



Oregon

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NOTICE OF ADOPTED CHANGE TO A COMPREHENSIVE PLAN OR LAND USE REGULATION

Date: February 27, 2015

Jurisdiction: City of St. Helens

Local file no.: CPZA.1.14

DLCD file no.: 002-14

The Department of Land Conservation and Development (DLCD) received the attached notice of adopted amendment to a comprehensive plan or land use regulation on 02/25/2015. A copy of the adopted amendment is available for review at the DLCD office in Salem and the local government office.

Notice of the proposed amendment was submitted to DLCD less than 35 days prior to the first evidentiary hearing.

Appeal Procedures

Eligibility to appeal this amendment is governed by ORS 197.612, ORS 197.620, and ORS 197.830. Under ORS 197.830(9), a notice of intent to appeal a land use decision to LUBA must be filed no later than 21 days after the date the decision sought to be reviewed became final. If you have questions about the date the decision became final, please contact the jurisdiction that adopted the amendment.

A notice of intent to appeal must be served upon the local government and others who received written notice of the final decision from the local government. The notice of intent to appeal must be served and filed in the form and manner prescribed by LUBA, (OAR chapter 661, division 10).

If the amendment is not appealed, it will be deemed acknowledged as set forth in ORS 197.625(1)(a). Please call LUBA at 503-373-1265, if you have questions about appeal procedures.

DLCD Contact

If you have questions about this notice, please contact DLCD's Plan Amendment Specialist at 503-934-0017 or plan.amendments@state.or.us

DLCD FORM 2



NOTICE OF ADOPTED CHANGE TO A COMPREHENSIVE PLAN OR LAND USE REGULATION

FOR DLCD USE

File No.:

DEPT OF

Received:

FEB 25 2015

Local governments are required to send notice of an adopted change to a comprehensive plan or land use regulation **no more than 20 days after the adoption.** (See OAR 660-018-0040). The rules require that the notice include a completed copy of this form. **This notice form is not for submittal of a completed periodic review task or a plan amendment reviewed in the manner of periodic review.** Use Form 4 for an adopted urban growth boundary including over 50 acres by a city with a population greater than 2,500 within the UGB or an urban growth boundary amendment over 100 acres adopted by a metropolitan service district. Use Form 5 for an adopted urban reserve designation, or amendment to add over 50 acres, by a city with a population greater than 2,500 within the UGB. Use Form 6 with submittal of an adopted periodic review task.

Jurisdiction: City of St. Helens

Local file no.: **CPZA.1.14**

Date of adoption: Feb. 18, 2015

Date sent: Feb. 20, 2015

Was Notice of a Proposed Change (Form 1) submitted to DLCD?

Yes: Date (use the date of last revision if a revised Form 1 was submitted): October 1, 2014

No

Is the adopted change different from what was described in the Notice of Proposed Change? Yes No
If yes, describe how the adoption differs from the proposal:

The Corridor Plan now includes all appendices and "Olde Towne" references have been changed to "Riverfront District." The updated Transportation Systems Plan, Sec. 2 is now a stand-alone attachment. The text amendment attachment has been reformatted. Two new Chapters (19.30 & 19.32) added.

Local contact (name and title): Jacob Graichen

Phone: 503-366-8204

E-mail: jacobg@ci.st-helens.or.us

Street address: 265 Strand Street

City: St. Helens

Zip: 97051

PLEASE COMPLETE ALL OF THE FOLLOWING SECTIONS THAT APPLY

For a change to comprehensive plan text:

Identify the sections of the plan that were added or amended and which statewide planning goals those sections implement, if any:

This proposal adds a Corridor Plan as an addendum to the Comp. Plan. This proposal also updates Sec. 2 of the City's Transportation Systems Plan, currently an addendum to the Comp. Plan. Some new policies have been added to the Comp. Plan; see 19.08.020 and 19.12.080. No statewide goal conflicts.

For a change to a comprehensive plan map:

Identify the former and new map designations and the area affected:

| | | | |
|------------------------|----|--------|--|
| Change from change. | to | acres. | A goal exception was required for this |
| Change from change. | to | acres. | A goal exception was required for this |
| Change from change. | to | acres. | A goal exception was required for this |
| Change from | to | acres. | A goal exception was required for this change. |

Location of affected property (T, R, Sec., TL and address):

The subject property is entirely within an urban growth boundary

The subject property is partially within an urban growth boundary

If the comprehensive plan map change is a UGB amendment including less than 50 acres and/or by a city with a population less than 2,500 in the urban area, indicate the number of acres of the former rural plan designation, by type, included in the boundary.

Exclusive Farm Use – Acres:

Non-resource – Acres:

Forest – Acres:

Marginal Lands – Acres:

Rural Residential – Acres:

Natural Resource/Coastal/Open Space – Acres:

Rural Commercial or Industrial – Acres:

Other: – Acres:

If the comprehensive plan map change is an urban reserve amendment including less than 50 acres, or establishment or amendment of an urban reserve by a city with a population less than 2,500 in the urban area, indicate the number of acres, by plan designation, included in the boundary.

Exclusive Farm Use – Acres:

Non-resource – Acres:

Forest – Acres:

Marginal Lands – Acres:

Rural Residential – Acres:

Natural Resource/Coastal/Open Space – Acres:

Rural Commercial or Industrial – Acres:

Other: – Acres:

For a change to the text of an ordinance or code:

Identify the sections of the ordinance or code that were added or amended by title and number:

Chapter 8.12 Nuisances; 17.16 General & Land Use Definitions; 17.32 Zones & Uses; 17.72 Landscaping & Screening; 17.80 Off-Street Parking & Loading; 17.84 Access, Egress, & Circulation; 17.152 Street & Utility Improvement Standards; 18.04 Abbreviations & Definitions; 18.12 Streets; and 18.20 Traffic Devices & Street Illumination.

For a change to a zoning map:

Identify the former and new base zone designations and the area affected:

| | | |
|-------------|----|--------|
| Change from | to | Acres: |
| Change from | to | Acres: |
| Change from | to | Acres: |
| Change from | to | Acres: |

Identify additions to or removal from an overlay zone designation and the area affected:

| | | |
|---------------------------|--------------|----------------|
| Overlay zone designation: | Acres added: | Acres removed: |
|---------------------------|--------------|----------------|

Location of affected property (T, R, Sec., TL and address):

List affected state or federal agencies, local governments and special districts: n/a

Identify supplemental information that is included because it may be useful to inform DLCD or members of the public of the effect of the actual change that has been submitted with this Notice of Adopted Change, if any. If the submittal, including supplementary materials, exceeds 100 pages, include a summary of the amendment briefly describing its purpose and requirements.

Note that additional chapters 19.30 and 19.32 were added after notice. However, these Chapters simply memorialize the Corridor Plan and Transportation Systems Plan in the Comp. Plan. This wasn't done when the TSP was adopted in 2011, but should have been. That's why it's being done now for the TSP AND the Corridor Plan.

NOTICE OF ADOPTED CHANGE – SUBMITTAL INSTRUCTIONS

1. A Notice of Adopted Change must be received by DLCD no later than 20 days after the ordinance(s) implementing the change has been signed by the public official designated by the jurisdiction to sign the approved ordinance(s) as provided in ORS 197.615 and OAR 660-018-0040.

2. A Notice of Adopted Change must be submitted by a local government (city, county, or metropolitan service district). DLCD will not accept a Notice of Adopted Change submitted by an individual or private firm or organization.

3. **Hard-copy submittal:** When submitting a Notice of Adopted Change on paper, via the US Postal Service or hand-delivery, print a completed copy of this Form 2 on light green paper if available. Submit **one copy** of the proposed change, including this form and other required materials to:

Attention: Plan Amendment Specialist
Dept. of Land Conservation and Development
635 Capitol Street NE, Suite 150
Salem, OR 97301-2540

This form is available here:

<http://www.oregon.gov/LCD/forms.shtml>

4. **Electronic submittals** of up to 20MB may be sent via e-mail. Address e-mails to plan.amendments@state.or.us with the subject line "Notice of Adopted Amendment."

Submittals may also be uploaded to DLCD's FTP site at http://www.oregon.gov/LCD/Pages/papa_submittal.aspx.

E-mails with attachments that exceed 20MB will not be received, and therefore FTP must be used for these electronic submittals. **The FTP site must be used for all .zip files** regardless of size. The maximum file size for uploading via FTP is 150MB.

Include this Form 2 as the first pages of a combined file or as a separate file.

5. **File format:** When submitting a Notice of Adopted Change via e-mail or FTP, or on a digital disc, attach all materials in one of the following formats: Adobe .pdf (preferred); Microsoft Office (for example, Word .doc or docx or Excel .xls or xlsx); or ESRI .mxd, .gdb, or .mpk. For other file formats, please contact the plan amendment specialist at 503-934-0017 or plan.amendments@state.or.us.

6. **Content:** An administrative rule lists required content of a submittal of an adopted change (OAR 660-018-0040(3)). By completing this form and including the materials listed in the checklist below, the notice will include the required contents.

Where the amendments or new land use regulations, including supplementary materials, exceed 100 pages, include a summary of the amendment briefly describing its purpose and requirements.

7. Remember to notify persons who participated in the local proceedings and requested notice of the final decision. (ORS 197.615)

If you have any questions or would like assistance, please contact your DLCD regional representative or the DLCD Salem office at 503-934-0017 or e-mail plan.amendments@state.or.us.

City of St. Helens
ORDINANCE NO. 3181

AN ORDINANCE ADOPTING THE US 30 AND COLUMBIA BOULEVARD/ST. HELENS STREET CORRIDOR MASTER PLAN AS AN ADDENDUM TO THE CITY OF ST. HELENS COMPREHENSIVE PLAN, AMENDING SECTION 2 OF THE TRANSPORTATION SYSTEMS PLAN, AMENDING THE ST. HELENS MUNICIPAL CODE CHAPTERS 8.12, 17.16, 17.32, 17.72, 17.80, 17.84, 17.152, 18.04, 18.12, 18.20, 19.08, 19.12, AND ADDING CHAPTERS 19.30 AND 19.32

WHEREAS, pursuant to St. Helens Municipal Code 17.20.020(1)(c) the Planning Director initiated a legislative change to the St. Helens Comprehensive Plan (St. Helens Municipal Code Title 19) to adopt the US 30 and Columbia Boulevard/St. Helens Street Corridor Master Plan as an addendum to the Comprehensive Plan and amend Section 2 of the Transportation Systems Plan as adopted by Ordinance No. 3150; and to adopt related text amendments to the Municipal Code, Health and Safety (St. Helens Municipal Code Title 8), Community Development Code (St. Helens Municipal Code Title 17), Engineering Standards Manual (St. Helens Municipal Code Title 18), and Comprehensive Plan (St. Helens Municipal Code Title 19); and

WHEREAS, consultants have prepared the US 30 and Columbia Boulevard/St. Helens Street Corridor Master Plan and related amendments after extensive review of existing plans, policies, studies and other information; analysis; consultation with an ad hoc Technical Advisory Committee, an ad hoc Citizen Advisory Committee, the City Council, Planning Commission, City staff, and other agencies; and public involvement; and

WHEREAS, pursuant to the St. Helens Municipal Code and Oregon Revised Statutes, the City has provided notice to: the Oregon Department of Land Conservation and Development on October 1, 2014, and the local newspaper of record on October 15, 2014; and

WHEREAS, the St. Helens Planning Commission did hold a duly noticed public hearing on November 4, 2014, and, following deliberation, made a recommendation of approval to the City Council; and

WHEREAS, the St. Helens City Council conducted a public hearing on December 17, 2014, and having the responsibility to approve, approve with modifications, or deny an application for a legislative change, has deliberated and found that based on the information in the record and the applicable criteria in the St. Helens Municipal Code that the proposed addendum and related amendments be approved.

NOW, THEREFORE, THE CITY OF ST. HELENS DOES ORDAIN AS FOLLOWS:

Section 1. The above recitations are true and correct and are incorporated herein by reference.

Section 2. The City hereby adopts the US 30 and Columbia Boulevard/St. Helens Street Corridor Master Plan, attached hereto as **Attachment "A"** and made part of this reference, as an addendum to the St. Helens Comprehensive Plan (St. Helens Municipal Code Title 19).

Section 3. Section 2 of the Transportation Systems Plan as adopted by Ordinance No. 3150, Attachment "A," is hereby amended, attached hereto as **Attachment "B"** and made part of this reference.

Section 4. The City of St. Helens Municipal Code and Comprehensive Plan are hereby amended, attached hereto as **Attachment "C"** and made part of this reference.

Section 5. In support of the plan addendum described herein, the Council hereby adopts the Findings of Fact and Conclusions of Law, attached hereto as **Attachment "D"** and made part of this reference.

Section 6. Severability. If any section, provision, clause, sentence, or paragraph of this Ordinance or the application thereof to any person or circumstances shall be held invalid, such invalidity shall not affect the other sections, provisions, clauses or paragraphs of this Ordinance which can be given effect without the invalid provision or application, and to this end the provisions of this Ordinance are declared to be severable.

Section 7. Provisions of this Ordinance shall be incorporated in the St. Helens Municipal Code and the word "ordinance" may be changed to "code," "article," "section," or another word, and the sections of this Ordinance may be renumbered, or re-lettered, provided however that Whereas clauses and boilerplate provisions need not be codified.

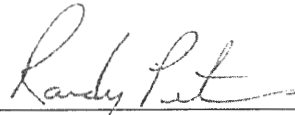
Section 8. The effective date of this Ordinance shall be 30 days after approval, in accordance with the City Charter and other applicable laws.

Read the first time: January 21, 2015
Read the second time: February 18, 2015

APPROVED AND ADOPTED this 18th day of February, 2015, by the following vote:

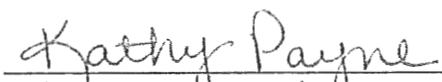
Ayes: LOCKE, CARLSON, CONN, MORTEN, PETERSON

Nays: NONE



Randy Peterson, Mayor

ATTEST:



Kathy Payne, City Recorder

Ordinance No. 3181

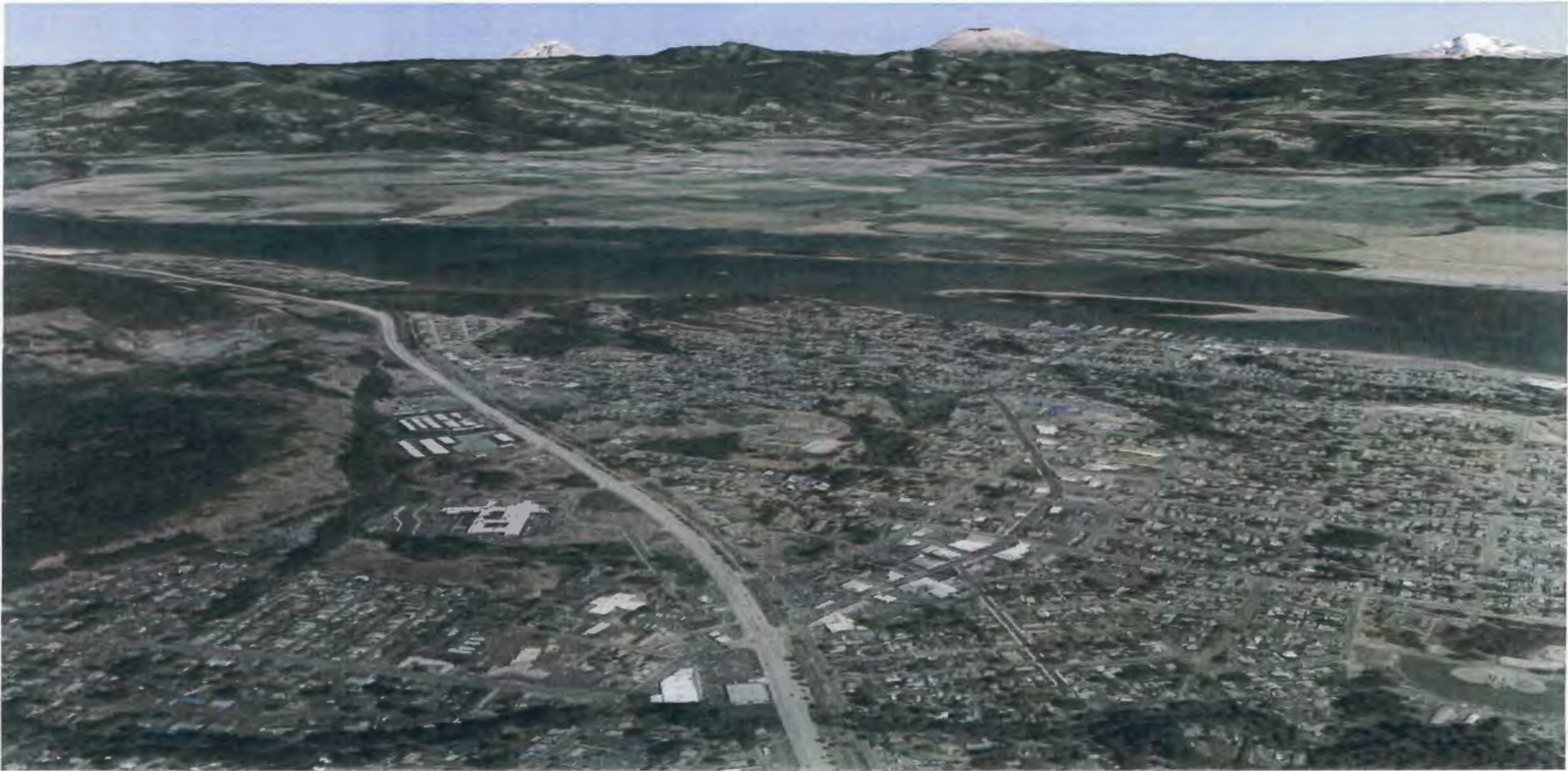
Attachment “A”

The following 291 pages is the final and approved draft of the US 30 & Columbia Boulevard/St. Helens Street Corridor Master Plan (108 pages) and the plan’s appendix (183 pages).

CORRIDOR MASTER PLAN

ST. HELENS - US 30 & COLUMBIA BLVD./ST. HELENS ST. CORRIDOR MASTER PLAN
JANUARY 2015

ORD. NO. 3181



KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING



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This project is partially funded by a grant from the Transportation and 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 Moving Ahead for Progress in the 21st Century (MAP-21), local government, and the State of Oregon funds.

The contents of this document do not necessarily reflect views or policies of the State of Oregon.

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A. INTRODUCTION

The City of St. Helens worked with a project team of staff from the Oregon Department of Transportation (ODOT) and urban design, land use planning, and transportation engineering and planning consultants to develop this Corridor Master Plan. The Master Plan addresses the US 30 corridor, as well as Columbia Boulevard, St. Helens Street and 1st Street within the greater Downtown Area, including the Houlton business district and the Riverfront District. The plan reflects the community's vision of how these areas should appear and function in the future, and includes measures for how to implement the plan. The plan focuses primarily on how the major streets and intersections in these areas are designed and improved over time to ensure that vehicles, bicyclists and pedestrians have ready access to local businesses and can travel safely and comfortably within and between these different parts of town.

As initial steps in the corridor planning process, the City's project team prepared a series of technical memoranda describing existing and projected future conditions in the study area, including land use, urban design, access, and relevant plans and policies, as well as different strategies or approaches that may be used to meet the goals for the corridor.

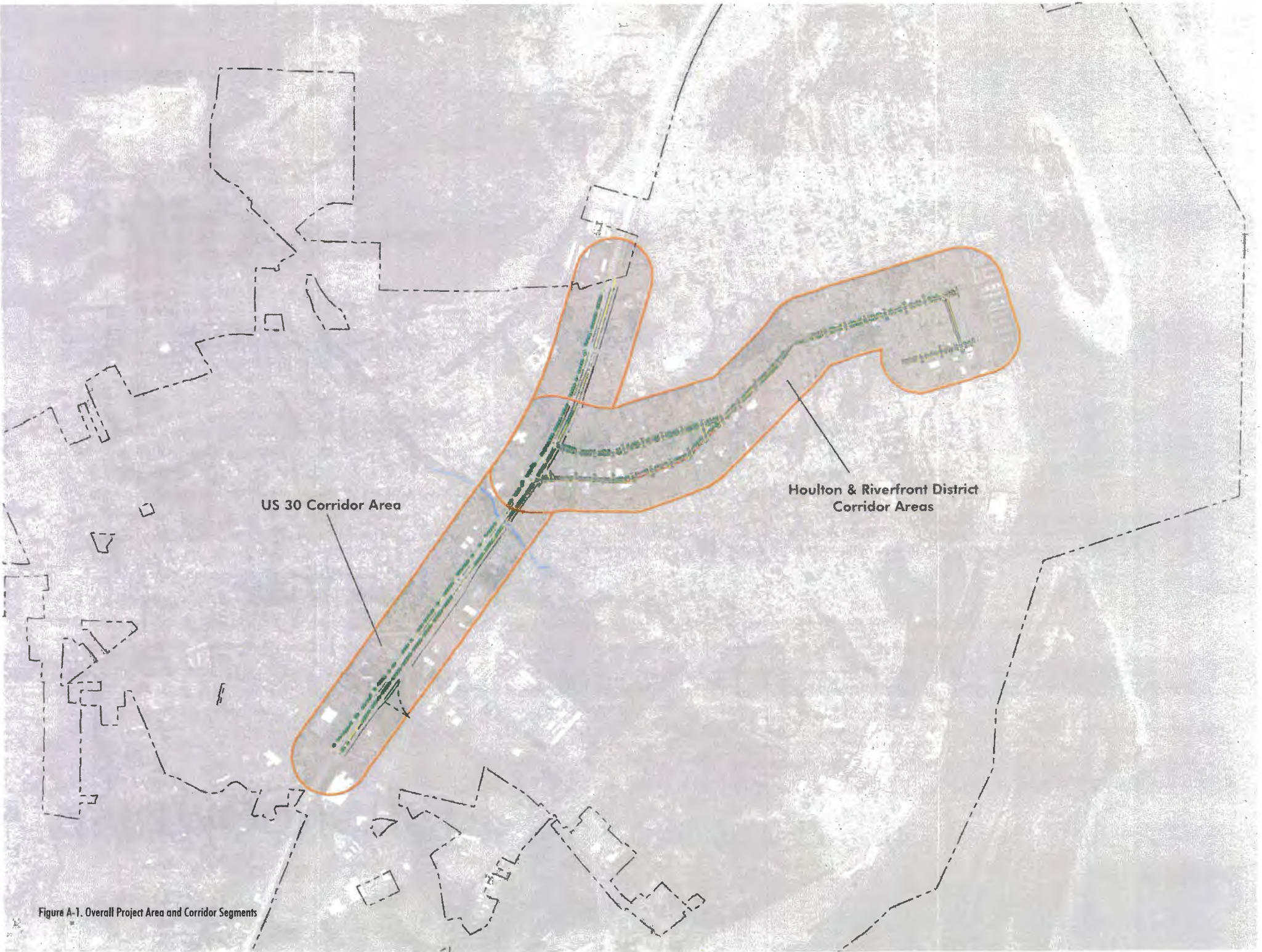
Previous reports summarized and illustrated a set of alternative design concepts and improvements for the three corridor segments in the study area, including:

- proposed plan view drawings of the corridor segments (with elements such as pedestrian crossings, gateway features, and special opportunity areas);
- three-dimensional cross-sections showing streetscape design options for each corridor segment; and
- potential enhancements to key intersections in the project area.

The information in this Plan builds on previous work conducted in this project, including the project Vision and Guiding Principles, Existing Conditions Report, Streetscape Design Toolkit and Master Plan Design Options and Evaluation Report. The project team, advisory committees, local business and property owners, St. Helens Planning Commission and City Council, and other community members reviewed and evaluated all of these documents and provided invaluable input which was used to refine those reports and help prepare this document.

The Table of Contents for this plan is as follows. Sections that address recommendations and design options are broken down into the three corridor segments.

- Introduction
- Summary of Recommendations
- Planning Process, Public and Agency Involvement
- Plan Goals and Objectives, Vision and Guiding Principles
- Evaluation of Corridor Design Options
 - Summary of Evaluation Criteria and Process
 - Summary of Options Evaluated
 - Rationale for Recommended Design Options
- Recommended Corridor Design Options
 - Overall Approach
 - Streetscape Design Concepts
 - Special Opportunity Areas
 - Conceptual Intersection Enhancements
 - Phasing recommendations and cost considerations
- Policy and Regulatory Changes
 - Land Use Issues and Potential Changes
 - Development Code Changes or Strategies
 - Access Management Goals and Approach



US 30 Corridor Area

Houlton & Riverfront District
Corridor Areas

Figure A-1. Overall Project Area and Corridor Segments

B. SUMMARY OF RECOMMENDATIONS

US 30 Corridor Segment

DESIGN RECOMMENDATION FOR US 30 CORRIDOR SEGMENT

- **Green Edge**, short-term
- Sidewalk and fencing on the rail side as shown in **Green Corridor Design**, long-term

The streetscape design option recommended for the US 30 Corridor Segment is the "Green Edge" option, with lower-cost plantings in the median, a combination of banner poles, and more consistent landscaping on the east side (rail side) of the highway in the short-term

Developing sidewalk and fencing on the rail side, as is shown in the "Green Corridor" option, is recommended in the long-term, if feasible within the available area and rail constraints.

The recommendation includes planted center medians at designated locations throughout the corridor segment and fencing on both sides of the rail corridor. An initial review of the corridor segment shows that there is enough room on the rail side of the highway for a six-foot sidewalk and at least three feet of landscaped area along the entire length of the US 30 corridor segment. Portions of potential future improvements along the rail side may encroach on the railroad easement currently owned by the Portland and Western Railroad (PNWR). If railroad right-of-way is required to accommodate the proposed improvements, it is likely that the right-of-way would need to be purchased from the Portland and Western Railroad. Even though the state of Oregon technically owns the underlying right-of-way, due to an existing rail service easement benefitting PNWR, the state cannot sell, lease or give permission for improvements thereon, without consulting with PNWR.

Two **Special Opportunity Areas** are recommended for the US 30 corridor segment.

- US 30/Downtown Gateway
- Pedestrian Bridge at Milton Creek

Conceptual Intersection Enhancements are recommended at the following intersections in this corridor segment.

- US 30 / Wyeth Street
- US 30 / St. Helens Street

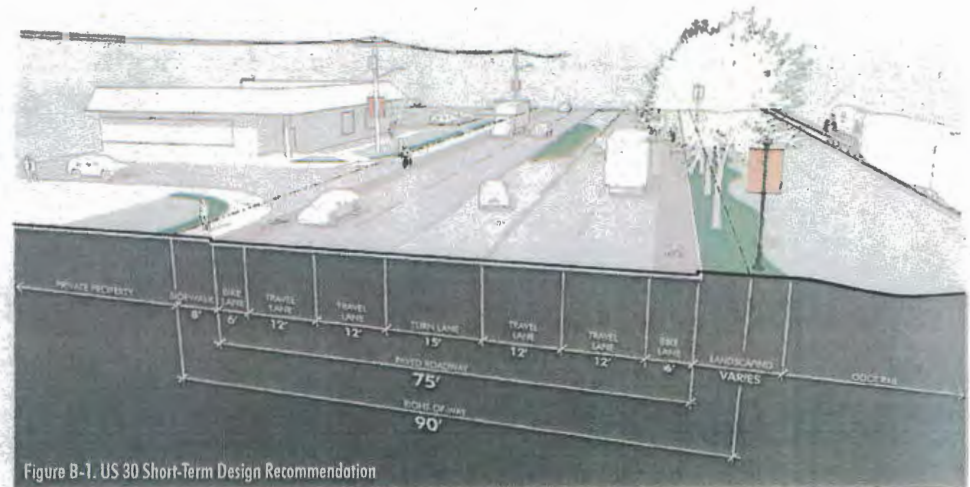


Figure B-1. US 30 Short-Term Design Recommendation

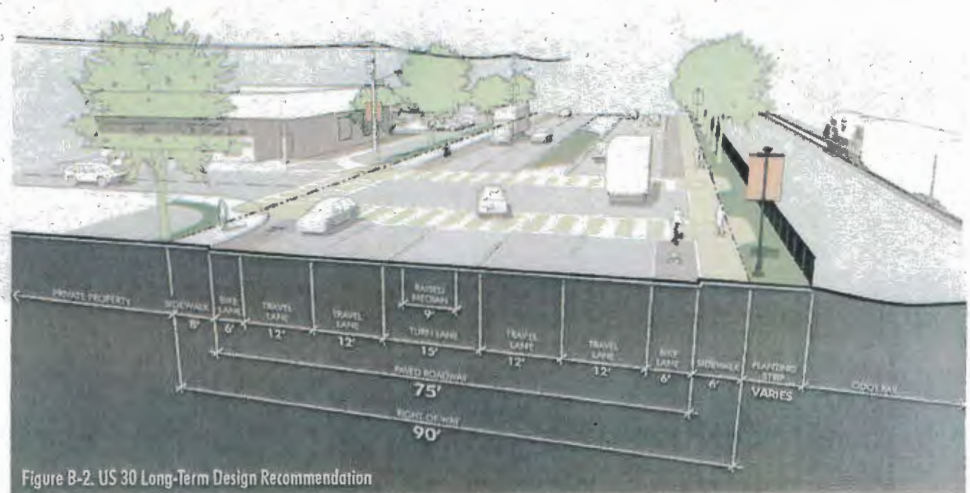


Figure B-2. US 30 Long-Term Design Recommendation

B. SUMMARY OF RECOMMENDATIONS

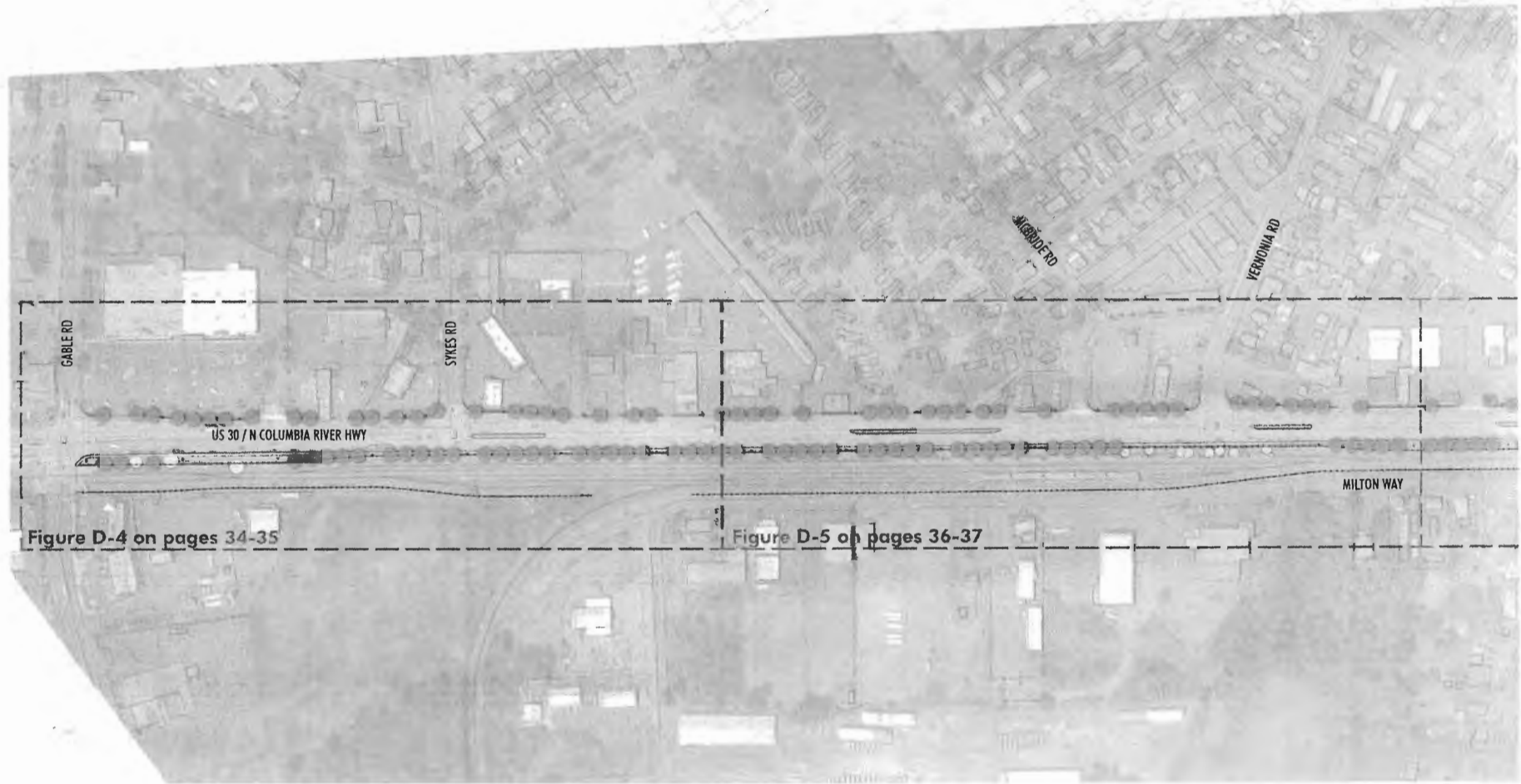


Figure B-3. US 30 Corridor Segment - Proposed Improvements and Plan Keymap



B. SUMMARY OF RECOMMENDATIONS

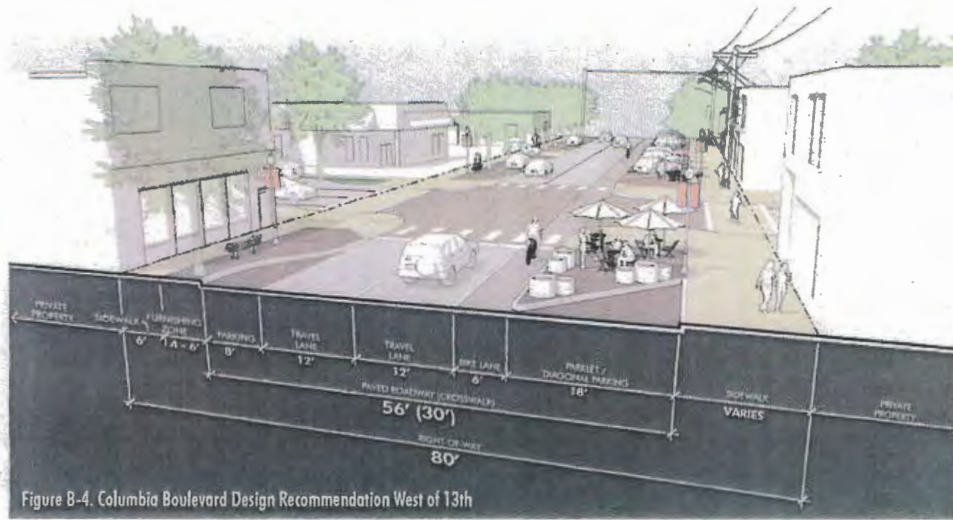


Figure B-4. Columbia Boulevard Design Recommendation West of 13th

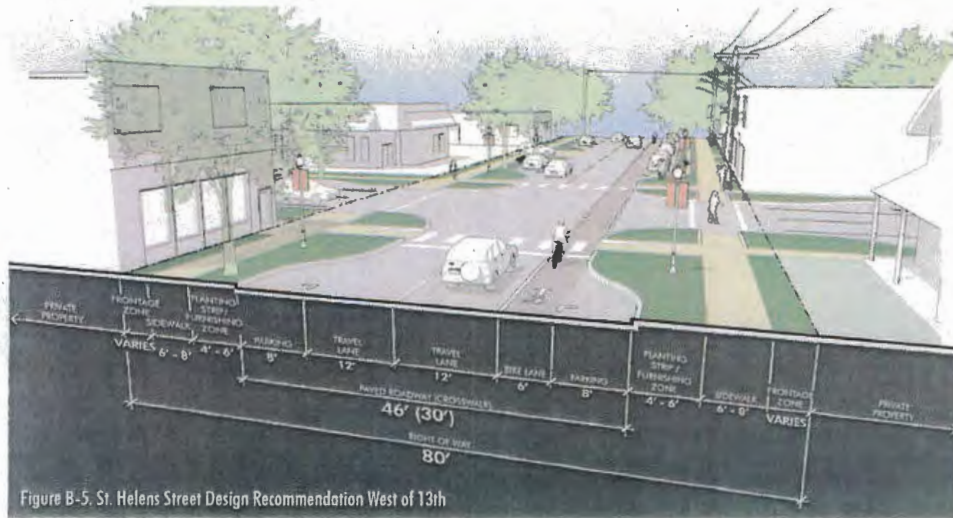


Figure B-5. St. Helens Street Design Recommendation West of 13th

Houlton/Riverfront District – West of 13th Street

DESIGN RECOMMENDATION FOR HOULTON/RIVERFRONT DISTRICT – WEST OF 13TH STREET

- Columbia Boulevard: Parklets Design
- St. Helens Street: Pedestrian Promenade Design, with bicycle lanes

The Parklet option proposed on the majority of Columbia Boulevard includes wider sidewalks, a bicycle lane and on-street parking on both sides of the street, with angled parking provided along the south side of Columbia Boulevard. This efficient parking layout allows room for large, open sidewalk areas called “parklets” at each intersection corner and/or in selected mid-block locations. Given the available right-of-way, angled parking would not be feasible between US 30 and 18th Street. In that area, parallel parking would be provided but parklets could still be included based on requests or agreements between property owners and the City in place of some on-street parking.

The Pedestrian Promenade on St. Helens Street includes widened sidewalks with generous planting strips and/or furnishing zones with street trees on both sides of the street. Curb extensions are proposed at all intersections in both the Parklet and Pedestrian Promenade options.

