Avenue Extension and Cascade Avenue. This trail will connect to a new north-south neighborhood connector between Sherman Avenue and the Wine Country Avenue extension with the specific alignment to be determined. Alignment options include Max's Place or over the existing stormwater utilities to the east.</u>
<u>P165</u>	<u>Upper Terrace Neighborhood Trail</u>	\$1,425,000 \$1,322,000	<u>Construct Upper Terrace Neighborhood Trail (about 6 feet wide) between May Street Post Canyon Drive and Fairview Drive.</u>

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Project ID	Name/Location	Cost Estimate*	Note
P176	Post Canyon Drive Bike Lanes and Sidewalks	\$778,000	Construct 6-foot bike lanes and 5-foot sidewalks between Frankton Road and West UGB Boundary
P187	West Community Trail extension west to Frankton Road	\$110,000 \$103,000	Extend the Westside Community Trail (about 4 feet wide minimum 5-foot-wide sidewalk) west to align with Carr Drive between Rocky Road terminus of project P4 and Frankton Road.
P198	Trail from Sherman Avenue to Frankton Road	\$50,000 \$112,000	Construct a trail (about 4 feet wide) from intersection of Sherman Avenue and Westside Drive Alignment D to Frankton Road west to Ridgeline Trail (trails merge, then P20 connects to Frankton Road).
P2019	Henderson Creek Trail	\$3,910,000 \$620,000	Construct a trail asphalt or concrete path (about 6 feet wide) from May Street/Fairview Drive the south UGB/Belmont Avenue Post Canyon Drive extension (MV7) to Cascade Avenue in a buffer along adjacent to Henderson Creek, including where the creek may have been piped.
P240	Ridgeline Trail north of Sherman Ave	\$2,245,000 \$776,000	Construct a trail (about 6 feet wide) from Sherman Ave Rand Road to Frankton Road.
Total Cost		\$120,530,213,1 4082723207,000	

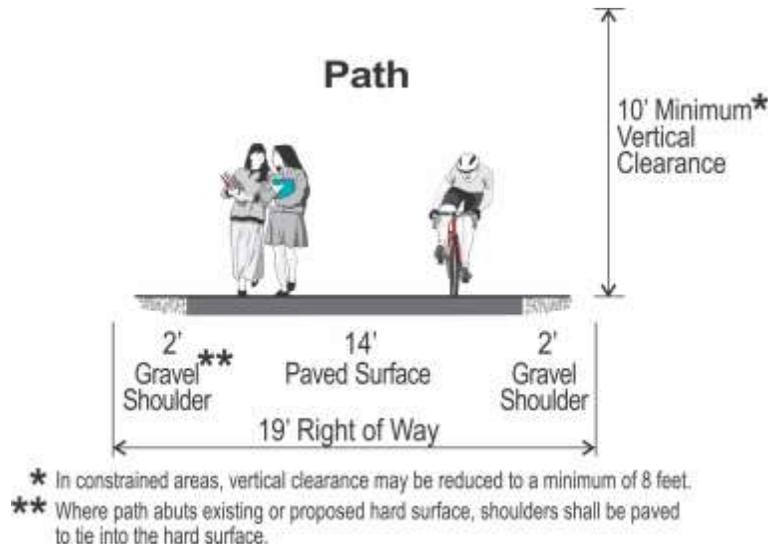
* All cost estimates include project administration, mobilization, engineering/design and contingency costs. Cost estimates are planning-level and do not include topographical/other site-specific issues that may increase overall cost.

Figure 3a: 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.

Figure 3b: High-Speed, High-Volume Path Typical Cross Section



Off-street bicycle and pedestrian path facilities will require additional enhancements at road crossings to ensure drivers are aware of the off-street facility, in addition to any point/crossing improvement projects identified in Table 2. Mid-block crossing locations for paths should include a striped crosswalk with accompanying signage. As vehicle volumes or speeds increase, additional protections (e.g., medians, rectangular rapid flashing beacons, or pedestrian hybrid beacons) should be considered. 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. An engineering study should consider the anticipated travel speed on the off-street facility in determining the appropriate treatment. The National Association of City Transportation Officials' Urban Bikeway Design Guide and the American Association of State Highway and Transportation Officials' Guide for the Development of Bicycle Facilities both include design guidance on crossing treatments.

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

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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 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

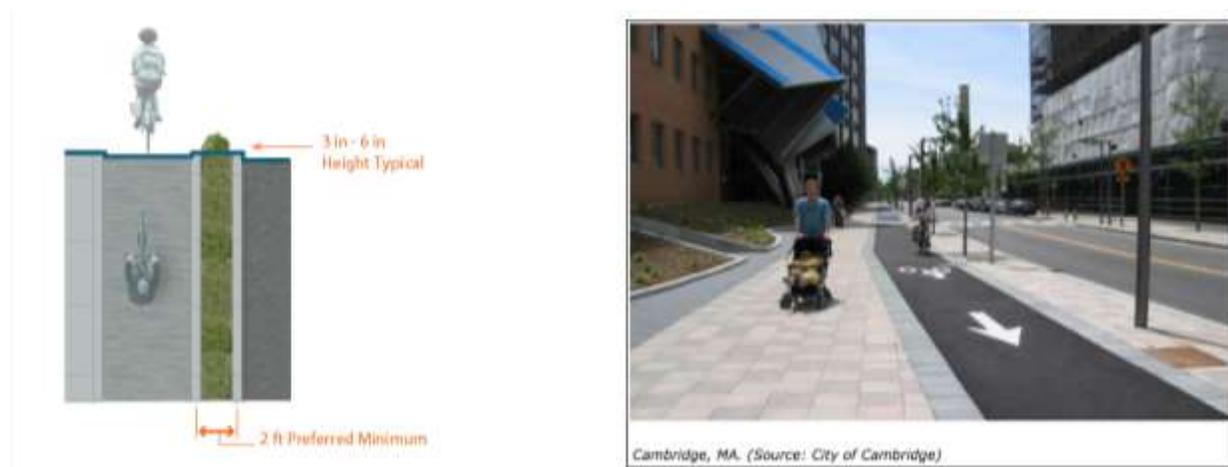
The Bicycle System Plan identifies improvements to the bicycle network in the City of Hood River for the next twenty years. Bicycles often use the same facilities as pedestrians, so to avoid overlap this section focuses primarily on bicycle-specific facilities. After review of the existing facilities 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.

Bicycle Facility Types

There are many different bicycle-specific treatments which can be applied to improve efficiency and access for bicyclists in Hood River. Bicycle facilities can include off-street, separated bike facilities or shared road environments depending on the roadway context, expected vehicle volumes, and travel speeds. A summary of potential facility types considered for Hood River and their recommended applications is summarized below. Figure 4 designates bicycle routes (generally on lower traffic streets where wayfinding signage and traffic calming techniques result in a more comfortable environment for cyclists) as well as recommended treatments such as bicycle lanes and shared lane markings. Other treatments such as advisory shoulders and neighborway designations also may be considered by the City Engineer.

Bicycle Lanes

Designated exclusively for bicycle travel, bicycle lanes provide a greater degree of separation between bicyclists and vehicles making them more suitable for roadways with higher vehicle volumes or speeds. Separated bike lanes provide the greatest separation between vehicles and bicyclists through the use of physical elements (e.g., curb, planters, bollards, or parking) to protect cyclists. Separated bike lanes can also be located outside of the paved roadway width and with a landscape strip for additional separation from traffic, seen below in [3], similar to a



shared use path. Separated bike lanes are typically recommended along arterials and collectors, especially for roadways with high vehicle volumes (over 7,000 vehicles per day) and speeds in excess of 35 mph. Available right-of-way and maintenance considerations can constrain the construction of these facilities.



[43] Example of a buffered bike lane (Source: DKS)

street bicycle lanes. Standard on-street bicycle lanes place the bicycle lane immediately adjacent to vehicle travel lanes, reducing the horizontal separation from vehicles for cyclists, seen at left/right in [5]. These facilities are more appropriate on moderate volume (3,000 to 7,000 vehicles per day) and moderate speed (25 to 35 mph) roadways. Right-of-way often constrains quick installation of buffered or standard bike lanes and can often lead to tradeoffs with parking availability.

Buffered bicycle lanes or standard on-street bicycle lanes provide less separation between bicyclists and vehicles. Pavement stencils are used to designate the lane for bicyclists although there is no physical protection for users of these facilities. However, buffered bike lanes, ~~above~~ left in [4], do include a painted buffer between the lane and adjacent vehicle travel lanes to provide increased separation for users compared to standard on-



[53] Example of standard on-street bike lane (Source: DKS)

Shared Lane Markings

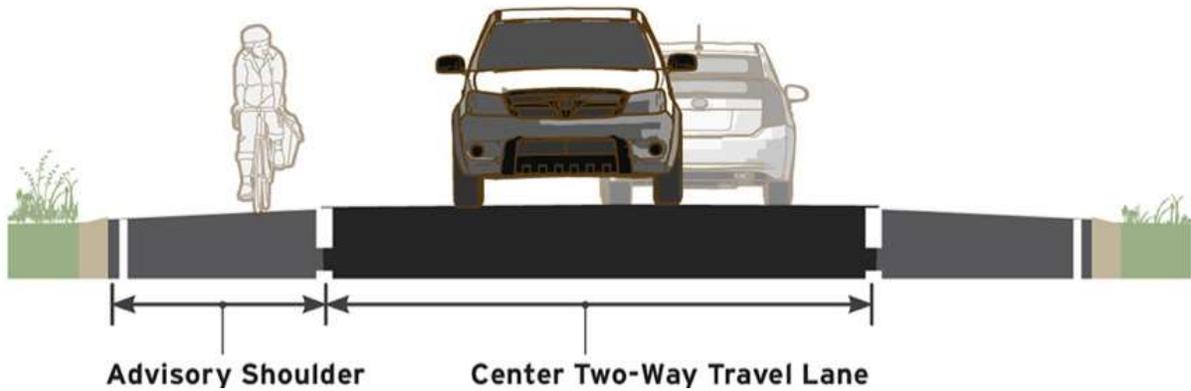
Shared-lane markings or “sharrows”, seen at right in [6], are designed to inform motorists to expect cyclists to be in the middle of the travel lane, and to inform cyclists that they should be in the travel lane and away from parked cars. An uphill bike lane with downhill shared-lane markings can be used on hilly routes that do not have room to accommodate bike lanes in both directions. Shared lane markings should not be used on facilities where vehicle speeds are significantly greater than bicyclist speeds. Roads with under 3,000 vehicles per day and speeds of 25 mph or under are typically best suited for shared lane markings.



[63] Example of shared lane marking (Source: DKS)

Advisory Shoulders

Advisory shoulders provide a prioritized space for people walking and biking without (or with little) roadway widening. Vehicles may not enter the advisory shoulder area if there is a pedestrian or cyclist present and requires-courtesy yielding is required when vehicles traveling in opposite directions meet. If there are no pedestrians or cyclists present, vehicles may encroach into the advisory shoulder space when two motor vehicles meet. Advisory Shoulders are intended for low volume (up to about 4,000 vehicles per day) and low speed (25 mph or less) streets. The paved two-way center travel lane should be narrow (10 to 14 feet) to encourage slow travel speeds and the preferred width of an advisory shoulder is 6 feet (minimum 4 feet without curb and gutter). A typical cross section for a roadway with advisory shoulders is seen below in [7].



[73] Typical cross-section for roadway with advisory shoulders (Source: FHWA)

Broken lane lines are used to delineate the advisory shoulder and contrasting pavement materials (between the center lane and advisory shoulder) should be considered as part of an advisory shoulder treatment. Warning signing should also be installed to increase driver awareness when sharing the road with people walking, people biking, and other drivers. Potential signage could include an unmodified Two-Way Traffic warning sign to clarify two-way operation. An example of an advisory shoulder application can be seen ~~above~~ below in [8].



[83] Example of advisory shoulders (Source: streets.mn)

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It is important to note that advisory shoulders are a new treatment type in the United States and no performance data has yet been collected to compare to a substantial body of international experience. In order to install advisory shoulders, an approved Request to Experiment is required as detailed in Section 1A.10 of the MUTCD. Furthermore, Oregon Revised Statutes (ORS 811.435) currently prohibit motor vehicles from driving in a bicycle lane or path. A change in this law may be required before an advisory shoulder could be implemented. Hood River will work with the Oregon Department of Transportation and other interested agencies such as the City of Portland to encourage this change.

Neighborways

Neighborways are local streets that may be specifically designated and optimized for bicycle and pedestrian travel. While shared lane marking are often applied along these corridors to indicate the presence of bicyclists, neighborways include additional measures to promote bicycle travel on these routes. Traffic calming along the corridor can be applied to reduce vehicle speeds and volumes to create a more comfortable environment for cyclists. An existing neighborway treatment is seen at right in [9]. Intersection improvements are critical to assist bicyclists at difficult roadway crossings and maintain the character of the neighborway. Wayfinding signage is also a popular treatment on neighborways to assist bicyclists with navigation. A roadway should only be converted to a neighborway where it is appropriate to discourage through-motor vehicle traffic, and they work well when a parallel route is available to motorists. This treatment is most appropriate for local streets with vehicle volumes less than 3,000 vehicles per day and roadway speeds of 25 mph or less.



[9] Example of a neighborway (Source: DKS)

Recommended Bicycle Projects

Improvements to the bicycle network include completion of bike lanes (requiring a six-foot 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 [103]) and signs where space is not available to add bike lanes. In many Hood River neighborhoods, streets are proposed for bike boulevardsbike routes: comfortable, low traffic streets where bicycles share the road with vehicles. Bike boulevardsBike routes can be treated with wayfinding signage and pavement markings in order to emphasize to drivers that they should expect to encounter bicyclists. Additional analysis will be necessary to identify specific treatments on each bike boulevardbike route corridor.



[103] 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	\$580,000 \$41365,00 0	Roadway expansion
BL2	Frankton Road	Bike Lanes	\$540,000 \$38840,00 0	Roadway expansion
BL3	Cascade Avenue-Oak Street-HCRH	Bike Lanes	\$220,000 \$1358,000	Intermittent bike lanes exist; assumes restriping along half of corridor length

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Project ID	Name/Location	Facility Type	Cost Estimate*	Note
BL4	State Street	Bike Lanes	\$130,000 \$9380,000	Restriping
BL5	OR 35/Hood River Bridge	Bike Lanes	\$110,000 \$765,000	Restriping
BL6a	May Street (Frankton Rd to Rand Rd)	Bike Lanes	\$715,000 \$516890,000	Roadway expansion; <u>on-street parking to be allowed on one side of the street only or prohibited on both sides</u>
BL6b	May Street (Rand Rd 17th Street to 12th St)	Bike Lanes	\$140,000 \$499,000	Roadway expansion
BL7	Rand Road	Bike Lanes	\$335,000 \$2410,000	Roadway expansion
BL8	12th Street/13th Street/HCRH	Bike Lanes	\$400,000 \$28645,000 0	Restriping
BL9	Belmont Avenue	Bike Lanes	\$180,000 \$12810,000 0	Restriping
BL10	Belmont Drive/ Hudson Road	Bike Lanes	\$190,000 \$13415,000 0	Roadway expansion
BL11	Indian Creek Road	Bike Lanes	\$255,000 \$18155,000 0	Roadway expansion
BL12	Brookside Drive/Eliot Drive	Bike Lanes	\$585,000 \$42360,000 0	Roadway expansion
BL13	13th Street	Bike Lanes	\$115,000 \$8270,000	Restriping.
BLSLM1	Serpentine Road/6th Street/Eugene Street	Uphill Bike Lane/ Downhill Shared Lane Markings	\$470,000	Restriping
SLM1	Wasco Street/7th Street	Shared Lane Markings	\$60,000 \$4135,000	
SLM2	Industrial Street/3rd Street/2nd Street	Shared Lane Markings	\$20,000 \$120,000	
SLM3	Oak Street/Front Street	Shared Lane Markings	\$35,000 \$230,000	

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Project ID	Name/Location	Facility Type	Cost Estimate*	Note
SLM4	Cascade Avenue	Shared Lane Markings	\$35,000 \$230,000	
SLM5	State Street	Shared Lane Markings	\$20,000 \$230,000	
SLM6	Sherman Avenue	Shared Lane Markings	\$65,000 \$470,000	
SLM7	9 th Street/Park Street	Shared Lane Markings	\$10,000 \$65,000	
SLM8	May Street	Shared Lane Markings	\$20,000 \$102,000	
SLM9	22 nd Street	Shared Lane Markings	\$25,000 \$185,000	
SLM10	Portway Avenue	Shared Lane Markings	\$25,000 \$185,000	
SLM11	Riverside Drive	Shared Lane Markings	\$10,000 \$65,000	Shared lane markings and wayfinding signs between N 2 nd Street and P10.
BLVD1BR1	20th Street/Jaymar Road	Bike Boulevard Bike Route	\$45,000 \$259,000	
BLVD2BR2	Sherman Avenue	Bike Route Bike Boulevard	\$20,000 \$120,000	
BLVD3BR3	Montello Avenue/Eugene Street	Bike Route Bike Boulevard	\$235,000 \$13415,000 0	
BLVD4BR4	9th Street	Bike Route Bike Boulevard	\$45,000 \$295,000	
BLVD5BR5	4th Street	Bike Route Bike Boulevard	\$25,000 \$158,000	
BLVD6BR6	18th Street/17th Street/Avalon Way/Avalon Drive	Bike Route Bike Boulevard	\$130,000 \$9380,000	
BLVD7BR7	8th Street	Bike Route Bike Boulevard	\$100,000 \$670,000	
Total Cost			\$3,54204, 278705,00 0	

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Project ID	Name/Location	Facility Type	Cost Estimate*	Note
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* 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~~Bike Route cost estimates include pavement markings, signs, traffic control modifications (ex. turning stop signs) and example traffic calming treatments.

Figure 4: Bicycle System Plan

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 at least the year 2031. The plan elements provide an array of strategies to achieve local transportation goals by improving system capacity, efficiency, safety, and connectivity. The 2021 Amendment includes additional actions to support growth in west Hood River through the year 2040, consistent with the land use assumptions in the Westside Area Concept Plan. Therefore, this amended TSP includes projects and performance results based on a planning horizon year of 2031 for some areas and on a planning horizon year of 2040 for others (e.g., see Table 14).

An analysis of the motor vehicle system under existing (2010) ~~and, and~~ future (2031 and 2040), ~~and future (2040)~~ 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.

Figure 5: Roadway Functional Classification

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.

Neighborhood Connectors are a local street that was created as part of the Westside Area Concept Plan process. On the Motor Vehicle System Plan, they depict desired local through routes that help set the framework for a highly connected local street network and are part of the bicycle network. These streets feature a 60-foot-wide right-of-way to accommodate wider planter strips for stormwater treatment.

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

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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. [The Minor Arterial Option shown in Figure 6c has been approved for new arterials.](#)

Figure 6A: Historical Columbia River Highway – US 30 Standard Diagram

Figure 6B: OR 281 Standard Diagram

Figure 6C: Arterial Streets Standard Diagram

Figure 6D: Collector Streets Standard Diagram

Figure 6E: Local Streets Standard Diagram

Figure 6F: Alley, Cul-de-sac & Industrial Streets Standard Diagram

Figure 6G: Private Street Standard Diagram

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.

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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 devices, 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 (85th 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.
<u>Neighborhood Connector</u>	<u>200 ft.</u>	<u>22 ft.</u>
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.

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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 UGBs 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:

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- 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.

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- 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.

Figure 7: Local Street Connectivity Plan

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 2021 Amendment includes additional actions to support growth in west Hood River through the year 2040, consistent with the land use assumptions in the Westside Area Concept Plan. Therefore, this amended TSP includes projects and performance results based on a planning horizon year of 2031 for some areas and on a planning horizon year of 2040 for others (e.g., see Table 14).

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. The alignments of new roadway projects in Figure 8 are conceptual, and the City will work with developers to finalize the locations and alignments of all new roadways.

Table 13: Motor Vehicle System Projects – Preferred Plan

Project ID	Location	Description	Planning Level Cost
MV1*	I-84 Exit 62 Interchange	<p><u>I-84 Westbound Ramps/Terminal</u></p> <ul style="list-style-type: none"> 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 <p><u>I-84 Eastbound Ramps/Terminal</u></p> <ul style="list-style-type: none"> Construct traffic signal <u>or roundabout</u> Construct northbound right turn lane (drop lane from Cascade Ave., <u>reevaluate the need for this if a roundabout is chosen as the preferred alternative</u>) Construct second southbound through lane Construct southbound left turn lane (<u>reevaluate the need for this if a roundabout is chosen as the preferred alternative</u>) Construct eastbound right turn lane 	\$ 20,900 <u>348,390</u> 5,000,000

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Project ID	Location	Description	Planning Level Cost
MV1/MV2 Interim	I-84 Exit 62 Interchange	<ul style="list-style-type: none"> I-84 Westbound Ramp/Terminal - Construct traffic signal I-84 Westbound Ramp/Terminal - Install queue detection devices on the off-ramp and ability to pre-empt signal timing to allow the off-ramp queues to be cleared during times when queue lengths become excessive I-84 Eastbound Ramp/Terminal - Construct an eastbound shared through/left turn lane to create an exclusive lane for the heavier right turn movement Cascade Avenue - Construct second eastbound lane from the I-84 eastbound ramp terminal to Mt. Adams Avenue (would tie into the existing eastbound right turn lane at Mt. Adams Avenue) Westcliff Drive/Cascade Avenue <ul style="list-style-type: none"> - Install a stop sign on the eastbound approach - Remove the stop sign for the northbound right turn lane 	\$ 5,6,915,000 ,000
MV2a*	Cascade Ave (HCRH): I-84 Exit 62 Interchange to Rand Rd. Mt. Adams Ave.	<ul style="list-style-type: none"> 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 <p><i>(Roundabout (preferred if feasible) or T-Traffic signal on Cascade Ave. at Mt. Adams Ave. listed as separate project – MV11)</i></p>	\$2,700,000 1,810,306 ,000
MV2b*	Cascade Ave (HCRH): Mt. Adams Ave to Rand Rd.	<ul style="list-style-type: none"> Widen Cascade Ave. between Mt. Adams Ave. and Rand Rd. to include one travel lane in each direction and a center turn lane 	\$91,255,000 ,000