In ODOT terminology, buffered bike lanes refer to bike lanes with an extra wide striped area between the vehicle travel lane and the bike lane, creating a “buffer”. Although not represented in the graphic, the City could create buffered bicycle lanes as an interim striping improvement on Columbia Boulevard and St. Helens Street. The striping would offer a lower cost alternative in the short term if the City resurfaces St. Helens Street in the next few years but doesn’t have the full funding to implement the other plan elements.

Three **Special Opportunity Areas** are recommended for this corridor segment:

- Gateway Plaza - Columbia Boulevard / Milton Way (Chamber of Commerce)
- Stormwater / Interpretive Gathering Space - Columbia Boulevard /14th Street
- Civic Gathering Space - Columbia Boulevard /13th Street

Conceptual Intersection Enhancements are recommended for the following sets of intersections in this corridor segment.

- Columbia Boulevard / Milton Way
- Columbia Boulevard / 18th Street
- Columbia Boulevard / St. Helens Street / 13th Street

Houlton/Riverfront District – East of 13th Street

DESIGN RECOMMENDATION FOR HOULTON/RIVERFRONT DISTRICT – EAST OF 13TH STREET

- Primarily **Pedestrian Promenade**, with buffered bike lanes
- Allow for **Parklets** in some locations where appropriate

As noted above, the Pedestrian Promenade option includes widened sidewalks with generous planting strips and/or furnishing zones with street trees on both sides of the street, along with curb extensions at all intersections. More permanent or temporary parklets are recommended for this corridor segment in situations. Curb extensions, a bicycle facility, and improved crossings at the intersections are also recommended.

Although not represented in the graphic, the City could create buffered bicycle lanes as an interim striping improvement on Columbia Boulevard and St. Helens Street. The striping would offer a lower cost alternative in the short term if the City resurfaces a street segment in the next few years but doesn't have the full funding to implement the other plan elements.

Four **Special Opportunity Areas** are recommended for this corridor segment.

- Civic Gathering Space – Columbia Boulevard / 9th Street
- Civic Gathering Space – Columbia Boulevard / 2nd Street
- Columbia River Overlook – Columbia Boulevard just east of 1st Street
- Riverfront District Overlook – 1st Street between Columbia Boulevard & St. Helens Street

Conceptual Intersection Enhancements are recommended for the following sets of intersections in this corridor segment.

- Columbia Boulevard / 11th Street
- Columbia Boulevard / 9th Street
- Columbia Boulevard / 7th Street
- Columbia Boulevard / 1st Street
- St. Helens Street / 1st Street



Figure B-6. Columbia Boulevard Design Recommendation East of 13th

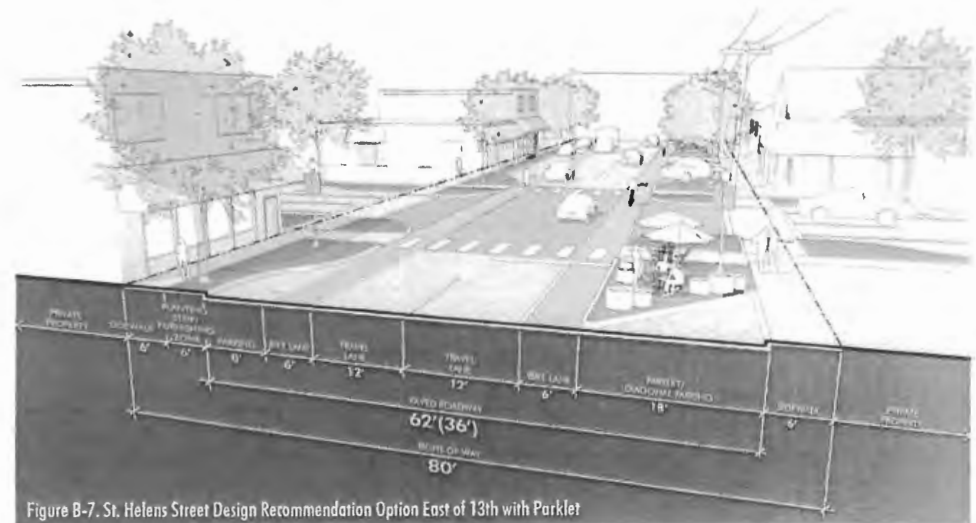


Figure B-7. St. Helens Street Design Recommendation Option East of 13th with Parklet

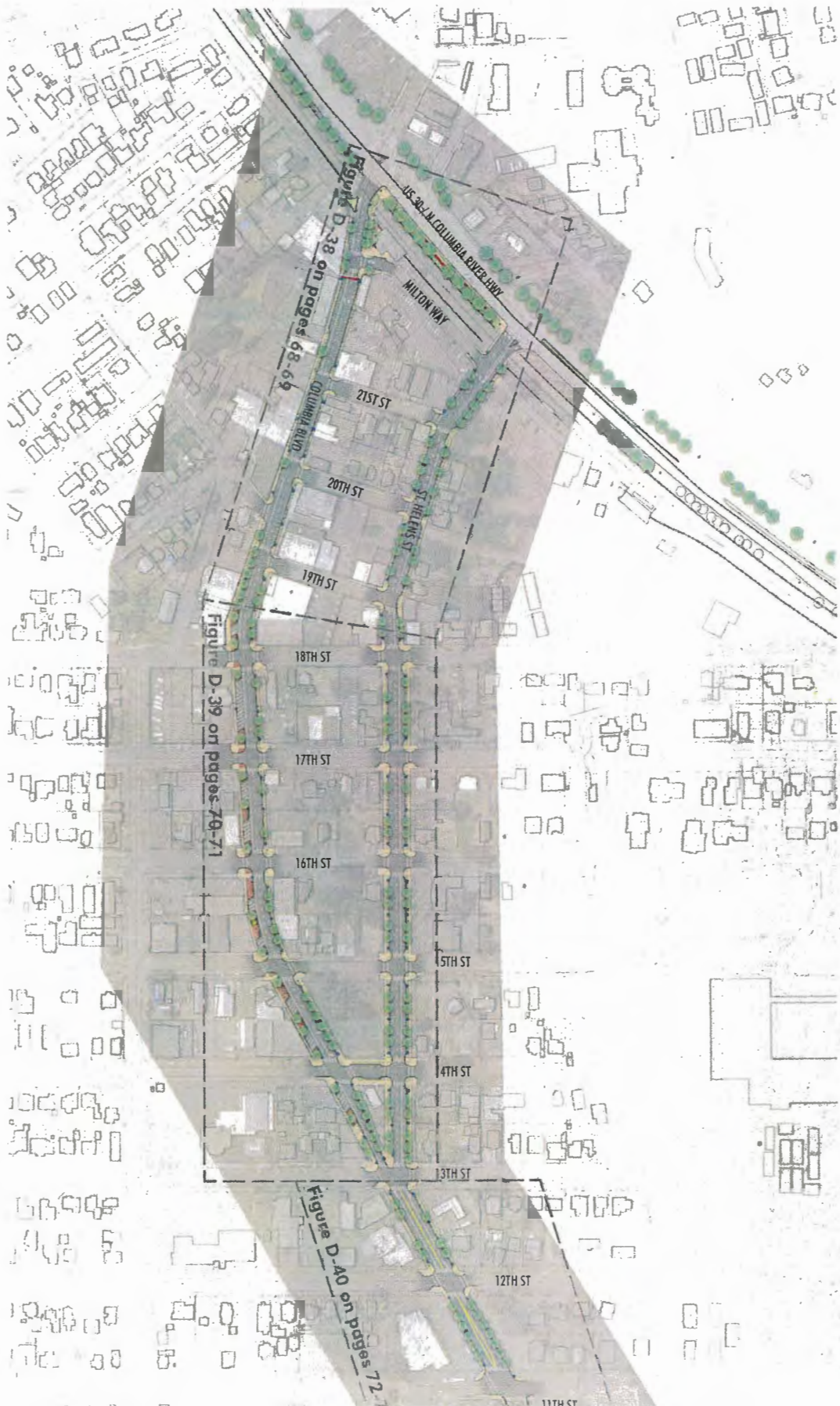
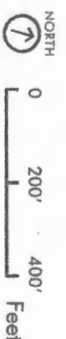
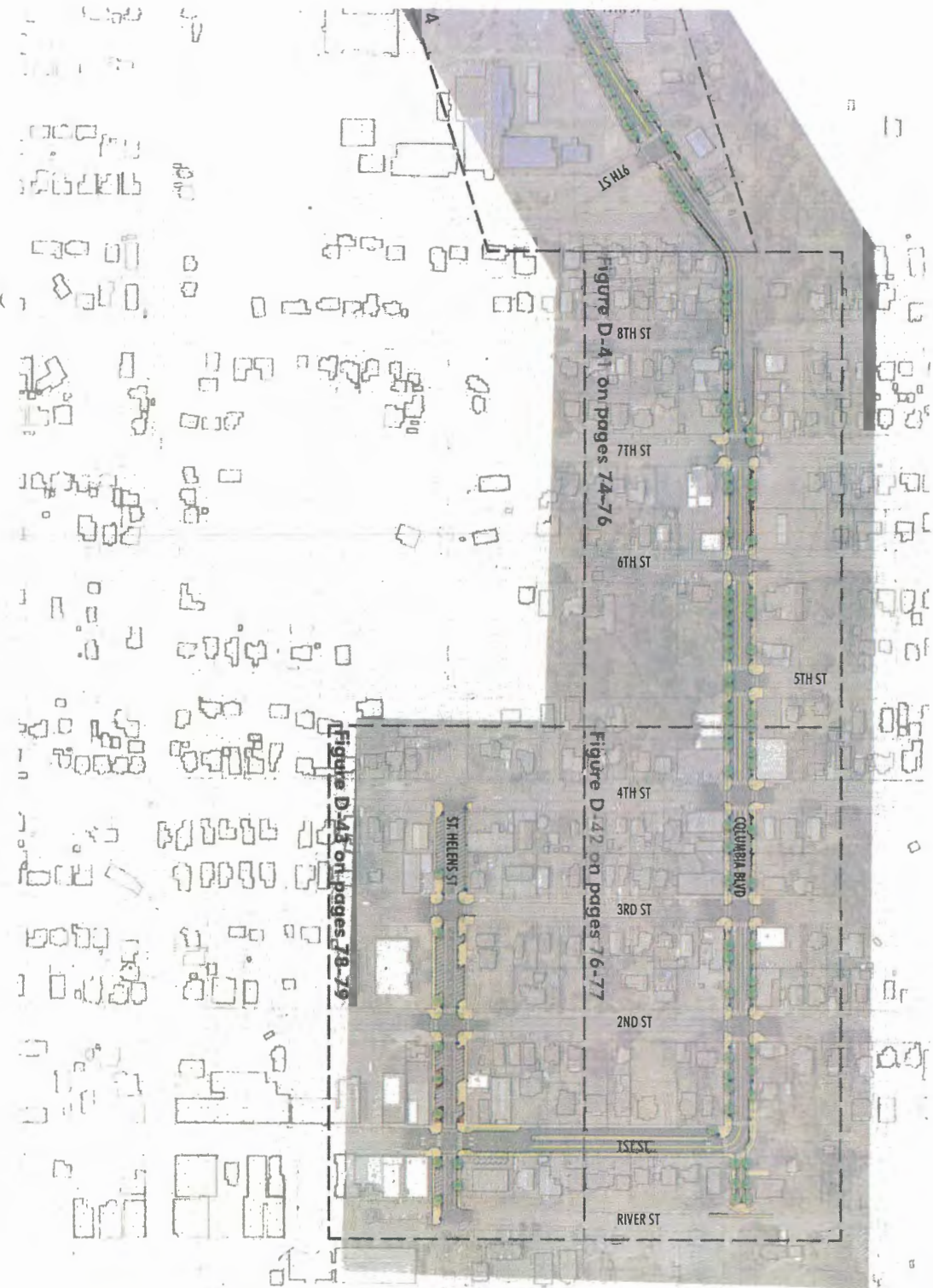


Figure B-8. Houlton & Riverfront District Corridor Segment Proposed Improvements



C. EVALUATION OF CORRIDOR DESIGN OPTIONS

As illustrated in Figure C-1 The Corridor Design Planning process included the following steps:

- Preparation of project goals, objectives, visions and guiding principles
- Review of existing conditions in the study area related to land use, streetscape design, access and regulatory requirements
- Development of a Design Options Toolkit
- Creation and evaluation of Design Options for each corridor segment
- Recommendations for preferred designs for each corridor segment

Throughout this process, city staff and consulting team members worked with community members to review and refine these materials and the recommendations in this Corridor Master Plan. These activities included the following:

- Project Website to distribute and provide access to all project materials and notify people about upcoming meetings and events
- Five meetings of a Citizens Advisory Committee (CAC) and four meetings of a Technical Advisory Committee (TAC)
- Three meetings with other business and property owners in the study area
- Additional meetings with staff from the Oregon Department of Transportation (ODOT)
- Three combined Planning Commission work sessions and public meetings
- Direct e-mail and phone conversations with community members
- Displays of presentation materials at City Hall and in a storefront on Columbia Boulevard

PLANNING PROCESS, PUBLIC AND AGENCY INVOLVEMENT

Throughout this process, Streetscape Design Concepts were evaluated for consistency with the project Goals and Guiding Principles, including improving safety, economic vitality, appearance and function of these areas, as well as relative cost and financial feasibility of implementing the improvements. Based on the review and evaluation of the concepts, the project team identified a preferred design concept and set of improvements for each corridor.

ST. HELENS US 30 & COLUMBIA BLVD. / ST. HELENS STREET CORRIDOR MASTER PLAN

Work Plan Summary

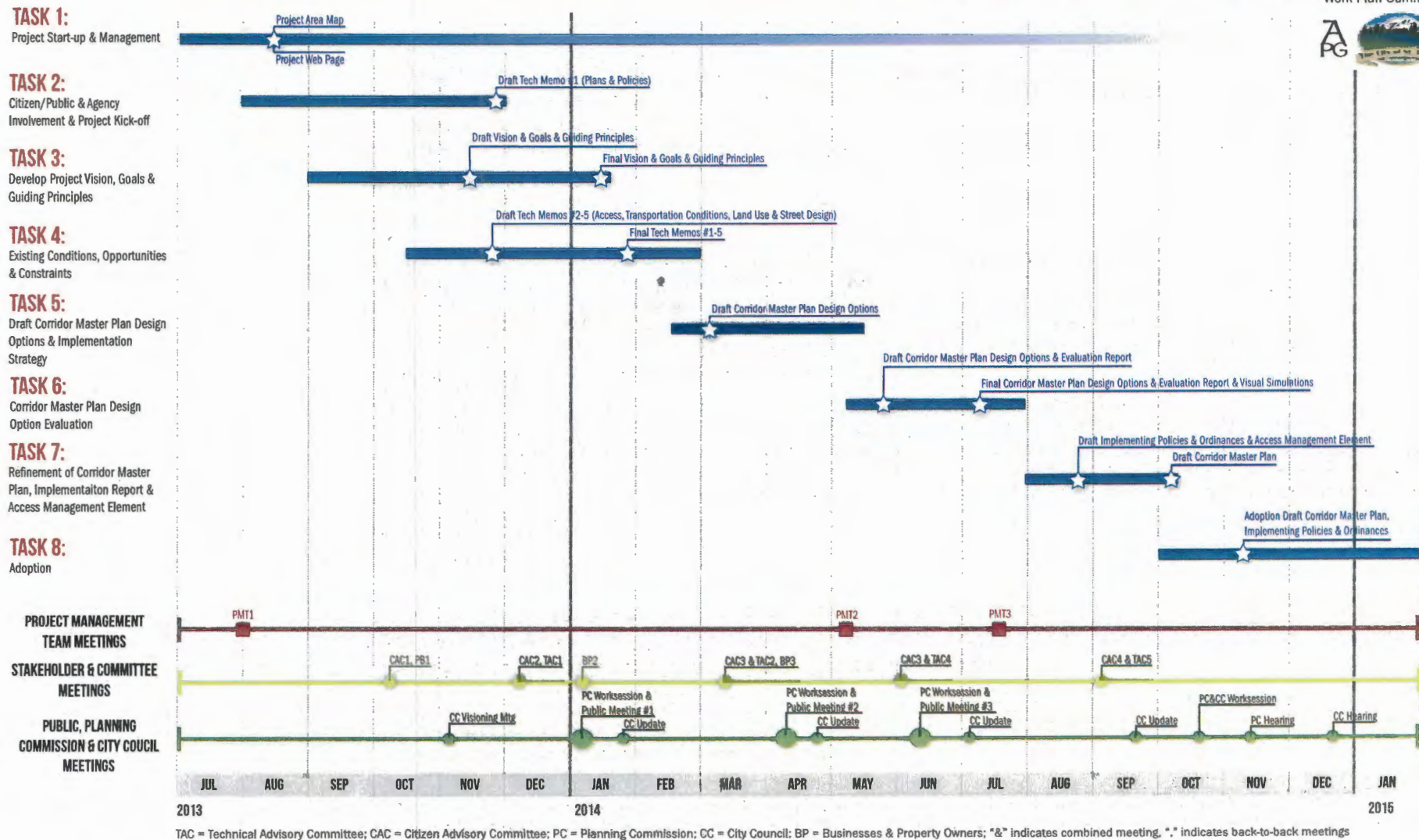


Figure C-1. Project Schedule

Summary of Evaluation Criteria and Process

In evaluating the relative merits of different street design options, the project team considered the goals and guiding principles developed in earlier phases of the project, along with the feedback and recommendations received from community members including:

- Business and property owners
- Technical and citizen advisory committees
- St. Helens Planning Commission
- St. Helens City Council

PROJECT AND CORRIDOR VISION, OVERALL GOALS, AND GUIDING PRINCIPLES

The following guiding principles and vision statements were developed in the early stages of the project and used to develop and evaluate corridor design options and recommended actions.

CORRIDOR VISION

US 30 CORRIDOR SEGMENT

Highway 30 will provide safe, convenient access to local businesses along the highway, while balancing that with state goals for traffic mobility. The appearance of the highway will be improved over time to enhance landscaping and other elements that will make it a more attractive place for people to travel by car, bicycle, walking or transit. Key intersections such as at Gable Road, Columbia Blvd. and St. Helens Street will be improved to enhance safety for all types of travel and to create attractive, clearly recognizable gateways to other parts of St. Helens, helping meet the community's goals for economic revitalization in those areas.

COLUMBIA BLVD./ST. HELENS STREET SEGMENT

Columbia Blvd. and St. Helens Street will provide safe, convenient travel to access the Houlton business area, Riverfront District and adjacent neighborhoods by drivers, bicyclists and pedestrians. These streets will provide good access to local businesses and be attractively designed to help draw people to the area and enhance their shopping and travel experiences. Street designs will incorporate opportunities for landscaping, public art and signage that directs people to the Houlton area and Riverfront District. Designs will recognize physical conditions and constraints, be cost-effective and build on natural and cultural features and other opportunities in the area.

OVERALL PROJECT GOALS

- Create "streetscape" plans for the US 30 & Columbia Blvd/St. Helens Street corridors that reflect the community's vision for appearance and function.
- Improve the aesthetics and function of the corridors to attract business and investment, provide better access, direction and signage to the Houlton and Riverfront District areas, and improve desirability.

GUIDING PRINCIPLES

Planning Process and Community Involvement

- Establish a community vision, goals and guiding principles for the project area.
- Engage business and property owners, residents, stakeholders, and elected and appointed officials.
- Ensure consistency with local and state plans and policies.

Economy and Business Support

- Develop planning design and implementation standards to revitalize businesses and business districts in the planning area.
- Ensure that customers, employees and others have good access to local businesses, including through on-street parking.
- Ensure that proposed solutions and projects are cost-effective and make efficient use of limited resources.

Transportation Safety and Mobility

- Improve street connectivity, design, and ability to access and locate business areas.
- Improve pedestrian and bicycle safety and accessibility, thereby encouraging walking and bicycling.
- Balance the need for local access and traffic calming with the need to provide for through-traffic movement and mobility (particularly in the US 30 corridor) as well as emergency vehicle accommodations.
- Develop and implement solutions that are consistent with local and regional transportation needs.

Connectivity and Streetscape Aesthetics

- Improve the appearance of the US 30 and Columbia Boulevard/St. Helens Street corridors.
- Improve pedestrian and bicycle connectivity between the corridor areas and adjacent open spaces and parks, trail/bicycle/transit networks, and neighborhoods.
- Develop and apply street designs that serve the unique needs of each corridor segment (US 30, Houlton and Riverfront District).
- Consider opportunities for integrating sustainable design strategies into the streetscape design and implement them where appropriate.

Existing Conditions and Corridor Options Evaluated

This section of the Plan briefly summarizes the design options evaluated for each corridor segment. Existing conditions are briefly illustrated with visual simulation graphics alongside illustrations of the design options. More detailed information about existing conditions in the study area can be found in Appendix B.

US 30 CORRIDOR SEGMENT

Three alternative streetscape design options were developed for consideration for the US 30 corridor segment, and are shown in Figure C-2. In general, these options would apply to the entire corridor segment but some of the individual improvements are targeted to specific locations within the corridor. Each concept attempts to “humanize” the current vehicle-dominated environment and create a civic identity befitting St. Helens through the use of landscape plantings, street trees, landscaped roadway medians, and improved pedestrian sidewalks and crossings. Each of the three concepts is described in further detail below. The descriptions are followed by a summary of responses from advisory committees, business and property owners, the Planning Commission, and City Council to these options. (See Table B-1: Feedback Regarding Design Options In The US 30 Corridor Segment)

OPTION 1: “GREEN EDGE” – This option proposed to create a distinctive landscaped edge along the east side of the highway while discouraging informal pedestrian crossings of US 30 and of the railroad tracks. Crosswalks would be provided at signalized intersections along US 30 to offer connectivity with destinations (potentially including future bus stops) and/or other sidewalks, and a new distinctive planting area was proposed along the east side of the highway.

OPTION 2: “GREEN CORRIDOR” – This option proposed a new sidewalk with a planting strip and continuous fence along the east side of the highway, with enhanced pedestrian crossings at key intersections. Raised planted medians with trees and shrubs were also proposed along the middle of the highway at strategic locations, as well as new planting areas behind the sidewalk along the west side of the highway.

OPTION 3: “COMPLETE STREET” – Option 3 proposed to modify US 30 to meet the recommended roadway cross section established for Major Arterials in the 2011 Transportation System Plan (TSP). This includes widening the west sidewalk to accommodate a new planting strip with street trees, several planted medians at strategic locations, reconstructing the east curb to accommodate a new sidewalk and planting strip with street trees, and re-striping the highway. New pedestrian-scale lighting and furnishings would be proposed at strategic locations.

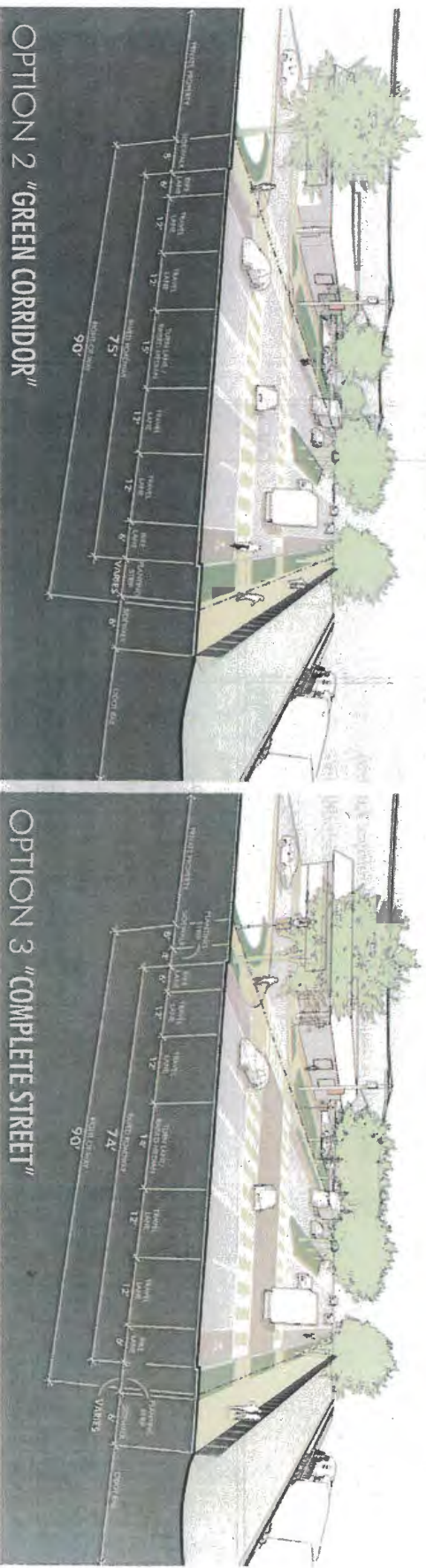
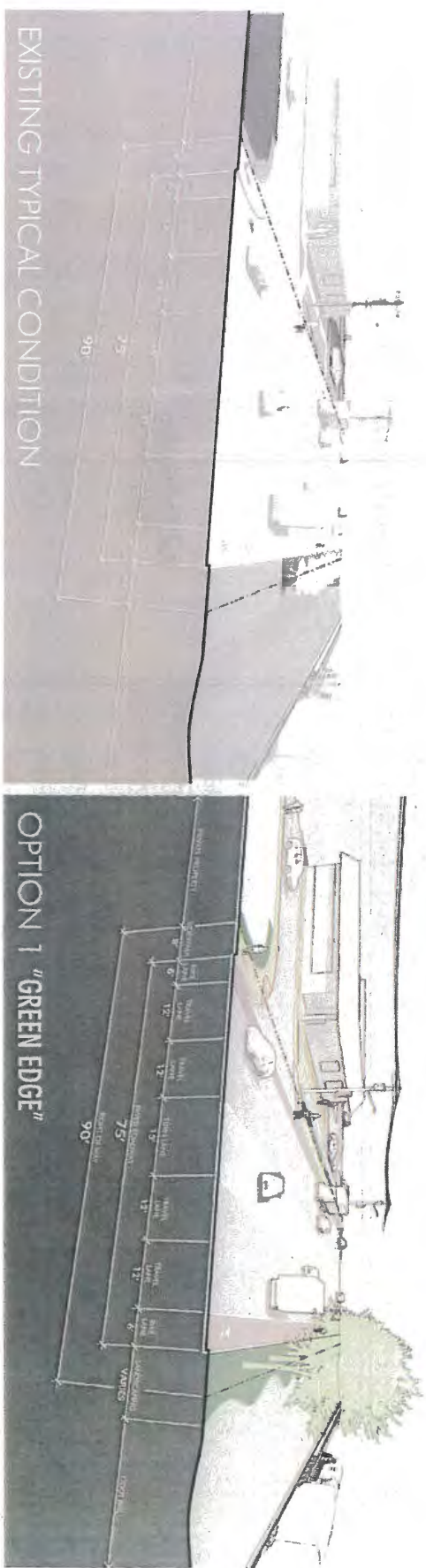


Figure C-2. Existing conditions and three preliminary streetscape options developed for the US 30 corridor.

C. EVALUATION OF CORRIDOR DESIGN OPTIONS

| TABLE C-1. FEEDBACK REGARDING DESIGN OPTIONS IN THE US 30 CORRIDOR SEGMENT | |
|--|--|
| TAC | <p><u>RECOMMENDATION:</u> None</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Maintenance • Highway Capacity • Fencing/appearance • Transit accommodation |
| CAC | <p><u>RECOMMENDATION:</u> None, but generally supported concepts</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Maintenance • Visibility related to trees in median or planting areas • Access to east side landscaped area |
| PROPERTY AND BUSINESS OWNERS | <p><u>RECOMMENDATION:</u> None</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Potential visibility impacts of median landscaping and street trees • Landscaping maintenance • Location of medians • Visual impacts of overhead utilities • Demand for eastside sidewalk |
| PLANNING COMMISSION | <p><u>RECOMMENDATION:</u> None but like median; like pathway on RR side in long term</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Median landscaping visibility impacts • Safety/use of pathway on RR side • Maintenance • Banner poles, lighting on RR side • Type of landscaping on RR side |
| CITY COUNCIL | <p><u>RECOMMENDATION:</u> None</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Mixed opinions on RR sidewalk • No consensus on median |

HOULTON / RIVERFRONT DISTRICT – WEST OF 13TH STREET

Three alternative streetscape design options were developed for consideration for the one-way streets west of 13th Street along Columbia Boulevard and St. Helens Street, and are shown in Figure C-3. Each option focused on narrowing the vehicular roadway to the widths recommended in the 2011 TSP in order to improve the safety of pedestrians while creating a sense of place and identity for St. Helens. Each option proposed widened sidewalks, street trees and plantings, site furnishings, and improved pedestrian sidewalks and crossings. Each design option is described in further detail below. The descriptions are followed by a summary of responses from advisory committees, business and property owners, the Planning Commission, and City Council to these options. (See TABLE C-3 on page 26)

OPTION 1: “PEDESTRIAN PROMENADE” – This option proposed widened sidewalks with generous planting strips and/or furnishing zones with street trees on both sides of the street. Bulbouts were proposed at each intersection to significantly shorten the pedestrian crossing distances.

OPTION 2: “GREEN SPINE” – This option proposed an elevated “cycle track” between the parking lane and the sidewalk buffered by planting strips and furnishing zones on either side. New widened sidewalks with planting strips and furnishing zones were proposed on each side of the street, with bulbouts at intersections shortening the pedestrian crossing distance.

OPTION 3: “PARKLETS” – This option proposed back-in angled parking along the south side of Columbia Boulevard and the north side of St. Helens Street. This efficient parking layout allows room for large, open sidewalk areas called “parklets” at each intersection corner and/or in selected mid-block locations, which can be designed to reflect the character and function of the adjacent land use (e.g., outdoor seating and tables adjacent to commercial uses, and landscaped areas with a bench or two adjacent to residential uses). On-street parking areas are shown to have special paving that visually extends the parklet, offering adjacent business owners the opportunity for temporary uses in the on-street parking areas such as outdoor seating or shopping areas. Widened sidewalks with street trees, pedestrian lighting, and furnishing zones were proposed along the other side of the street.

C. EVALUATION OF CORRIDOR DESIGN OPTIONS

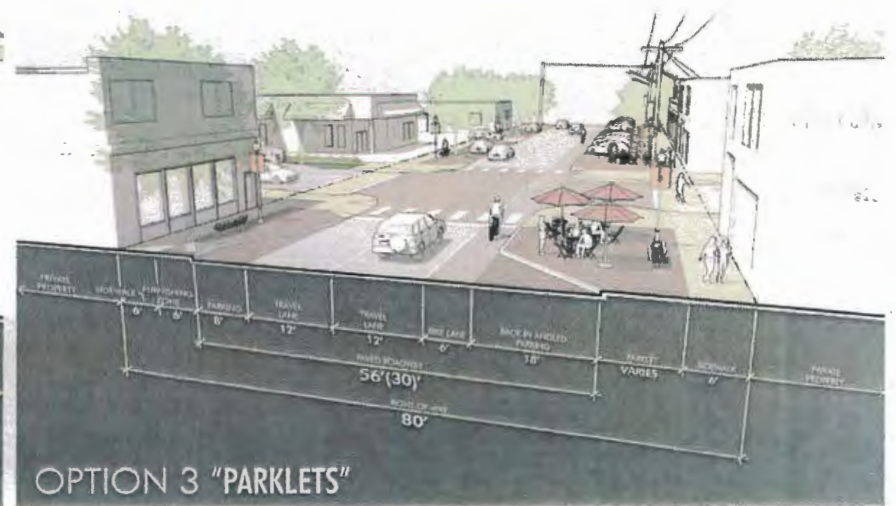
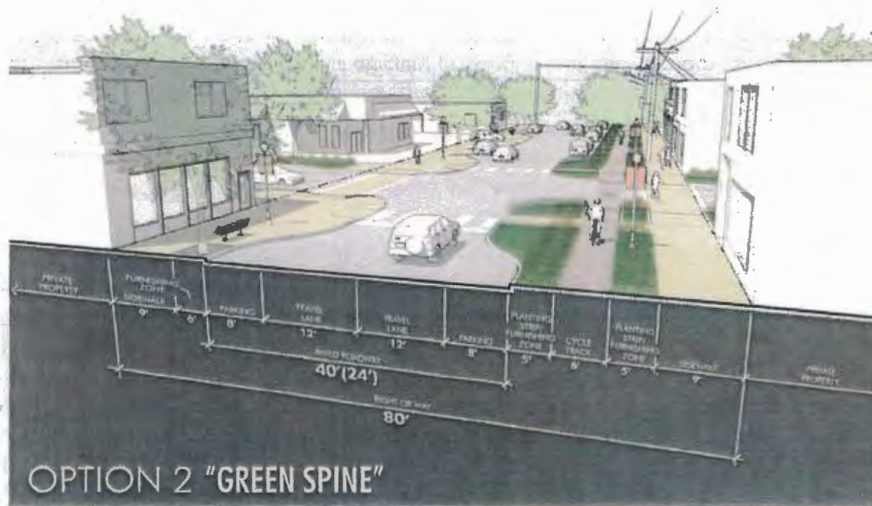
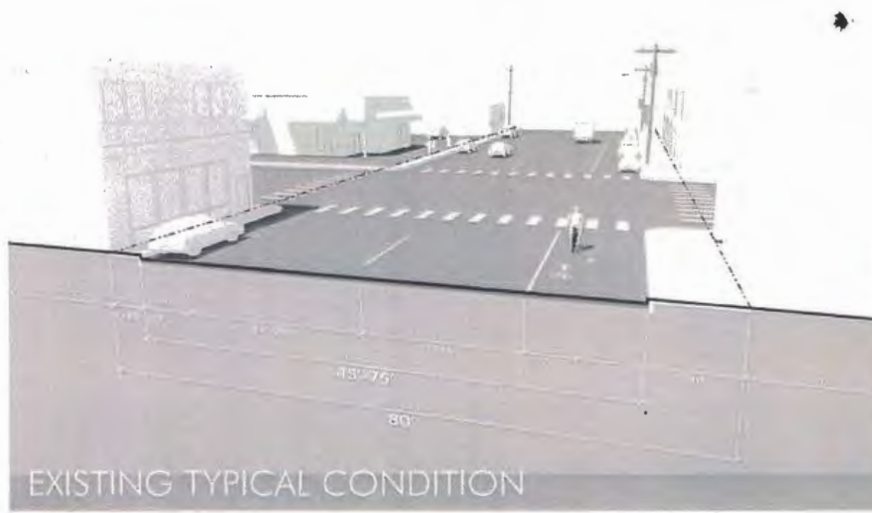


Figure C-3. Existing conditions and three preliminary streetscape options developed for the Houlton/Riverfront District - West of 13th Street

TABLE C-2. FEEDBACK REGARDING DESIGN OPTIONS IN THE HOULTON/RIVERFRONT DISTRICT – WEST OF 13TH STREET CORRIDOR SEGMENT

| | |
|--|---|
| <p>TAC</p> | <p><u>RECOMMENDATION:</u> None</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Cost/benefit of bicycle facilities • Viability of street trees • Parking impacts • Wayfinding, freight movement |
| <p>CAC</p> | <p><u>RECOMMENDATION:</u> Parklets or Green Spine on Columbia; Promenade or Green Spine on St. Helens</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Bicycle and pedestrian safety • Difficulty with reverse angled parking • Flexibility, location of parklets |
| <p>PROPERTY AND BUSINESS OWNERS</p> | <p><u>RECOMMENDATION:</u> None</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Greater benefit to businesses immediately adjacent to parklets • Accommodating truck traffic with narrow lanes and bulbouts • Difficulty of using reverse angle parking • Enough room for gateway |
| <p>PLANNING COMMISSION</p> | <p><u>RECOMMENDATION:</u> Parklets on Columbia; Promenade or Green Spine on St. Helens</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Bicycle and pedestrian safety; bike/vehicle conflicts • Flexibility, location of parklets • Location of diagonal parking |
| <p>CITY COUNCIL</p> | <p><u>RECOMMENDATION:</u> Parklets</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Differing opinions on reverse angle vs. traditional diagonal parking |

C. EVALUATION OF CORRIDOR DESIGN OPTIONS

HOULTON / RIVERFRONT DISTRICT – EAST OF 13TH STREET

Three alternative streetscape design options were developed for consideration for the two-way portion of Columbia Boulevard east of 13th Street, and are shown in Figure C-4. Like the corridor segment west of 13th Street, each concept focused on narrowing the vehicular roadway to the widths recommended in the 2011 TSP in order to improve pedestrian safety while creating a sense of place and identity. Each option proposed widened sidewalks, street trees and plantings, site furnishings, and improved pedestrian sidewalks and crossings. Each concept is explained in further detail below. The descriptions are followed by a summary of responses from advisory committees, business and property owners, the Planning Commission, and City Council to these options. (See Table B-3: Feedback Regarding Design Options In The Houlton/Riverfront District – East Of 13Th Street Corridor Segment)

(Note: These concepts do not apply to 1st Street between Columbia Boulevard and St. Helens Street, which has a unique configuration requiring special attention. However, they could be applied with some modifications to the section of St. Helens Street between 1st Street and 4th Street.)

OPTION 1: “PEDESTRIAN PROMENADE” – This option proposed widened sidewalks with generous planting strips and/or furnishing zones with street trees on both sides of the street. Bulbouts were proposed at each intersection to significantly shorten the pedestrian crossing distances.

OPTION 2: “BOULEVARD” – This option proposed raised landscaped medians that separate the east- and west-bound lanes. Other improvements include widened sidewalks with planting strips, site furnishings, street trees, as well as bulbouts and pedestrian refuge islands.