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Project ID	Location	Description	Planning Level Cost
MV3*	<p>Cascade Ave. at Mt. Adams Ave.: Cascade Ave. to Wine Country Ave. eCountry Club Rd. Realignment/ Mt. Adams Ave.</p>	<ul style="list-style-type: none"> • 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. <p><u>Cascade Ave. at Mt. Adams Ave.</u></p> <ul style="list-style-type: none"> • <u>Widen to east of Mt. Adams Avenue between Cascade Ave. And Wine Country Ave. to cConstruct atwe second northbound left turn lanes on inside, full length to Country Club RdWine Country Ave. on outside(reevaluate the need for this if a roundabout is chosen as the preferred alternative)</u> • Construct northbound right turn lane • Install yield control for eastbound right turn lane (constructed as part of MV2) <p><i>(Roundabout (preferred if feasible) or tTraffic signal on Cascade Ave. at Mt. Adams Ave. listed as separate project – MV11)</i></p> <p><u>Mt. Adams Ave. at Wine County Ave. as south and east approaches are constructedCountry Club Rd.</u></p> <ul style="list-style-type: none"> • <u>Construct a roundabout</u> <p>When Mt. Adams Ave. is extended to the south (MV4), construct northbound left turn lane</p> <p>When Mt. Adams Ave. is extended to the south (MV4), cConstruct stop controlled northbound shared through/right turn lane with the northbound left turn prohibited</p> <p>Construct channelized southbound right turn only lane under yield control (drop lane from Mt. Adams Ave.)(no southbound through or left turns allowed)</p> <p>Construct southbound through lane</p> <p>Construct southbound left turn lane serving property access on east approach</p> <p>Construct eastbound left turn lane</p> <p>Construct eastbound shared left/through/right turn lane</p> <p>Construct stop controlled east approach for property access, including a westbound left turn lane, and a shared westbound through/right turn lane only</p> <p>(Traffic signal on Mt. Adams Ave. at Country Club Rd. listed as separate project —MV12)</p>	<p>\$3,700,0003,170844,000</p>

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Project ID	Location	Description	Planning Level Cost
MV4.1	Mt. Adams Ave./30 th Street: Country Club Rd./May Street to Fairview Dr.	<ul style="list-style-type: none"> Construct 30th Street as a 3-lane minor arterial from the current stub south of May Street/Talon Avenue to Fairview Dr. along the south/west edge of the urban growth boundary (UGB). 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. 	\$7,674,000 \$11,940,000
MV4.2	Alignment D/Westside Drive (Wine Country Avenue to May Street)	<ul style="list-style-type: none"> Construct Alignment D/Westside Drive as a 2 to 3-lane minor arterial from Country Club Road/Wine Country Avenue to May Street. 	\$13,602,000 \$18,805,000
MV4.3	May Street/Alignment D/Westside Drive	<ul style="list-style-type: none"> Construct a traffic signal roundabout (preferred if feasible) or traffic signal 	\$2,000,000 (roundabout) \$350,000 \$1,000,000 (traffic signal)
MV 4.4	30 th St.: May St. to Sherman Ave.	<ul style="list-style-type: none"> Install traffic calming measures to mitigate cut-through traffic after neighborhood connections are completed to the north. Specific locations and methods will be determined by the City Engineer but could include chicanes, chokers, or curb extensions with input from the Fire Chief. 	\$40,000
MV5	Sherman Ave.: Rand Rd. to Mt. Adams Ave./Alignment D/Westside Drive	<ul style="list-style-type: none"> Extend Sherman Ave. from Rand Rd. to Mt. Adams Ave./Alignment D/Westside Drive (middle segment of this extension exists) 	\$10,805,000 \$2,145,000

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MV6	Rand Rd.: May St. to Belmont Ave.	<ul style="list-style-type: none"> Extend Rand Rd./27th St. from the current stub south of May St. to Belmont Ave. 	\$4,110,972,000 \$3,220,000
MV7	Belmont Ave.: Rand Rd. to Frankton Rd.	<ul style="list-style-type: none"> 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 13,5609,808,000
MV8**	I-84 Exit 63 Interchange	<p><u>I-84 Westbound Ramps/Terminal</u></p> <ul style="list-style-type: none"> Widen westbound off-ramp approach to include a right turn lane, shared through/left lane, and a left turn lane <p><u>I-84 Eastbound Ramps/Terminal</u></p> <ul style="list-style-type: none"> Lengthen the I-84 Exit 63 off-ramp Modify the eastbound approach to include a shared through/left turn lane and right turn lane <p><u>2nd Street</u></p> <ul style="list-style-type: none"> 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 13,8850,043,000

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MV9**	I-84 Exit 63 westbound off-ramp queue management	<ul style="list-style-type: none"> 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. <p><i>(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.)</i></p>	\$2,375,693 0,000
MV10*	Cascade Ave. (HCRH) / Westcliff Dr.	<ul style="list-style-type: none"> Construct traffic signal <u>or roundabout (type of traffic control should be coordinated with MV1)</u> Construct eastbound right turn lane <u>(reevaluate the need for this if a roundabout is chosen as the preferred alternative)</u> 	\$2,000,000 (roundabout) \$1,535,409 950,000 (traffic signal)
MV11*	Mt. Adams Ave./ Cascade Ave.(HCRH)	<ul style="list-style-type: none"> Construct traffic signal<u>roundabout (preferred if feasible)****</u> or traffic signal <p><i>(Assumes complementary road improvements constructed as part of MV1/MV2 Interim, MV2b and MV3)</i>MV2 and MV3)</p>	\$5,500,000 (roundabout) \$1,000,000 399,500,000 (traffic signal)
MV12*	Mt. Adams Ave./Country Club Rd.	<ul style="list-style-type: none"> Construct traffic signal <p><i>(Assumes complimentary road improvements constructed as part of MV3 and MV4)</i></p>	\$350,000
MV12.1	Wine Country Avenue/Alignment Westside Drive	<ul style="list-style-type: none"> Construct a <u>traffic signal</u><u>roundabout (preferred if feasible) or traffic signal</u> Construct a westbound left-turn lane <u>(reevaluate the need for this if a roundabout is chosen as the preferred alternative)</u> 	\$3,000,000 (roundabout) \$1,160,000 498,000 (traffic signal)
MV13*	Rand Rd./ Cascade Ave. (HCRH)	<ul style="list-style-type: none"> 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 	\$3,200,475 000,000 (traffic signal)

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MV14**	2 nd St./ Riverside Dr.	<ul style="list-style-type: none"> 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. <p>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.</p>	\$ 350562 10,000
MV15**	2 nd St./ Portway Ave.	<ul style="list-style-type: none"> All-way stop control (as needed based on implementation of turn restrictions at 2nd St./ Riverside Dr.) 	\$ 3 104,000

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MV16**	OR 35/ State St.	<ul style="list-style-type: none"> Construct traffic signal <u>or roundabout</u> 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) <u>Reevaluate the need for turn lanes if a roundabout is chosen as the preferred alternative</u> 	<p>\$4,000,000 (roundabout)</p> <p>\$1,210,285 \$400,000 (traffic signal)</p>
MV17	May St./ 13 th St. (OR 281)	<ul style="list-style-type: none"> Construct traffic signal <u>or roundabout</u> Construct eastbound right turn lane (<u>reevaluate the need for this if a roundabout is chosen as the preferred alternative</u>) 	<p>\$4,000,000 (roundabout)</p> <p>\$971,685 \$75,000 (traffic signal)</p>
MV18	May St./17 th St.	<ul style="list-style-type: none"> Reconfigure the stop sign placement so that all southbound movements on 18th St. must stop, while May St. would not be required to stop 	\$1043,000
MV19	May St./ 22 nd St.	<ul style="list-style-type: none"> Convert the intersection to two-way stop control by removing the stop signs on the May St. approaches 	\$1043,000
MV20	Cascade Ave. (HCRH) / 20 th St.	<ul style="list-style-type: none"> Construct a traffic signal <u>or roundabout</u> 	<p>\$4,000,000 (roundabout)</p> <p>\$1,000,000 (traffic signal)350,000</p>
MV21	Belmont Ave./ 13 th St. (OR 281)	<ul style="list-style-type: none"> Construct a traffic signal <u>or roundabout</u> 	<p>\$5,000,000 (roundabout)</p> <p>\$1,000,000 (traffic signal)350,000</p>
MV22	Belmont Ave./ 12 th St (OR 281)	<ul style="list-style-type: none"> Add signs limiting the westbound approach to right out movements only 	\$1065,000
MV23**	2 nd St./ Oak St.(HCRH)	<ul style="list-style-type: none"> Construct traffic signal 	\$1,000,000 (traffic signal) \$350,000
MV24	2 nd St./State St.	<ul style="list-style-type: none"> Construct traffic signal <u>or roundabout</u> 	<p>\$2,000,000 (roundabout)</p> <p>\$1,000,000 (traffic signal)350,000</p>
MV25	Rand Road/27th Street/May Street	<ul style="list-style-type: none"> <u>Construct a traffic signal or mini roundabout</u> 	<p>\$350,000\$55,000 (mini roundabout)</p> <p>\$1,000,000 (traffic signal)</p>
MV26	Exit 62 IAMP Refinement Plan	<ul style="list-style-type: none"> <u>Refine the Exit 62 Interchange Area Management Plan to be consistent with the Westside Area Concept Plan.</u> 	\$21500,000
MV 27	May St.: Rand Rd. to Frankton Rd.	<ul style="list-style-type: none"> <u>Restripe May Street to include one travel lane in each direction and bike lanes.</u> 	

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Total Cost

\$68,289,000~~154,815~~**03,310,000******

* 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.

****Total cost assumes that traffic signals are constructed unless a roundabout is identified as the preferred alternative in the project description

Figure 8: Motor Vehicle System Plan

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. [The intersections included in the Westside Area Concept Plan traffic analysis were updated to reflect the year 2040 preferred plan operations.](#)

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.

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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.

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Table 14: Weekday 2031 PM Peak Hour Intersection Operations

Intersection (North-South / East-West)	Mobility Standard d **	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	0.7 8	11.8 12.6	A/B	0.34 0.26****
Frankton Rd. / May St.	D	35.7	A/E	0.7 0	16.3 14.6	A/CB	0.39 0.6****
Rand Rd. / May St.	D	21.4	A/C	0.5 3	19.1 13.7	A/DB	0.61 0.77****
22 nd St. / May St.*	D	16.4	C	0.6 4	33.2	A/D	0.54
18 th St. / May St.	D	14.4	A/B	0.3 9	20.3	A/C	0.55
Indian Creek Rd. / Brookside Dr.	D	14.7	A/B	0.4 4	16.7	A/C	0.57
2 nd St. / Portway Ave.	D	12.5	A/B	0.3 1	14.0	B	0.59
2 nd St. / State St.	D	>200	B/F	1.6 8	43.0	D	0.85
2 nd St. / Cascade Ave.	0.80/0.90	42.4	A/E	0.6 4	42.4	A/E	0.64
12 th St. (North Leg) / May St.	D	30.4	A/D	0.6 3	19.4	A/C	0.37
ODOT intersections							
Cascade Ave. (HCRH) / Westcliff Dr.	0.80/0.90	15.8	A/C	0.2 2	18.2 20.9	BC	0.11 0.36****
Cascade Ave. (HCRH) / I-84 WB Ramps	0.65/0.85	>200	A/F	4.5 3	39.0 27.0	DC	0.67 0.5****
Cascade Ave. (HCRH) / I-84 EB Ramps	0.65/0.85	129.9	A/F	1.1 1	14.9 22.9	BC	0.50 0.66****
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	28.1 22.6	C	0.79 0.85****
20 th St. / Cascade Ave. (HCRH)	0.80/0.90	>200	B/F	NA	9.9	A	0.64
13 th St. (OR 281) / Oak St.	0.80/0.90	61.5	E	1.0 1	28.0	C	0.74
13 th St. (OR 281) / State St.	0.80/0.90	>200	A/F	2.3 9	32.7	A/D	0.30
13 th St. (OR 281) / May St.	0.80/0.90	28.4	A/D	1.0 2	18.9	B	0.85***
12 th St. (South Leg) (OR 281) / May St.	0.80/0.90	8.9	A	0.6 8	8.6	A	0.66
13 th St. (OR 281) / Belmont Ave.	0.80/0.90	>200	A/F	2.4 3	10.5	B	0.67
12 th St. (OR 281) / Belmont Ave.	0.80/0.90	85.2	A/F	0.8 3	67.7	A/F	0.80

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12 th St. (OR 281) / Brookside Dr.	0.80/0.85	10.2	B	0.6 7	9.4	A	0.62
2 nd St. / Riverside Dr.*	0.80/0.90	26.1	D	0.9 4	15.7	C	0.26
2 nd St. / I-84 WB On/Off Ramps	0.65/0.85	19.7	B	0.7 4	22.245 4	<u>BC</u>	0.6007 <u>7****</u>
2 nd St. / I-84 EB On/Off Ramps	0.65/0.85	35.2	D	0.9 3	19.167	B	0.8174* <u>***</u>
2 nd St. / Oak St. (HCRH)	0.80/0.90	72.1	F	1.1 0	18.1	B	0.77
Button Bridge Rd. / Marina Wy.	0.80/0.80	10.7	B	0.5 7	12.7	B	0.58
Button Bridge Rd. / I-84 WB Ramps	0.65/0.80	7.9	A	0.4 6	7.9	A	0.49
Button Bridge Rd. / I-84 EB Ramps	0.65/0.85	12.5	B	0.4 6	16.9	B	0.59
Button Bridge Rd. / Historic Columbia River Hwy.*	0.70/0.80	30.1	D	0.9 6	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

****Updated to reflect year 2040 future conditions under the preferred plan based on the Westside Area Concept Plan land use changes

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)

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Strategy	Description	Potential Trip Reduction
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)

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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.

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

Another report was also released by the Gorge TransLink Coordination Project³ 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 Dalles 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.

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

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- Support development of transit service through identified commuter corridors.
- 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 through the Columbia River Gorge. ~~Typically~~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~~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

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.

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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.

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 Airports⁸. 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 alternative can move forward.¹¹ The list of the adopted improvement elements follows.

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.

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;
- 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

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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 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~~14.7 million available for capital improvements through 2040~~34~~. It should be noted that this includes about \$3.6~~7.9~~152 million~~000 million~~ of ODOT Statewide Transportation Improvement Program (STIP) funds that have been ~~dedicated for the realignment of Country Club Road~~promised for the Exit 62 Interchange Interim Improvements although this project is not currently programmed in the STIP. and that theThe City’s regular revenue streams are only projected to generate approximately ~~\$7.3~~7.8 million through 2040 ~~for capital improvements~~34.

Table 16: Transportation Revenue from Current Sources

Funding Source	20 <u>21</u> 01 Revenue	Estimated Revenue for Next <u>21-20</u> Years (20 <u>21</u> 14 - 20 <u>40</u> 34)*		
		Total	Maintenance and Other Expenses	Capital Projects
State Fuel Apportionment	\$290,000	\$ 6,090,000 <u>5,800,000</u>	\$ 5,800,000	\$0
State Vehicle License Fees	\$10,000	\$ <u>20</u> 0,000	\$ <u>20</u> 0,000	\$0
State Match Funds (STIP)**	-	\$3,000,000 <u>6,915,000</u>		\$6,915,000 <u>000</u>
City Gas Tax	\$280,000	\$ 5,880,000	\$ 5,880,000	\$0
Street Systems Development Charges	\$387 <u>470</u> ,500	\$ 3,805,500 <u>7,750,000</u> ***	-	\$3,805,500 <u>7,750,000</u>
Total	\$750<u>967</u>,500	18,985,500<u>26,265,000</u>	12,264<u>11,600,000</u>	6,805<u>14,665,050</u>

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.

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*Forecast revenue is ~~2010-2021~~ dollars, ** includes funds for Exit 62 Interchange Interim Improvements, ***~~includes existing balance of \$225,000~~ does not include any existing SDC balances

Financially Constrained Plan

The Preferred Plan consists of all transportation improvements identified to meet future needs through the year ~~2031~~2040. 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.

The improvements identified in the Westside Area Concept Plan Report were included in the Financially Constrained Plan. Although no dedicated funding has been identified, the City has committed to identifying funding for the projects on the local network, including along Cascade Avenue. ODOT has committed to fund the interim improvements (MV1/MV2 Interim) at Exit 62.

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 (20 21 17 0 Dollars)	
	Preferred Plan	Financially Constrained Plan
Pedestrian	\$11.29.615.5 million	\$3.021.7 million
Shared Pedestrian/Bicycle (Crossings) (Off Street Facilities) (Programs)	\$44.55.423.0 million (\$52445720,000) (\$12.23.420.5 million) (\$1.8 million)	\$8.916.7 million 85,000 (\$1004585,000) (\$8.816.6 million) 0 (\$0)
Bicycle	\$5.44.33.7 million	\$3.12.614.4 million
Motor Vehicle	\$403.368.3154.8 million	\$54.511.085.8 million
Total Cost	\$133.387198.7 million	\$68108.614.2 million
Difference between Preferred and Financially Constrained Plans		\$65.372.890.1 million

*From the year ~~2011-2021~~ to the year ~~2031~~2040

As ~~listed~~ shown in Table 17, the difference in costs to fund the Preferred Plan (~~\$133.387198.7~~ million) and Financially Constrained Plan (~~\$68108.614.2~~ million) is approximately ~~\$65.372.890.1~~ million. Furthermore, there is a significant gap between what the City can fund (~~\$6.814.7~~ million) compared to what is needed to fund even the Financially Constrained plan (~~\$68108.614.2~~ 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 ~~\$68108.614.2~~ million (Table 17) and current revenue projected to reach only ~~\$6.814.7~~ million (Table 16), a means of generating an additional ~~\$61.27.493.9~~ million must be pursued.

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As an example, the City of Hood River currently has a Transportation System Development Charge (SDC) rate of approximately \$~~666,205~~⁹ per single-family residence and \$~~69.60~~⁹ per daily trip for all other uses. By comparison, the SDC rates for many cities in and surrounding the Portland Metropolitan Area average approximately \$~~7,750~~^{6,500} per p.m. peak hour trip (or approximately \$~~820~~⁵⁷⁰ per daily trip). Sandy has a transportation SDC rate of \$~~1,943,830~~⁹ per p.m. peak hour trip, while The Dalles has an SDC rate of \$1,500 per p.m. peak hour trip.

Although 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 could be increased further, this increase alone would not be enough to cover the nearly \$94 million difference between the projected revenue and the financially constrained project cost. Alternatively, a lesser SDC rate increase could be applied, with the remainder funded through other revenue sources. The remainder of this balance could be generated through alternative revenue sources which are detailed below.

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, commitment to 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	\$ 440,315 ²⁷ 0,000	\$ 315,440 ²⁷ 0,000	City of Hood River
SW8	May Street	\$ 1,245,451 ¹⁰ ,000	\$ 570,497 ⁰ 00	City of Hood River
SW14	Cascade Avenue/HCRH (between Mt. Adams and Rand)	\$ 263,365 ²⁵ 000	\$ 190,550 ⁰ 0	City of Hood River, ODOT
<u>SW19</u>	<u>Post Canyon Drive (Frankton Road to West UGB)</u>	<u>\$655,000</u>	<u>\$655,000</u>	<u>City of Hood River, Developer</u>
	Financially Constrained Plan	\$2,032,970⁷⁰ 1,740,000	\$969,181⁵⁸ 30,000	

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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	\$ 6105 ,000	City of Hood River, ODOT, Heights Urban Renewal
CR9	*OR 281-13th Street & May Street	\$ 649055 ,000 (\$ 30540 ,000 if RRFB is not included)	City of Hood River, ODOT, Heights Urban Renewal, developer
CR11	*OR 281-13th Street & Belmont Avenue	\$ 15825 ,000	City of Hood River, ODOT, Heights Urban Renewal, developer
CR18	OR281-13 th Street & Oak Street-HCRH	\$ 6105 ,000	City of Hood River, ODOT, Heights Urban Renewal, developer
CR20	(Future) Westside Community Trail & Belmont Drive	\$ 6105 ,000	City of Hood River
Financially Constrained Plan Cost		\$1004585,000	

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

Project ID	Name/Location	Cost Estimate	Potential Funding Sources
P1.1^a	Historic Columbia River Highway Trail	\$1,7242,405,000	City of Hood River, Developer
P1.2^a	Westcliff Dr. Pedestrian Path	\$2,1513,555,000	City of Hood River, Developer
P4	Westside Community Trail	Off-street segments of project already funded by Hood River Valley Parks & Recreation; on-street segment along Rocky Road will cost \$1,220,000 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
P13^a	Historic Columbia River Highway Trail, south side of Cascade Avenue	\$1,485640,000	ODOT
P14^a	Westside Community Trail extension to Cascade Avenue	\$675,000	City of Hood River, Developer
P15^a	Upper Terrace Neighborhood Trail	\$1,322425,000	City of Hood River, Developer
P17^a	West Community Trail extension west to Frankton Road	\$10310,000	City of Hood River, Developer

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Project ID	Name/Location	Cost Estimate	Potential Funding Sources
P18^a	Trail from Sherman Avenue to Frankton Road	\$11250,000	City of Hood River, Developer
P19^a	Henderson Creek Trail	\$6203,910,000	City of Hood River, Developer
P20^a	Ridgeline Train north of Sherman Ave	\$2,245776,000	City of Hood River, Developer
Financially Constrained Plan Cost		\$8,83816,625,000	

^aProject is not included in the City's current SDC methodology but will be added incrementally over time (see Goal 7, Policy 4).

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Table 21: Bicycle System Financially Constrained Projects

Project ID	Name/Location	Facility Type	Cost Estimate	Potential Funding Sources
BL1^a	Country Club Bike Lanes	Bike Lanes	\$416 580,000	City of Hood River, Developer
BL2^a	Frankton Bike Lanes	Bike Lanes	\$388 540,000	City of Hood River, Developer
BL3	Cascade Avenue-Oak Street-HCRH	Bike Lanes	\$220 358,000	City of Hood River, ODOT, may be candidate for urban renewal
BL6^a	May Street (Frankton Rd to Rand Rd)	Bike Lanes	\$516 715890,000	City of Hood River, Developer
BL6^b	May Street (Rand Rd to 12th Street)	Bike Lanes	\$140 499,000	City of Hood River,
BL7^a	Rand Road	Bike Lanes	\$240 335,000	City of Hood River, Developer
BL13	OR 281/13th Street	Bike Lanes	\$82 11570,000	City of Hood River, ODOT, Heights Urban Renewal
BLSLM1	Serpentine Road/6th Street/Eugene Street	Uphill Bike Lane/ Downhill Shared Lane-Markings	\$407,000	City of Hood River
SLM1	Wasco Street/7th Street	Shared Lane Markings	\$44 6035,000	City of Hood River
SLM5	State Street	Shared Lane Markings	\$20 30,000	City of Hood River, urban renewal
BLVD3BR3	Montello Avenue/Eugene Street	Bike Route/Bike Boulevard	\$134 23515,000	City of Hood River
BLVD7BR7	8th Street	Bike Boulevard/Bike Route	\$100 760,000	City of Hood River
Financially Constrained Plan Cost			\$2,614 3,0601,365,000	

^aProject is not included in the City's current SDC methodology but will be added incrementally over time (see Goal 7, Policy 4).