OPTION 3: “PARKLETS” – This option proposed parklets similar to that of Streetscape Option 3 for the corridor segment west of 13th Street, above. However, due to the added bike lane in this two-way roadway configuration, the right-of-way would not accommodate a planting strip between back-in or traditional angled parking lane and the sidewalk along the south side of Columbia Boulevard.

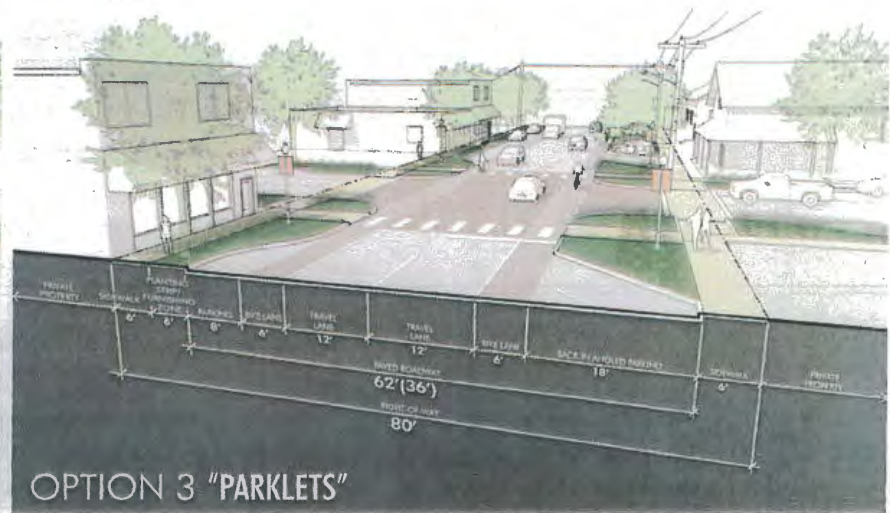
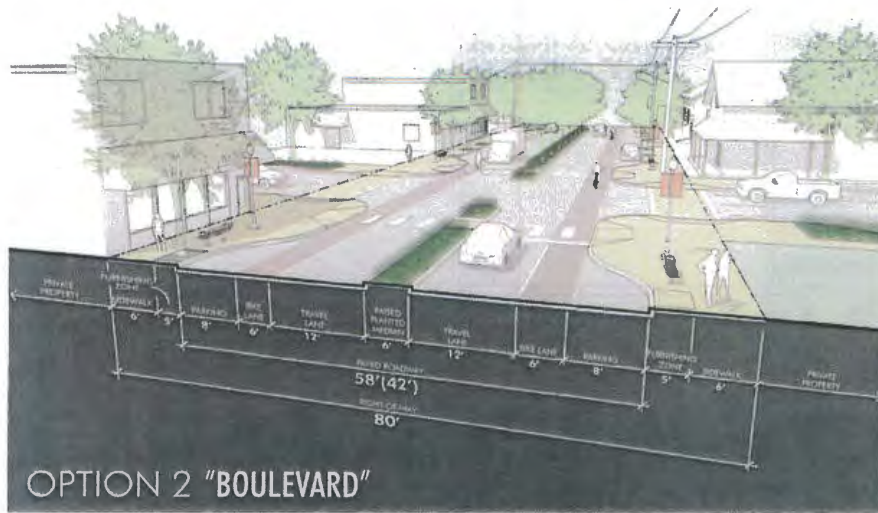
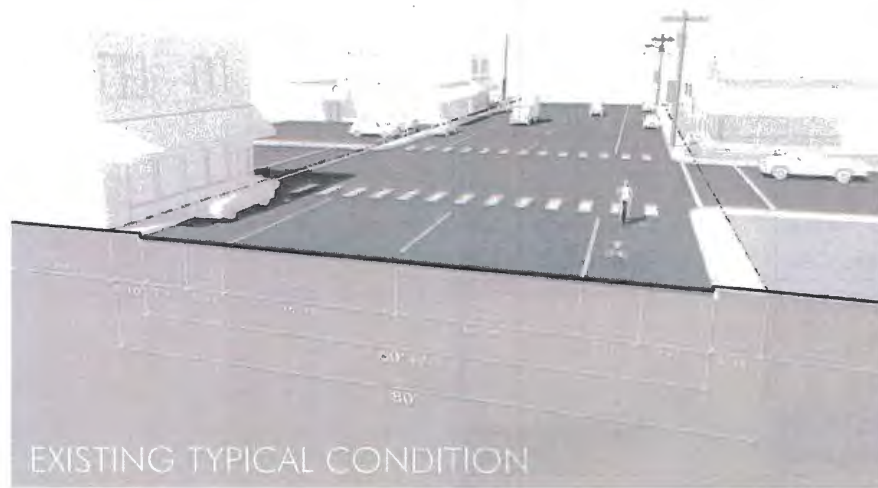


Figure C-4. Existing conditions and three preliminary streetscape options developed for the Houlton/Riverfront District - East of 13th Street

C. EVALUATION OF CORRIDOR DESIGN OPTIONS

| TABLE C-3. FEEDBACK REGARDING DESIGN OPTIONS IN THE HOULTON/RIVERFRONT DISTRICT – EAST OF 13TH STREET CORRIDOR SEGMENT | |
|--|--|
| TAC | <p><u>RECOMMENDATION:</u> None</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Difficulty with reverse angled parking • Mini-roundabout operations |
| CAC | <p><u>RECOMMENDATION:</u> Green Spine or Parklets</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Median is overkill • Loss of on-street parking • Location, design of gateway on 1st Street |
| PROPERTY AND BUSINESS OWNERS | <p><u>RECOMMENDATION:</u> None</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Location of gateway • Grade-separated rail crossings • Improving appearance of streets in order to improve area's vitality |
| PLANNING COMMISSION | <p><u>RECOMMENDATION:</u> Pedestrian Promenade</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Median is overkill • Don't need diagonal parking in this area • Bicycle safety (consider buffered bike lanes) |
| CITY COUNCIL | <p><u>RECOMMENDATION:</u> Parklets</p> <p><u>ISSUES OF CONCERN</u></p> <ul style="list-style-type: none"> • Special opportunity area at end of Columbia/1st – concern about open space there; want trail connection |

Rationale for Recommended Design Options

Following is a summary of the rationale for selecting each corridor segment design option.

US 30 SEGMENT

- Selective application of raised median treatment promotes City and ODOT safety and access management objectives while recognizing and respecting property access needs (no existing driveway closures are proposed by the plan)
- Final Design of median location and content can address site-specific considerations such as individual property access, business visibility and maintenance issues
- Consistent with state design standards and guidelines
- Improves the visual appearance of the corridor to a greater degree than the non-median option
- Balances goals for improvements to appearance with cost and financial viability
- Short-term implementation represents lower cost solution; long-term phases will not be undertaken if not financially feasible
- Improves bicycle and pedestrian connectivity and safety in the short- and long-term
- Equally consistent or superior in satisfying project goals and objectives in a financially feasible manner as compared to other options
- Generally consistent with community and stakeholder feedback to date; anticipated property-specific issues can be addressed and resolved through the detailed design of specific proposed improvements
- Improvements shown along the east side of US 30 advance long-sought safety and aesthetic changes that screen and protect the adjacent railroad corridor
- Improvement recommendations can be implemented in phases as resources and timing allow and/or as property redevelopment occurs

HOULTON/RIVERFRONT DISTRICT – WEST OF 13TH STREET

- Designs for each street best meet land use conditions and goals
- Improves the visual appearance of the corridor segment to an equal or greater degree than other options; creates a long-sought gateway
- Deemed best option to enhance economic viability compared to other options (particularly on Columbia Boulevard)
- Represents mid-range or lower cost alternative compared to other options
- Key elements (e.g., parklets) can be implemented in a temporary manner at relatively low cost and in a shorter timeframe, allowing the community to “try on” these options
- Improves bicycle and pedestrian connectivity and safety with a balanced approach to meeting mobility needs for all users
- Equally consistent with all other project goals and objectives in comparison to other options

C. EVALUATION OF CORRIDOR DESIGN OPTIONS

- Most consistent with community and stakeholder feedback to date, compared to other options
- Improvement recommendations can be implemented in phases as resources and timing allow and/or as property redevelopment occurs

HOULTON/RIVERFRONT DISTRICT – EAST OF 13TH STREET

- Designs for each street best meet land use conditions and goals
- Improves the visual appearance of the corridor segment to an equal or greater degree than other options
- Represents lower cost alternative compared to other options
- Maximizes space for pedestrians throughout the corridor compared to other options
- Improves bicycle and pedestrian connectivity and safety with a balanced approach to meeting these needs and those of drivers
- Equally consistent with all other project goals and objectives in comparison to other options
- Most consistent with community and stakeholder feedback to date, compared to other options
- Improvement recommendations can be implemented in phases as resources and timing allow and/or as property redevelopment occurs

D. RECOMMENDED CORRIDOR DESIGNS

This section of the Plan describes the designs recommended for each corridor segment in detail using narrative text, plan view maps, street cross-sections and other illustrations, and photos depicting specific design features.

US 30 Corridor Segment

OVERALL APPROACH

The proposed improvements along the US 30 highway corridor between Gable Road and Pittsburgh Road strive to improve safety while enhancing the character of the roadway, better creating a sense of place, and bolstering economic viability. Through the use of landscape plantings, street trees, landscaped roadway medians, and improved pedestrian sidewalks and crossings, the recommended design creates a Green Corridor and attempts to “humanize” this vehicle-dominated environment and create a civic identity befitting St. Helens. The following goals and strategies for the recommended design of the US 30 corridor segment are summarized below.

1. **IMPROVE PEDESTRIAN SAFETY.** The recommended design proposes to retrofit the US 30 corridor with a number of traffic calming features and elements intended to facilitate pedestrian movement without impacting vehicular function. These improvements include new crosswalk striping, ADA-accessible curb ramps, pedestrian refuge median islands, and enhanced crosswalk signals. Additionally, new fencing along each side of railroad corridor will help discourage informal crossings of the railroad tracks.
2. **IMPROVE CONNECTIVITY.** Several design features improve pedestrian and bicycle connectivity along the US 30 corridor, and between the corridor and nearby neighborhoods and destinations. New sidewalks along the east side of highway provide additional accessible routes for pedestrians to reach and move along the corridor, tying into existing sidewalks at most intersections. Additionally, a new pedestrian bridge at Milton Creek provides an important link for pedestrians moving along the east side of the US 30 corridor.
3. **IMPROVE AESTHETICS AND SENSE OF PLACE.** New street trees, planted highway medians, and planting areas on each side of the highway work together to reinforce US 30 as a Green Corridor, breaking down the scale of this wide, intimidating highway arterial to one that is attractive, inviting and accessible to pedestrians. Highly visible gateway elements at the intersections of Gable Road and Columbia Boulevard mark key transitions and reinforce civic identity. Additionally, banner poles distributed at equal intervals along each side of the corridor add festiveness and help to unify the corridor.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

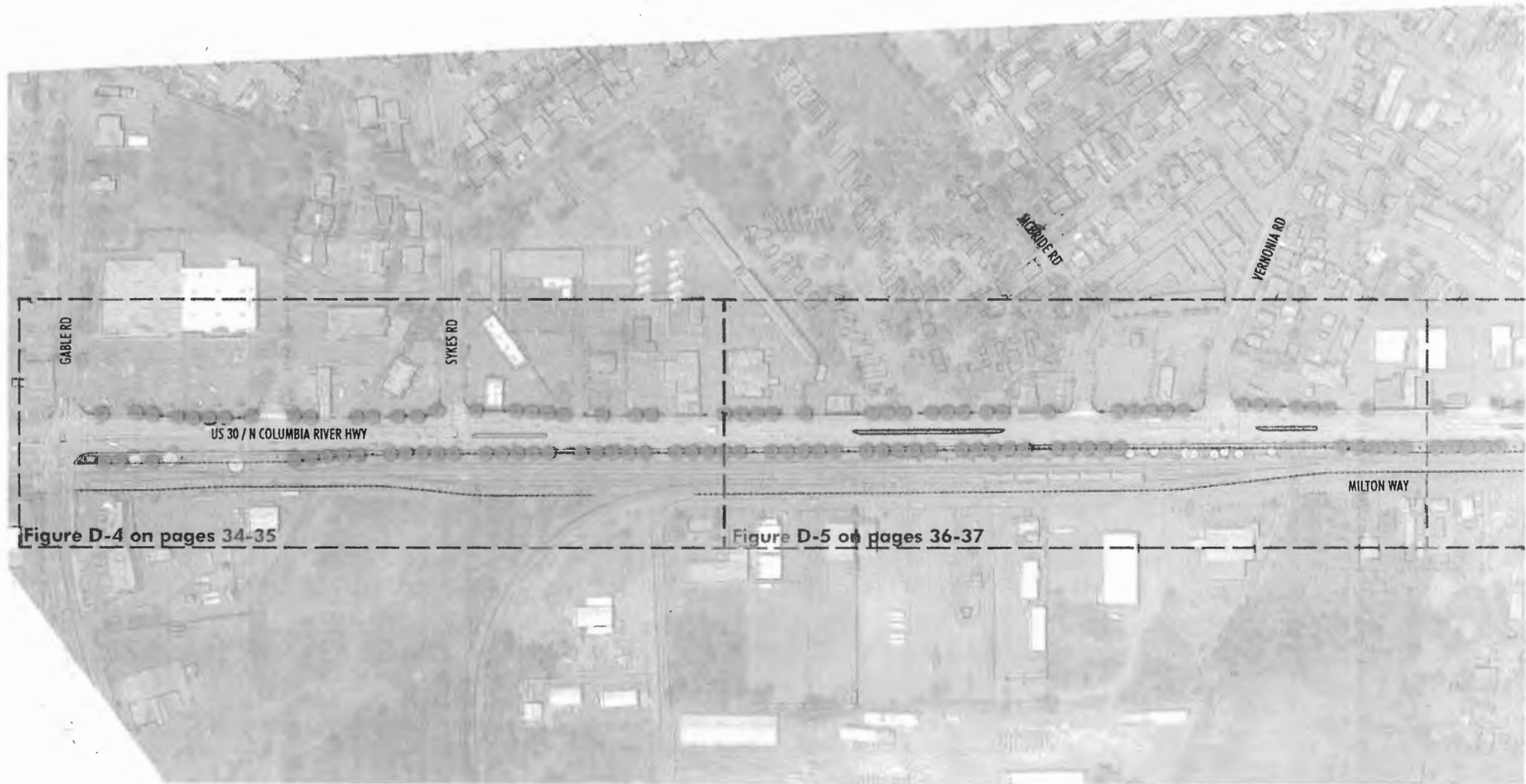


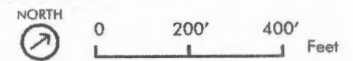
Figure D-1. US 30 Corridor Segment - Proposed Improvements and Plan Keymap



Figure D-6 on pages 38-39

Figure D-7 on pages 40-41

Figure D-8 on page 42-43



D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

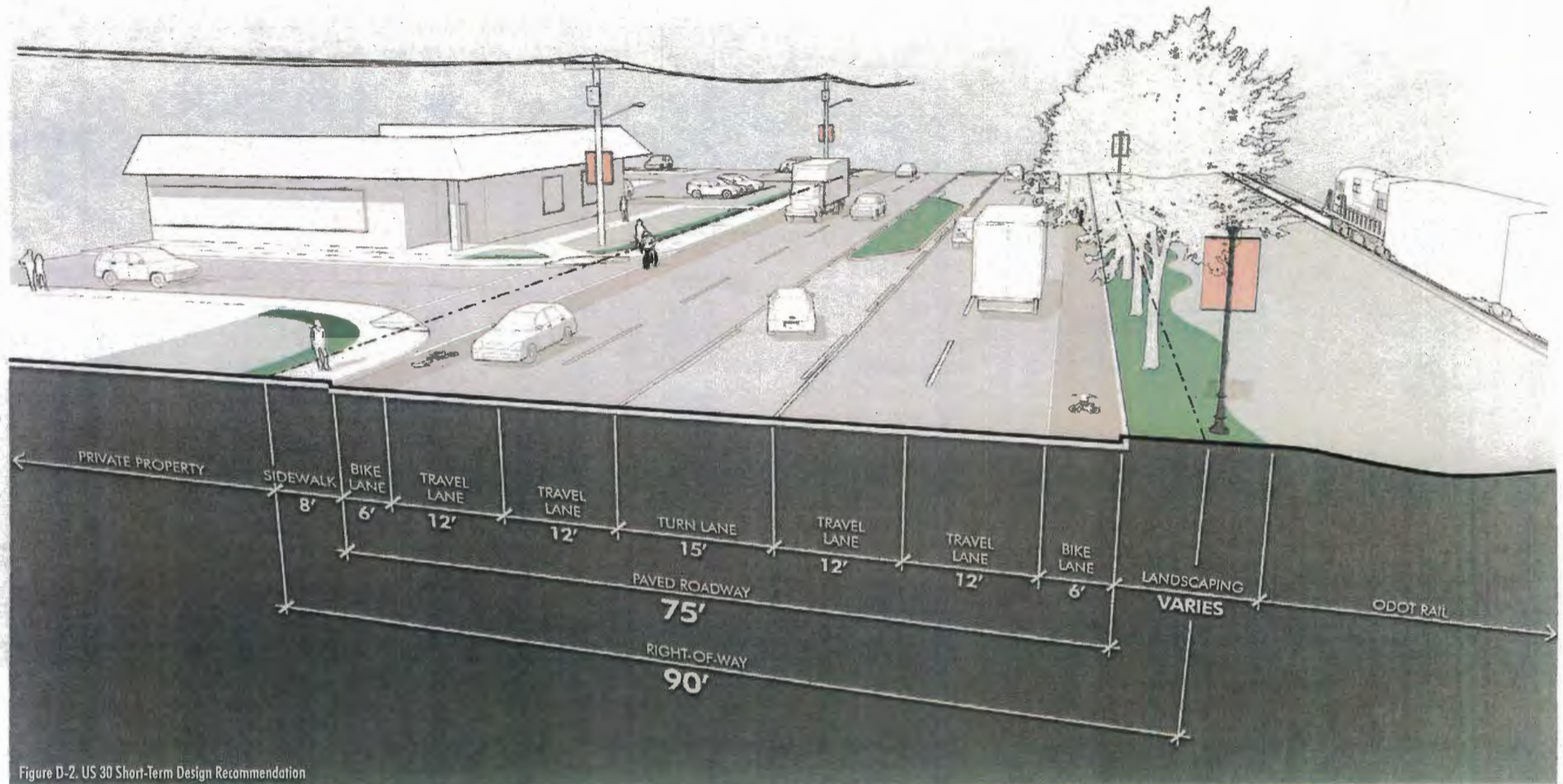


Figure D-2. US 30 Short-Term Design Recommendation

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

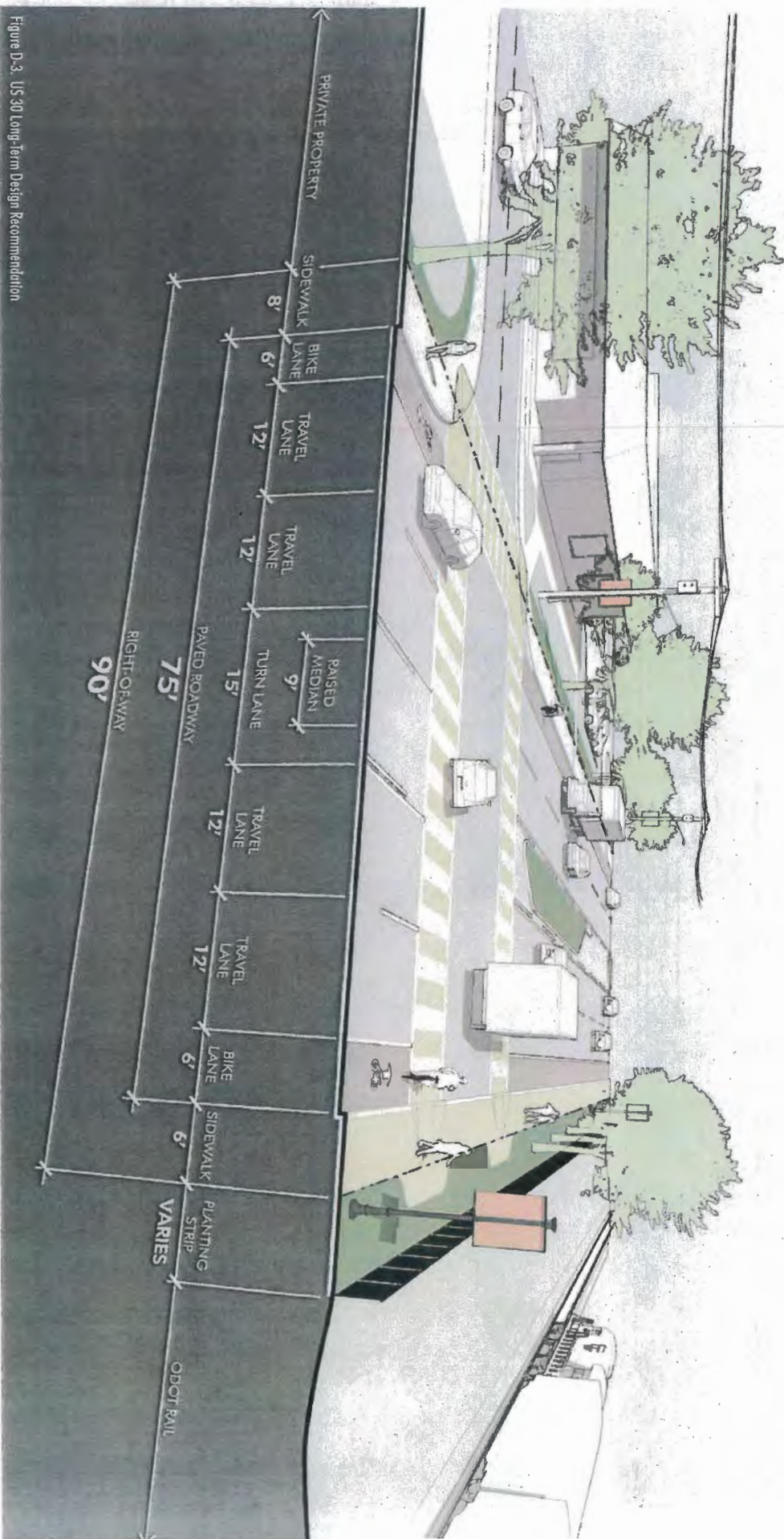


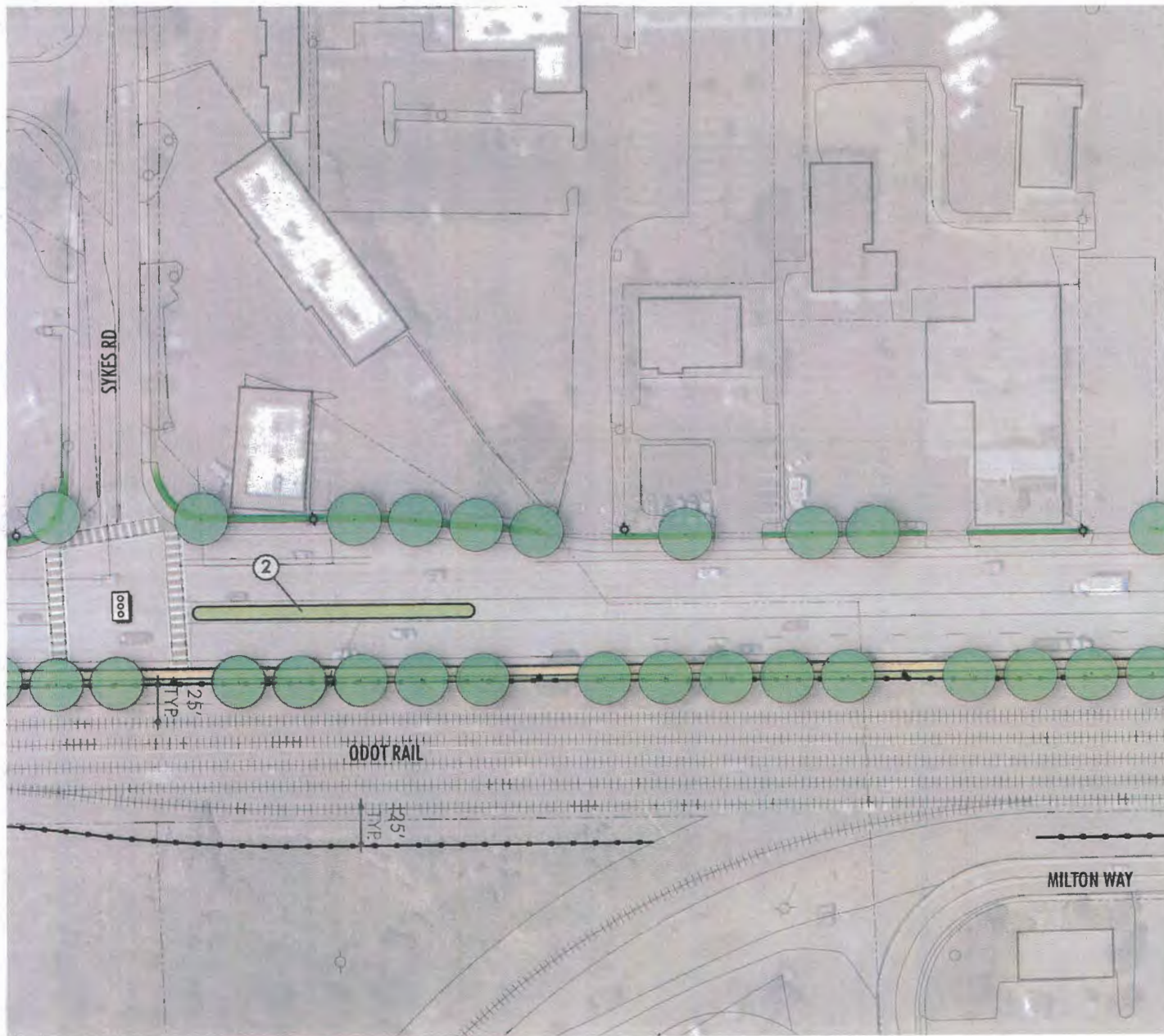
Figure D-3. US 30 Long-term Design Recommendation

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT



Figure D-4. Conceptual Streetscape Design for US 30 Corridor Segment - SUBJECT TO CHANGE

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

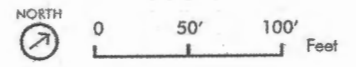


LEGEND: US 30 CORRIDOR

- NEW 6' SIDEWALK *
 - NEW LANDSCAPE AREA
 - PRIVATE PROPERTY LANDSCAPE IMPROVEMENTS
 - INTERSECTION CROSSWALK PAVING ENHANCEMENTS *
 - NEW CROSSWALK STRIPING
 - NEW 5' HT. FENCE *
 - NEW BANNER POLE
 - NEW BANNER ON EXISTING UTILITY / POLE
 - NEW TREE *
 - EXISTING TREE TO REMAIN
 - EXISTING SIGNALIZED INTERSECTION
 - FUTURE SIGNALIZED INTERSECTION
 - SPECIAL OPPORTUNITY AREA
 - CONCEPTUAL INTERSECTION ENHANCEMENT
- * DENOTES LONG-TERM IMPROVEMENTS

KEY NOTES

- ① FUTURE BUS STOP
- ② PLANTED MEDIAN - SEE PAGE 46



PLANS ARE CONCEPTUAL AND SUBJECT TO CHANGE

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT



Figure D-5. Conceptual Streetscape Design for US 30 Corridor Segment - SUBJECT TO CHANGE

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

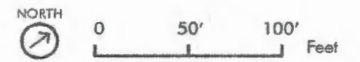


LEGEND: US 30 CORRIDOR

- NEW 6' SIDEWALK *
 - NEW LANDSCAPE AREA
 - PRIVATE PROPERTY LANDSCAPE IMPROVEMENTS
 - INTERSECTION CROSSWALK PAVING ENHANCEMENTS *
 - NEW CROSSWALK STRIPING
 - NEW 5' HT. FENCE *
 - NEW BANNER POLE
 - NEW BANNER ON EXISTING UTILITY / POLE
 - NEW TREE *
 - EXISTING TREE TO REMAIN
 - EXISTING SIGNALIZED INTERSECTION
 - FUTURE SIGNALIZED INTERSECTION
 - SPECIAL OPPORTUNITY AREA
 - CONCEPTUAL INTERSECTION ENHANCEMENT
- * DENOTES LONG-TERM IMPROVEMENTS

KEY NOTES

- ① PLANTED MEDIAN - SEE PAGE 46



PLANS ARE CONCEPTUAL AND SUBJECT TO CHANGE

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

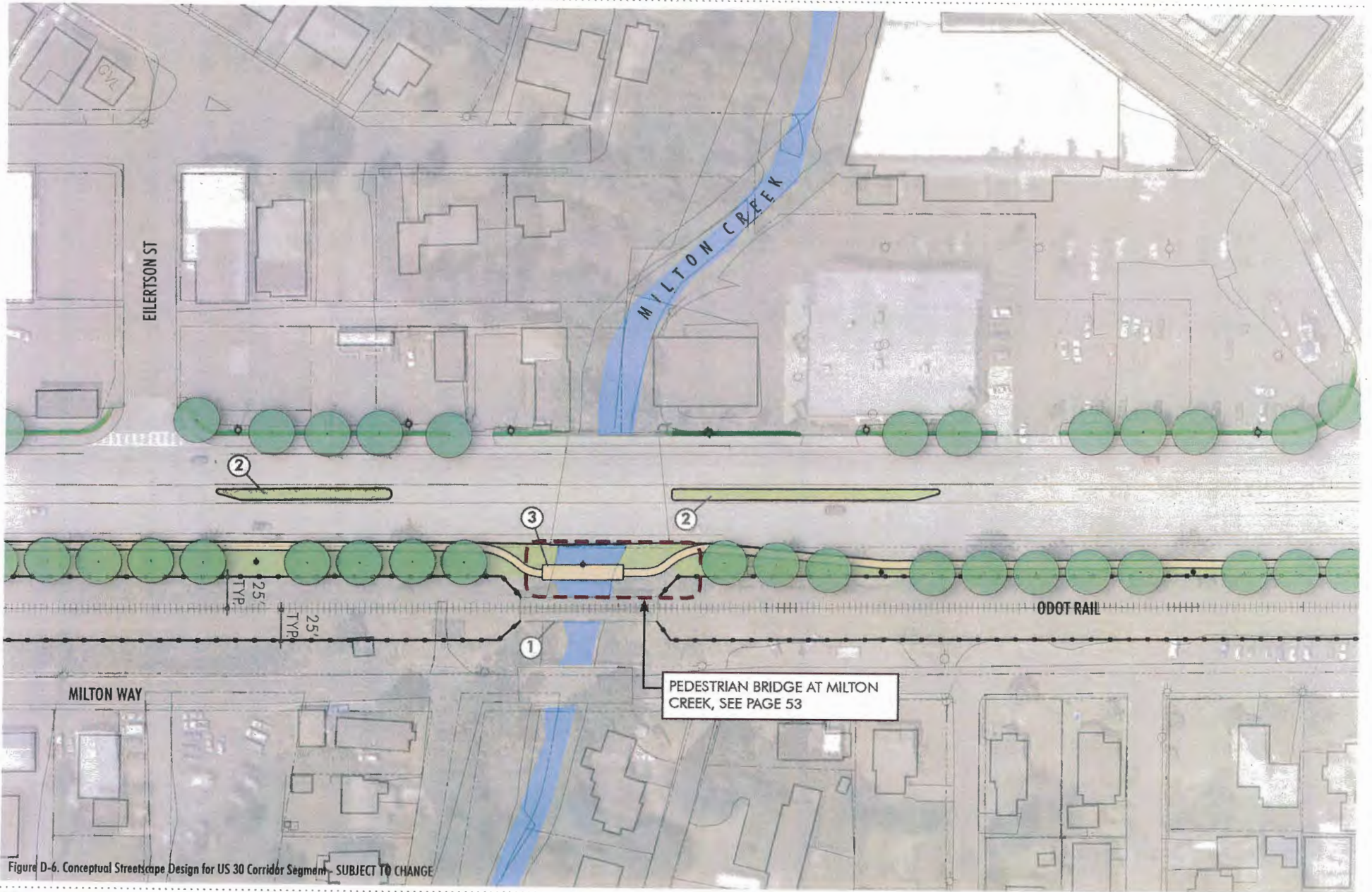


Figure D-6. Conceptual Streetscape Design for US 30 Corridor Segment - SUBJECT TO CHANGE

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

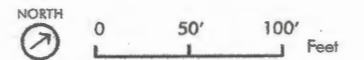


LEGEND: US 30 CORRIDOR

- NEW 6' SIDEWALK *
 - NEW LANDSCAPE AREA
 - PRIVATE PROPERTY LANDSCAPE IMPROVEMENTS
 - INTERSECTION CROSSWALK PAVING ENHANCEMENTS *
 - NEW CROSSWALK STRIPING
 - NEW 5' HT. FENCE *
 - NEW BANNER POLE
 - NEW BANNER ON EXISTING UTILITY / POLE
 - NEW TREE *
 - EXISTING TREE TO REMAIN
 - EXISTING SIGNALIZED INTERSECTION
 - FUTURE SIGNALIZED INTERSECTION
 - SPECIAL OPPORTUNITY AREA
 - CONCEPTUAL INTERSECTION ENHANCEMENT
- * DENOTES LONG-TERM IMPROVEMENTS

KEY NOTES

- ① EXISTING TRAIN TRESTLE
- ② PLANTED MEDIAN, SEE PAGE 46
- ③ NEW PEDESTRIAN BRIDGE AT MILTON CREEK
- ④ US 30 GATEWAY SCULPTURAL ELEMENTS

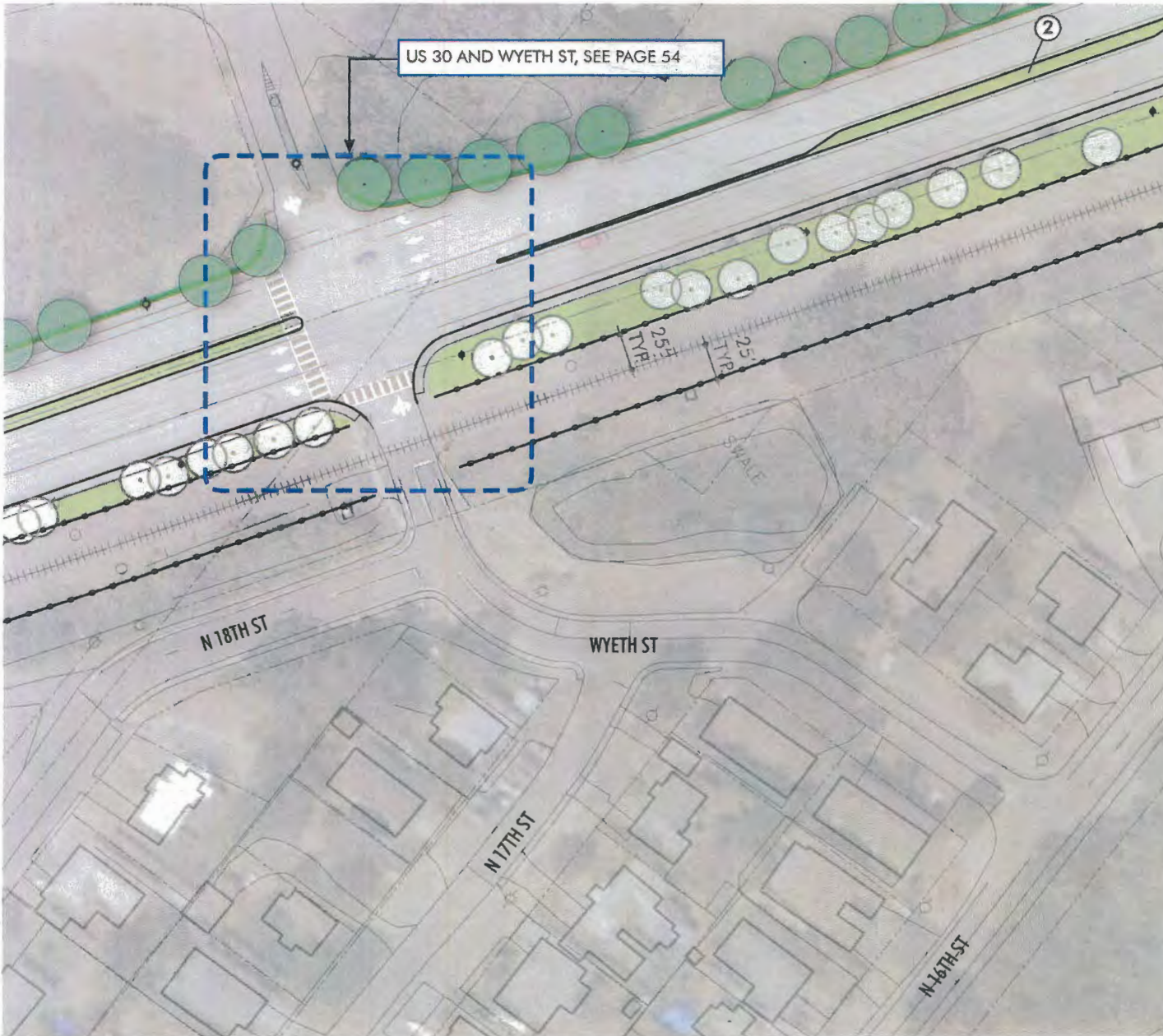


PLANS ARE CONCEPTUAL AND SUBJECT TO CHANGE















D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT





D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

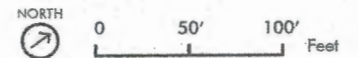


LEGEND: US 30 CORRIDOR

-  NEW 6' SIDEWALK *
 -  NEW LANDSCAPE AREA
 -  PRIVATE PROPERTY LANDSCAPE IMPROVEMENTS
 -  INTERSECTION CROSSWALK PAVING ENHANCEMENTS *
 -  NEW CROSSWALK STRIPING
 -  NEW 5' HT. FENCE *
 -  NEW BANNER POLE
 -  NEW BANNER ON EXISTING UTILITY / POLE
 -  NEW TREE *
 -  EXISTING TREE TO REMAIN
 -  EXISTING SIGNALIZED INTERSECTION
 -  FUTURE SIGNALIZED INTERSECTION
 -  SPECIAL OPPORTUNITY AREA
 -  CONCEPTUAL INTERSECTION ENHANCEMENT
- * DENOTES LONG-TERM IMPROVEMENTS

KEY NOTES

-  FUTURE BUS STOP
-  PLANTED MEDIAN, SEE PAGE 46



PLANS ARE CONCEPTUAL AND SUBJECT TO CHANGE

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT



Figure D-8. Conceptual Streetscape Design for US 30 Corridor Segment - SUBJECT TO CHANGE

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

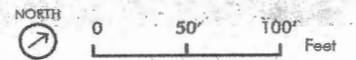


LEGEND: US 30 CORRIDOR

- NEW 6' SIDEWALK *
 - NEW LANDSCAPE AREA
 - PRIVATE PROPERTY LANDSCAPE IMPROVEMENTS
 - INTERSECTION CROSSWALK PAVING ENHANCEMENTS *
 - NEW CROSSWALK STRIPING
 - NEW 5' HT. FENCE *
 - NEW BANNER POLE
 - NEW BANNER ON EXISTING UTILITY / POLE
 - NEW TREE *
 - EXISTING TREE TO REMAIN
 - EXISTING SIGNALIZED INTERSECTION
 - FUTURE SIGNALIZED INTERSECTION
 - SPECIAL OPPORTUNITY AREA
 - CONCEPTUAL INTERSECTION ENHANCEMENT
- * DENOTES LONG-TERM IMPROVEMENTS

KEY NOTES

- ① PLANTED MEDIAN, SEE PAGE 46



PLANS ARE CONCEPTUAL AND SUBJECT TO CHANGE

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

STREETScape DESIGN CONCEPTS

Specific site responses to the goals listed above, and to the physical and environmental influences on the corridor are explained in further detail below.