Table 22: Motor Vehicle Financially Constrained Plan

Project ID	Location	Planning Level Cost	Potential Funding Sources
MV1/MV 2 Interim	I-84 Exit 62 Interchange	\$ 5,000 6,915,000	ODOT
MV2^a	Cascade Avenue	\$1,306 810,000	City of Hood River, Developer
MV2^b	Cascade Avenue	\$1,255 906,000	City of Hood River, Developer
MV3*	Country Club Rd. Realignment/ Mt. Adams Ave.	\$3,700,000 443,170,000	City of Hood River, ODOT, Developer

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Project ID	Location	Planning Level Cost	Potential Funding Sources
MV4.1^a MV4	30th Street (May Street to Fairview Drive) Mt. Adams Ave.: Country Club Rd. to Fairview Dr.	\$7,1296,740 \$11,940,000	City of Hood River, Developer , Financially Constrained Plan includes segment from Country Club Road to May Street : \$5,815,000
MV4.2^a	Alignment D Westside Drive (Wine Country Avenue to May Street)	\$13,60218,8 \$18,050,000	City of Hood River , Developer , Financially Constrained Plan includes \$5,815,000 for this project. The remaining project funding (\$7,787,000) has not been identified.
MV4.3^a	May Street / Alignment D Westside Drive	\$350,000 \$2,000,000	City of Hood River , Developer
MV5^a	Sherman Avenue (Rand Road to Alignment D Westside Drive)	\$7,84410,8 \$5,000	City of Hood River , Developer
MV6^a	Rand Road (May Street to Belmont)	\$2,9724,110 \$0,000	City of Hood River , Developer
MV7^a	Belmont Avenue (Rand Road to Frankton Road) Post Canyon Drive (Frankton Road to Belmont Ave.)	\$9,80813,56 \$0,000	City of Hood River , Developer
MV11*	Mt. Adams Ave./ Cascade Ave.(HCRH)	\$350,000 \$399,500,000	City of Hood River , Developer , Proportional share district exists – no cost included
MV12*	Mt. Adams Ave./Country Club Rd.	\$350,000	City of Hood River , developer
MV12.1	Wine Country Avenue/Alignment D Westside Drive	\$498,000 \$3,000,000	City of Hood River , Developer
MV13*	Rand Rd./ Cascade Ave. (HCRH)	\$1,759003,2 \$0,000	City of Hood River , Developer , Proportional share district exists – no cost included
MV17	May St./ 13 th St. (OR 281)	\$907751,68 \$5,000	City of Hood River, ODOT, Heights Urban Renewal, developer
MV18	May St./17 th St.	\$1043,000	City of Hood River
MV21	Belmont Ave./ 13 th St. (OR 281)	\$3501,000 ,000	City of Hood River, ODOT, Heights Urban Renewal, developer
MV23**	2 nd St./ Oak St.(HCRH)	\$3501,000 ,000	Assumed to be candidate for proportional share improvement – no cost included
MV25^a	Rand Road/27th Street/May Street	\$3501,000 ,000	City of Hood River , Developer
MV26^a	Exit 62 IAMP Refinement Plan	\$2800,000	ODOT
Financially Constrained Plan Cost		\$10,993,000 \$4,52885,84 \$5,000	

* 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

^aProject is not included in the City's current SDC methodology but will be added incrementally over time (see Goal 7, Policy 4).

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

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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, the amendment must be analyzed to determine if it has a “significant affect” on transportation facilities and 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, Heights 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.

Hood River Transportation System Plan

The City of Hood River has a current SDC rate of approximately ~~\$2,059~~ ~~\$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

Hood River Transportation System Plan

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

Hood River Transportation System Plan

- 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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Appendix

[Appendix A: Westside Area Concept Plan Transportation Analysis Memorandum](#)

Appendix [BA](#): Background Document Review Memorandum

Appendix [CB](#): Existing Conditions Memorandum

Appendix [DC](#): Draft Technical Memorandum #2 Future Forecasting

Appendix [ED](#): Future Transportation System Needs

Appendix [FE](#): Final Technical Memorandum #3 Transportation System Solutions

Appendix [GF](#): Future Preliminary Signal Warrant Analysis

Appendix [HG](#): Neighborhood Traffic Management Photo Log

Appendix [IH](#): Project Cost Estimates

Appendix [J](#): Technical Memorandum #4 Implementation-Action Strategy

Appendix [KJ](#): Implementation Ordinances Memorandum

Appendix [LK](#): Public Involvement Summary

Appendix [ML](#): 2031 Preferred Alternative Synchro Output

Appendix A: Westside Area Concept Plan
Transportation Analysis
Memorandum

Appendix **BA**: Background Document Review
Memorandum

Appendix **CB**: Existing Conditions
Memorandum

Appendix DC: Draft Technical Memorandum #2
Future Forecasting

Appendix **ED**: Future Transportation System Needs

Appendix EF: Final Technical Memorandum #3
Transportation System Solutions

Appendix **GF**: Future Preliminary Signal Warrant
Analysis

Appendix **HG**: Neighborhood Traffic
Management Photo Log

Appendix **I**: Project Cost Estimates

Appendix J: Technical Memorandum #4
Implementation-Action Strategy

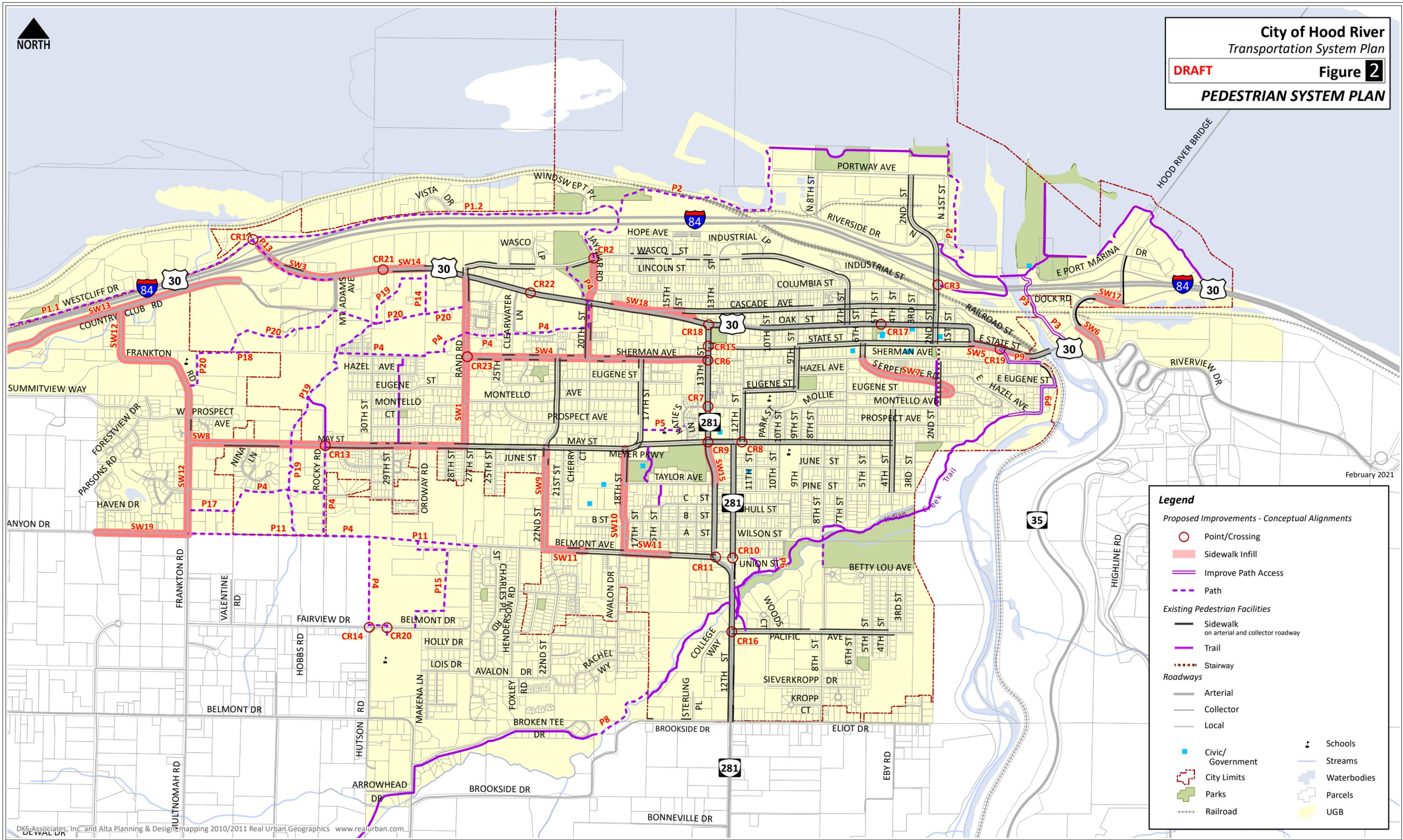
Appendix **KJ**: Implementing Ordinances
Memorandum

Appendix LK: Public Involvement Summary

Appendix **ML**: 2031 Preferred Alternative
Synchro Output

Attachment F

Revised Transportation System Plan Figures



February 2021

Legend

Proposed Improvements - Conceptual Alignments

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

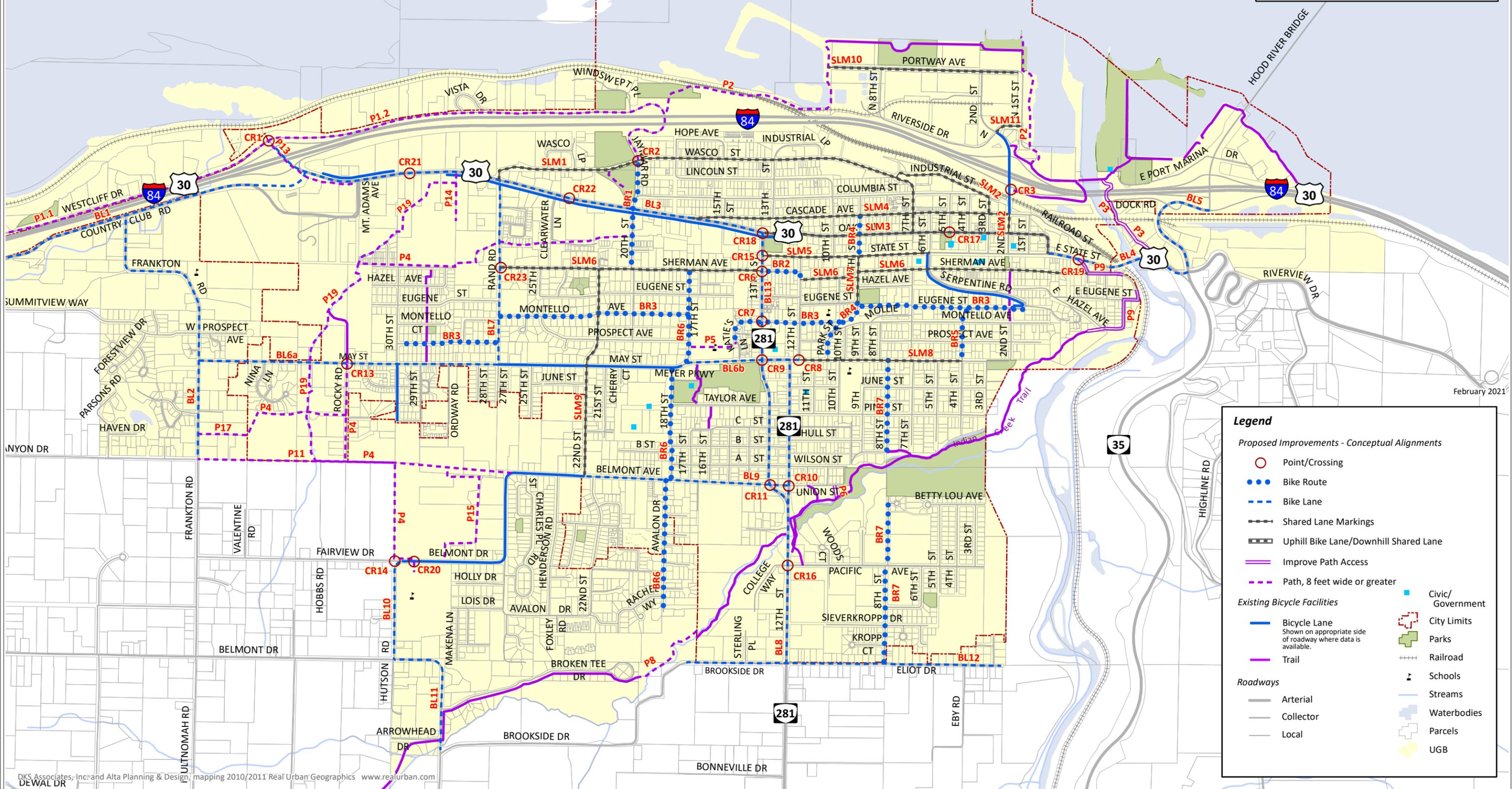
Existing Pedestrian Facilities

- Sidewalk on arterial and collector roadway
- Trail
- - - Stairway

Roadways

- Arterial
- Collector
- Local

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



February 2021

Legend

Proposed Improvements - Conceptual Alignments

- Point/Crossing
- Bike Route
- Bike Lane
- Shared Lane Markings
- Uphill Bike Lane/Downhill Shared Lane
- Improve Path Access
- Path, 8 feet wide or greater