1. **TRAFFIC CALMING FEATURES.** An inviting pedestrian environment on US 30 relies on creating routes for pedestrians that are safe, accessible, and can help calm traffic. Traffic calming measures such as enhanced crosswalks and planted medians slow traffic and encourage awareness of drivers to their surroundings. The following features are proposed along US 30:

- Several enhanced east-west pedestrian crosswalks are proposed at key intersections along US 30, visually breaking the monotony of asphalt streets and creating a more inviting pedestrian route. These crosswalks could feature special paving materials, articulated scoring patterns, or integral concrete colors, and can significantly enhance the pedestrian experience along the US 30 corridor. They also must include some kind of highly visible striping, consistent with state design standards for the highway. If textured paving is used, stamping or texturing of crosswalks should be relatively minimal to avoid adverse impacts on people in wheelchairs with spinal issues. Crosswalk enhancements are proposed at the intersections of Gable Road, Columbia Boulevard, St. Helens Street (north side only), Wyeth Street (south side only) and Pittsburgh Road (south side only). New E-W crosswalks are proposed at Vernonia Road and Sykes Road



Figure D-9. Example of a concrete crosswalk on an asphalt roadway with striping.



Figure D-10. Example of a Pedestrian Refuge Island with Crosswalk Striping.



Figure D-11. Example of a raised planted median on an arterial roadway with plantings, trees, light poles with banners, and a perimeter maintenance walkway - Ottawa, Canada

with the anticipated future new pedestrian sidewalk and intersection signalization. It should be noted that ODOT State Traffic Engineer approval is required for all crosswalk locations across US 30 .

- Several improved north-south pedestrian crosswalks are proposed at roadway intersections and major driveway entrances along the west side of US 30 where few, if any, crosswalk amenities exist. New striping and ADA-accessible curb ramps are proposed at the US 30 entrance to Safeway, and the intersections at McBride Street, Eilertson Street, Marshall Street, and Howard Street.
- New planted roadway medians are proposed at strategic locations, subject to ODOT approval considering the freight classification of US 30. The areas where potential medians are conceptually shown assume that existing driveway access and left-turn lanes at public intersections will remain unchanged. The median areas will need to accommodate both long-term intersection left-turn queues and the taper transition design requirements established by ODOT through the Oregon Highway Design Manual (HDM). It should also be noted that one or more breaks in the conceptual median area shown between Milton Creek and 22nd Street may be sought as properties west of US 30 redevelop in the future.

Generally speaking, ODOT will require the following for raised planted medians:

- The roadway cross section shall include a 2' shy distance between the median curb and adjacent travel lane.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

- Raised medians with planted trees will require a minimum 8' median island width and minimum 100' length per ODOT HDM standards.
- If trees are planted in medians, and their mature canopy size is wider than the median area itself, the bottom of the canopy must maintain minimum 16' vertical clearance, free of branching to avoid vehicular conflicts. If the mature canopy size is less than or equal to the width of the median, the bottom of the canopy must maintain 10' vertical clearance.
- Any groundcover plantings must maintain a maximum 24" height from the adjacent roadway grade.

Three possible planted median options are presented here, offering different low-maintenance planting and hardscape strategies to consider during design.

Option 1 proposes the use of columnar deciduous or coniferous trees planted in tree wells and spaced approximately 30-feet on center, creating a vertical punctuation at key intersections. The ground plane consists of low maintenance unit paving material such as clay bricks, or concrete unit pavers, mortared in place. An ODOT-approved mountable curb is utilized to provide ease of access for maintenance vehicles.



Figure D-12 US 30 Planted Median Option 1



Figure D-14 US 30 Planted Median Option 2



Figure D-13 US 30 Planted Median Option 3

Option 2 proposes the use of free-standing poles with colorful banners to further reinforce the civic and cultural identity of St. Helens, and are coordinated with new banner located along the east side of the highway, as well as banners mounted to existing utility and light poles along the west side of the highway. A mass of low-maintenance, drought-tolerant ornamental grasses are proposed to soften the roadway and further reinforce US 30 as a Green Corridor.

Option 3 proposes to utilize ODOT-approved modified jersey barrier-style walls to create a robust, elevated planting expression along US 30. Large, broad-leaved deciduous trees are proposed in this option, offering a number of benefits to this asphalt-dominated roadway corridor including needed shade, reduced heat-island effect, stormwater benefits. Low-maintenance, evergreen shrubs provide a year-long stripe of green along this Green Corridor.

From a traffic operations perspective, all three options are viable. Key considerations stakeholders should evaluate when selecting a preferred alternative include on-going ease/cost of maintenance, visibility implications for businesses along the corridor, and the ease of making future modifications if needed to accommodate changes in adjacent land use/access/or turn bay lengths. While the concept plan shows anticipated needs, some redevelopment/further development along the corridor is anticipated. Certain options will have advantages over others in these respects. For example, Option 1 likely would have the lowest maintenance costs, while providing less greenery to soften the character of the roadway. Option 3 would have the most significant impact on the look and feel of the road but also could have the most significant impact on visibility of businesses or properties on the west side of the highway for drivers heading north. Note that some businesses along Milton Way on the east side of the highway may also have visibility concerns.

2. PEDESTRIAN AMENITIES. Streetscape enhancements to the US 30 corridor like new sidewalks, fencing, and plantings are important features for pedestrians to feel welcome and that the street is a comfortable place to be. A vibrant pedestrian realm can increase public safety, increase the value of adjacent real estate, and sustain the health of local businesses. The following summarizes the proposed amenities along US 30:

- A new 6' wide, curb-tight sidewalk is proposed along the east side of the US 30 corridor between Gable Road and St. Helens Street, with connections to existing sidewalks at Gable Road, Columbia Boulevard, and St. Helens Street. This new sidewalk will provide an extension to the existing sidewalk network on the east side of US 30 north of St. Helens Street, and is proposed as a long term improvement for the US 30 corridor. As an alternative to a curb-tight sidewalk, this walkway could be buffered by a landscaping strip next to the roadway. This would improve pedestrian comfort and safety to some degree. However, provision of a landscape strip would have several disadvantages. Because of the variation in right-of-way and the need to maintain a distance of at least 25 feet from the railway tracks, the path would be forced to meander. This would increase costs of construction and maintenance and would be at odds with current pathway standards recommended by ODOT (which don't favor meandering pathways). In addition, the potential need to purchase railroad right-of-way, varying topography and drainage issues along the length of the corridor also would increase costs and make construction and drainage more challenging. For these reasons, the curb-tight walkway is recommended. However, other options could be considered during a detailed design process.
- To discourage informal crossings of the railroad tracks, a 5' tall fence is proposed on each side of the railroad corridor located 25' from the centerline of the nearest track as required by ODOT Rail to accommodate operations and maintenance vehicles and activity. Access gates shall be provided at each private property entrance, and every 1,000' along each side of the corridor. In addition, access gate location should be determined with cooperation of emergency response agencies.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

- The fence should be attractive, visually transparent, durable yet cost effective, and should not have barbed wire or other such human-proofing elements.
- Two fence types - welded-wire mesh fence panels and chain link fencing - are recommended here, each with benefits and disadvantages.

Welded-wire mesh partition fences are a better security barrier than chain link, are easier to modify an existing layout, easier to replace damaged partitions, and have better structural integrity. The vertically-oriented 2"x4" mesh grid is difficult to get a foot-hold, discouraging people from climbing. Additionally, most are fabricated with a durable epoxy and polyester coating that provides better corrosion resistance over time than galvanized chain-link fences. This type of fence is an attractive, alternative to standard chain-link fence, which tends to look and feel utilitarian. This type of fence is more expensive than chain-link fences.

Chain link fences are the best-selling fencing system in the world, are less expensive, and easier to install. However, they are easier to climb and not as structurally stable, requiring more long-term maintenance. If this type of fence is pursued, a black vinyl coating is recommended to create a more attractive streetscape edge.

Although the pathway and fencing proposed adjacent to the roadway have been located at least 25' from the center of the railroad tracks, consistent with ODOT and railway guidance and the right-of-way in this area is owned by ODOT, approval of improvements within the rail right-of-way will have to be approved by the railroad because it has an easement to use this area.



Figure D-15. Example of a concrete sidewalk with plantings and fencing



Figure D-16. Welded-Wire mesh fencing



Figure D-17. Black vinyl-coated chain link fence

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT



Figure D-18. Existing "heritage" grove observed along east edge of US 30



Figure D-19. Existing street trees on US 30



Figure D-20. Long term planting concept for the east edge of US 30 including tree groups, shrubs, grasses, and ground cover

- To create a distinctive and uniform "green edge" along the east side of US 30, a continuous, linear swath of street trees is proposed to supplement existing groups of tree plantings. In proposing a long-term vision for establishing a distinctive green edge of the highway, several factors were considered.

First, there are several existing stands of trees and shrubs along the east side of US 30 that are comprised of a mix of species in various states of health and maturity. Several stands, however, are in good health and vigor and should be preserved, and are specifically located just north of Gable Road, just east of Vernonia Road, and from north of St. Helens Street to Pittsburgh Road (and beyond). The design proposes to retain these existing "heritage" groves, and intersperse new plantings in a way that complements and highlights them.

Secondly, approximately 60 street trees located approximately 6' from the back of curb, extend north from Gable Road to just north of Sykes Road, and from McBride Street to Columbia Boulevard. These street trees, which are also in varying states of health and maturity, are comprised of a mix of oak, ash, and cherry, will likely all require replacement in roughly 20-30 years. Additionally, due to its proximity to these existing trees, the new east sidewalk may require many, if not all of these street trees to be removed. However, considering the east sidewalk is a long-term improvement, the design proposes removing and replacing these trees in kind with species of equal or greater value at the time the sidewalk is installed, which would help in establishing the long-term vision of creating a distinc-

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

five, uniform green edge along the east side of US 30.

- New shrub and ornamental grass plantings are proposed along the east edge of the highway between the back of sidewalk and fence to reinforce the concept of a green highway edge, and should be comprised of species that are low-maintenance, site appropriate, distinctive, and should maintain sight lines at intersections and rail crossings.
 - The design proposes to enhance the west side of US 30 by encouraging private property owners to plant new tree and shrub plantings behind the sidewalk and create a needed visual and physical buffer between public sidewalks and private parking lots. These plantings would be installed on private property through redevelopment activity and/or partnerships between the City and private property owners. These shrubs and trees should complement the species and groupings on the east side of the highway to maintain continuity and reinforce US 30 as a green corridor.
3. **CIVIC IDENTITY.** Gateway elements, public art, and banner poles can strengthen the identity of the US 30 corridor, enhancing the visitor's relationship to St. Helens and resulting in frequent visitation, loyalty, and an ongoing interest in the vitality of its downtown. The following summarizes the proposed elements that contribute to civic identity along US 30:
- New banners are proposed on both sides of US 30 to add festiveness and variety to this commercial arterial. Along the west edge, the design proposes to hang banners on existing utility and light poles, which are spaced on average at 250' apart between Gable Road and Columbia Boulevard. North of Columbia Boulevard on the west side where there are fewer existing utility poles, and along the eastern edge of US 30 from Gable Road to Pittsburgh Road, new banners poles are proposed at 250' spacing to reinforce a consistent and unified roadway corridor.
 - As part of the US 30 / Columbia Boulevard Gateway (described further below), a series of sculptural elements are proposed



Figure D-21. Example of street banners from Lake Oswego, OR



Figure D-22. Banner poles in groups have a significant impact on civic identity

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

along the east side of the highway at strategic locations to help announce key intersections, help draw visitors downtown, and create a unified and distinctive streetscape that honors the spirit of St. Helens. Specific locations include north of Gable Road, between Columbia Boulevard and St. Helens Street, and north of St. Helens Street. These sculptures are intended to serve as a "trail of breadcrumbs" for visitors to St. Helens, and are described in greater detail below.

4. **PUBLIC TRANSIT AND POLICE VEHICLES** The Columbia County Transit District (CC Rider) has long term plans for providing transit service in the US 30 corridor using bus stops on the roadway. Currently buses pull off the road into parking or other areas to allow riders to get on or off the buses, causing significant increases in transit time. At this time, only two to three stops are envisioned, at approximately Gable Road, Columbia Boulevard and possibly a location approximately mid-way between them. Incorporating bus pullouts in these or other locations will require some combination of the following to accommodate them:

- Acquisition of additional right-of-way or easements, particularly on the west side of US 30
- Location-specific design refinements to the proposed pathway and landscaping concepts on the east side of US 30
- Incorporation of bus shelters, lighting, landing pads and/or other needed amenities associated with the bus pullouts and stops

These features are not illustrated in the proposed design concept for US 30. They could be incorporated during a future, more detailed design phase as construction design plans are developed. The St. Helens Police Chief requested provision of pull-outs for law enforcement use along US 30. Pullout for use by law enforcement vehicles could be stand-alone or potentially integrated with future Transit pullouts.



Figure D-23. Metal sculptural elements recall railroad history, creating a unique identity for the front door of St. Helens. A welcome sign is integrated into one of the elements, and is located at a "mini plaza".

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: US 30 CORRIDOR SEGMENT

SPECIAL OPPORTUNITY AREAS

A number of areas are identified throughout this report as "Special Opportunity Areas." These locations provide prospects for signature improvements that will enhance the overall corridor and meet specific community goals or needs, and may include the creation of gathering places, gateway features, viewpoints, or stormwater management features. Special Opportunity Areas that are located on private property are identified below, which will require the City to purchase the land and develop these recommended improvements. These preliminary ideas would need the support of impacted property owners to move forward.

1. US 30 / DOWNTOWN GATEWAY

– A gateway feature that marks the entrance to downtown St. Helens is proposed along US 30 between St. Helens Street and Columbia Boulevard to help draw people into Houlton and towards the Riverfront District. The feature should be highly visible, and representative of the spirit and culture of St. Helens. A number of site constraints should be considered, including proximity to the railroad tracks, required sight lines, and limited landscape area. Subject to ODOT approval, this feature could be one or any combination of typical gateway features, including an arched gateway monument, a sculptural or iconic element, or a vibrant and expansive landscaped area. While the primary gateway features are envisioned at the intersection of US 30 and Columbia Boulevard, the gateway may include features that extend as far as the US 30/ St. Helens Street intersection, which would serve as a secondary gateway.



Figure D-24. Conceptual view of the US 30 / Downtown Gateway, showing sculptural elements, "mini-plaza", street trees, intersection enhancements, and gateway arch - SUBJECT TO CHANGE



Figure D-25. Conceptual view of a gateway arch spanning over Columbia Boulevard, located just east of Milton Way, integrating metal materials also utilized in sculptural elements along US 30 - SUBJECT TO CHANGE



Figure D-26. The existing US 30 crossing and train trestle at Milton Creek



Figure D-27. Example of a pedestrian bridge of similar scale and character

2. MILTON CREEK PEDESTRIAN BRIDGE

– A critical link to the successful establishment of a new pedestrian sidewalk along the east side of US 30 will be a new pedestrian bridge crossing at Milton Creek. This bridge will be constructed independently of the existing roadway bridge currently spanning the creek. A gateway art installation has been placed on the existing US 30 bridge, as shown in Figure D-26. The potential new pedestrian bridge will need to be designed to accommodate the new art.

CONCEPTUAL INTERSECTION ENHANCEMENTS

A number of potential improvements have been identified to address traffic safety and operational issues and concerns at specific locations in this corridor segment. These conceptual intersection enhancements are intended to improve safety for all users (e.g., drivers, bicyclists, and pedestrians), while also enhancing the appearance and function of the transportation system.

1. **US 30 / WYETH STREET** - This concept illustrates a potential enhanced pedestrian crossing at the south leg of the US30 / Wyeth Street intersection. Conceptually the crossing would include signing, striping, and a raised median island to help facilitate pedestrian movements across US30. Subject to ODOT and ODOT Rail review and approval, the crossing may also include Rectangular Rapid Flash Beacons (RRFB) on the shoulders and in the center median or a High-Intensity Activated crossWalk (HAWK) signal. Either treatment would restrict northbound left-turn movements from US30 to the Columbia Commons Business Campus. ODOT state traffic engineer approval would be required for any intersection improvements; coordination with ODOT Rail is also needed. This likely will be a challenging project for which to obtain ODOT approval and secure funding. It also should be considered in the context of potential future development in this area and alternative connectivity, such as the anticipated future US30 / Pittsburg Road traffic signal.



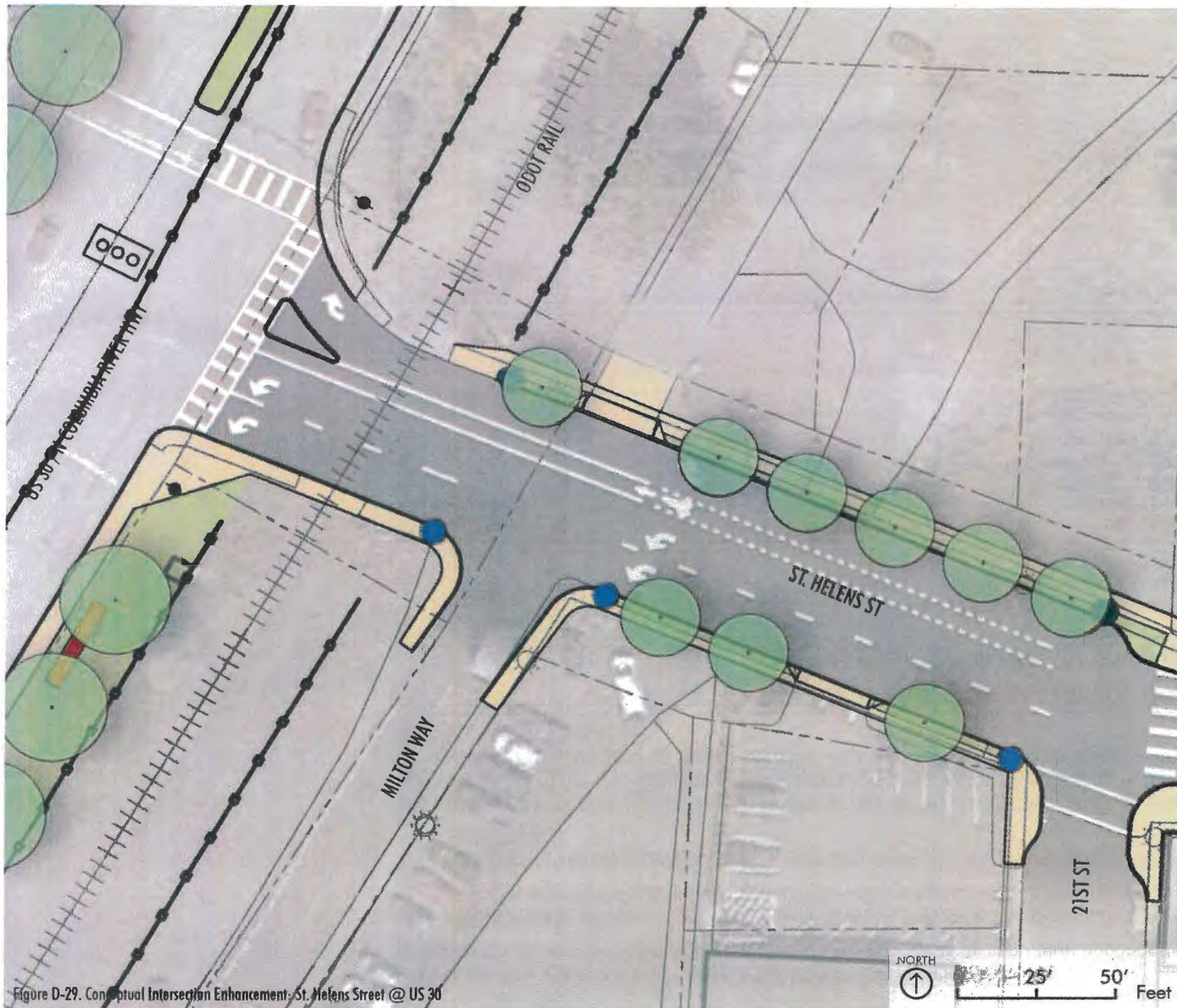


Figure D-29. Conceptual Intersection Enhancement - St. Helens Street @ US 30

2. **ST. HELENS STREET / US 30 -**
 This concept illustrates potential enhancements to the westbound approach to the US30/St Helens Street intersection as well as the segments of St Helens Street within the Houlton area. This concept includes a continuous on-street bicycle lane along the north side of St Helens Street, which continues straight through to US30 between the two left-turn lanes and the right-turn lane (which is developed after 21st Street). This concept also includes a small splitter island at the westbound approach to the intersection to improve crossing conditions for pedestrians as well as to provide further separation between cyclists and right-turning motorists. This concept would not impact the capacity of the intersection for motor vehicles; however, there would be a significant increase in the capacity for cyclists. Further, this concept provides bicycle lane delineation in accordance with ODOT and transportation industry best practices. This concept would also contribute to an improvement in the Bicycle Level of Traffic Stress scoring for the roadway.

PHASING RECOMMENDATIONS AND COST CONSIDERATIONS

Improvements for the US 30 Corridor segment can be separated into short-term and long-term improvements:

- **Short-term Improvements** – Implement Option 1, with lower cost plantings in the medians, a combination of banner poles, and more consistent landscaping on the rail (east) side of the highway.
- **Long-term Improvements** – Develop sidewalk on the rail side of the highway, if feasible within available area and rail constraints.

A potential range of construction costs is provided for the US 30 Corridor Segment improvements in Table C-1, below. These potential costs are broken down into Short-Term Improvements and Long-Term Improvements. These order-of-magnitude costs were derived from the recommended improvements described in the pages above, and are presented as a range to allow for flexibility in implementation, described further below.

| TABLE D-1. ORDER OF MAGNITUDE COSTS FOR US 30 CORRIDOR SEGMENT IMPROVEMENTS | | | |
|--|--|--|--|
| ITEM | INCLUSIONS | POTENTIAL RANGE OF CONSTRUCTION COSTS | |
| | | LOW | HIGH |
| <u>SHORT-TERM IMPROVEMENTS</u> | <ul style="list-style-type: none"> • Medians (curbs, plantings, trees/banner poles) • Plantings (east side of US 30) • New Banner Poles (east side of US 30) • New Banners on Existing Utility Poles • New Curb Ramps • New Crosswalk Striping • Mobilization/Demo • 30% Design / Construction Contingencies | <p>\$750,000</p> <p>Assumes low-intensity landscape plantings throughout medians and new planting areas, standard median curbs, and base options for banners and banner poles.</p> | <p>\$1,650,000</p> <p>Assumes medians with banner poles or sculptural elements, jersey barrier-style walls and articulated paving, higher-intensity trees and plantings in all new landscape areas, and high quality banners and banner poles.</p> |
| <u>LONG-TERM IMPROVEMENTS</u> | <ul style="list-style-type: none"> • Fencing (each side of ODOT Rail property) • New Sidewalk (east side of US 30) • Intersection Crosswalk Paving • Curb Ramps • Trees and Plantings (east side of US 30) • Private Property Landscape Improvements • Mobilization/Demo • 30% Design / Construction Contingencies | <p>\$1,500,000</p> <p>Assumes chain-link fencing, standard concrete sidewalks, standard concrete crosswalk paving materials, and low-intensity landscape plantings.</p> | <p>\$2,350,000</p> <p>Assumes welded-wire mesh panel fencing, articulated concrete sidewalk paving, colored and/or textured concrete crosswalk paving materials, and high-intensity landscape plantings.</p> |

Greater Downtown (Houlton & Riverfront District) Corridor Segment

OVERALL APPROACH

In developing concepts for improving these areas, our overall approach considers the Houlton and Riverfront District corridor segments together, working in concert to create a cohesive Master Plan for the entire corridor between US 30 and 1st Street. The following list summarizes the overall approach for improving Greater Downtown (Houlton and Riverfront District). These goals build on and are consistent with the Vision and Guiding Principles developed for this project, as well as discussion with advisory committee and community members.

1. **IMPROVE PEDESTRIAN SAFETY.** The recommended design proposes to introduce a number of traffic calming features and elements throughout Houlton and the Riverfront District that help build human-scale spaces and a pedestrian-friendly environment. These improvements rely on narrowing the roadway and widening sidewalks to accommodate bulbouts and pedestrian refuge islands that shorten pedestrian crossings, diagonal parking strategies that increase driver awareness and calm traffic, as well as enhanced intersections and new crosswalk striping.
2. **IMPROVE CONNECTIVITY.** Several design features improve pedestrian and bicycle connectivity throughout and between the Houlton and Riverfront District corridors. Widened sidewalks, new roadway striping for bicyclists and pedestrians, as well as a consistency in streetscape design and materials from US 30 to 1st Street facilitate pedestrian and bicycle movement throughout the downtown district.
3. **IMPROVE AESTHETICS AND SENSE OF PLACE.** A number of pedestrian amenities are proposed as part of the recommended design for the Houlton and Riverfront District corridor segments, and include planting strips with new street trees, streetscape furnishings such as benches, bike racks, and waste receptacles, pedestrian scale lighting, wayfinding signage, community kiosks, and gateway markers. Additionally, several flexible, unprogrammed sidewalk spaces called “parklets” are provided as a strategy to provide additional space for amenities and green space and to “reclaim the right-of-way” for pedestrians.
4. **IMPROVE ECONOMIC VITALITY.** Improving the safety and comfort for pedestrians will make this a more attractive place to visit and shop, including for those people driving to the area. Providing more area for people to gather, sit and/or shop on the sidewalks and within the parking areas will expand opportunities for local business and also help draw people to the area. All of these impacts will enhance the economic viability of the area.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

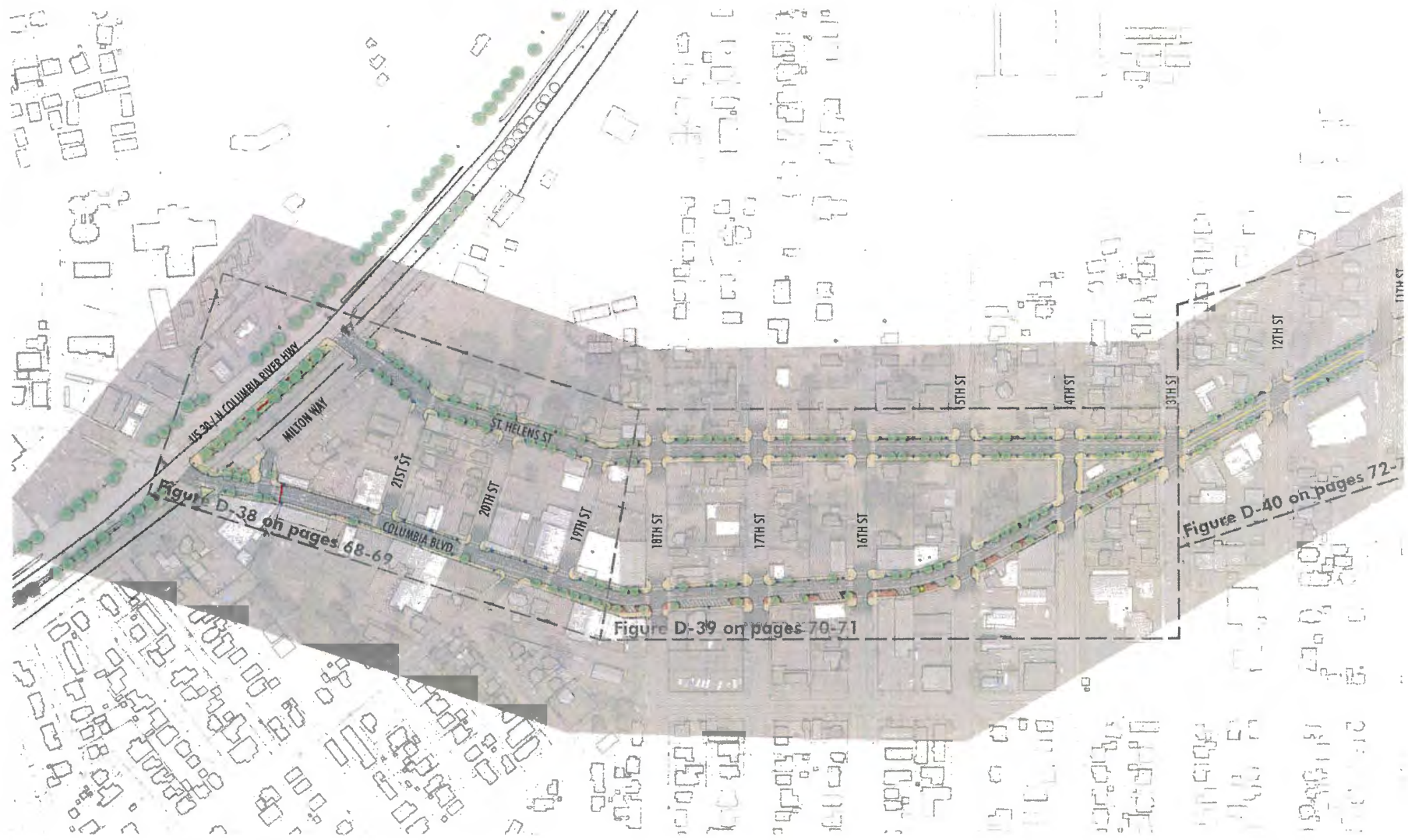
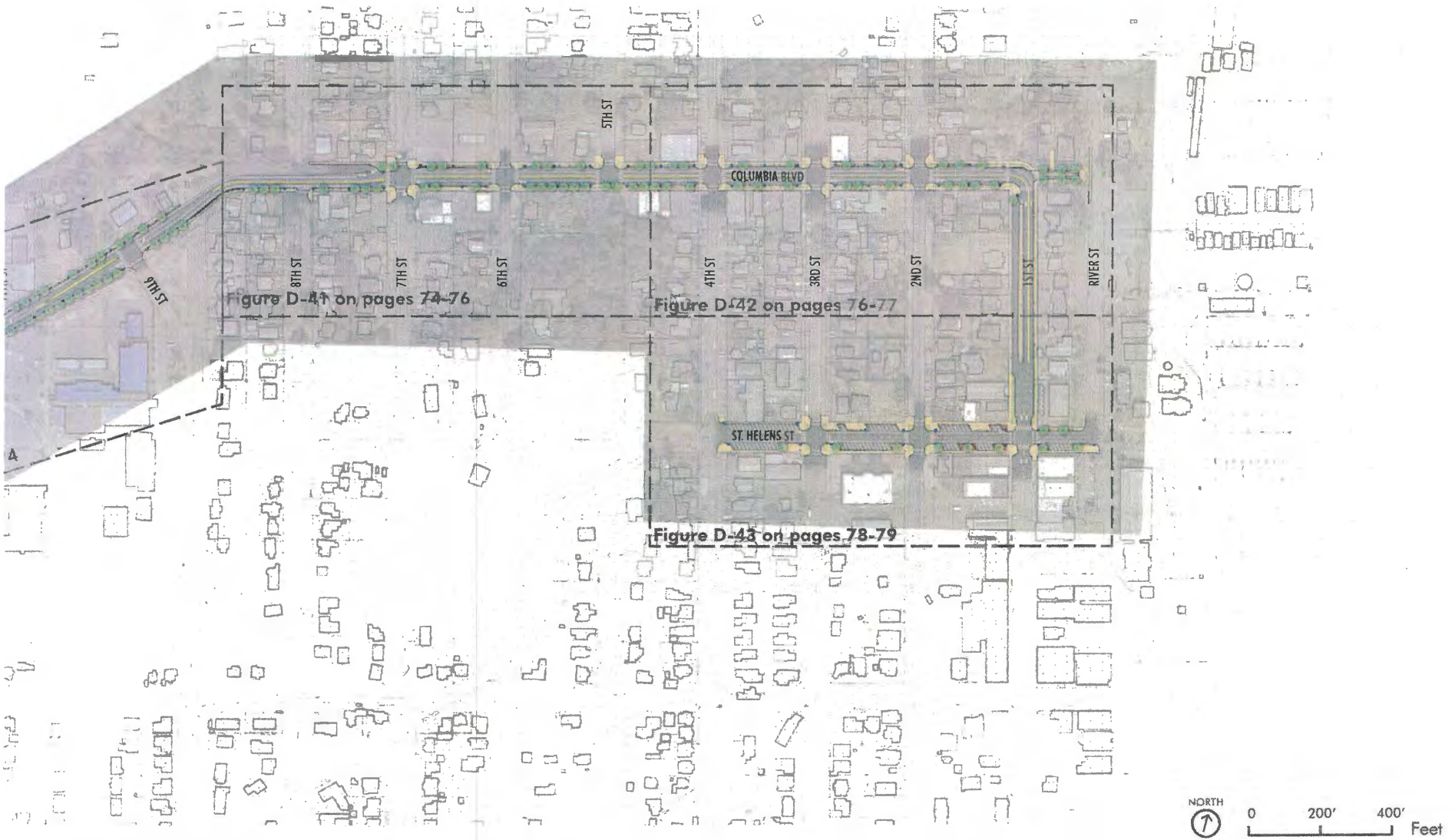


Figure D-30. Houlton & Riverfront District Corridor Segment Proposed Improvements

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS



D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

Two predominant roadway types comprise the Houlton and Riverfront District project areas: one-way streets along Columbia Boulevard and St. Helens Street west of 13th Street; and two-way streets along Columbia Boulevard east of 13th Street, along 1st Street between Columbia Boulevard and St. Helens Street, and along St. Helens Street between 1st Street and 4th Street. The following two sections provide a summary of the design concepts for each of these areas – West of 13th Street, and East of 13th Street – followed by a summary of the design concepts and streetscape elements common to the Houlton and Riverfront District corridor segments.

STREETSCAPE DESIGN CONCEPTS – WEST OF 13TH STREET

Between US 30 and 13th Street in the Houlton corridor segment, Columbia Boulevard serves as the one-way eastbound street surrounded primarily by commercial land uses, while St. Helens Street serves as the one-way westbound street and is predominantly residential. The recommended design proposes two distinctive streetscape strategies that best serve the unique character and settings of each of these streetscapes west of 13th, and are explained further below:

1. COLUMBIA BOULEVARD BETWEEN US 30 AND 13TH STREET

The recommended design concept proposes to narrow each one-way travel lane width down to 12' and dedicate the leftover space oriented towards pedestrians, and also to introduce unprogrammed, flexible spaces that serve as extensions of the sidewalk called "parklets".

- Parklets can be either permanent spaces at corners or mid-block bulbout locations designed in a flexible manner to accommodate various uses or amenities. Alternatively, parklets can be more temporary in nature and located in on-street parking stalls that are visually or physically differentiated from the adjacent roadway in some manner. In this commercial setting, parklets offer adjacent business owners with potential for setting up outdoor seating, dining, or shopping areas, which would help activate the streetscape and encourage people to stop and linger.

Parklets can be implemented along Columbia Boulevard between US 30 and 13th Street, however, due to varying right-of-way widths, parklets will tend to be narrow and more linear between Milton Way and 18th Street where the existing right-of-way is generally around 60' in width, and generally deeper and larger between 18th Street and 13th Street where the right-of-way width widens out to approximately 80' in width.