Existing Bicycle Facilities

- Bicycle Lane (Shown on appropriate side of roadway where data is available)
- Trail
- Civic/Government
- City Limits
- Parks
- Railroad
- ▲ Schools
- Streams
- Waterbodies
- Parcels
- UGB

Roadways

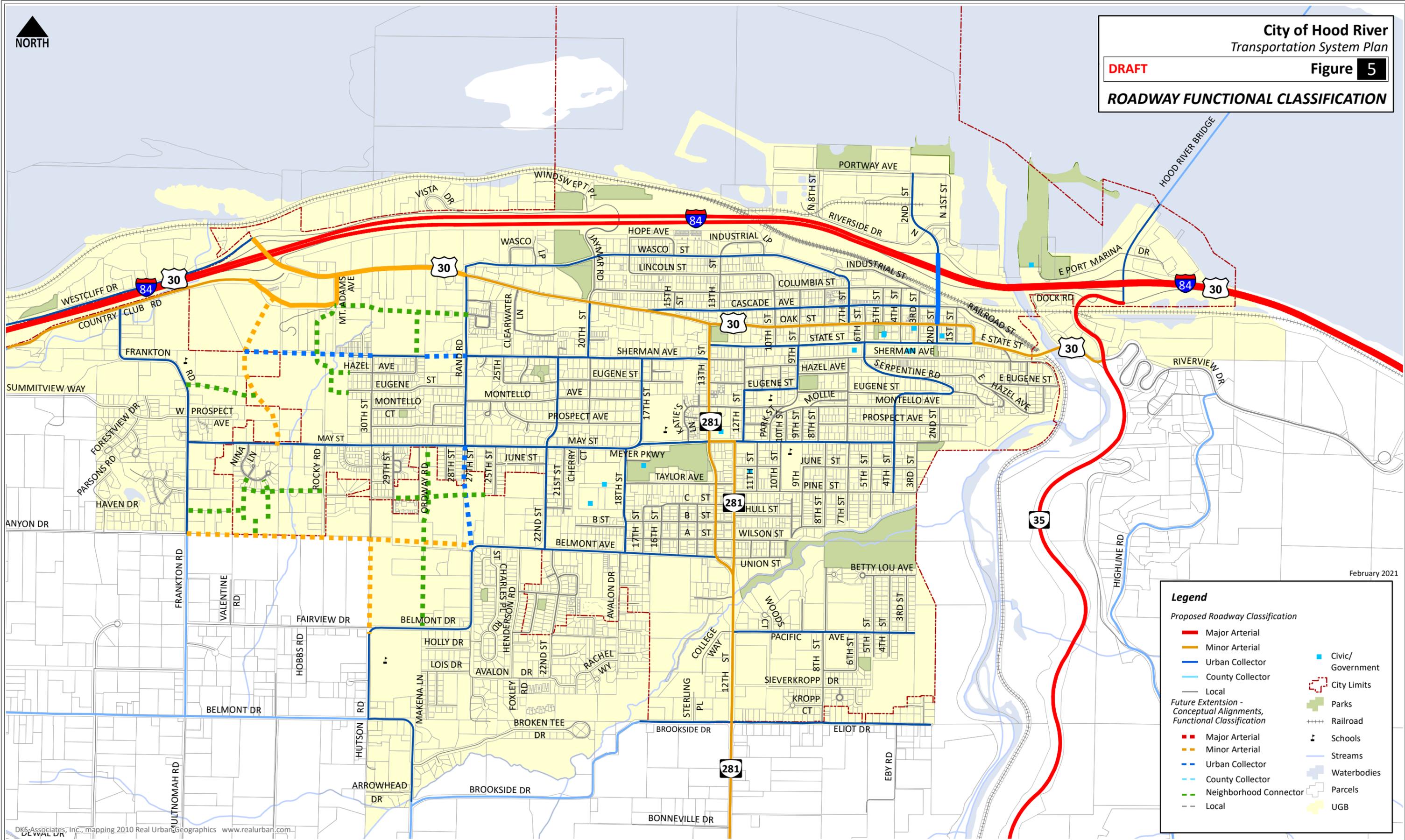
- Arterial
- Collector
- Local



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Figure 5

ROADWAY FUNCTIONAL CLASSIFICATION



February 2021

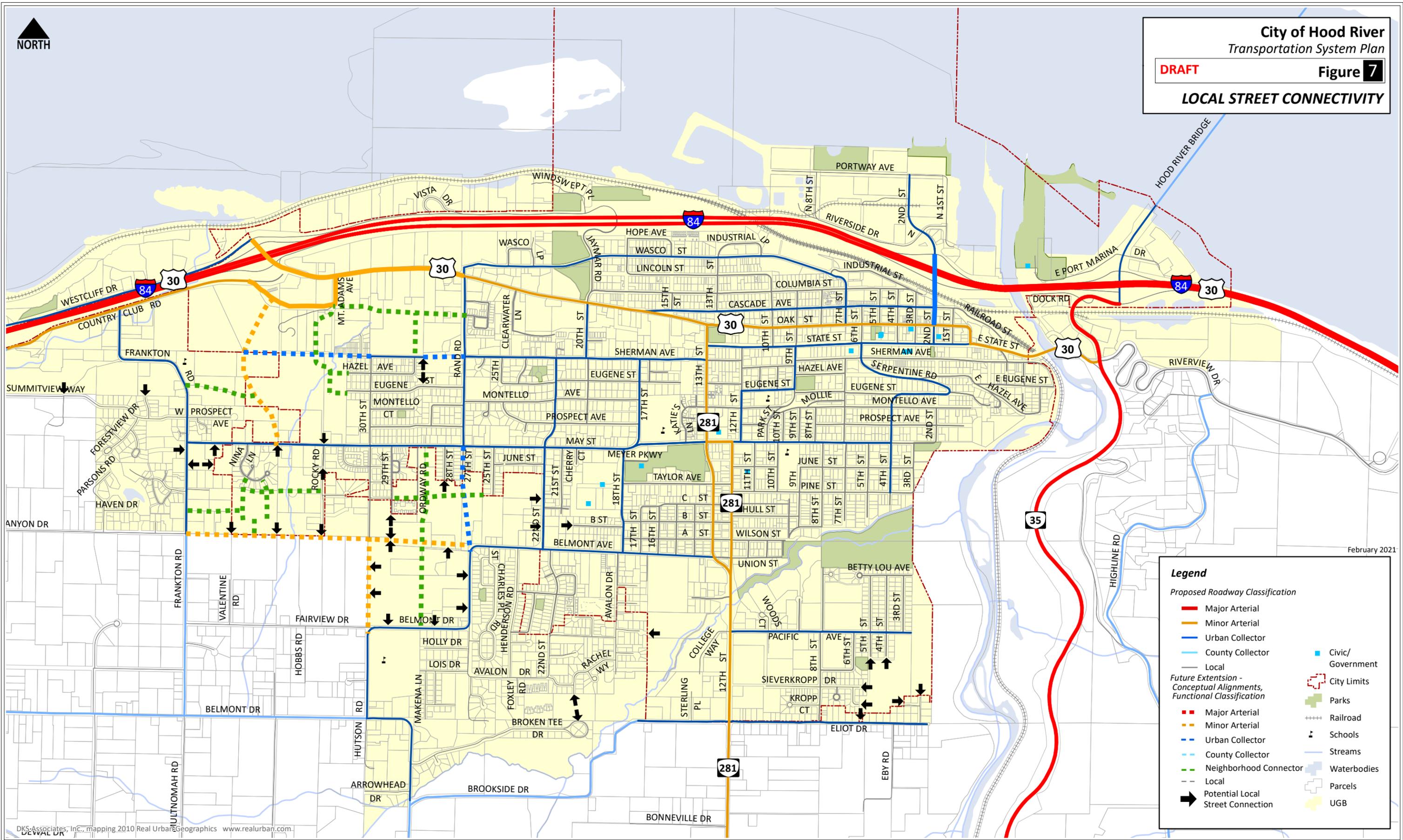
Legend

Proposed Roadway Classification

- Major Arterial
- Minor Arterial
- Urban Collector
- County Collector
- Local
- - - Major Arterial
- - - Minor Arterial
- - - Urban Collector
- - - County Collector
- - - Neighborhood Connector
- - - Local
- Civic/Government
- - - City Limits
- Parks
- + Railroad
- Schools
- Streams
- Waterbodies
- Parcels
- UGB



LOCAL STREET CONNECTIVITY



February 2021

Legend

Proposed Roadway Classification

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

Future Extension - Conceptual Alignments, Functional Classification

- Major Arterial
- Minor Arterial
- Urban Collector
- County Collector
- Neighborhood Connector
- Local
- Potential Local Street Connection

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



February 2021

Legend

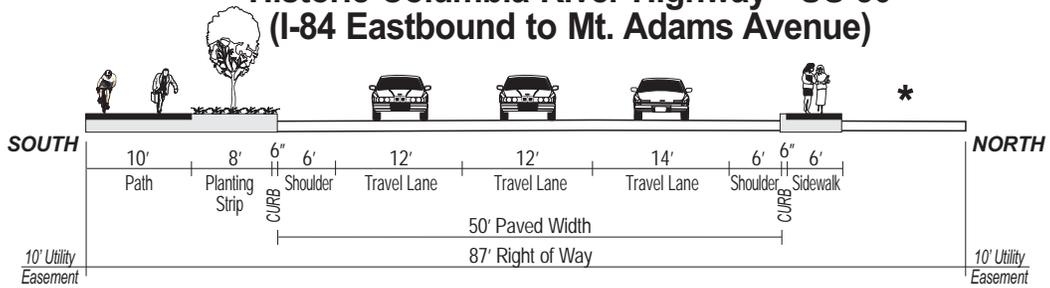
Proposed Improvements - Conceptual Alignments

- Arterial (New)
- Arterial (Widening)
- Collector (New)
- Collector (Widening)
- Neighborhood Connector (New)
- Traffic Calming (New)
- Intersection Improvement