- Between 18th Street and 13th Street, this 80' right-of-way provides opportunities to introduce diagonal parking with a 6-7' width sidewalk along the south side of Columbia Boulevard. Angle parking requires less linear curb length per parking stall than traditional parallel parking, so more stalls can typically be provided on the same block. Angle parking is commonly used in downtown areas to increase the on-street parking supply and to slow or calm traffic. Angle parking also visually reinforces one-way street orientation for drivers. Striving for no net loss or gain in parking, this efficient diagonal parking layout accommodates more space for parklets than in traditional parallel parking configurations. The graphics in this report show potential conceptual locations for parklets that make sense within the context of the location of intersections and other conditions in the area. However, the exact location of these features could be refined based on further discussion between the City, business and property owners and other community members.
- Both back-in and front-in angled parking were discussed and considered in this area. While both front-in and back-in angle parking are viable options, back-in angle parking offers a variety of benefits over front-in angle parking that were and should be considered in the future, including:
 - A. Better visibility: Back-in angle parking allows for better visibility than front-in angle parking because the driver is backing into a parking stall instead of into a travel lane where there is moving traffic. This reduces the potential for collisions and provides a safer environment for the parked vehicle and the vehicles and bicycles in the adjacent travel lane.
 - B. Easier access: Drivers can generally maneuver into back-in parking stalls faster than parallel parking stalls allowing for quicker entry and exits, and therefore shorter time period when the travel lane is blocked.
 - C. Safer for users: Back-in angle parking allows for safer loading and unloading than front-in angle parking from the vehicle doors and the trunk. With back-in angle parking, the vehicle doors channel occupants to the sidewalk and the vehicle trunk may be accessed from the sidewalk instead of from the adjacent roadway.
 - D. Bicycle friendly: Back-in angle parking creates a more bicycle friendly environment than front-in angle parking since drivers are able to see them easier (and much sooner) when exiting a parking stall. Some cities have reported a decrease in the number of parking related accidents since back-in angle parking was installed.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

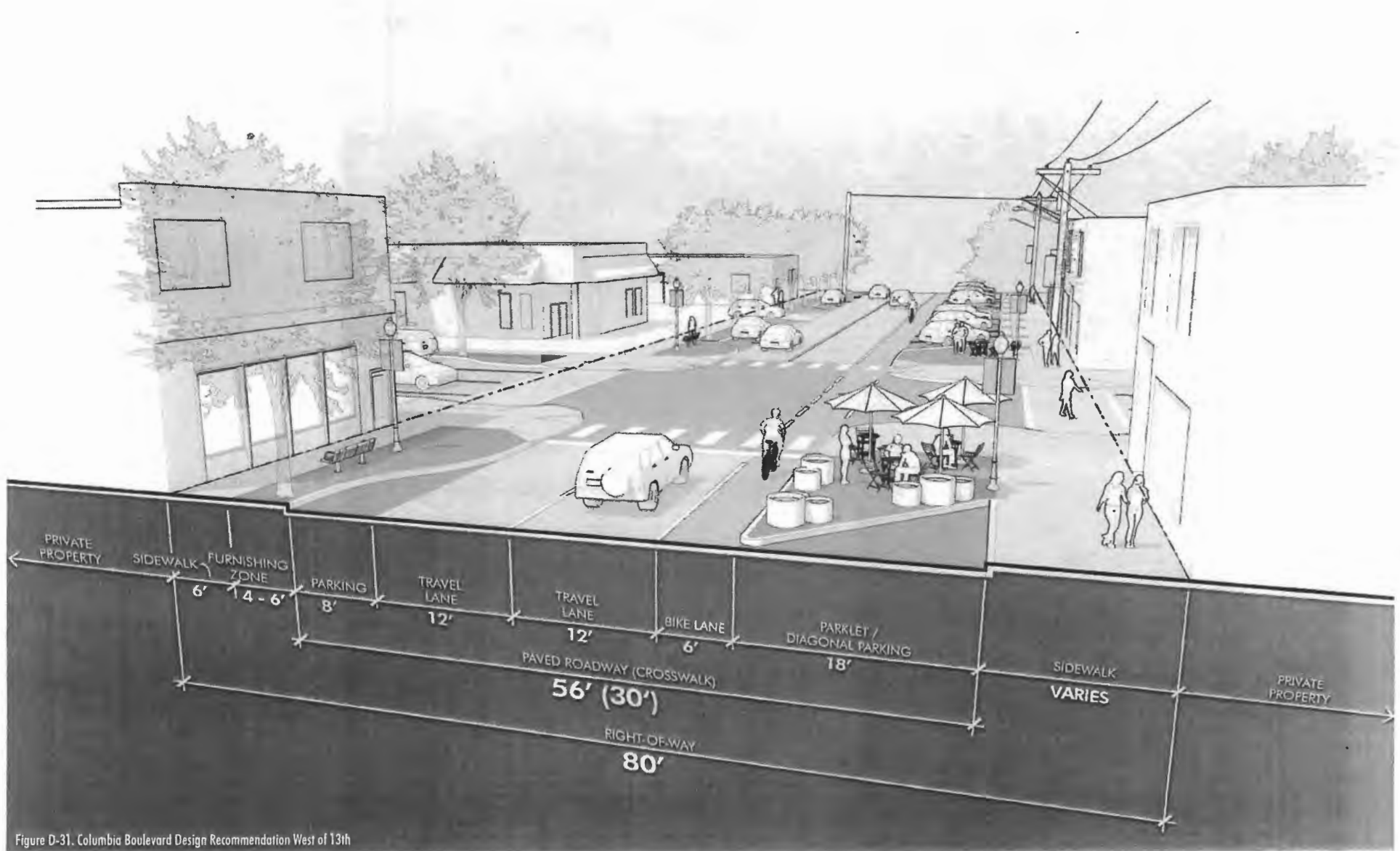


Figure D-31. Columbia Boulevard Design Recommendation West of 13th

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

While back-in angle parking offers many benefits over front-in angle parking, there are a few drawbacks unique to back-in angle parking that should also be considered:

- Vehicles may overhang the sidewalk and/or back into street furniture. This can be alleviated with proper design of the parking stalls and placement of the street furniture.
- Vehicles may enter the stalls head-in from the opposite side of the street. This can be alleviated with enforcement, signs, and driver awareness. This will not be an issue along the one-way segments of Columbia Boulevard slated for angle parking.
- Vehicles may idle in the parking stall, emitting exhaust over sidewalks. Some cities restrict idling for certain periods of time.
- Community member support for back-in angle parking can also be a challenge in some communities, and therefore it is often installed on a trial/ temporary basis.

Ultimately a majority of advisory groups and other stakeholders in this process recommended front-in angled parking in large part due to the potential unfamiliarity with and difficulty in becoming accustomed to back-in angle parking. However, the City could consider implementing back-in angle parking if these attitudes

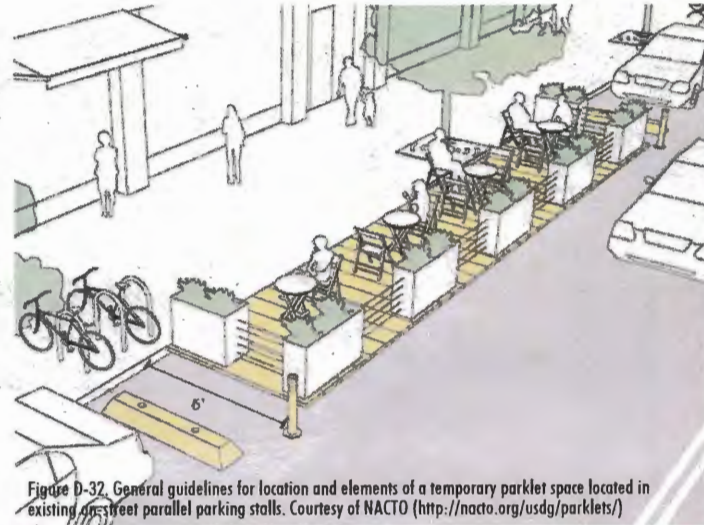


Figure D-32. General guidelines for location and elements of a temporary parklet space located in existing on-street parallel parking stalls. Courtesy of NACTO (<http://nacto.org/usdg/parklets/>)



Figure D-33. An example of a temporary parklet located in existing on-street parking stalls - Oakland, CA



Figure D-34. Outside cafe seating and planting amenities located in an extension of the sidewalk area adjacent to existing on-street diagonal parking - Winters, CA

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

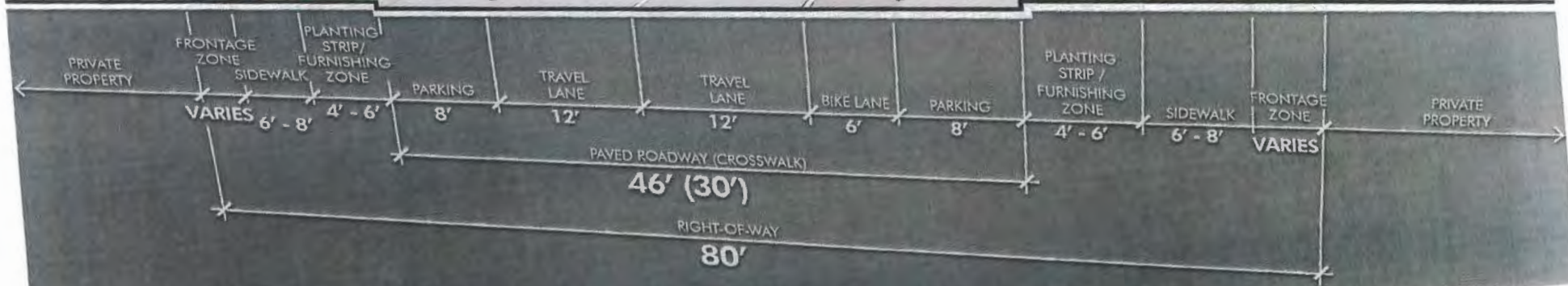


Figure D-35. St. Helens Street Design Recommendation West of 13th

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

change or could implement it in small demonstration areas to test its feasibility.

Along the north side of Columbia Boulevard between 18th Street and 13th Street, the design proposes a 10' wide paved sidewalk that accommodates a 6' width pedestrian through-zone and a 4' width furnishing zone with site furnishings, pedestrian scale lights, and street trees.

- Between US 30 and 18th Street, the 60' right-of-way can accommodate 6' width sidewalks and parallel parking on each side of Columbia Boulevard in addition to the two 12' width travel lanes and 6' width bicycle lane. Bulbouts and mid-block curb extensions along this stretch provide spaces for planting areas, street furnishings, and pedestrian scale lighting, which need to meet minimum sight clearance requirements.
- To shorten pedestrian crossing distance and help calm traffic, bulbouts and mid-block crossings are proposed at most intersections along Columbia Boulevard between US 30 and 13th Street. Bulbouts with crosswalks are generally located on the west side of intersections along this one-way street to minimize pedestrian and motor vehicle conflicts. Mid-block crossings are located at T-intersections along the south side of Columbia Boulevard, and provide space for additional plantings and/or street furnishings.

2. ST. HELENS STREET BETWEEN US 30 AND 13TH STREET

The recommended design concept proposes to narrow one-way travel lanes to 12' in width along St. Helens Street, and dedicate the leftover space to create widened sidewalks with generous planting strips and furnishing zones on both sides of the street. Street trees and plantings soften the streetscape and create an aesthetically-pleasing buffer between the paved roadway and pedestrian areas, creating a Pedestrian Promenade for visitors and residents of St. Helens. Bulbouts shorten the pedestrian crossing distance from 45'-55' in the current roadway conditions down to 30' in this option, improving pedestrian safety.

- To shorten pedestrian crossing distance and help calm traffic, bulbouts and mid-block crossings are proposed at most intersections along St. Helens Street between US 30 and 13th Street. Bulbouts with crosswalks are generally located on the east side of intersections along this one-way street to minimize pedestrian and motor vehicle conflicts. Mid-block crossings are located at T-intersections along the north side of St. Helens Street, and provide space for additional plantings and/or street furnishings, which need to meet minimum sight clearance requirements.

STREETSCAPE DESIGN CONCEPTS – EAST OF 13TH STREET

East of 13th Street, Columbia Boulevard serves as the primary two-way street providing access to the Riverfront District area. The recommended design concept proposes the use of widened sidewalks, street trees and plantings, site furnishings, and improved pedestrian sidewalks and crossings, to improve the safety of pedestrians, while creating a sense of place and identity for St. Helens. As noted previously, 1st Street between Columbia Boulevard and St. Helens Street has a unique configuration demanding special attention, and will be addressed in the following Special Opportunity Areas section.

1. COLUMBIA BOULEVARD BETWEEN 13TH STREET AND 1ST STREET

The recommended design concept for this segment proposes to narrow two-way travel lanes to 12' in width, and dedicate the leftover space towards widened sidewalks with generous planting strips and/or furnishing zones on both sides of the street. Street trees and plantings soften the streetscape and create an aesthetically-pleasing buffer between the paved roadway and pedestrian areas. Bulbouts shorten the pedestrian crossing distance from 55'-60' in the current roadway condition down to 36' in this option, improving pedestrian safety. These elements work in concert to create a Pedestrian Promenade that connects visitors between the Houlton and Riverfront District areas.

2. ST. HELENS STREET BETWEEN 1ST STREET AND 4TH STREET

Along these four blocks, new bulbouts and crosswalk striping are proposed to increase pedestrian safety and provide additional areas for planting areas and site furnishings. Parklets are proposed at the corner of St. Helens and 1st Street, providing flexible spaces that could act as gateway elements announcing visitors' arrival into the Riverfront District.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

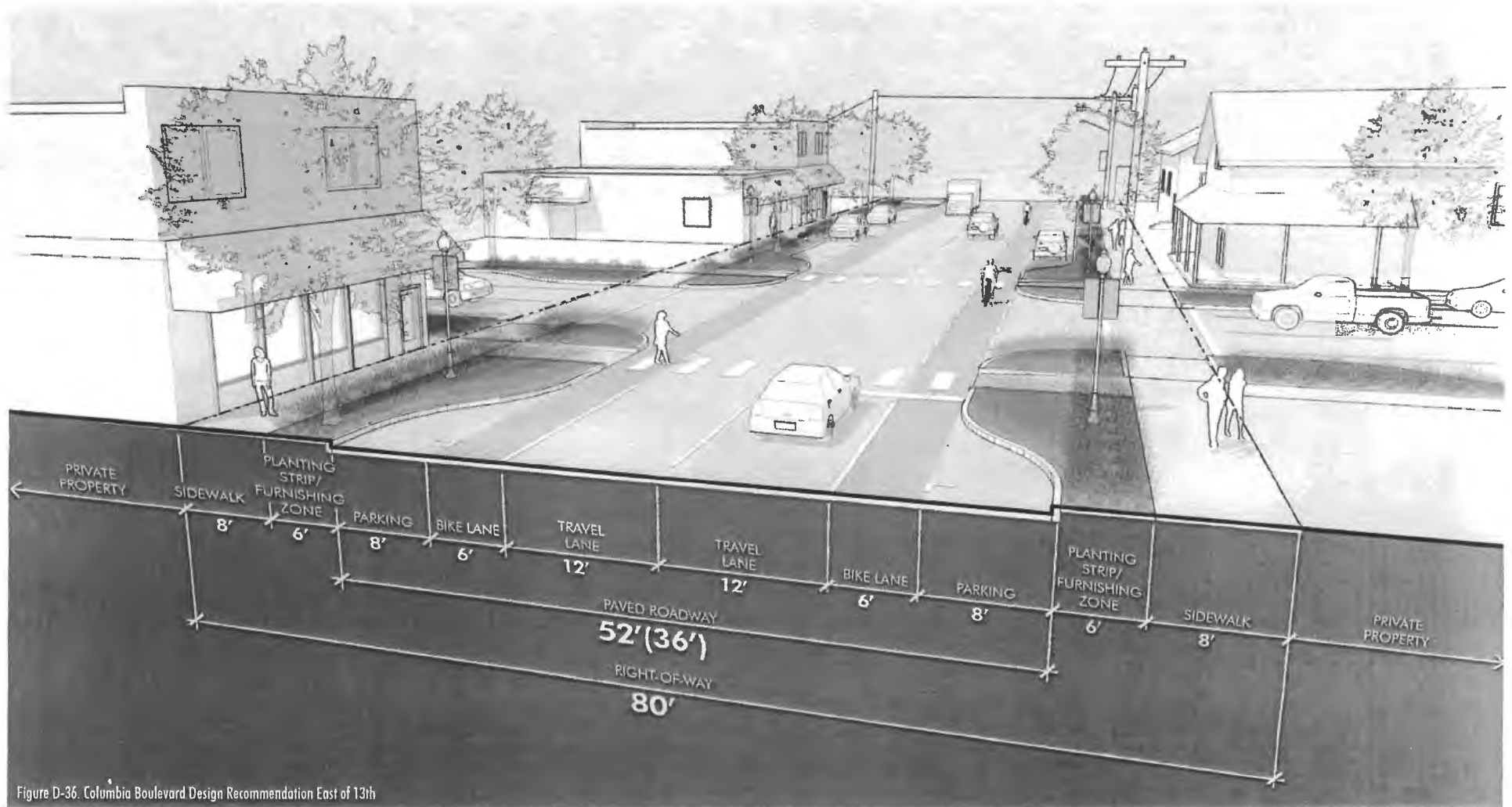


Figure D-36. Columbia Boulevard Design Recommendation East of 13th

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

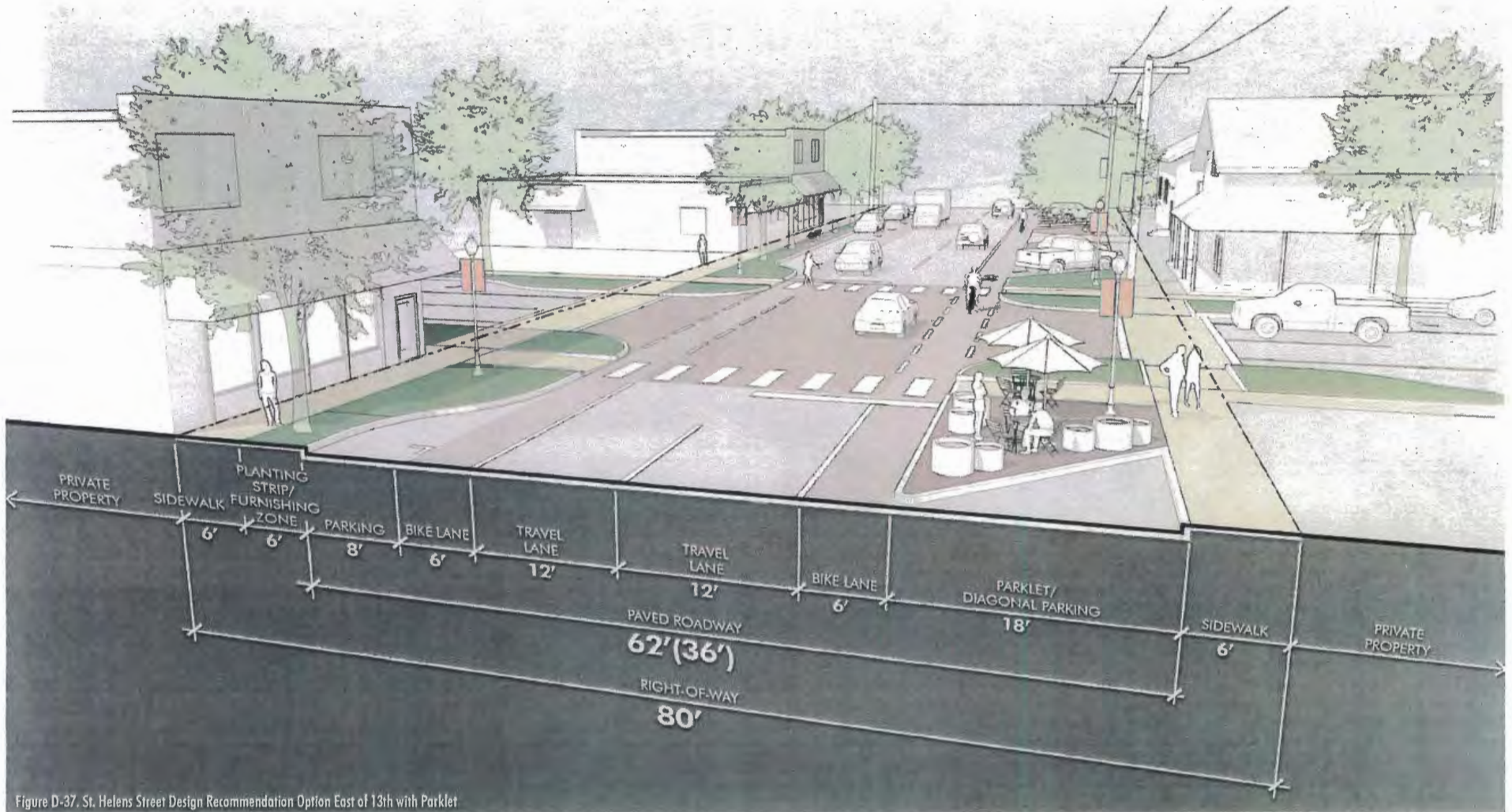


Figure D-37. St. Helens Street Design Recommendation Option East of 13th with Parklet

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D. RECOMMENDED CORRIDOR DESIGN OPTIONS: HOULTON & RIVERFRONT DISTRICT CORRIDOR SEGMENTS

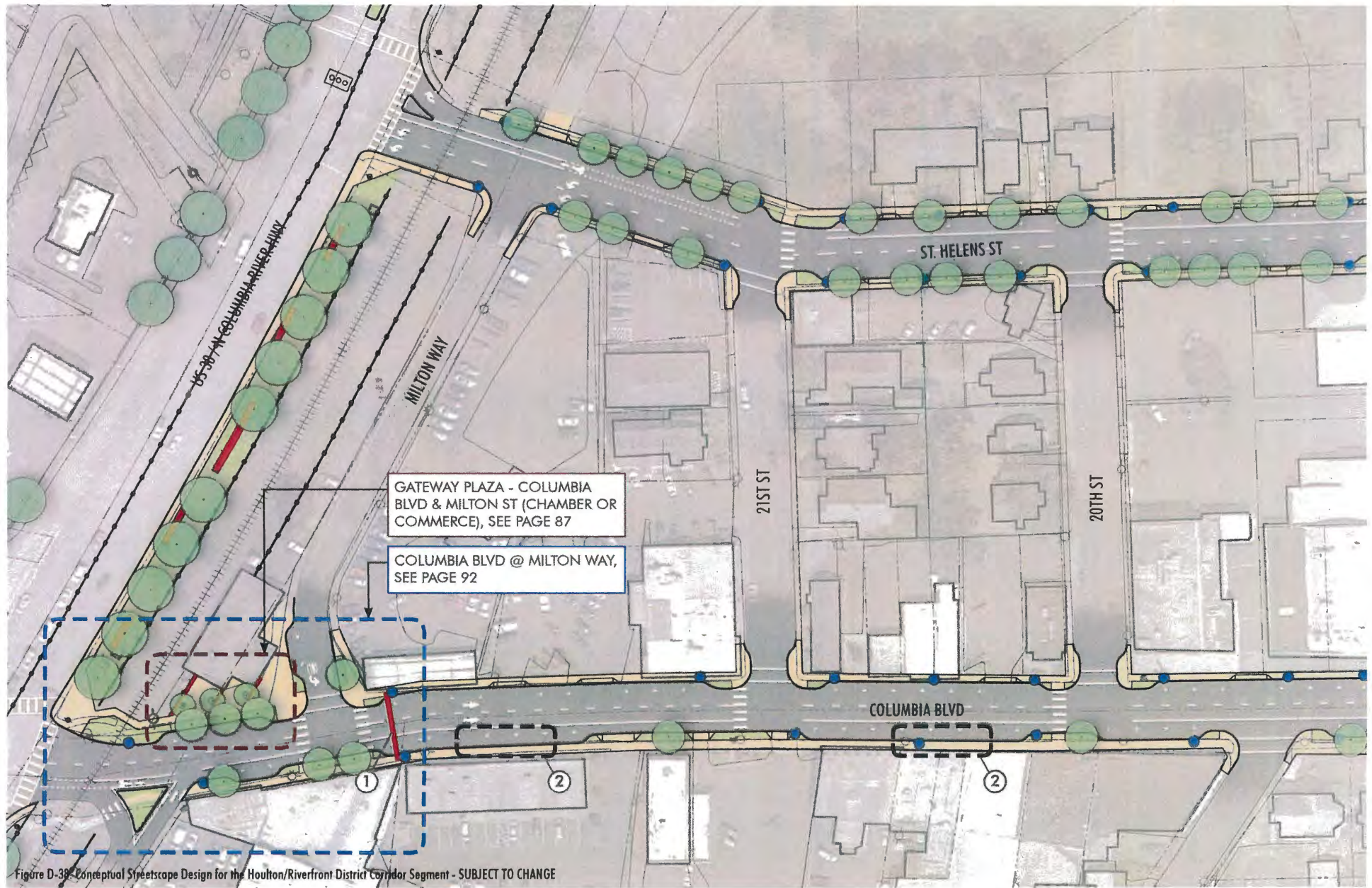



Figure D-38: Conceptual Streetscape Design for the Houlton/Riverfront District Corridor Segment - SUBJECT TO CHANGE



D. RECOMMENDED CORRIDOR DESIGN OPTIONS: HOULTON & RIVERFRONT DISTRICT CORRIDOR SEGMENTS

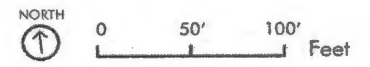


LEGEND: HOULTON & RIVERFRONT DISTRICT

-  NEW SIDEWALK
-  PLANTING STRIP/FURNISHING ZONE
-  SCULPTURAL ELEMENT
-  PARKLET - SUBJECT TO CHANGE
-  NEW CROSSWALK STRIPING
-  NEW LIGHT POLE
-  NEW TREE
-  SPECIAL OPPORTUNITY AREA
-  CONCEPTUAL INTERSECTION ENHANCEMENT

KEY NOTES

-  GATEWAY ARCH
-  TEMPORARY PARKLET LOCATION - SUBJECT TO CHANGE



PLANS ARE CONCEPTUAL AND SUBJECT TO CHANGE

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: HOULTON & RIVERFRONT DISTRICT CORRIDOR SEGMENTS

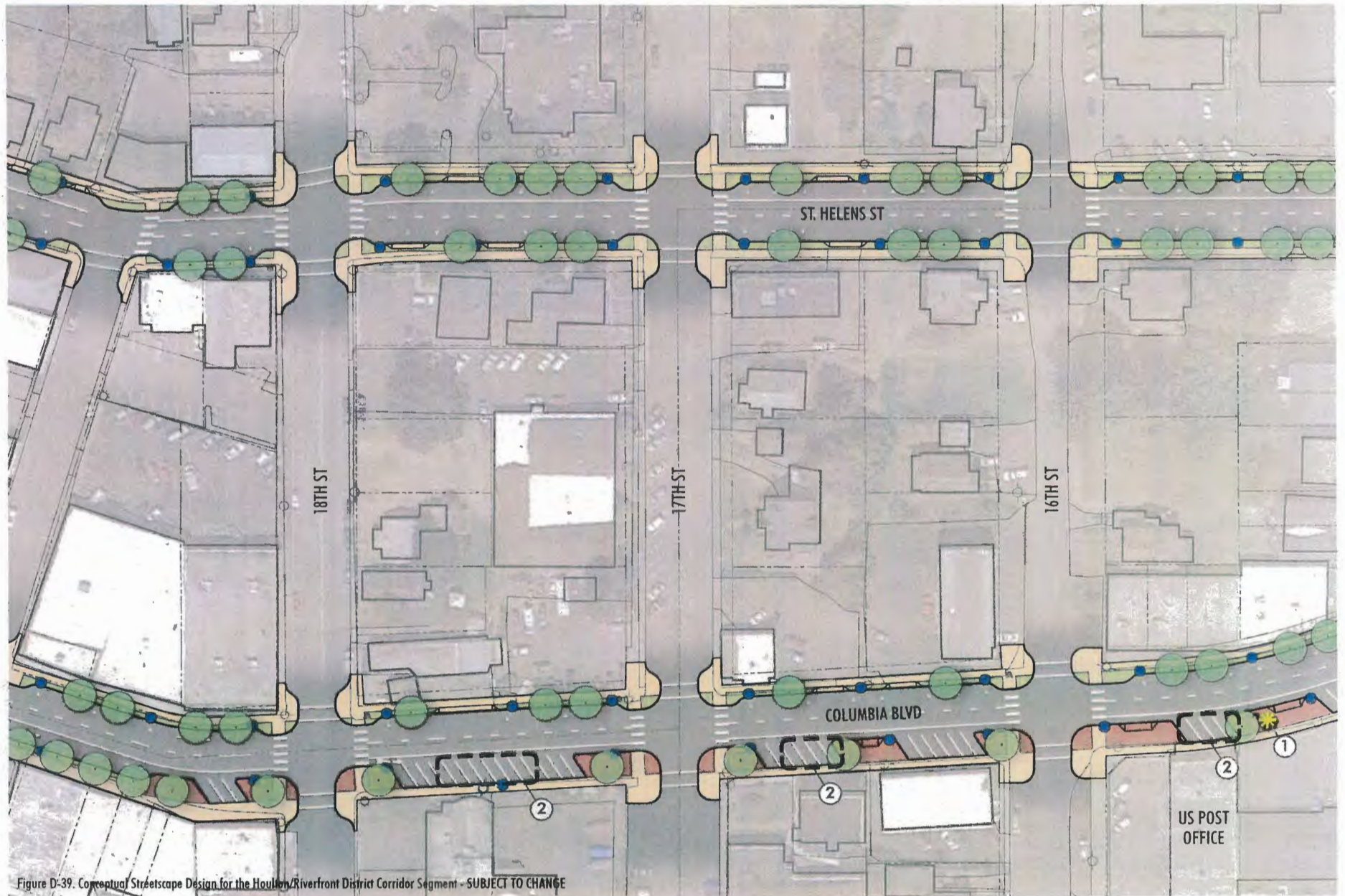
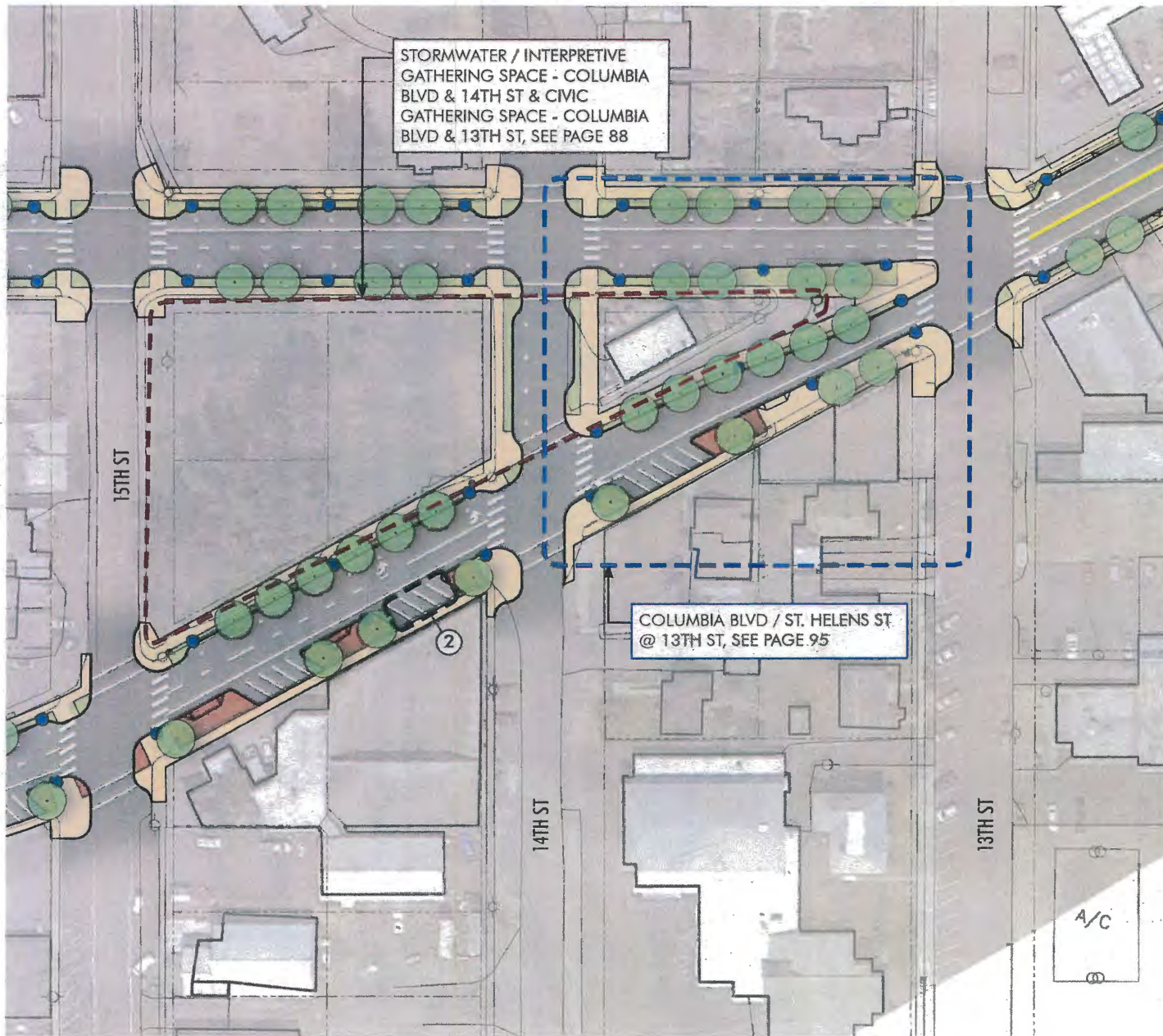











Figure D-39. Conceptual Streetscape Design for the Houlton/Riverfront District Corridor Segment - SUBJECT TO CHANGE



D. RECOMMENDED CORRIDOR DESIGN OPTIONS: HOULTON & RIVERFRONT DISTRICT CORRIDOR SEGMENTS

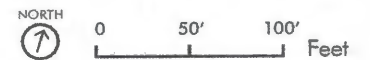


LEGEND: HOULTON & RIVERFRONT DISTRICT

-  NEW SIDEWALK
-  PLANTING STRIP/FURNISHING ZONE
-  SCULPTURAL ELEMENT
-  PARKLET - SUBJECT TO CHANGE
-  NEW CROSSWALK STRIPING
-  NEW LIGHT POLE
-  NEW TREE
-  SPECIAL OPPORTUNITY AREA
-  CONCEPTUAL INTERSECTION ENHANCEMENT