Roadways

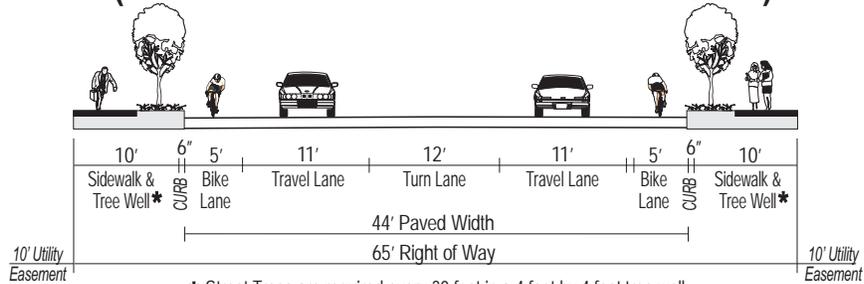
- Arterial
- Collector
- Local
- Civic/Government
- City Limits
- Parks
- Railroad
- Schools
- Streams
- Waterbodies
- Parcels
- UGB

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



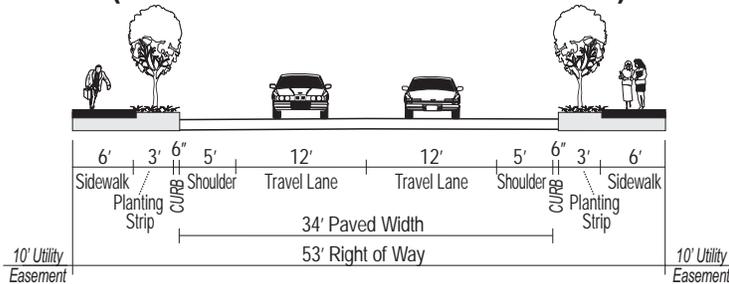
* Prior to construction of the outer westbound travel lane, the City of Hood River and ODOT will demonstrate the need for the lane based on updated traffic projections and will present the findings to the Historic Columbia River Highway Advisory Committee.

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

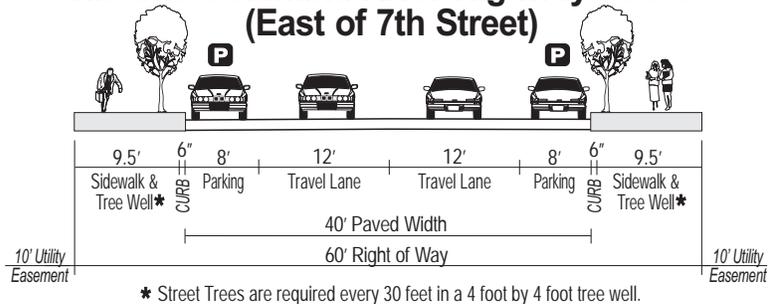


* Street Trees are required every 30 feet in a 4 foot by 4 foot tree well.

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

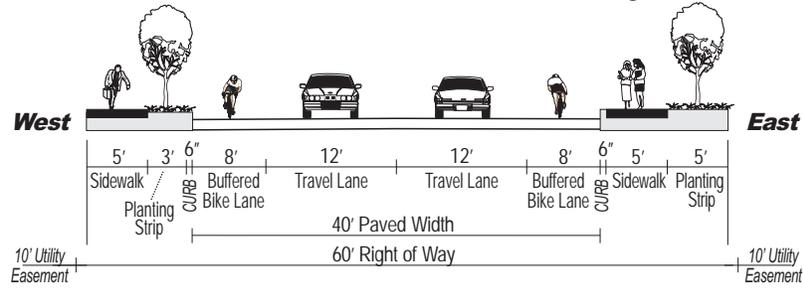
City of Hood River
Transportation System Plan

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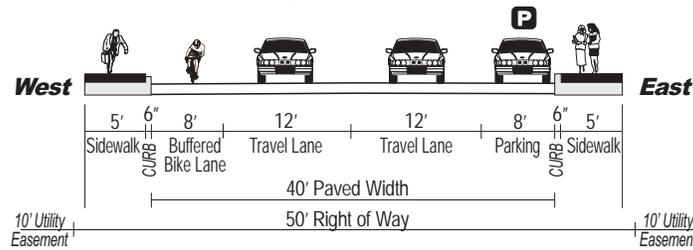
Figure **6A**

**HISTORIC COLUMBIA RIVER HIGHWAY -
US 30 STANDARD DIAGRAM**

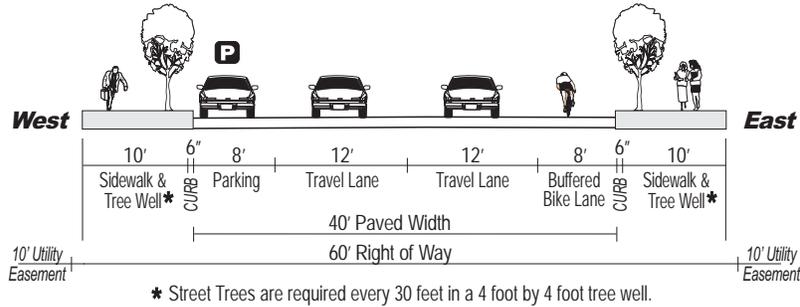
OR 281- Between Oak Street & May Street



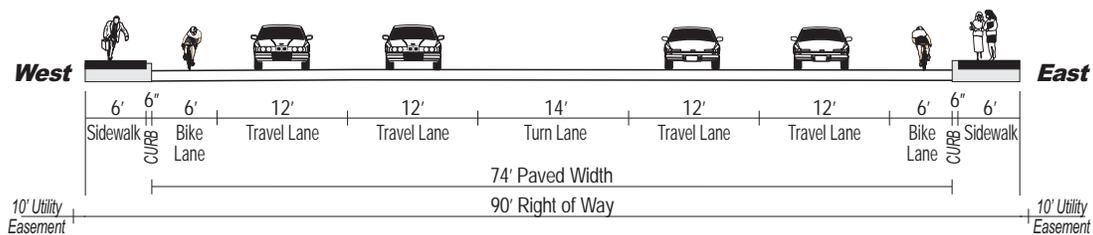
OR 281/13th Street - Between May Street & Belmont Avenue (One-Way Street)



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



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

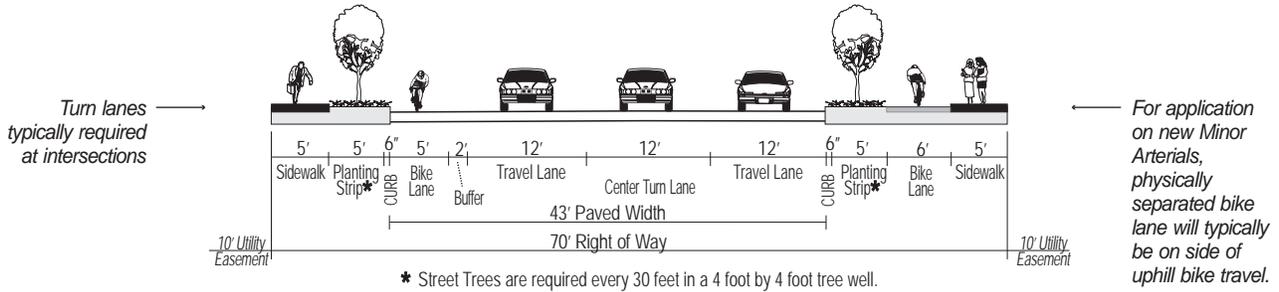
City of Hood River
Transportation System Plan

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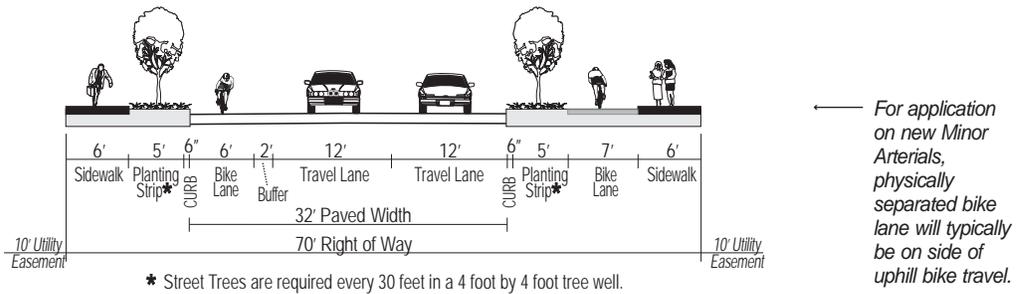
Figure 6B

OR 281 STANDARD DIAGRAM

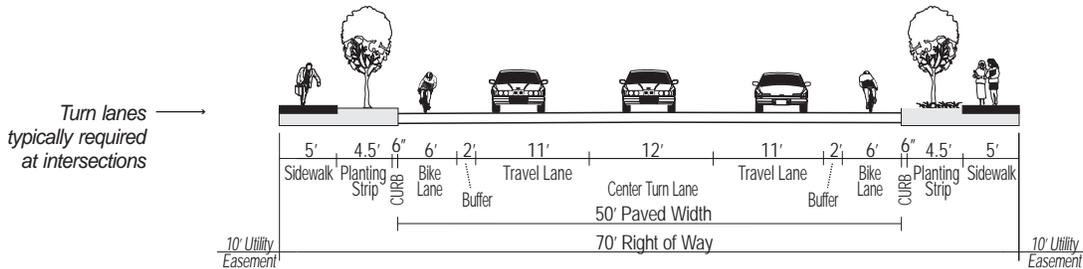
Minor Arterial with Physically Separated Bike Lane (with Turn Lane)



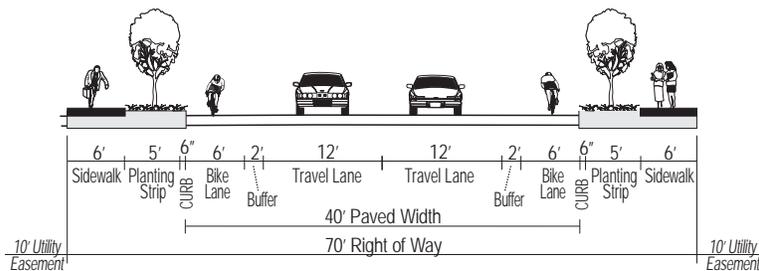
Minor Arterial with Physically Separated Bike Lane (without Turn Lane)



Minor Arterial without Physically Separated Bike Lane (with Turn Lane)



Minor Arterial without Physically Separated Bike Lane (without Turn Lane)



General Notes:

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

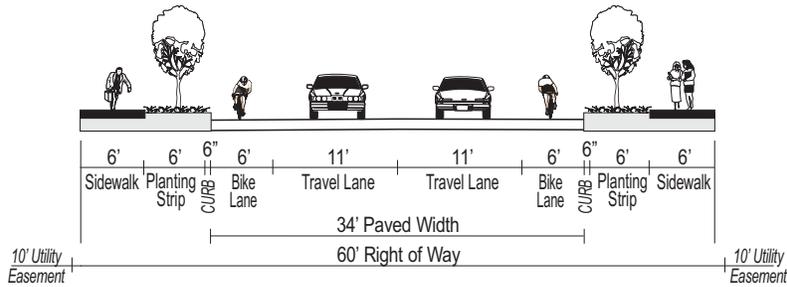
City of Hood River
Transportation System Plan