KEY NOTES

-  ① COMMUNITY KIOSK
-  ② TEMPORARY PARKLET - LOCATION SUBJECT TO CHANGE



PLANS ARE CONCEPTUAL AND SUBJECT TO CHANGE

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: HOULTON & RIVERFRONT DISTRICT CORRIDOR SEGMENTS

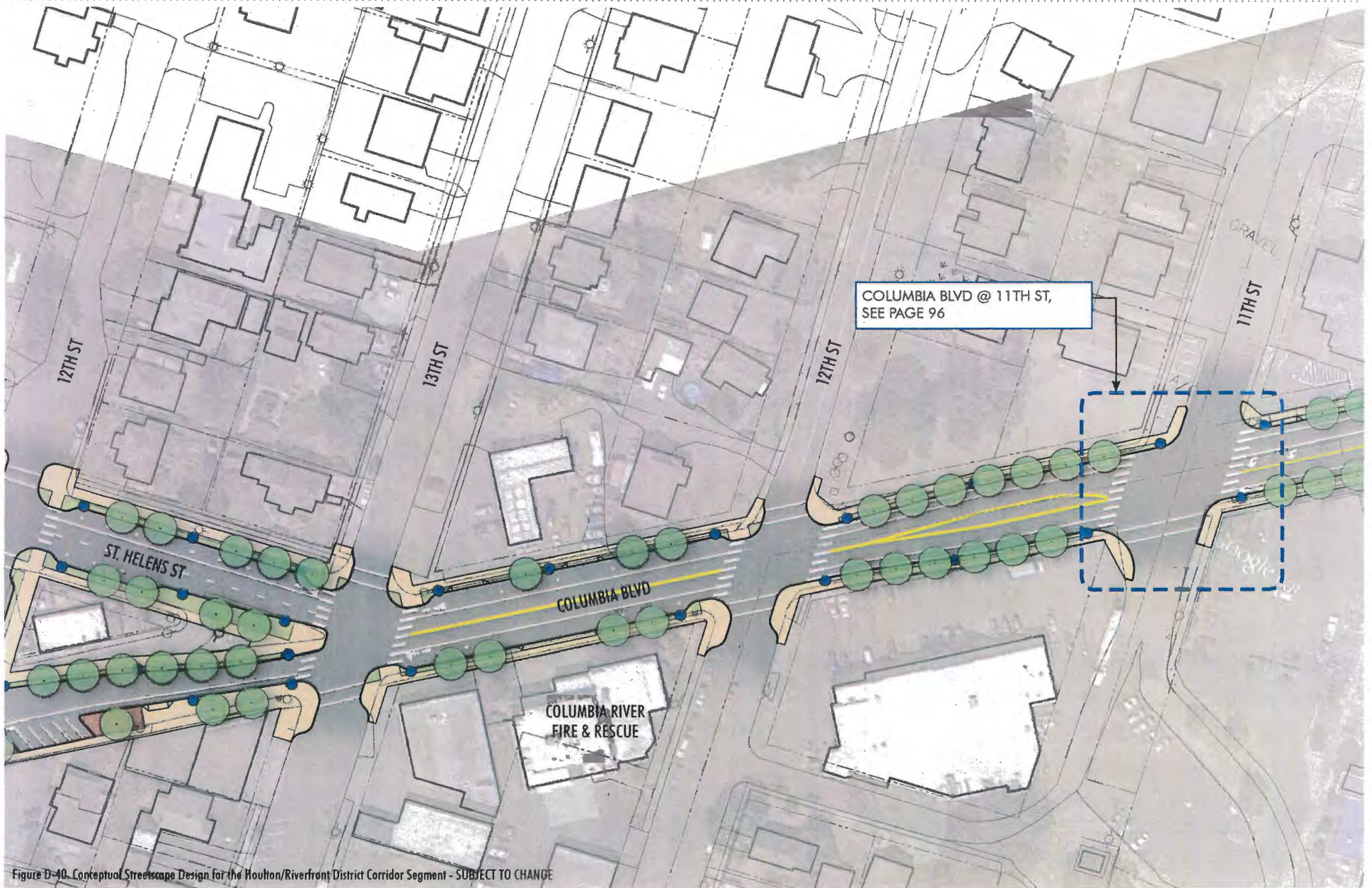
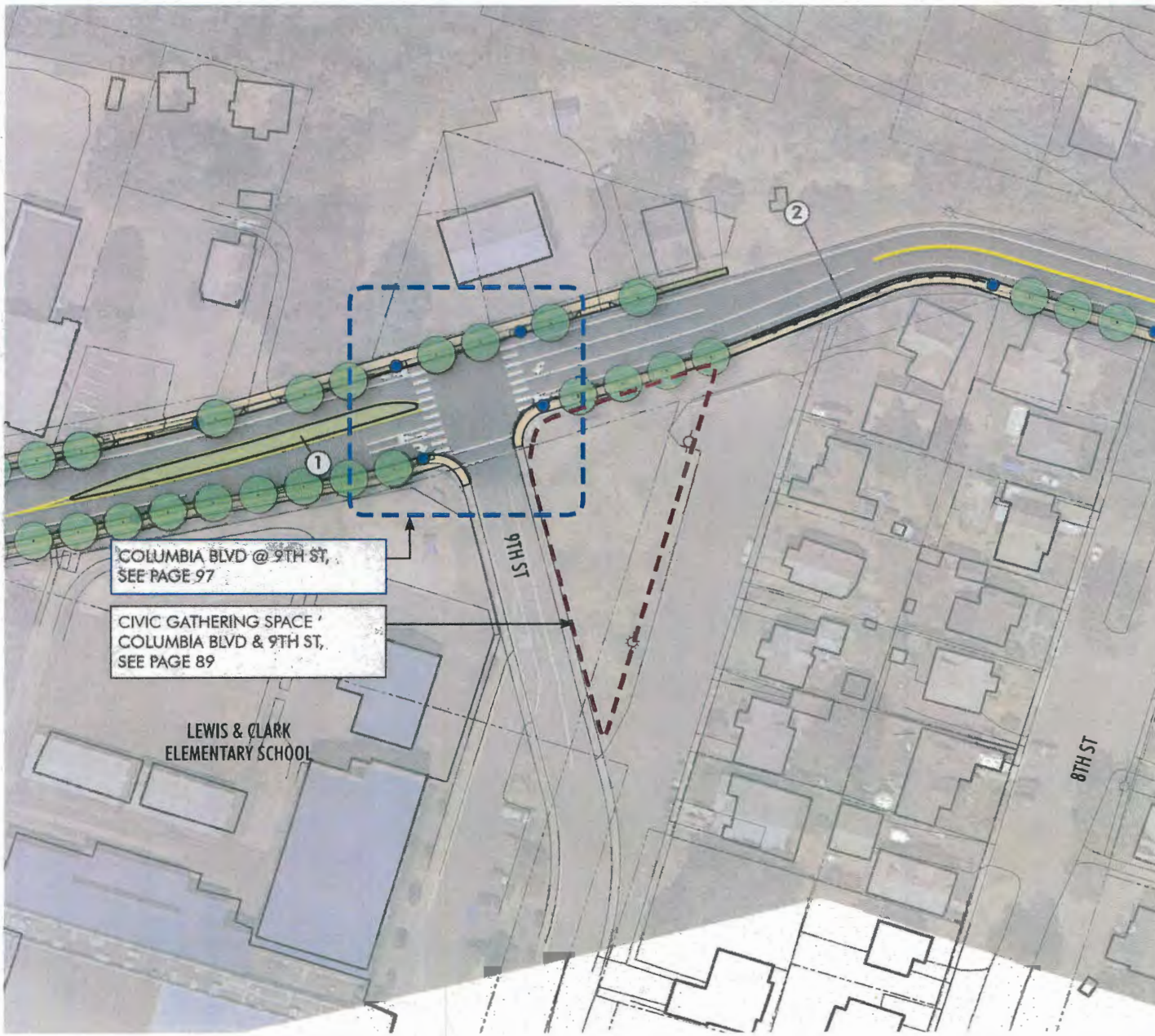


Figure B-40. Conceptual Streetscape Design for the Houlton/Riverfront District Corridor Segment - SUBJECT TO CHANGE

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: HOULTON & RIVERFRONT DISTRICT CORRIDOR SEGMENTS



COLUMBIA BLVD @ 9TH ST,
SEE PAGE 97

CIVIC GATHERING SPACE
COLUMBIA BLVD & 9TH ST,
SEE PAGE 89

LEWIS & CLARK
ELEMENTARY SCHOOL

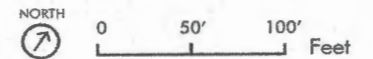
PLANS ARE CONCEPTUAL AND SUBJECT TO CHANGE

LEGEND: HOULTON & RIVERFRONT DISTRICT

- NEW SIDEWALK
- PLANTING STRIP/FURNISHING ZONE
- SCULPTURAL ELEMENT
- PARKLET - SUBJECT TO CHANGE
- NEW CROSSWALK STRIPING
- NEW LIGHT POLE
- NEW TREE
- SPECIAL OPPORTUNITY AREA
- CONCEPTUAL INTERSECTION ENHANCEMENT

KEY NOTES

- ① NEW PLANTED MEDIAN
- ② NEW ORNAMENTAL GUARDRAIL



D. RECOMMENDED CORRIDOR DESIGN OPTIONS: HOULTON & RIVERFRONT DISTRICT CORRIDOR SEGMENTS

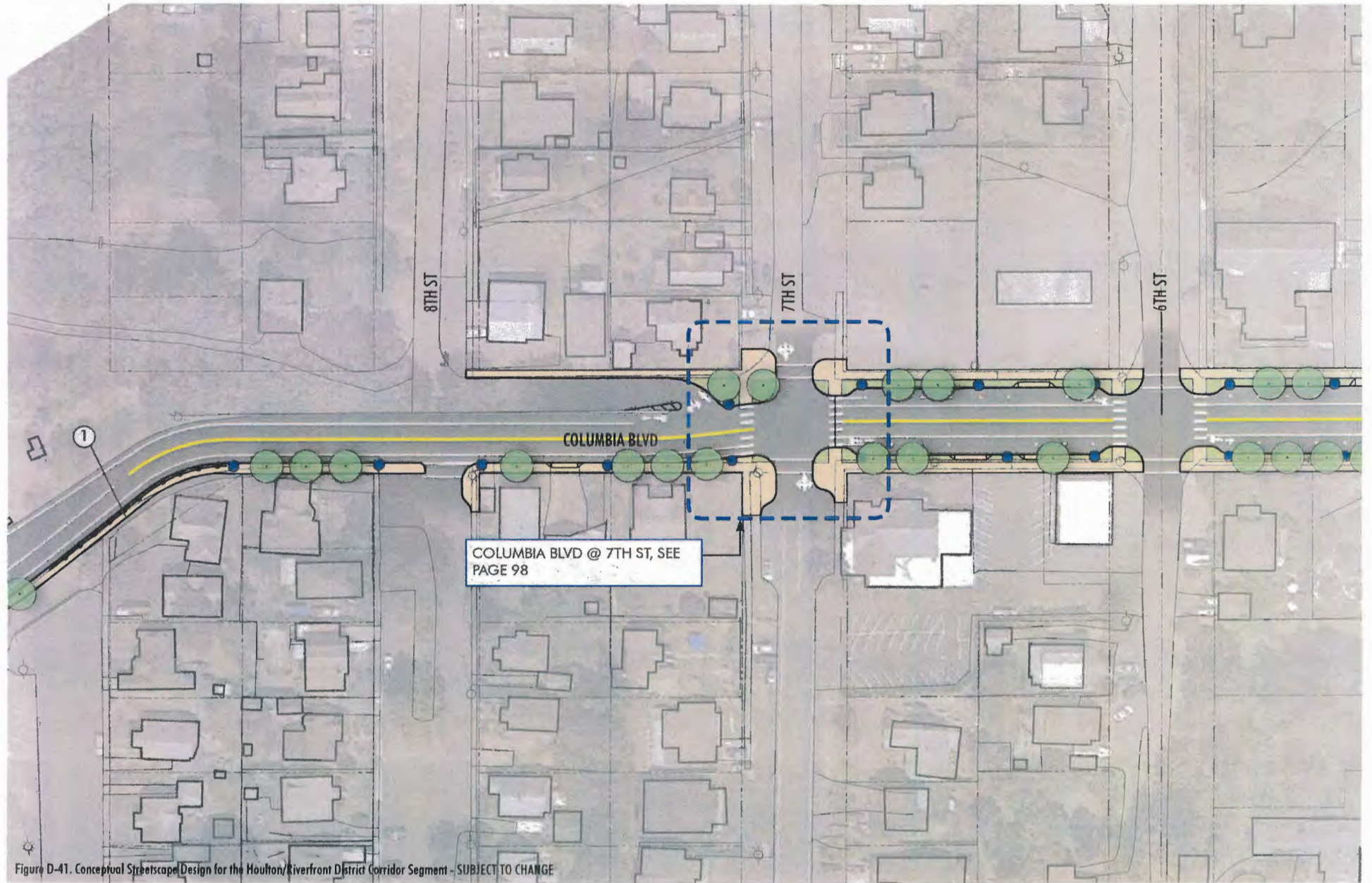










Figure D-41. Conceptual Streetscape Design for the Houlton/Riverfront District Corridor Segment - SUBJECT TO CHANGE


D. RECOMMENDED CORRIDOR DESIGN OPTIONS: HOULTON & RIVERFRONT DISTRICT CORRIDOR SEGMENTS

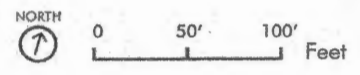


LEGEND: HOULTON & RIVERFRONT DISTRICT

-  NEW SIDEWALK
-  PLANTING STRIP/FURNISHING ZONE
-  SCULPTURAL ELEMENT
-  PARKLET - SUBJECT TO CHANGE
-  NEW CROSSWALK STRIPING
-  NEW LIGHT POLE
-  NEW TREE
-  SPECIAL OPPORTUNITY AREA
-  CONCEPTUAL INTERSECTION ENHANCEMENT

KEY NOTES

-  NEW ORNAMENTAL GUARDRAIL



D. RECOMMENDED CORRIDOR DESIGN OPTIONS: HOULTON & RIVERFRONT DISTRICT CORRIDOR SEGMENTS

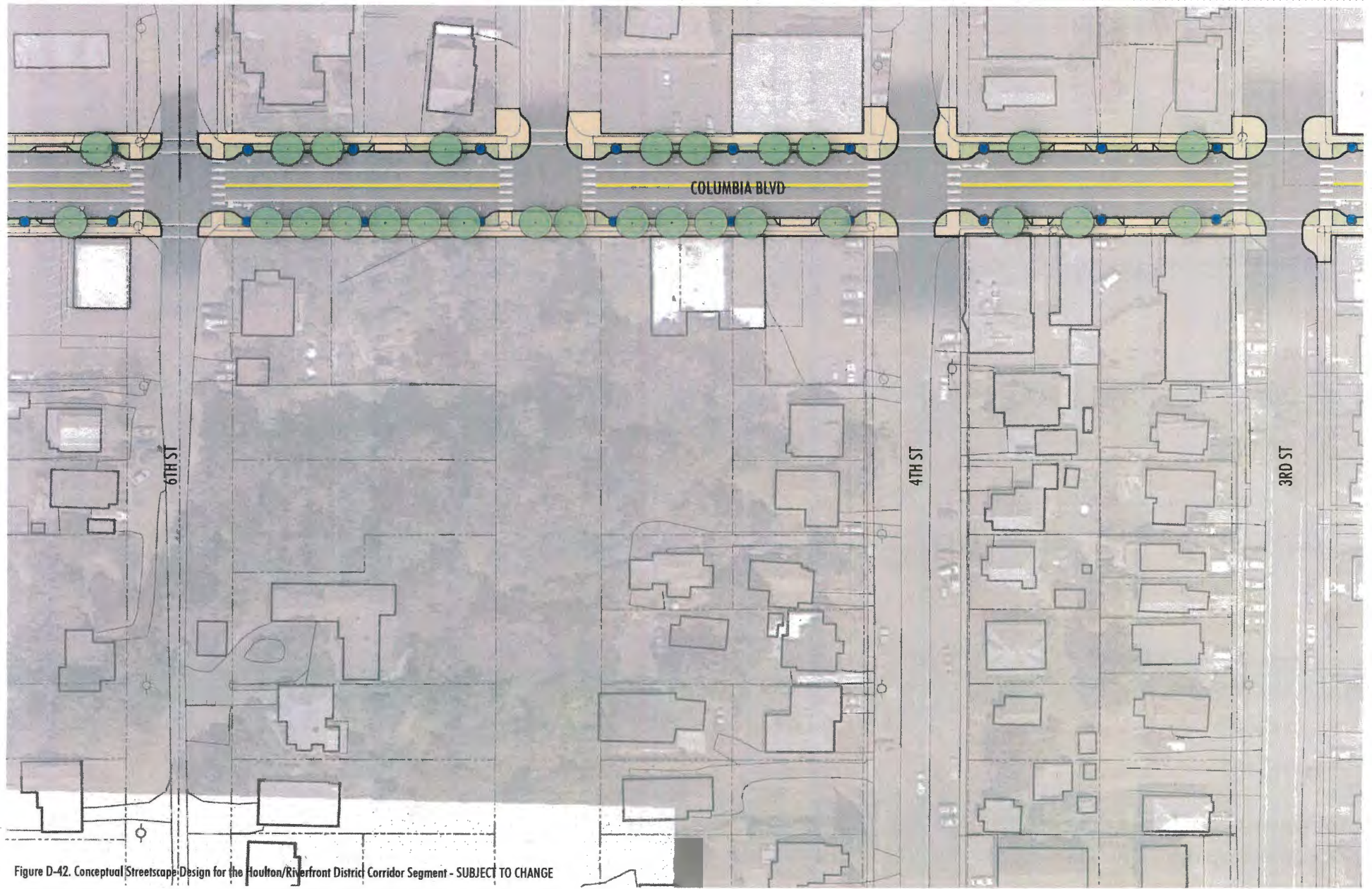
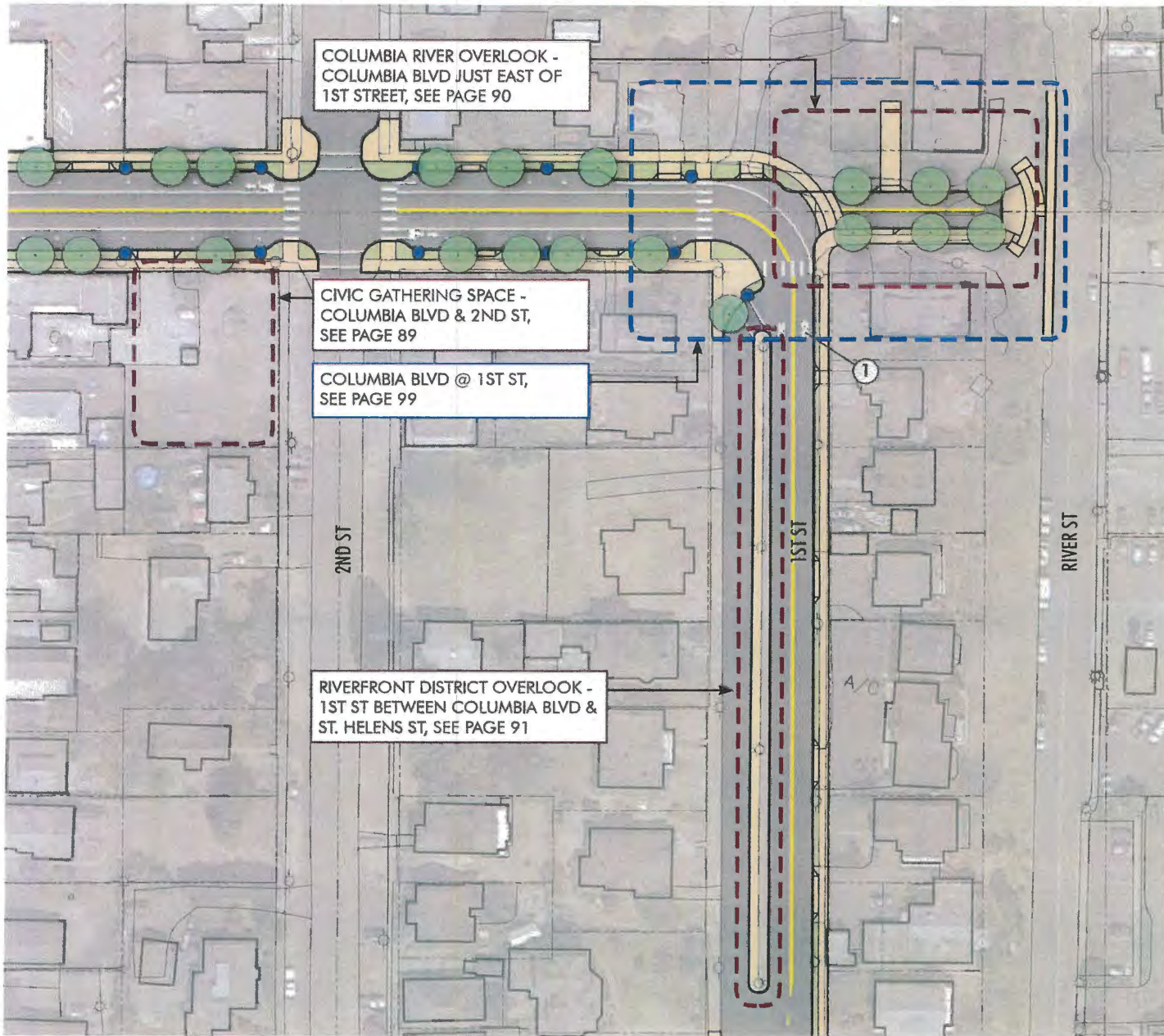










Figure D-42. Conceptual Streetscape Design for the Houlton/Riverfront District Corridor Segment - SUBJECT TO CHANGE

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: HOULTON & RIVERFRONT DISTRICT CORRIDOR SEGMENTS

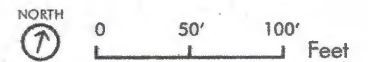


LEGEND: HOULTON & RIVERFRONT DISTRICT

-  NEW SIDEWALK
-  PLANTING STRIP/FURNISHING ZONE
-  SCULPTURAL ELEMENT
-  PARKLET - SUBJECT TO CHANGE
-  NEW CROSSWALK STRIPING
-  NEW LIGHT POLE
-  NEW TREE
-  SPECIAL OPPORTUNITY AREA
-  CONCEPTUAL INTERSECTION ENHANCEMENT

KEY NOTES

- ① SHARROWS ON NORTH- AND SOUTHBOUND LANES OF 1ST STREET - SHARED BIKE AND VEHICULAR TRAFFIC.



D. RECOMMENDED CORRIDOR DESIGN OPTIONS: HOULTON & RIVERFRONT DISTRICT CORRIDOR SEGMENTS

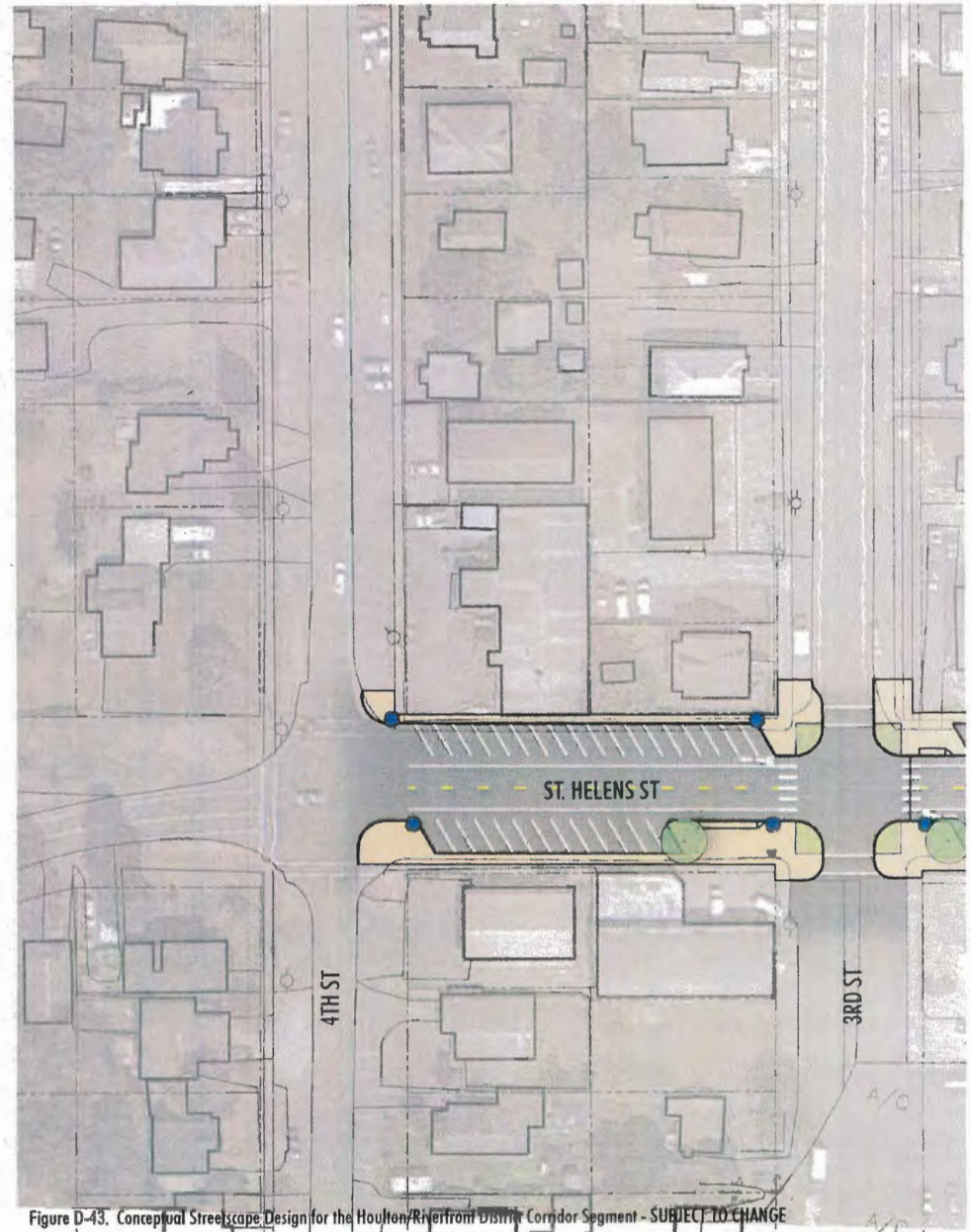
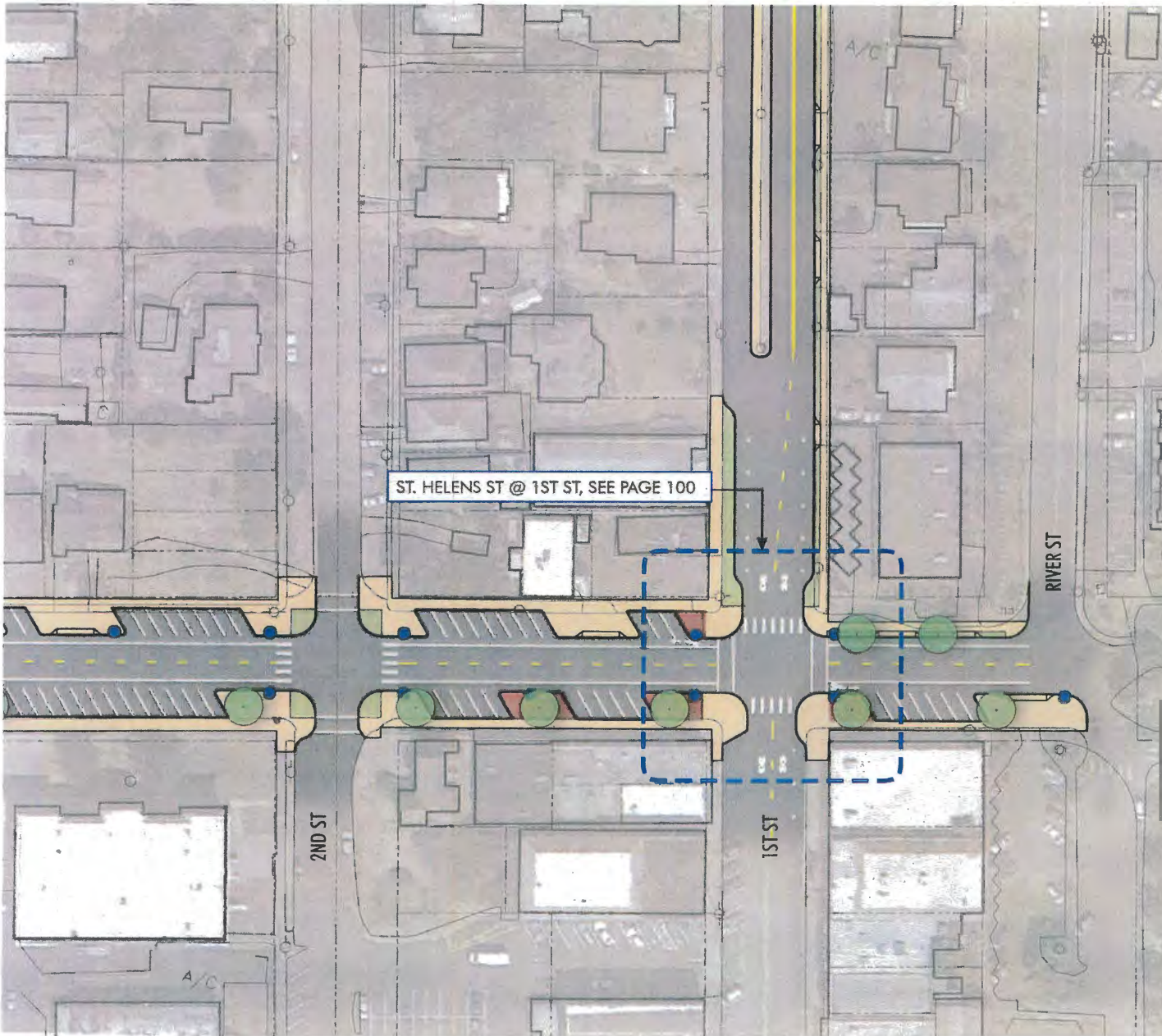










Figure D-43. Conceptual Streetscape Design for the Houlton/Riverfront District Corridor Segment - SUBJECT TO CHANGE

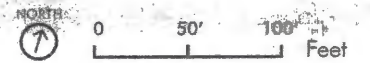
D. RECOMMENDED CORRIDOR DESIGN OPTIONS: HOULTON & RIVERFRONT DISTRICT CORRIDOR SEGMENTS



LEGEND: HOULTON & RIVERFRONT DISTRICT

-  NEW SIDEWALK
-  PLANTING STRIP/FURNISHING ZONE
-  SCULPTURAL ELEMENT
-  PARKLET - SUBJECT TO CHANGE
-  NEW CROSSWALK STRIPING
-  NEW LIGHT POLE
-  NEW TREE
-  SPECIAL OPPORTUNITY AREA
-  CONCEPTUAL INTERSECTION ENHANCEMENT

PLANS ARE CONCEPTUAL AND SUBJECT TO CHANGE



D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

STREETSCAPE DESIGN CONCEPTS – GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

1. TRAFFIC CALMING FEATURES

Traffic calming measures like bulbouts, mid-block crossings, improved crosswalks, buffered bicycle lanes, and on-street angled-parking areas will encourage slower vehicular speeds and make Houlton and the Riverfront District safer and more comfortable for residents, pedestrians, children, bicyclists, and drivers. The following traffic calming features are proposed along Houlton and the Riverfront District:

- The design proposes to reduce travel lanes to the recommended width of 12' per the TSP, and dedicate the leftover space to widened pedestrian sidewalks and, where space permits, planting strips and/or furnishing zones on each side of the street.
- To shorten pedestrian crossing distance and help calm traffic, bulbouts are proposed at most intersections throughout these two corridor areas, where adjacent on-street parking areas can accommodate them. Generally these bulbouts work to re-configure on-street parking without eliminating existing spaces, though there are several locations where a minimal loss of on-street parking is required.
- Buffered bicycle lanes, which are conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane, and are encouraged along St. Helens Street between US 30 and 13th Street, and along Columbia Boulevard between 13th Street and 1st Street. Buffered bike lanes provide greater shy distance between vehicles and bicyclists, allow bicyclists space to pass one another without encroaching on the vehicular travel lane, and encourage bicyclists to ride outside of the "door zone" when the buffer is between parked cars and the bike lane.
- New crosswalk striping and ADA-accessible curb ramps are proposed at all pedestrian crossings throughout the Houlton and Riverfront District corridor areas.
- At key intersections, the design proposes concrete with articulated scoring in the roadway and along crosswalks to reinforce these two corridors as a pedestrian-friendly environment. The change in material from asphalt to concrete alerts drivers as they pass through spaces designed to facilitate pedestrian movement, and helps improve safety throughout the corridor.



Figure D-44. Curb extension (bulbout) example integrated with a stormwater planter - Portland, OR



Figure D-45. Example of a buffered bike lane



Figure D-46. Intersection with enhanced paving example

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS



Figure D-47. Wood bench example



Figure D-48. Sidewalk Example



Figure D-49. Pedestrian-scale lighting integrated with banners located within the furnishing zone



Figure D-50. Custom Bike Rack



Figure D-51. Benson bubbler drinking fountain, Portland OR

2. PEDESTRIAN AMENITIES

Streetscape enhancements like street furnishings, street trees and planting areas, and pedestrian light poles create an inviting streetscape for pedestrians and encourages them to linger. This has numerous benefits to a streetscape including safety and economic growth and stability. The following summarizes the proposed pedestrian amenities in the Houlton and Riverfront District corridor segments:

- Street furnishings such as benches, bike racks, and waste receptacles are proposed throughout the corridor within furnishing zones, outside of the path of travel, and in special opportunity areas. The final locations, quantities, types, and styles of these elements will need to be further developed during subsequent design phases, but should generally be of a style and material befitting St. Helens.
- Pedestrian-scale light poles are proposed along each block face throughout the corridor, which will act as an organizing element for the streetscape and have numerous benefits including increased pedestrian safety, economic vitality during evening hours, and increased access throughout the project corridor. These lights are generally 12'-18' in height and should reinforce the character and identity of St. Helens. This design proposes locating one light at each corner near pedestrian crosswalks, and additional lights every 100' minimum.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

- Street trees are proposed throughout the US 30, Houlton, and Riverfront District corridor segments. Street trees are an integral component to a successful, vibrant, pedestrian-friendly streetscape. Their social, economic, and environmental benefits include shading streets and buildings, enhancing neighborhood beauty, filtering the air, improving adjacent real estate values, and even reducing crime.
- The requirements for locating street trees can be found in chapter 17.72.035 of St. Helens Municipal Code. In addition to these requirements, the following recommended criteria informed by feedback from the TAC, CAC, Planning Commission, and City Council, are intended to act as a guide for the selection of new street trees along US 30, Columbia Boulevard, and St. Helens Street:
 - Select trees to avoid interference with overhead utility lines where applicable;
 - Select trees with canopy widths to work with pedestrian-scale lighting (i.e. ensure that trees do not block light), and utility poles;
 - Select trees with non-invasive roots to minimize impacts to tree well paving and sidewalks;
 - Avoid tree species that cause excessive litter;
 - Select trees to provide color and contribute to neighborhood identity;
 - Select 'business-friendly' trees with airy leaf/branch patterns;
 - Select trees suited for the available planting area to ensure proper root development;
 - Select trees from the City's Recommended Street Trees list in Chapter 17.72 of the Municipal Code that meet the above criteria

Given these criteria, the following is a preliminary recommendation of potential street trees for US 30, Houlton, and Riverfront District areas:

| <u>CORRIDOR SEGMENT</u> | <u>LOCATION</u> | <u>SPECIES</u> (<i>Botanical name</i> - <i>Common Name</i>) |
|-------------------------|--------------------------|---|
| US30 | East Side | <i>Acer platanoides</i> 'Schweden' - Schwedler Norway Maple <i>Carpinus betulus</i> - European Hornbeam <i>Gleditsia triacanthos</i> 'Skyline' - Skyline Honeylocust <i>Tilia cordata</i> 'Glenleven' - Glenleven Linden |
| | West Side | <i>Acer truncatum</i> x <i>A. platanoides</i> 'Warrenred' - Pacific Sunset Maple <i>Acer grandidentatum</i> - Rocky Mountain Glow Maple <i>Cercis canadensis</i> - Red Bud <i>Ginkgo biloba</i> 'Saratoga' - Saratoga Ginkgo |
| | Medians - Columnar Trees | <i>Acer platanoides</i> 'Columnar' - Columnar Norway Maple <i>Acer rubrum</i> 'Bowhall' - Bowhall Maple |
| | Medians - Broad Canopies | <i>Acer platanoides</i> 'Schweden' - Schwedler Norway Maple <i>Carpinus betulus</i> - European Hornbeam <i>Gleditsia triacanthos</i> 'Skyline' - Skyline Honeylocust |
| HOULTON | Under Overhead Power | <i>Acer truncatum</i> x <i>A. platanoides</i> 'Warrenred' - Pacific Sunset Maple <i>Acer grandidentatum</i> - Rocky Mountain Glow Maple <i>Cercis canadensis</i> - Red Bud |
| | No Overhead Power | <i>Fraxinus ornus</i> - Flowering Ash <i>Fraxinus oxycarpa</i> - Flame Ash <i>Ginkgo biloba</i> 'Saratoga' - Saratoga Ginkgo |
| RIVERFRONT DISTRICT | Under Overhead Power | <i>Acer grandidentatum</i> - Rocky Mountain Glow Maple <i>Cercis canadensis</i> - Red Bud <i>Styrax japonica</i> - Japanese Snowbell |
| | No Overhead Power | <i>Fraxinus ornus</i> - Flowering Ash <i>Fraxinus oxycarpa</i> - Flame Ash <i>Ginkgo biloba</i> 'Saratoga' - Saratoga Ginkgo |

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS



D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

- Planting areas along streetscape corridors are an effective, attractive way to enhance the pedestrian experience, improve adjacent property values, and indicate a sense of civic care for a neighborhood. Some planting areas can manage stormwater runoff, as described in the last section of this document.

Like street trees, planting areas can take many forms. They can exist at-grade, visually breaking up the paving area and providing focal points of interest, or they can be raised above the grade of the sidewalk in planters to elevate the green to the pedestrian's eye and help to create distinct spaces. They can be containerized, either in pots on or adjacent to sidewalks as the City has done in the Houlton area in recent years, or elevated in planter baskets that hang off of other streetscape elements like light posts or wayfinding signs. Plantings can also be located in roadway medians at busy highway intersections or crosswalks to help with traffic calming and pedestrian safety. Median planting/landscaping on US 30 was identified as a potential option in the St. Helens 2011 TSP.

As with installing street trees, certain site conditions in each of the corridor segments can limit the ability to implement planting areas. Shallow basalt bedrock, vehicular sight lines, and narrow rights-of-way all have an impact on where and how planting areas might be located.

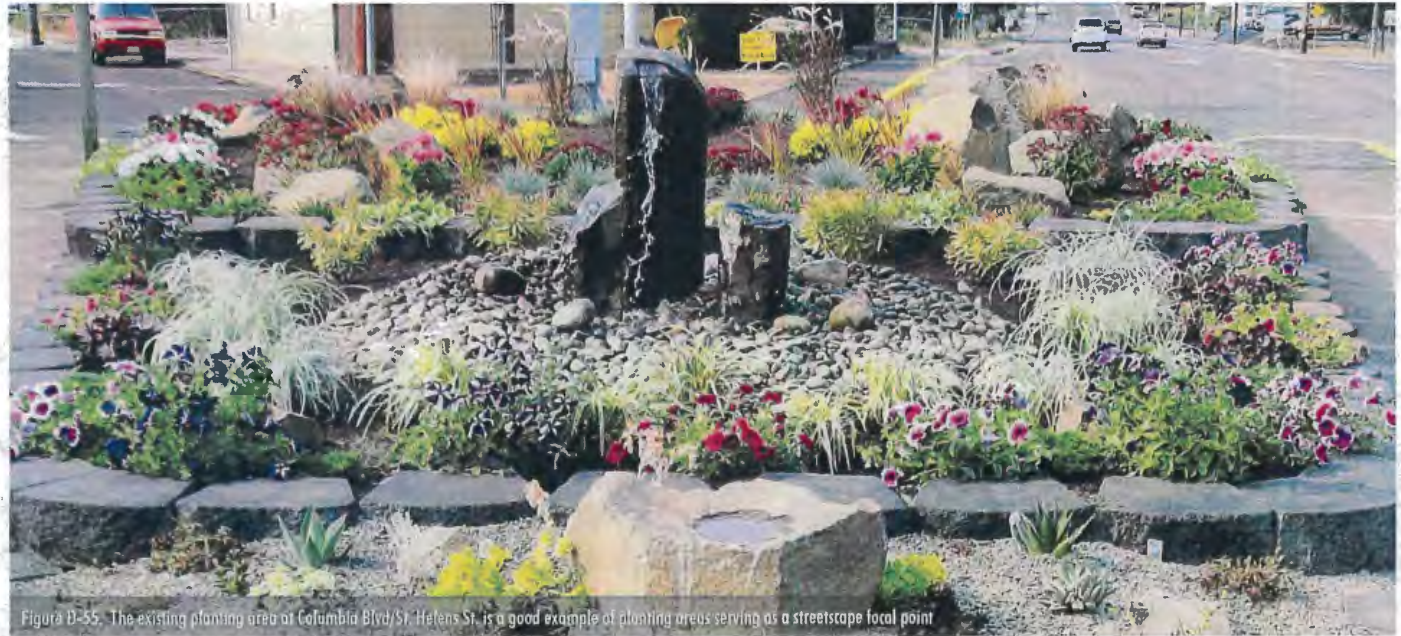


Figure D-55. The existing planting area at Columbia Blvd/St. Helens St. is a good example of planting areas serving as a streetscape focal point



Figure D-57. Stormwater plantings accent a curb extension - Portland, OR



Figure D-56. Streetscape plantings provide the streetscape with a native landscape character - Winters, CA



Figure D-58. Gateway arch marks the transition into an old town neighborhood - Bandon, OR



Figure D-59. A community kiosk example



Figure D-60. Banners on light poles add festivity and reinforce civic identity.



Figure D-61. Example of a downtown wayfinding sign - Breckenridge, CO

3. CIVIC IDENTITY & WAYFINDING

Gateway elements, wayfinding signs, banners, and community kiosks can enhance the civic identity of the Houlton and Riverfront District areas, adding vitality and character to its downtown. The following summarizes the proposed elements that contribute to civic identity throughout Houlton and the Riverfront District:

- Establish a gateway at the US 30 / Columbia Boulevard intersection that draws people into the Houlton area and towards the Riverfront District. Additional gateway elements are proposed at 13th Street to mark the arrival to Houlton's commercial coupler, and one at Columbia Boulevard and 1st Street marking the arrival to the Riverfront District.
- Locate wayfinding signs at key intersections that include maps and directories to guide people to various neighborhood amenities and destinations within and outside of the Houlton and Riverfront District project areas.
- A community kiosk is proposed mid-block on the south side Columbia Boulevard at 16th Street, adjacent to the St. Helens Post Office. Several community members have expressed a desire for this streetscape element, and confirmed that this location currently acts as a community news and gathering place.

4. GATEWAYS

The proposed gateway features at the intersection of US 30 and Columbia Boulevard would serve as a primary gateway to the Houlton and Riverfront District areas. A series of secondary gateways could be located at multiple locations along Columbia Boulevard to alert people that they are approaching or entering the Riverfront District area. Advisory committee and other community members suggested consideration of gateway elements at 6th, 4th, 2nd and/or 1st Streets. These gateway elements could include repeating signage, sculptural or other artistic elements and could vary somewhat at each place to signify culturally or historically significant aspects of each location.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

5. GREEN STREET STRATEGIES

The Houlton and Riverfront District streetscapes will feature a series of vegetated stormwater planters to capture and infiltrate stormwater run-off from adjacent roadways and sidewalks. These planters are envisioned as structural, landscaped reservoirs used to collect, filter, and infiltrate stormwater run-off and will feature low vegetation that tolerates both drought and inundation; street trees will be planted in their own wells rather than in the planters.

Though stormwater facilities are not located on the plans or sections above, we recommend that vegetated stormwater planters, swales, and rain gardens be integrated into the final streetscape design, where feasible. Reference the City of Portland 2008 Stormwater Management Manual for location, sizing, and design criteria of these Green Street Strategies.

Each of the following strategies for Houlton and the Riverfront District must consider the shallow basalt bedrock present throughout the project areas, and the potential impediments this bedrock could have on constructability and long-term performance:

- Rain Gardens
- Stormwater Planters
- Stormwater Infiltration Swales



Figure D-62. Example of a rain garden



Figure D-63. Example of a stormwater planter



Figure D-64. Example of a stormwater swale



Figure D-65. Existing photo of the South Columbia County Chamber of Commerce



Figure D-66. Conceptual view of the proposed gateway plaza integrated with Columbia Boulevard streetscape improvements and US 30 gateway elements

SPECIAL OPPORTUNITY AREAS

Refer to plan views on page 68-79 for locations of Special Opportunity Areas.

1. GATEWAY PLAZA – COLUMBIA BOULEVARD & MILTON STREET (CHAMBER OF COMMERCE)

The South Columbia County Chamber of Commerce is located just off of US 30 on Columbia Boulevard at Milton Way, and is situated at the front door to St. Helens' commercial core. Recommended intersection and streetscape enhancements adjacent to this site create an opportunity to establish a Gateway Plaza - a space to welcome visitors to relax and orient themselves to the various businesses and destinations throughout downtown St. Helens. Sculptural features that define the US 30 / Columbia Boulevard Gateway could be repeated in this space to further unify this gateway area. Sculptural elements should be designed to minimize future maintenance needs, including as a result of unintended use by skateboarders.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

2. STORMWATER / INTERPRETIVE GATHERING SPACE – COLUMBIA BOULEVARD & 14TH STREET

Located at the heart of the Houlton area, a vacant, depressed city block provides a special opportunity for creating a public space that could serve the many needs of the community. The site is situated at the low point of the Houlton area, making it a prime location for a large-scale stormwater detention basin with pedestrian trails or boardwalks, as well as interpretive elements that recall the natural history of the St. Helens area. According to City staff, this site already serves as a stormwater management facility to some degree. Enhancing its function for this purpose and as a community focal point is recommended. While this facility could improve the appearance and function of this area, it also requires acquisition of private property and likely would be relatively expensive to construct. As a result, it is considered a lower priority or longer range project in comparison to other recommended improvements.



Figure D-67. Photo of the existing vacant site at 14th Street and Columbia Blvd



Figure D-68. Photo of the existing triangular area at 13th Street and Columbia Blvd / St. Helens St



Figure D-69. Tanner Springs Park is an example of stormwater / interpretive civic gathering place - Portland, OR

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

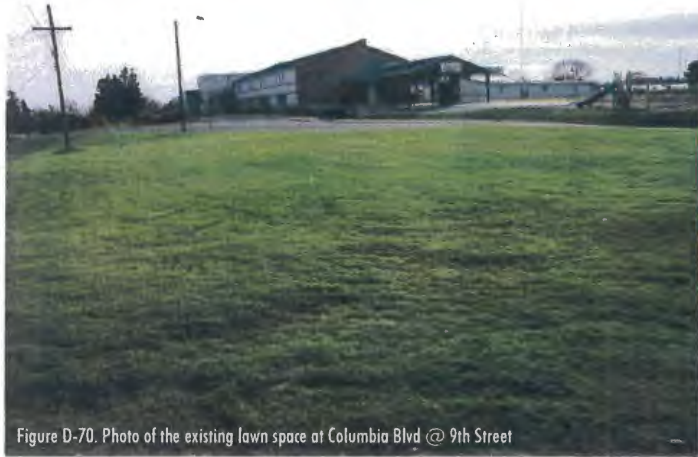


Figure D-70. Photo of the existing lawn space at Columbia Blvd @ 9th Street



Figure D-71. Photo of the existing lawn space at Columbia Blvd @ 2nd Street

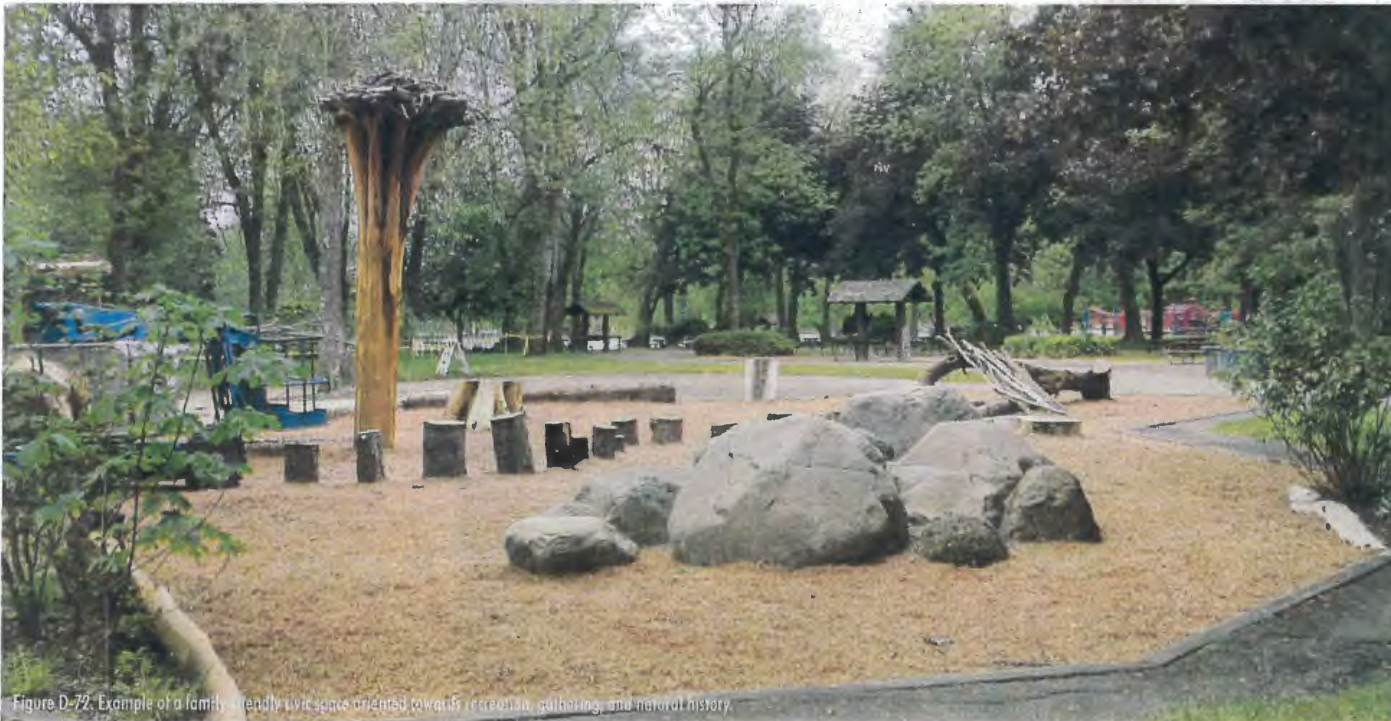


Figure D-72. Example of a family-friendly civic space oriented towards recreation, gathering, and natural history.

3. CIVIC GATHERING SPACE – COLUMBIA BOULEVARD & 13TH STREET

A wedge-shaped parcel located at 13th Street where Columbia Boulevard and St. Helens Streets converge could accommodate a flexible, pedestrian-oriented, paved outdoor space that could host a number of different civic events. This space could be designed to work in concert with the stormwater / interpretive gathering space located across 14th Street. As described in the Conceptual Intersection Enhancements 3B and 3C, the overall size of the wedge could increase significantly over what is there today.

4. CIVIC GATHERING SPACE – COLUMBIA BOULEVARD & 9TH STREET

A large, elevated lawn area at 9th Street adjacent to the elementary school could accommodate a civic gathering space that is oriented towards families, education, or cultural or natural history of St. Helens.

5. CIVIC GATHERING SPACE – COLUMBIA BOULEVARD & 2ND STREET

An existing lawn area at 2nd Street is located in the heart of a residential neighborhood, and could host a variety of civic events with a park-like setting. If this idea moves forward, it will be essential to carefully consider the type and hours of use of this area and minimize impacts on adjacent residents and property owners.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

6. COLUMBIA RIVER OVERLOOK –
COLUMBIA BOULEVARD JUST EAST
OF 1ST STREET

An existing parking area in City right-of-way at the end of Columbia Boulevard offers great views of the Columbia River. Nestled between two residences, an overlook with seating could provide some respite off the beaten path and a new way for the community to experience a natural wonder in their backyard. More discussion of this area is provided on page 99.



Figure D-73. Photo of the existing right-of-way spur just east of the Columbia Boulevard / 1st Street intersection



Figure D-74. Concept view of an overlook feature integrated with pedestrian walkways, on-street parking, planting areas and a vehicular turn around. Existing access to adjacent residences are preserved, SUBJECT TO CHANGE

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

7. RIVERFRONT DISTRICT OVERLOOK
– 1ST STREET BETWEEN COLUMBIA
BOULEVARD & ST. HELENS STREET

An elevated portion of 1st Street offers great views of the Riverfront District's "Main Street", the historic Columbia County Courthouse, and the Columbia River beyond. An overlook with seating and other pedestrian accommodations is proposed here, and would be accessed by a new pedestrian sidewalk along the top of the basalt outcrop wall.



Figure D-75. Photo of the upper section of 1st Street overlooking the Riverfront District, the Columbia County Courthouse, and the Columbia River

CONCEPTUAL INTERSECTION ENHANCEMENTS

As with the US 30 corridor segment, a number of potential improvements have been identified to address traffic safety and operational issues at specific locations in the Houlton/Riverfront District area. These options are intended to improve safety for all users (drivers, bicyclists and pedestrians), while also enhancing the appearance and function of the transportation system. The proposed enhancements are shown in Figure D-76 to Figure D-84.

1. COLUMBIA BOULEVARD / MILTON WAY (Figure D-76) - This concept illustrates potential enhancements to the Milton Way/Columbia Boulevard intersection. This concept has been designed to prevent southbound motorists on Milton Way north of Columbia Boulevard from traveling the wrong-way on Columbia Boulevard to continue south along Milton Way as well as to enhance pedestrian and bicycle connectivity to US 30 and to improve parking for the Chamber of Commerce. Initially two concepts were considered in this area: the recommended concept; and another option that would allow and legitimize the southbound movement onto Milton Way while making it safer. The primary benefit of the second alternative would be to continue to provide direct access southbound on Milton Way and to adjacent neighborhoods. The primary disadvantages would be to narrow Columbia Boulevard, to one lane between US 30 and Milton Way and to continue to create potential conflicts between vehicles and pedestrians in this area.



Figure D-76. Conceptual Intersection Enhancement: Columbia Boulevard @ Milton Way

D. RECOMMENDED CORRIDOR DESIGN OPTIONS, GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

While the project advisory groups failed to reach a consensus on a preferred option and a number of citizens argued for the second option, the City Council ultimately recommended the preferred option shown in this Report. While this will reduce direct access to residents near Milton Way to some degree, they will still be able to access the area from roads to the south via Columbia Boulevard such as 18th Street.

In addition to prohibiting the southbound movement to Milton Way, City Police Department personnel advocated for measures to ensure that vehicles turning left onto Columbia from US 30 southbound do not subsequently turn right onto Milton Way southbound. There is inadequate space between US 30 and Milton Way to perform this maneuver legally. Police personnel suggested considering a median or other barrier in this section of Columbia Blvd to restrict this maneuver. However, the project team does not recommend a barrier at this time because it likely would not prevent all motorists from making the maneuver and could in fact create safety and maintenance issues. As an alternative, the design team recommends installing "lane extension striping (wide white dotted line)" that directs motorists turning left southbound from US 30 to remain in the left lane of Columbia Boulevard. Subject to ODOT approval, the design team further recommends either 1) modifying the existing "No Right Turn on Red" part time restriction sign (that currently becomes active during a rail crossing event) to also activate when the southbound left-turn receives a green light or 2) posting a "No Turn on Red" sign on the northbound US 30 intersection approach. Both of these measures would reduce potential southbound left-turn and northbound right-turn vehicle interaction at this intersection. Additional options to address the concerns raised by police personnel also could be considered during a more detailed design phase.

This concept includes re-aligning the north leg of the intersection further east to provide greater separation between the north and south legs of the intersection, which also creates the opportunity for a pedestrian plaza adjacent to the Chamber of Commerce building. This concept also includes curb extensions on all four quadrants of the re-aligned north leg of the intersection (improving sight lines and shortening crossing distances for pedestrians). Pedestrian crossings of Columbia Boulevard are shown both east and west of Milton Way to maximize pedestrian connectivity. It would be possible to implement just one of these crossings and that could be considered in a more detailed design process. This project also includes a splitter island at the south leg to provide a refuge for pedestrian crossing Milton Way. As configured in this Report, the splitter island would allow from a moderate sized truck (e.g., one with a wheel base of about 40 feet) to turn right onto Milton Way after turning onto Columbia Boulevard. However, larger trucks would not be able to make this maneuver without driving over the splitter island. Signage is recommended to discourage larger trucks from attempting this maneuver.

Additional information about other concepts considered for this intersection is found in Appendix C.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

2. COLUMBIA BOULEVARD / 18TH STREET (Figure D-77) - This concept illustrates potential enhancements to the 18th Street/Columbia Boulevard intersection as well as the segments of Columbia Boulevard within the Houlton area. This concept includes curb extensions on all four quadrants of the intersection (improving sight lines and shortening crossing distances for pedestrians as well as providing channelization through the intersection). This concept also includes removal of the eastbound right turn-lane to provide wider sidewalks and on-street parking along Columbia Boulevard. Final design of the intersection will need to accommodate truck turn movements toward the Port area.



Figure D-77. Conceptual Intersection Enhancement. Columbia Boulevard @ 18th Street

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS



Figure D-78. Conceptual Intersection Enhancement: Columbia Boulevard / St. Helens Street @ 13th Street

3. COLUMBIA BOULEVARD / ST. HELENS STREET / 13TH STREET (Figure D-78)
- This concept illustrates a wide variety of potential enhancements to the 14th Street/Columbia Boulevard, 14th Street/St Helens Street, and 13th Street Columbia Boulevard intersections as well as the block bounded by 14th Street, Columbia Boulevard, and St Helens Street. This concept has been designed to improve the transition between the one-way segments of Columbia Boulevard and St Helens Street and the two-way segments of Columbia Boulevard. This concept includes removal of the eastbound left-turn lane between 14th and 13th Street and creation of a left-turn lane at the eastbound approach to 14th Street. This concept also includes curb extensions on all four quadrants of all three intersections (improving sight lines and shortening crossing distances for pedestrians) as well as wider sidewalks and on-street bike lanes.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

4. COLUMBIA BOULEVARD / 11TH STREET (Figure D-79) - This concept illustrates minor variations on the existing lane configurations at the 11th Street/Columbia Boulevard intersection. This concept has been designed to better transition between the potential cross-sections located east and west of the intersection while accommodating large trucks traveling to/from the south along 11th Street. This concept includes a painted median at the west leg of the intersection as well as wider sidewalks along Columbia Boulevard.



D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS



Figure D-80. Conceptual Intersection Enhancement: Columbia Boulevard @ 9th Street

5. COLUMBIA BOULEVARD / 9TH STREET (Figure D-80) - This concept illustrates minor variations on the existing lane configurations at the 9th Street/Columbia Boulevard intersection. This concept has been designed to better transition between the potential cross-sections located east and west of the intersection while accommodating vehicles queues and school buses traveling to/from Lewis & Clark Elementary. This concept includes a painted median and striped crosswalk at the west leg of the intersection as well as wider sidewalks along Columbia Boulevard.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

6. COLUMBIA BOULEVARD / 7TH STREET (Figure D-81) - This concept illustrates potential enhancements to the 7th Street/Columbia Boulevard intersection. This concept has been designed to better transition between the existing cross-section located west of the intersection to the potential cross-section located east while also maintaining access to 8th Street. This concept includes bulbouts on all four quadrants of the intersection (improving sight lines and shortening crossing distances for pedestrians as well as to providing channelization through the intersection).

7. COLUMBIA BOULEVARD / 1ST STREET (Figure D-82 and Figure D-83) - This concept illustrates potential enhancements to the 1st Street/Columbia Boulevard intersection as well as the special opportunity area located immediately east of the intersection. This concept has been designed to better transition between the potential cross section along Columbia Boulevard to the existing cross-section along 1st Street while maintaining access to 1st Street (overlook). This concept includes a bulbout in the southwest quadrant of the intersection (improving sight lines and shortening crossing distances for pedestrians as well as providing channelization through the intersection). Final design of the intersection/adjacent roadways should accommodate boat trailers



Figure D-81. Conceptual Intersection Enhancement: Columbia Boulevard @ 7th Street

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS



and other large vehicles traveling to/ from the boat launch located along River Street. The design for the overlook and surrounding area includes three short-term recommendations: (1) provide a stairway from the end of the Columbia Boulevard right-of-way to River Street below; (2) build a raised crossing area between the two curb extensions on the east side of 1st Street; and (3) provide a bicycle connection to River Street using existing right of way north and east of the intersection. In the long term if the two properties on either side of the right-of-way extension redevelop and no longer need direct vehicle access from that portion of Columbia Boulevard, the area between them could potentially be closed to vehicle traffic and transformed into a pedestrian plaza adjacent to the overlook.

Recommendations for the Section of 1st Street between Columbia Boulevard and St. Helens Street include not allowing for on-street parking within the constrained lower tier, prohibiting parking on the existing sidewalk on the east side within the constrained lower tier, maintaining the current width of that sidewalk, and providing "sharrows" (shared lane markings) in the street for bicycles where the right-of-way is too constrained to provide bike lanes. The striping on the east side of the street would be removed.

Another option which may be considered by the City would be to provide on-street parking on the east side of this section (lower tier) of 1st Street. In order to do so, the sidewalk would need to be narrowed, which

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

would not be ideal from a pedestrian comfort perspective because this is the only sidewalk through this section of roadway and the sidewalk would have to be narrowed to five feet which represents a minimum acceptable width. However, this could be done if the City decides to pursue that option to allow for on-street parking on that side of the street and ensure that people do not park on the sidewalk. The project team recommends that if this is the final direction given by the City, in the near term, the City should at a minimum reverse the ordinance that currently allows for on-sidewalk parking at this specific location.

8. **ST. HELENS STREET / 1ST STREET** (Figure D-84) - This concept illustrates potential enhancements to the 1st Street/St Helens Street intersection as well as the adjacent segments of 1st Street and St Helens Street within the Riverfront District area. This concept includes bulbouts on all four quadrants of the intersection (improving sight lines and shortening crossing distances for pedestrians). Shared lane pavement markings are shown along 1st Street and on-street bike lanes are shown along St Helens Street to improve driver awareness of cyclists along the roadways. Many of the potential enhancements shown in this concept could be applied to the intersections/roadway segments located further west along St Helens Street as illustrated in other sections of this report. Final design of the intersection/adjacent roadways should accommodate boat trailers and other large vehicles traveling to/from the boat launch located along River Street.



Figure D-84. Conceptual Intersection Enhancement: St. Helens Street @ 1st Street

PHASING RECOMMENDATIONS AND COST CONSIDERATIONS

Streetscape design concepts that are recommended for the Greater Downtown (Houlton and Riverfront District) corridor segments west of 13th Street can be separated into phases by street.

- Columbia Boulevard – Parklets that are recommended for this street in this corridor segment can be implemented first as temporary parklets in on-street parking spaces to explore the success and public use of these spaces. As support builds and the spaces serve public needs in a successful manner, more permanent parklet features as described above in bulbouts at intersections and at mid-block locations can be implemented.
- St. Helens Street – The Pedestrian Promenade streetscape design concept is recommended for this street in this corridor segment, with buffered bicycle lanes, widened sidewalks, planting strips, pedestrian scale lighting, and site furnishings.
- Curb extensions – Upgrading the number of intersections shown in this plan with curb extensions will be costly and will presumably occur on an incremental basis. A phased implementation plan will need to be developed in the future and some curb extensions may be constructed by private parties in conjunction with local development projects.
- Painting and striping – Some of the intersection improvements identified in this plan could initially be undertaken through painting and striping, rather than by building new curbs, sidewalks and specially paved areas. This would allow for the City to try these projects out in a less permanent way and ensure that a more permanent design meets the community's needs.

The Pedestrian Promenade streetscape design concept, with buffered bike lanes, is recommended for the Houlton/Riverfront District corridor segment east of 13th Street. It is also recommended to allow for parklets in some locations where appropriate in this corridor segment. In terms of phasing, these parklets can be initially implemented as temporary parklets within on-street parking areas.

A potential range of construction costs is provided for the Houlton and Riverfront District Corridor Segment improvements in Table C-3, below. These potential costs are broken down into Intersection Improvements (including vehicular roadway and pedestrian sidewalk areas), Roadway Improvements (including only vehicular roadway areas), and Pedestrian Improvements (including only pedestrian sidewalk areas). These order-of-magnitude costs were derived from the recommended improvements for each Houlton and Riverfront District corridor segment area described in the pages above, and are presented in a manner that allows for flexibility in determining priority projects for implementation.

POTENTIAL PRIORITY PROJECTS

Ultimately the City will need to prioritize the improvements identified in this Report. In doing so, the City should consider the overarching objectives for the proposed design concepts and specific improvements including the goals of improving safety, connectivity, economic vitality and appearance/sense of place. Other criteria for prioritizing projects could include:

- Ease and cost of implementation. Focus first on the “low hanging fruit” – projects with the most benefit for the lowest cost. This will help create early successes reasonably quickly and leverage additional improvements by community partners.
- Consistency with the City’s Transportation System Plan (TSP). The City has already identified a number of projects that should be undertaken to meet overall transportation needs. These also should be considered as relatively high priority.
- Potential for grant funding. Certain types of projects have a higher potential for successful funding from state and federal grant programs. Bicycle and pedestrian improvement projects in particular may garner potential funding from Active Transportation, or other similar grant programs.
- Significant community priorities. Some projects have been identified in a variety of community plans and discussions as priorities for a long period of time. The US 30/Columbia Boulevardvd. gateway project would fit into this category.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

Based on these criteria, the project team has identified the following potential preliminary list of priorities. These should undergo community scrutiny and discussion before completion of the Corridor Master Plan.

1. Stripe a continuous bike lane at the westbound approach to the US30/St Helens Street intersection. (TSP Project)
2. Install a crosswalk at the west leg of the 9th/Columbia Boulevard intersection – could also complete most of the striping enhancements between 11th and 9th Streets along Columbia Boulevard.
3. Install buffered bike lanes in select locations.
4. Install curb extensions/street patios and striping enhancements at 1st Street/St Helens Street. This project is also a priority in terms of addressing existing sight distance needs at the intersection. (TSP Project)
5. Reconfigure the 18th Street/Columbia Boulevard intersection with wider sidewalks along the north and curb extensions. (TSP Project)
6. Reconfigure the 18th Street/St Helens Street intersection with wider sidewalks along the north and curb extensions. (TSP Project)
7. Install curb extensions at 15th/Columbia Boulevard and 15th/St Helens Street. (TSP Project)
8. Reconfigure island between 13th and 14th along Columbia and St Helens to remove left-turn; consider doing this initially with striping and other less costly means.
9. Install curb extensions at 13th Street/Columbia Boulevard. (TSP Project)
10. Install curb extensions at 7th Street/Columbia Boulevard. (TSP Project)
11. Install one or more temporary parklets along Columbia Boulevard along with diagonal parking through striping and use of planter boxes and street furniture to delineate and enhance the parklet.
12. As funding allows, complete initial stages of the US 30/Columbia/Milton Way gateway project, beginning with striping and other low-cost means of providing safety and operational improvements.

D. RECOMMENDED CORRIDOR DESIGN OPTIONS: GREATER DOWNTOWN (HOULTON & RIVERFRONT DISTRICT) CORRIDOR SEGMENTS

| TABLE D-3. ORDER OF MAGNITUDE COSTS FOR HOULTON & RIVERFRONT DISTRICT CORRIDOR SEGMENT IMPROVEMENTS | | | |
|--|--|---|--|
| ITEM | INCLUSIONS | POTENTIAL RANGE OF CONSTRUCTION COSTS | |
| | | LOW | HIGH |
| <u>INTERSECTION IMPROVEMENTS</u> <ul style="list-style-type: none"> Vehicular Roadway & Pedestrian Sidewalk Areas Assumes a 110'x75' intersection | <ul style="list-style-type: none"> Curb Extensions (curbs, curb ramps, pedestrian paving areas) Wearing Surfaces (roadway asphalt, striping, pavement markings) Pedestrian Scale Lighting (1 luminaire per corner) and associated switching, conduit, and wiring Site Furnishings (benches & bike racks) Intersection Paving Enhancements (HIGH only) Subsurface Drainage Allowances Mobilization/Demo 30% Design / Construction Contingencies | <p>\$170,000 / Intersection</p> <p>Assumes standard curbs, concrete pedestrian paving areas, asphalt roadway paving, pavement markings and striping, roadway signage, base pedestrian scale lighting options and site furnishings (2 benches and 2 bicycle racks per intersection).</p> | <p>\$325,000 / Intersection</p> <p>Assumes concrete pavers and/or colored concrete pedestrian paving areas, colored and/or scored concrete intersection paving and crosswalks, higher quality pedestrian scale lighting, seatwalls, and optimal number of benches and bicycle racks (4 each per intersection).</p> |
| | | <p>\$65,000 / Block</p> <p>Assumes standard curbs, asphalt roadway and parking aisle paving, pavement markings, and roadway signage.</p> | <p>\$70,000 / Block</p> <p>Assumes more curbs associated with mid-block curb extensions, painted bike-lanes, and some customized roadway signage.</p> |
| <u>ROADWAY IMPROVEMENTS</u> <ul style="list-style-type: none"> Vehicular Roadway Only Assumes a 200' length block | <ul style="list-style-type: none"> Curbs Driveways Subsurface Drainage Allowances Wearing Surfaces (asphalt, striping, pavement markings) Signage Mobilization/Demo 30% Design / Construction Contingencies | <p>\$115,000 / Block</p> <p>Assumes standard concrete sidewalk paving, low-intensity landscape plantings in planting strips, minimal number of site furnishings, & base lighting options.</p> | <p>\$200,000 / Block</p> <p>Assumes colored and/or scored concrete pedestrian sidewalk paving with unit paver accents, high-intensity planting strip/ furnishing zone paving treatments, optimal quantity of site furnishings, seatwalls, and higher quality pedestrian scale lighting.</p> |
| | | <p>\$115,000 / Block</p> <p>Assumes standard concrete sidewalk paving, low-intensity landscape plantings in planting strips, minimal number of site furnishings, & base lighting options.</p> | <p>\$200,000 / Block</p> <p>Assumes colored and/or scored concrete pedestrian sidewalk paving with unit paver accents, high-intensity planting strip/ furnishing zone paving treatments, optimal quantity of site furnishings, seatwalls, and higher quality pedestrian scale lighting.</p> |
| <u>PEDESTRIAN IMPROVEMENTS</u> <ul style="list-style-type: none"> Pedestrian Sidewalk Areas Only Assumes a 200' length block | <ul style="list-style-type: none"> Pedestrian Sidewalk Paving Planting Strips / Furnishing Zone Treatments Site Furnishings (bicycle racks, benches, seatwalls) Pedestrian Scale Lighting (1 luminaire per block face) and associated switching, conduit, and wiring Pedestrian Wayfinding Signage (select locations) Mobilization/Demo 30% Design / Construction Contingencies | <p>\$115,000 / Block</p> <p>Assumes standard concrete sidewalk paving, low-intensity landscape plantings in planting strips, minimal number of site furnishings, & base lighting options.</p> | <p>\$200,000 / Block</p> <p>Assumes colored and/or scored concrete pedestrian sidewalk paving with unit paver accents, high-intensity planting strip/ furnishing zone paving treatments, optimal quantity of site furnishings, seatwalls, and higher quality pedestrian scale lighting.</p> |

E. POLICY AND REGULATORY CHANGES

Conclusions from the Land Use and Urban Design report (Technical Memorandum #4) can be used as the basis for potential policy and regulatory changes needed in order to implement the Corridor Master Plan. The following conclusions, by corridor segment, are those that can be addressed through local regulations, particularly City development code.

US 30

- Consider updating standards for parking lot landscaping and design to increase landscaping and improve pedestrian connections.

HOULTON

- Use excess right-of-way to enhance landscaping, as well as bicycle and pedestrian facilities and create a narrower feel to the road that can help slow traffic.
- Provide improved pedestrian amenities (e.g., pedestrian scale light, street furniture, etc.) to create more of sense of place and unique identity for the area; use signage both for this purpose and to guide people to the Riverfront District.

RIVERFRONT DISTRICT

- Ensure that on and off-street parking requirements and availability are integrated to meet the needs of existing and future land uses and businesses in the area.

These conclusions, in addition to elements from the recommended streetscape design options, are discussed further in terms of potential regulatory changes in the following sections.

Land Use Issues and Potential Changes

The following conclusions related to land use were presented in the Land Use and Urban Design report.

- Short of undergoing a very significant transformation through major redevelopment, the vehicle-oriented character of development on US 30 is not likely to change in the near future.
- Houlton is a key shopping and business district for residents and visitors, as well as a gateway to the Riverfront District area. Land use patterns and design standards have the potential to encourage a mix of land uses.
- There are opportunities for more mixed use development in the Riverfront District in the future. The area currently has a strong residential character with accents of civic uses and businesses as well as activities on the Riverfront.

A variety of uses can be developed and redeveloped in the corridor given existing land use and zoning designations. Therefore, no land use or zone changes are being developed or proposed as part of the Corridor Master Plan.

The recommended streetscape design options for Houlton and the Riverfront District, in particular, have been developed to reflect and complement the variety of existing and potential uses in these areas. For example, parklets recommended in commercial areas would feature more seating and active uses than parklets recommended in residential uses, which would feature more landscaping, passive, and "park-like" uses.

Development Code Changes or Strategies

Potential development code changes and strategies are being developed based on conclusions from the Land Use and Urban Design report and elements from the recommended streetscape design options that relate to the development code. These potential changes and strategies include the following development code concepts:

- Landscaping standards for parking lots and yards fronting US 30, Columbia Boulevard, and St. Helens Street
- Pedestrian connections through parking lots to US 30
- Landscaping in planting strips and bulbouts along Columbia Boulevard and St. Helens Street
- Pedestrian amenities (e.g., pedestrian-scale lighting, street furniture, etc.) along Columbia Boulevard and St. Helens Street
- Temporary parklets in on-street parking spaces

These code concepts are discussed in terms of on-site landscaping standards, pedestrian access standards, planter strip standards, and other code requirements in the following sections.

LANDSCAPING STANDARDS

City Development Code requirements for landscaping and screening (St. Helens Municipal Code (SHMC) Chapter 17.72) generally apply to construction of new structures and to changes of use that either increase on-site parking or loading requirements or change access requirements. The requirements do not apply to single-family and two-family dwelling units or to uses that do not require site design review or a conditional use permit. Landscaping and screening requirements apply to on-site locations. Landscaping in the public right-of-way, namely the planting strip, is addressed by street trees and related requirements discussed in the following sections.

PARKING LOT LANDSCAPING

Pursuant to SHMC 17.72.110(b), the following screening provisions apply to parking areas in St. Helens:

(b) Screening of parking (larger than three spaces) and loading areas (larger than 400 square feet) is required. The specifications for this screening are as follows:

- (i) Landscaped parking areas shall include special design features which effectively screen the parking lot areas from view. These design features may include the use of landscaped berms, decorative walls, and raised planters;*
- (ii) Landscape planters may be used to define or screen the appearance of off-street parking areas from the public right-of-way;*

RECOMMENDATION: For parking lots that front US 30, Columbia Boulevard, or St. Helens Street in the project area, it can be specified which design features (e.g. landscaping or planters, but not walls) shall be required to screen parking lots, as well as any other design details that will serve the vision of the Master Corridor Plan. Buffer requirements should accordingly be set for parking lots fronting an arterial street in Figure 13 of SHMC Chapter 17.72.

FRONT YARD LANDSCAPING

There are no front yard setbacks, per se, required in the Highway Commercial District along US 30 and there is a zero front yard setback in the Houlton Business District and Riverfront District.

SHMC Chapter 17.64 of the City Development Code establishes the setback requirements below for streets of substandard width in the project area, which is not necessarily an identified issue in the project area.

F. POLICY AND REGULATORY CHANGES

- Major arterials (US 30) – At least 50 feet measured from the centerline
- Minor arterials (Columbia Boulevard, St. Helens Street, and Old Portland Road) – At least 30 feet from the centerline
- Collectors (1st Street) – At least 25 feet measured from the centerline

The Development Code allows the maximum setback in Houlton and the Riverfront District to be increased if the increased setback is used for pedestrian-oriented amenities, such as a sidewalk cafe, plaza, or courtyard (17.32.170 and SHMC 17.32.175(4)).

Existing landscaping standards do not set minimum standards (e.g., percentage) for site landscaping based on land use district or proposed use.

RECOMMENDATION: Minimum landscaping standards can be established for front yard setbacks created during development or redevelopment (development subject to site development review pursuant to SHMC Chapter 17.96) along US 30, Columbia Boulevard, and St. Helens Street in the project area. Given the recommendations in this Plan, the most effective use of front-yard setbacks for new landscaping and buffering would be along US 30. While such setbacks would help implement the recommendations in this Plan, setbacks should not be excessive.

PEDESTRIAN ACCESS STANDARDS

SHMC 17.84.050 (Required walkway location) establishes walkway requirements between buildings on a site and between building entrances and streets. It also requires separated or demarcated walkways when crossing motor vehicle traffic ways in parking lots.

Recommendation: To increase pedestrian connections to US 30 for development subject to site development review, requirements can be added specifying the maximum spacing of walkways crossing parking lots larger than a threshold size and connecting to US 30.

PLANTING STRIP STANDARDS

PLANTER STRIPS

SHMC 17.152.060(2) requires at least five feet separation between the curb and sidewalk (i.e., planter strip) for arterials and collectors except in some specified cases. Maintaining sidewalks, planter strips, and curbs is the responsibility of the adjacent property owner.