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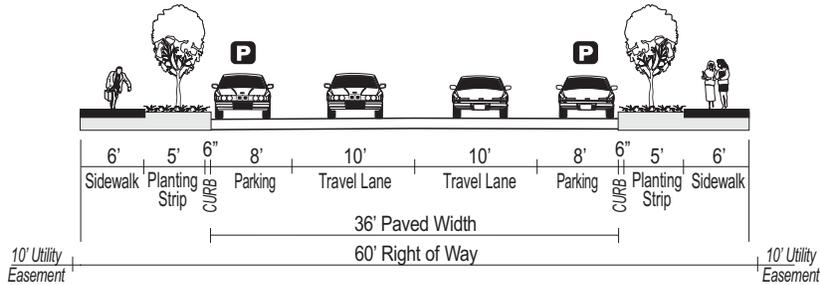
Figure 6C

ARTERIAL STREETS STANDARD DIAGRAM

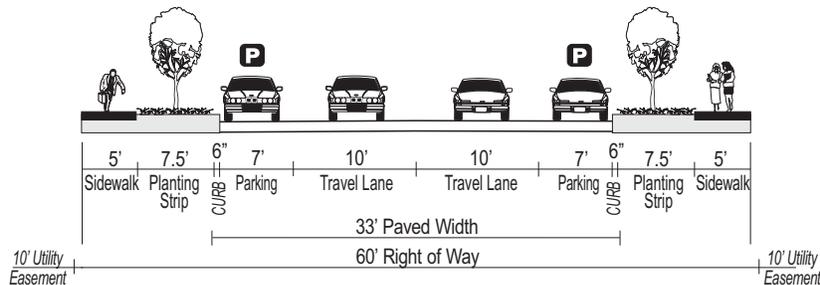
Commercial/Residential Collector



Neighborhood Collector



Neighborhood Connector



General Notes:

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

LEGEND

P - On-Street Parking Lane

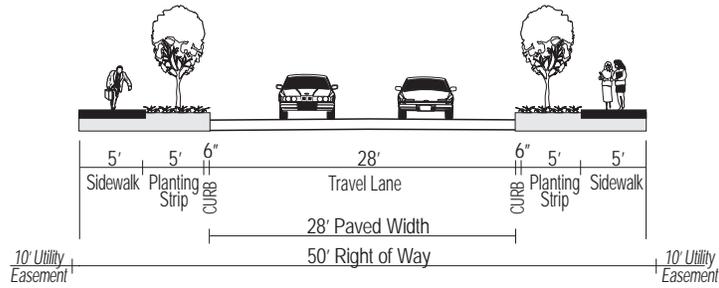
City of Hood River
Transportation System Plan

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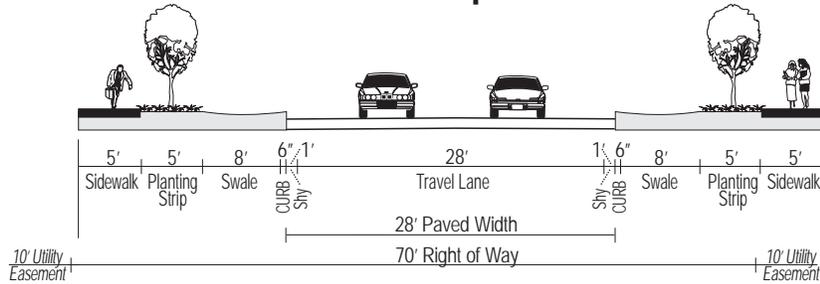
Figure **6D**

**COLLECTOR & CONNECTOR STREETS
STANDARD DIAGRAM**

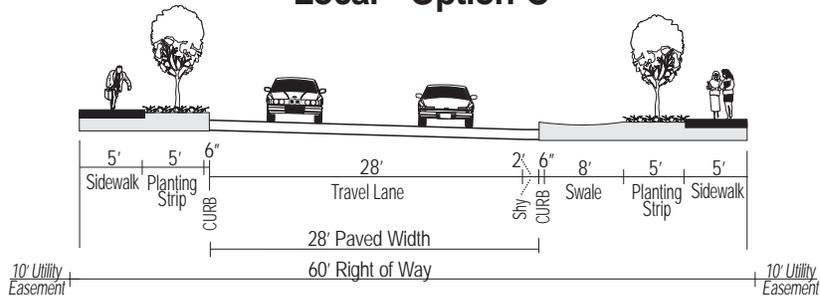
Local - Option A



Local - Option B



Local - Option C



General Notes:

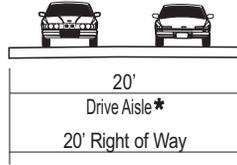
1. Drawings represent the minimum required cross-section. Modifications may be permitted by the City Engineer.
2. A future refinement plan will produce an alternative cross-section for Westcliff Drive. However, development on Westcliff Drive will be subject to the local street standard. As part of the 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.

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Figure 6E

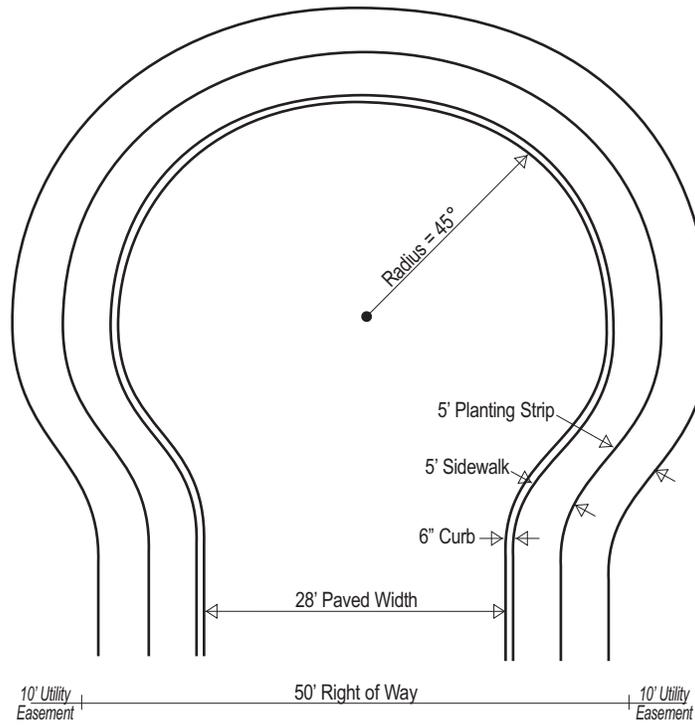
LOCAL STREETS STANDARD DIAGRAM

Alley

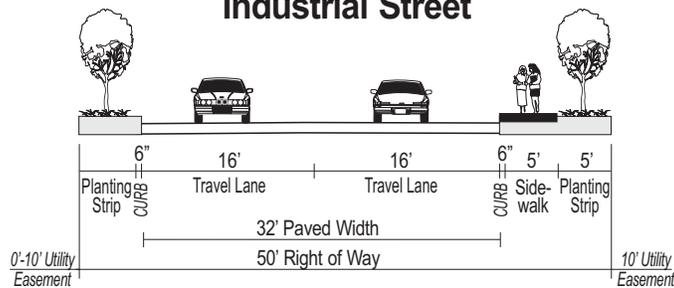


* On-Street Parking prohibited.

Cul-de-sac



Industrial Street



General Notes:

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

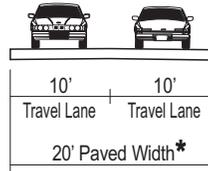
City of Hood River
Transportation System Plan

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Figure **6F**

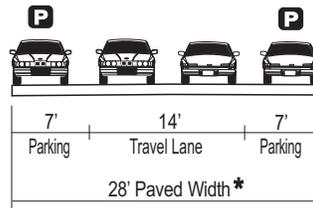
**ALLEY, CUL-DE-SAC & INDUSTRIAL
STREETS STANDARD DIAGRAM**

Six Home Private Street ^{1.}



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

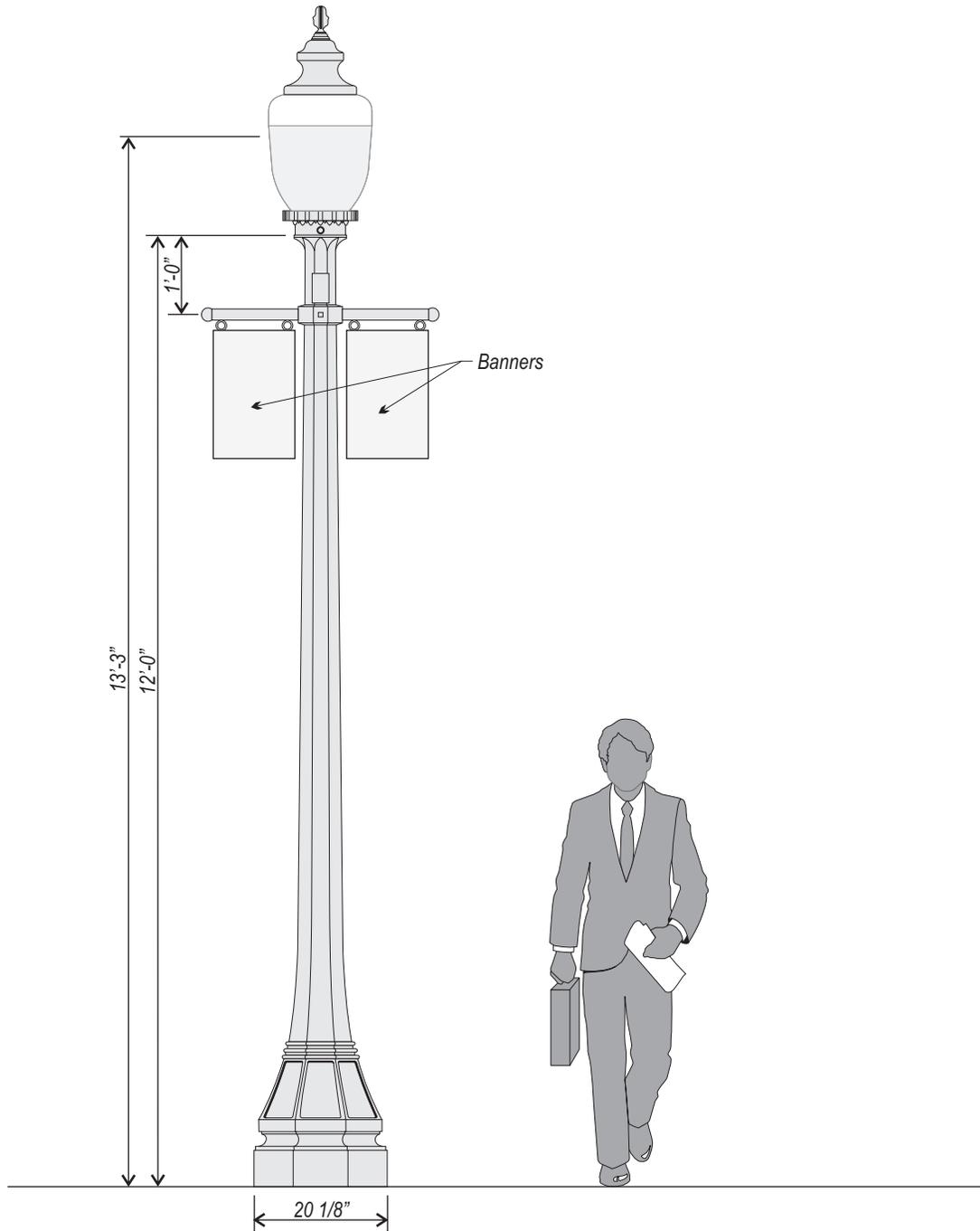
Private Street ^{2., 3.}



2. Cross-Section applies to PUD streets that serve more than 6 homes.

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).



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

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Figure **6H**

**CLASSIC STREET LIGHT
 STANDARD DIAGRAM**