STREET TREES

Pursuant to SHMC Chapter 12.06 (Street Trees), the City or a development applicant is required to plant street trees where there is a lack of street trees, which is defined as the absence of trees for 100 lineal feet or more along one or both sides of the street. It is the City's responsibility to provide street trees under the following conditions:

- Replaces or substantially repairs 30 lineal feet or more of sidewalk;
- Performs an asphalt overlay of the entire street width for a street section longer than 50 feet; or
- Makes underground utility repairs that require any of the work described above.

Street tree provisions in SHMC 17.72.030 also specify that all development fronting a public or private street, or a private driveway more than 100-feet long, must provide street trees according to a City-approved plan. Exemptions to street tree requirements may be granted if the tree would potentially conflict with existing utility lines, would create visual clearance problems, does not have enough space within the public right-of-way, or could not be supported by the ground/soil conditions within the public right-of-way. In cases of exemption the applicant may be required to provide a landscaping easement outside of the public right-of-way or pay a fee to the City commensurate with the cost of the trees that would have otherwise been required.

Street trees are to be provided in accordance with street tree regulations in SHMC Chapter 17.72. These regulations address the location,

spacing, size, and species of the trees. Recommended street tree species tables (small trees, understory trees, overstory trees, flowering trees, columnar trees, and conifers) are provided at the end of Chapter 17.72.

RECOMMENDATION: Landscaping requirements can be modified to specify trees that are particularly suited to the soils in the project areas, as well as to allow for and/or require other (non-tree) planting in the soil or in planters in the planting strip are part of development subject to site development review. Spacing and other standards also may be adjusted based on the recommendations in this Plan.

PEDESTRIAN AMENITY REQUIREMENTS

Existing street improvement standards require that street lights to be provided “in accordance with regulations adopted by the city’s direction,” and that, at a minimum, “there shall be a street light at each street intersection”(SHMC 17.152.030(24)). There is not guidance about the type or design of lighting. There are also not requirements currently in the Development Code for providing furniture or other pedestrian amenities in the planting strip as part of street improvements.

RECOMMENDATION: Provisions could be added to these standards that require development subject to site development review to provide pedestrian amenities in the planting strip—for example, developers can be required to provide a fee-in-lieu of actual amenities that would cover their proportional share of the cost of amenities along a given section of the street. Examples of and guidelines for pedestrian-scale lighting, street furniture, and other pedestrian amenities that can be installed in the planting strip should be provided in the City of St. Helens Engineering Department Public Facilities Construction Standards Manual, and a reference to that section in the manual should be included in the street improvement standards in the Development Code.

OTHER CODE REQUIREMENTS

The Development Code also likely will need to be updated in order to allow and implement parklets and, in particular, temporary parklets in on-street parking spaces. Other communities have regulated these types of parklets in street, traffic, and building code and not development code. They have provided a permitting process and guidelines for design, construction, and maintenance.

RECOMMENDATION: Guidelines for parklets, including temporary parklets in on-street parking spaces, should be provided in the City of St. Helens Engineering Department Public Facilities Construction Standards Manual. A reference to that section in the manual should be included in applicable code sections—for example, in SHMC Title 10 (Vehicles and Traffic), Title 12 (Streets, Sidewalks and Public Places), and Title 15 (Buildings and Construction).

More information about this topic can be found in Appendix D.

Access Management Goals and Approach

Access management goals for roadways within the study area are documented in the City's adopted Transportation System Plan (TSP) as well as in previous technical memoranda associated with this study. The segments of US 30, Columbia Boulevard, and St Helens Street located within the project area currently have multiple access points that do not meet adopted access spacing standards for new construction.

This study does not provide recommendations for making changes to existing private driveways within the project area, nor does it provide guidance on how to address issues with existing access points in the future. As public and private properties within the project area redevelop, ODOT and the City will review the location of existing and proposed access points along their respective facilities. Driveway conformance with access spacing standards will be assessed and a determination will be made as to whether proposed land use changes or other factors necessitate the consolidation or reconfiguration of existing or proposed access points. ODOT and the City retain the legal authority to close or restrict driveways on an as-needed basis if safety or other conditions warrant. In the interim, many of the existing access points that do not conform with access spacing standards may continue to operate acceptably due to: 1) relatively low traffic volumes and travel speeds, 2) separation of left and right-turn movements at many of City's the major intersections, and 3) the presence of a two-way left-turn lane (TWLTL) along US 30 and Columbia Boulevard east of St Helens Street.

This study includes recommendations for installation of a raised median islands along portions of US 30 and for roadway alignment changes along the Columbia Boulevard and St. Helens Street Corridors. The recommended changes shown are conceptual in nature and were developed to minimize potential impacts to existing private driveways. No private driveway closures or turn movement restrictions are proposed along US 30 except at the US 30/Wyeth Street intersection and in areas where signalized intersection queuing currently blocks driveway access. Final design of any median improvements along US 30 will be subject to a public review process and that process would be the forum for assessing specific potential property implications. Similarly, any potential future changes to private driveway access along US 30 are subject to a public review and appeal process.

More information on this topic can be found in Appendix E.

APPENDIX A. PROJECT MISSION, GOALS AND GUIDING PRINCIPLES

Vision, Goals and Guiding Principles

St. Helens US 30 & Columbia Blvd./St. Helens St. Corridor Master Plan

One of the first steps in the Corridor Planning process was to identify a Vision for the area and a set of related goals and guiding principles for the project and the different corridor segments being addressed by it. This document includes a vision, goals and guiding principles which were reviewed and refined based on discussion with project advisory committee members, local business and property owners, the St. Helens City Council and other community members.

Corridor Vision

US 30 Corridor Segment

Highway 30 will provide safe, convenient access to local businesses along the highway, while balancing that with state goals for traffic mobility. The appearance of the highway will be improved over time to enhance landscaping and other elements that will make it a more attractive place for people to travel by car, bicycle, walking or transit. Key intersections such as at Gable Road, Columbia Blvd. and St. Helens Street will be improved to enhance safety for all types of travel and to create attractive, clearly recognizable gateways to other parts of St. Helens, helping meet the community's goals for economic revitalization in those areas.

Columbia Blvd./St. Helens Street Segment

Columbia Blvd. and St. Helens Street will provide safe, convenient travel to access the Houlton business area, Olde Towne and adjacent neighborhoods by drivers, bicyclists and pedestrians. These streets will provide good access to local businesses and be attractively designed to help draw people to the area and enhance their shopping and travel experiences. Street designs will incorporate opportunities for landscaping, public art and signage that directs people to the Houlton area and Olde Towne. Designs will recognize physical conditions and constraints, be cost-effective and build on natural and cultural features and other opportunities in the area.

Overall Project Goals

- Create “streetscape” plans for the US 30 & Columbia Blvd/St. Helens Street corridors that reflect the community's vision for appearance and function.
- Improve the aesthetics and function of the corridors to attract business and investment, provide better access, direction and signage to the Houlton and Olde Towne areas, and improve desirability.

Project and Corridor Guiding Principles

Planning Process and Community Involvement

- Establish a community vision, goals and guiding principles for the study area.
- Engage business and property owners, residents, stakeholders, and elected and appointed officials.
- Ensure consistency with local and state plans and policies.

Economy and Business Support

- Develop planning design and implementation standards to revitalize businesses and business districts in the planning area.
- Ensure that customers, employees and others have good access to local businesses, including through on-street parking.
- Ensure that proposed solutions and projects are cost-effective and make efficient use of limited resources.

Transportation Safety and Mobility

- Improve street connectivity, design, and ability to access and locate business areas.
- Improve pedestrian and bicycle safety and accessibility, thereby encouraging walking and bicycling.
- Balance the need for local access and traffic calming with the need to provide for through-traffic movement and mobility (particularly in the US 30 corridor) as well as emergency vehicle accommodations
- Develop and implement solutions that are consistent with local and regional transportation needs.

Connectivity & Streetscape Aesthetics

- Improve the appearance of the US 30 and Columbia Blvd./St. Helens St. corridors (Houlton area).
- Improve pedestrian and bicycle connectivity between the corridor areas and adjacent open spaces & parks, trail/bicycle/transit networks, and neighborhoods.
- Develop and apply street designs that serve the unique needs of each corridor segment (US 30, Houlton and Olde Towne).
- Consider opportunities for integrating sustainable design strategies into the streetscape design and implement them where appropriate.

APPENDIX B. EXISTING CONDITIONS, OPPORTUNITIES AND CONSTRAINTS REPORT



KITTELSON & ASSOCIATES, INC.

TRANSPORTATION ENGINEERING / PLANNING

610 SW Alder Street, Suite 700, Portland, OR 97205 ☎ 503.228.5230 ☎ 503.273.8169

MEMORANDUM

Date: January 31, 2014

Project #: 13172.3

To: Jacob Graichen, City of St. Helens and Naomi Zwerdling, Oregon Department of Transportation

From: Ribeka Toda, Matthew Bell, and Chris Brehmer, P.E.

Project: US 30 & Columbia Boulevard/St. Helens Street Corridor Master Plan

Subject: Final Technical Memorandum #3 – Existing and Future Transportation Conditions

This memorandum summarizes existing and projected future transportation conditions along the segments of US 30, Columbia Boulevard, and St. Helens Street located within the US 30 & Columbia Boulevard/St. Helens Street Corridor Master Plan study area (herein referred to as the “study area”). The information presented in this memorandum provides the project team with an overview of the planned and potential future transportation improvements within the study area.

Much of the information presented in this memorandum was obtained from the *City of St. Helen’s 2011 Transportation System Plan (TSP)* update prepared by Kittelison & Associates, Inc. (KAI) and Angelo Planning Group (APG) in conjunction with the city, Columbia County, and Oregon Department of Transportation (ODOT). Supplemental data and further analysis of the corridors was prepared to provide the following:

- An evaluation of the existing physical and operational characteristics of the study area corridors.
- An evaluation of existing motor vehicle volumes at select locations within the study area to understand daily traffic patterns and variations throughout a typical mid-week day,
- An assessment of existing pedestrian and bicycle volumes at select locations within the study area to identify areas that experience high levels of pedestrian and bicycle activity,
- A block-by-block assessment of existing bicycle infrastructure using a new methodology adopted by ODOT.

The remainder of the memorandum is organized as follows:

- Existing conditions
 - Roadway facilities
 - Pedestrian facilities

- Bicycle facilities
 - Traffic volumes
 - Intersection safety analysis
 - Bicycle infrastructure assessment
 - Long-term Future Travel Demand
 - Planned Transportation Improvements from the TSP
 - Roadway facilities
 - Pedestrian facilities
 - Bicycle facilities

Appendix "A" contains the TSP figures referenced throughout this memorandum.

EXISTING TRAFFIC CONDITIONS

This section documents the existing physical and operational characteristics of the multimodal transportation system within the study area and reflects all transportation related improvements that have occurred since adoption of the TSP. This section also includes a review of traffic volume patterns, traffic safety, and a qualitative evaluation of bicycle infrastructure.

ROADWAY FACILITIES

US 30 travels north-south through St. Helens connecting the City to communities such as Astoria, Clatskanie, Rainer, Prescott, and Columbia City to the north and Scappoose and the greater Portland metropolitan area to the south. US 30 is classified as a major arterial by the City of St. Helens and as a principal arterial by ODOT. Both US 30 and the Portland & Western Railroad rail line are barriers to providing connectivity for motorists, pedestrians, and cyclists within the community. The City and ODOT have been working together to identify and implement solutions to increase the frequency and improve the quality of the pedestrian and bicycle crossings on US 30. The City's current TSP includes several projects to enhance crossing conditions along US 30. The Corridor Plan will build upon this work and identify additional projects to improve multimodal connectivity within the community.

Columbia Boulevard and St. Helens Street form a couplet east of US 30. Both streets are classified as minor arterials by the City of St. Helens and ODOT. Both streets provide local access to a variety of land uses in the eastern part of the city, including the Houlton and St. Helens Olde Towne areas. Both streets are also relatively wide in many areas with the extra pavement width presenting both challenges and opportunities for connectivity and safety.

Historically, Columbia Boulevard and St. Helens Street served as major trucking routes to industries located along the Columbia River and were constructed to accommodate freight vehicles between US

30 and the river industrial area. Over time the amount of right-of-way needed to accommodate these wide roadways has become unnecessary due to the evolution of local industry and diminished large truck travel needs through the corridor. The wide roadways present challenges for the community in that they create a travel environment that contributes to speeding, requires lengthy pedestrian crossings, and is costly to maintain. While there are challenges, the wide roadways also present opportunities for the community in that there may be ways that the public right-of-way could be better used to create an environment where the focus can be on travel to instead of through the area. The City's current TSP includes several projects to address the challenges presented by the wide roadways. The Corridor Plan will build upon this work and identify additional projects to improve travel conditions.

PEDESTRIAN FACILITIES

The TSP provides an inventory of existing pedestrian facilities within the study area and identifies locations where there are gaps in the sidewalk network as well pedestrian crossings needing improvement. Figure 3-5 from the TSP illustrates the existing pedestrian facilities and known deficiencies. As shown, sidewalks are provided along both sides of US 30 between Wyeth Street and St. Helens Street and along the west side of US 30 south of St. Helens Street. There are no sidewalks provided along US 30 north of Wyeth Street. Sidewalks are also provided along both sides of Columbia Boulevard and St. Helens Street through the couplet and on both sides of Columbia Boulevard east of the couplet to 9th Street. Sidewalks are provided on the north side of Columbia Boulevard between 9th Street and 7th street and on both sides east of 7th Street.

Each of the signalized crossings along US 30 provides striped pedestrian crosswalks and pedestrian signals that can be activated by pedestrians at the intersection. Unsignalized intersections along US 30 do not have striped crosswalks. The lack of a sidewalk along the east side of US 30 between Gable Road and St. Helens Street, coupled with the presence of the Portland & Western Railroad to the east of the highway, limits but does not eliminate the number of pedestrian crossings across US 30 at unsignalized locations. Anecdotal information obtained from the public through the current corridor study process indicates that a number of pedestrian crossings occur along US 30 at unsignalized intersections and other mid-block locations, often to destinations without an adjacent sidewalk along the east side of the roadway.

The city has several marked and unmarked pedestrian crossings along Columbia Boulevard and St. Helens Street that rely on drivers to yield the right-of-way to pedestrians. These and other locations throughout the Houlton area tend to have wide (approximately 60 feet) roadway cross sections that require pedestrians to cross not only the travel lanes, but also on-street parking lanes provided on one or both sides of a given roadway. Figure 3-5 from the TSP identifies several intersections within the study area with unmarked or unimproved pedestrian crossings. The City's current TSP identifies several projects to address the gaps in the sidewalk network as well as improve crossing conditions along US 30, Columbia Boulevard, and St. Helens Street. The Corridor Plan will build upon this work and identify additional projects to pedestrian and bicycle access and circulation along the corridors.

BICYCLE FACILITIES

The TSP provides an inventory of existing bicycle facilities within the study area and identifies locations where there are missing bike lanes (on one or both sides of the roadway) and where crossing improvements are desirable. Figure 3-6 from the TSP illustrates the existing bicycle facilities and known deficiencies. As shown, US 30, Columbia Boulevard, and St. Helens Street currently have striped bike lanes. Field measurements completed in the fall of 2013 indicate that the width of the striped bike lanes do not meet the City's roadway design standards in some areas. The TSP indicates that bike lanes along Columbia Boulevard and St. Helens Street should be six feet wide, yet in some areas the bike lanes are less than six feet wide and/or overlap with the on-street parking. Figure 3-6 also illustrates two locations with identified bicycle crossing improvement needs. Although the City's current TSP does not include any projects to restripe Columbia Boulevard and/or St. Helens Street, it does include projects to enhance crossing conditions. The corridor master plan will contemplate solutions that can enhance bicycle travel within the study area.

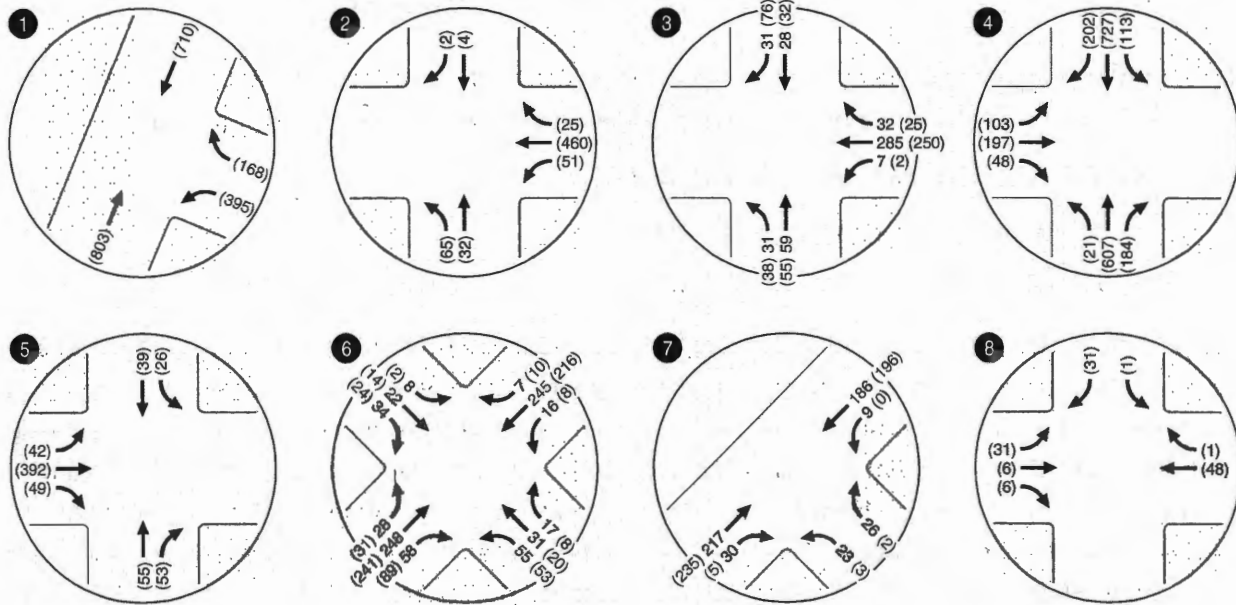
TRAFFIC VOLUMES

Manual turning movement counts were conducted by ODOT at eight intersections in October 2013. Five of the counts were conducted during the weekday evening (4:00 to 6:00 p.m.) peak time period consistent with the TSP and three were conducted over a 16-hour period (6:00 a.m. to 10:00 p.m.). The counts include the total number of pedestrian, bicycles, and motor vehicles at the following locations:

- US 30/St. Helens Street (2-hour count)
- US 30/Columbia Boulevard (2-hour count)
- 18th Street/St. Helens Street (2-hour count)
- 18th Street/Columbia Boulevard (2-hour count)
- 15th Street/St. Helens Street (16-hour count)
- S River Road/St. Helens Street (2-hour count)
- 12th Street/Columbia Boulevard (16-hour count)
- 9th Street/Columbia Boulevard (16-hour count)

The traffic volumes along US 30 were seasonally adjusted to reflect the 30th highest hour in a manner consistent with the TSP. Given the number of intersecting roadways and driveways along the study corridors, there was no basis to balance volumes between study intersections.

Based on a review of the turning movement counts, the weekday evening peak hour was found to occur from 4:30 to 5:30 p.m. Figure 1 summarizes the motor vehicle turning movement volumes at the study intersections during the weekday evening peak hour. Given the relatively high level of pedestrian and bicycle activity adjacent to local schools, additional turning movement volumes representing the school peak hour (2:00 to 3:00 p.m.) are included where applicable.



Legend
 # - School Volumes
 (#) - PM Volumes

Existing (2013) Motor Vehicle Turning Movements
 Weekday School & PM Peak Hours
 St Helens, Oregon

Figure
 1

H:\profile\13172 - US 30 & Columbia Blvd Streetscape Plan\dwgs\Figs\13172_Bike_Ped_Fig02.dwg Jan 24, 2014 - 11:22am - mbell Layout Tab: Fig01

Review of the traffic volumes shown in Figure 1 indicates that the roadway capacity along Columbia Boulevard and St. Helens Street exceeds the current traffic demand. Traffic volumes eastbound and westbound on the 2-lane segment of Columbia Boulevard east of 12th Street were measured to be *higher* than those eastbound and westbound on the couplet west of 18th Street where there are more travel lanes. These results indicate there may be opportunities to reconfigure the roadway cross sections while still preserving adequate capacity. For example, the eastbound right-turn lane on Columbia Boulevard at 18th Street could be eliminated (at least from an intersection capacity perspective) as was suggested during the corridor study walking tour (Business and Property Owners Meeting #1/CAC Meeting #1). Other opportunities to reconfigure the cross sections are presented later in this report.

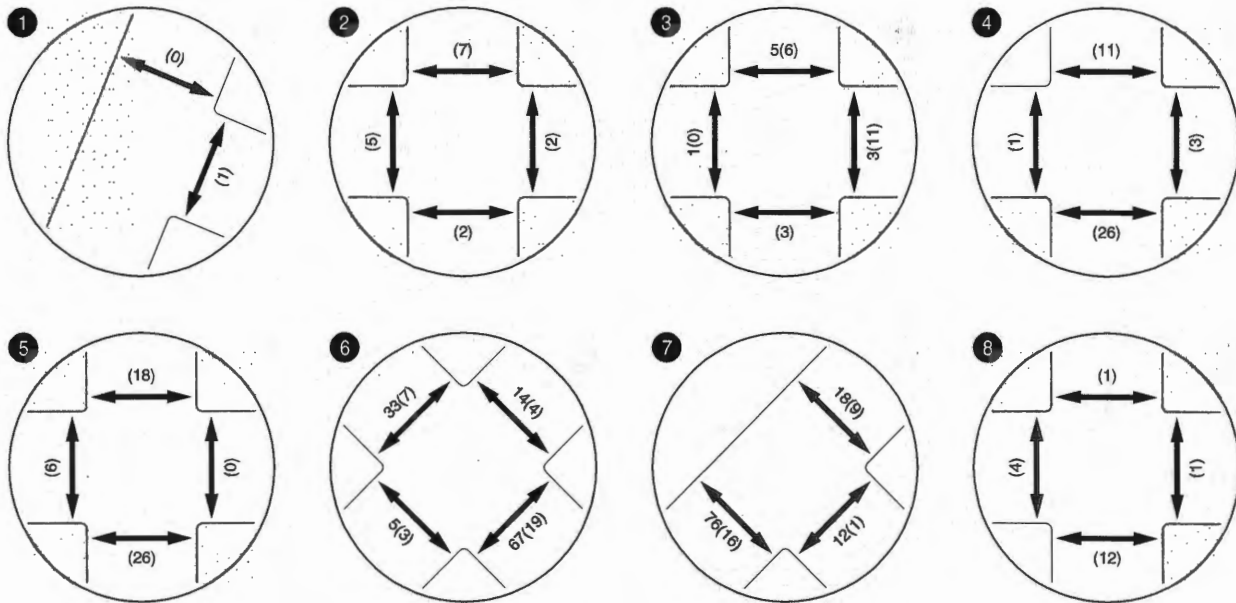
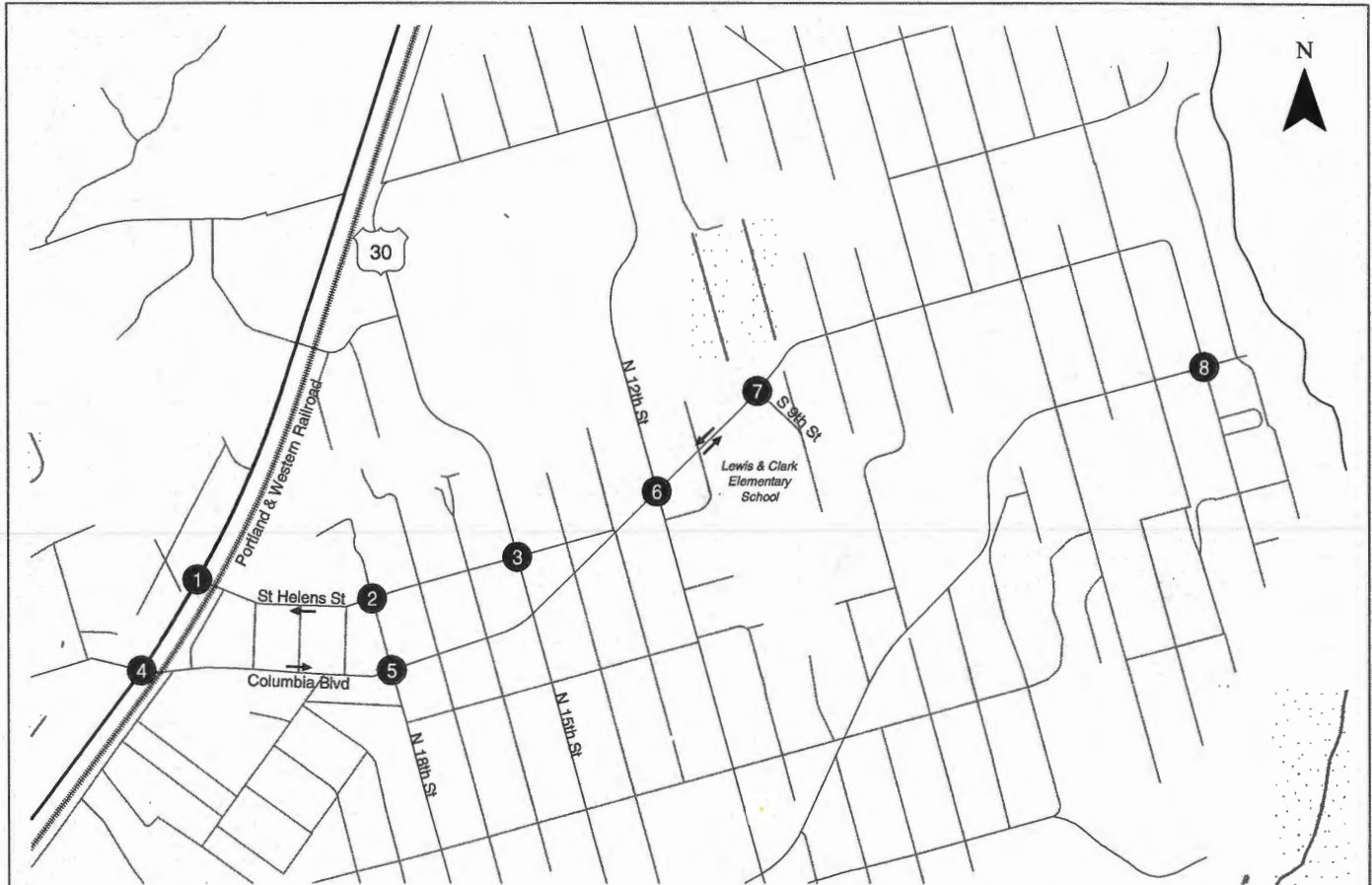
Figure 2 illustrates the pedestrian crossing volumes measured by ODOT at the study intersections in October 2013 during the weekday evening peak hour (4:30 to 5:30 p.m.) and during the school peak hour (2:00 to 3:00 p.m.) where applicable. Our review indicates that the level of pedestrian crossing volumes at the 9th Street/Columbia Boulevard intersection and the 12th Street/Columbia Boulevard intersection may warrant additional treatments to facilitate comfortable and convenient crossings at these locations. Improvements may include curb extensions, raised median islands, flashing beacons, or other facilities. Opportunities to improve crossing conditions at these locations, as well as a number of others identified in the TSP are identified later in this report.

Figure 3 illustrates the bicycle volumes at the study intersections during the evening peak hour (4:30 to 5:30 p.m.) and during the school peak hour (2:00 to 3:00 p.m.) where applicable.

Automated through traffic counts were conducted by ODOT at three locations in October 2013. The counts include the total number of vehicles at the following locations over a 36-hour period:

- Columbia Boulevard, west of 18th Street
- St. Helens Boulevard, west of 18th Street
- Columbia Boulevard, east of 12th Street

Figure 4 illustrates the location of the through traffic counts and the highest 24-hour profile at each location. As shown, Columbia Boulevard and St. Helens Street west of 12th Street were found to experience higher traffic volumes during the mid-day and evening peak hours compared to the morning peak hour, but there does not appear to be a difference in the directional split of traffic. Columbia Boulevard east of 12th Street, however, was found to experience a morning peak hour similar to the mid-day and evening peak hours. This is, in part, reflective of its proximity to the Lewis and Clark Elementary School. The measured traffic volumes on these streets are consistent with the TSP facility designations. Further, the traffic volumes confirm that the evening peak time period evaluated as part of the TSP is an appropriate representation of the peak period of the day. *Appendix "B" contains the traffic count data provided by ODOT.*

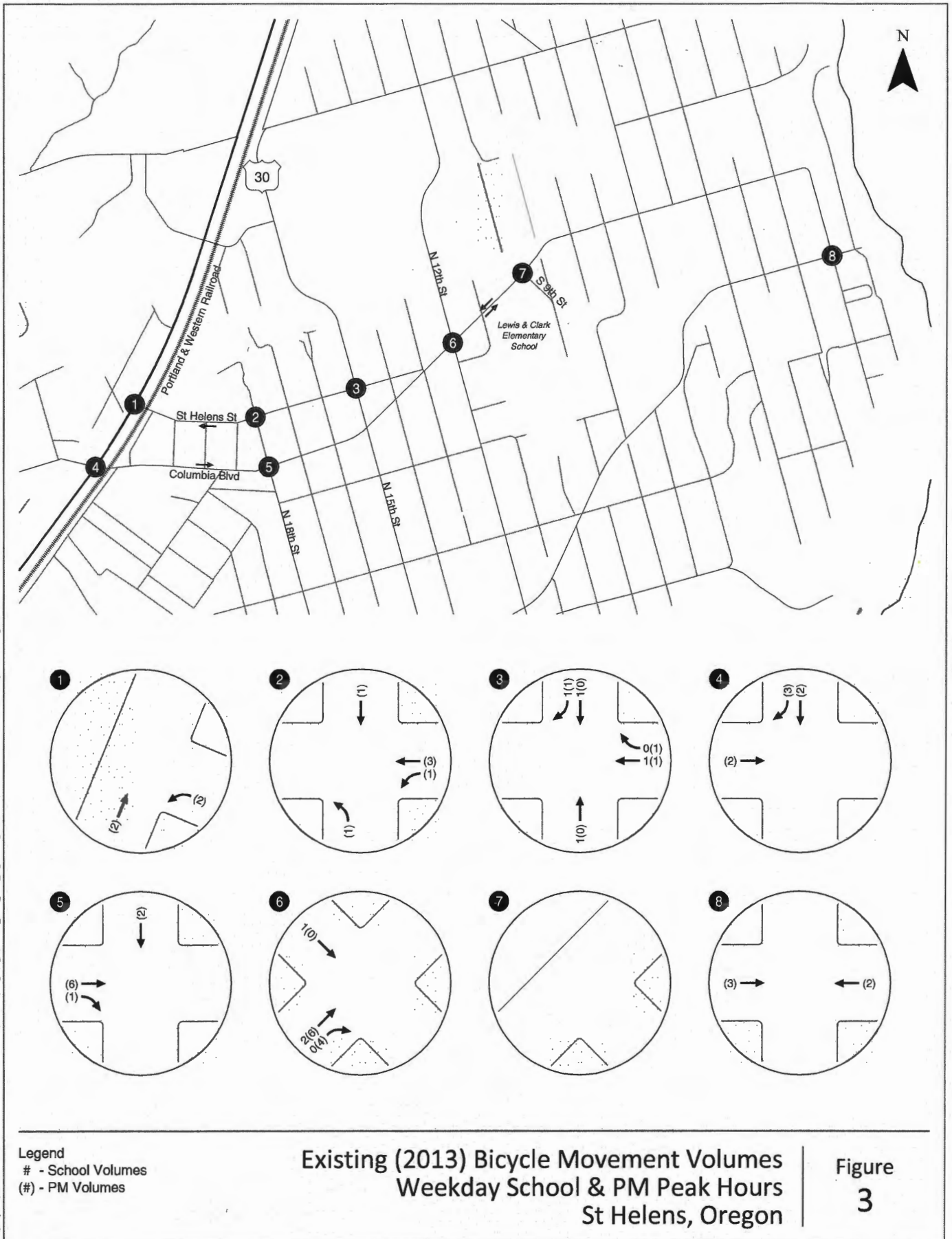


Legend
 # - School Volumes
 (#) - PM Volumes

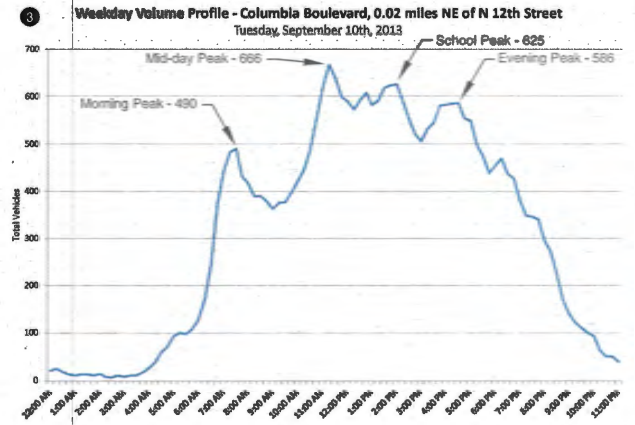
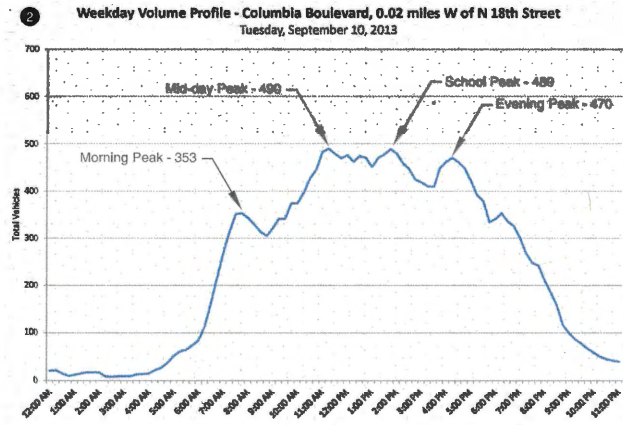
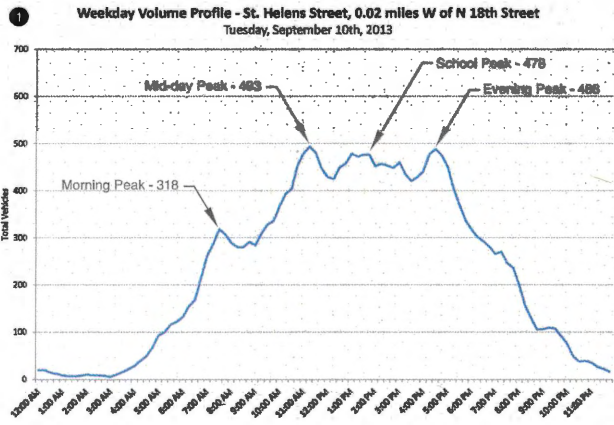
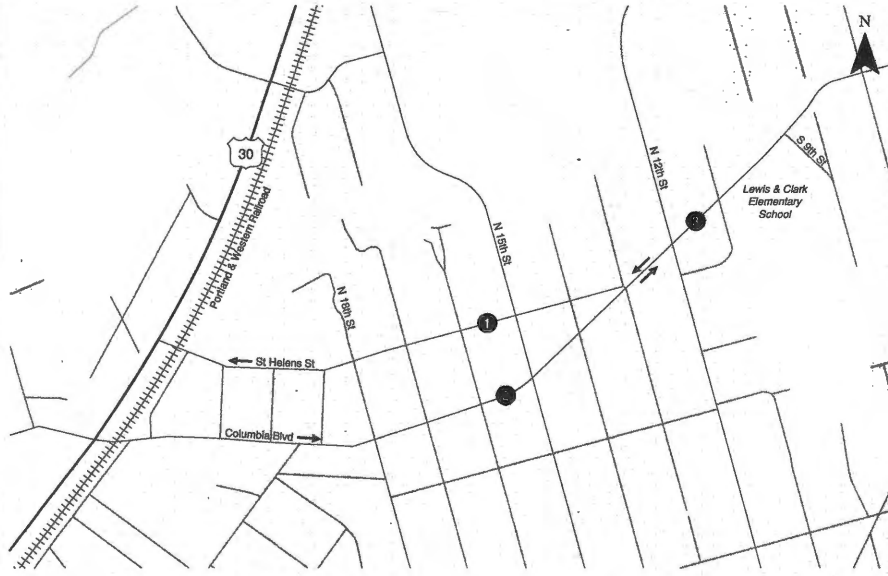
Existing (2013) Pedestrian Volumes at Crosswalk
 Weekday School & PM Peak Hours
 St Helens, Oregon

Figure
 2

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24-Hour Weekday Volume Profile | Figure
 St Helens, Oregon | 4

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SAFETY ANALYSIS

Traffic safety along US 30, Columbia Boulevard, and St. Helens Street was evaluated as part of the TSP. ODOT provided information from the Statewide Priority Index System as well as crash data for the segment of US 30 located within the City limits and for each of the study intersections included in the TSP. The following provides a summary of the safety analysis included in the TSP.

Statewide Priority Index System

The Statewide Priority Index System (SPIS) is a method developed by ODOT for identifying hazardous locations on state highways through consideration of crash frequency, crash rate, and crash severity. An intersection or roadway segment can be designated as a SPIS site if it experiences three or more crashes or one or more fatal crashes over a three-year period. Under this method, all state highways are analyzed in 0.10 mile segments to identify SPIS sites. At the time of the TSP, there were approximately 6,000 SPIS sites statewide, including two in St. Helens:

- US30/Sykes Road
- US 30/Gable Road

Given the frequency and severity of crashes at the intersections, the SPIS program identified potential safety improvements for the intersections that involve installation of a traffic separator, median islands, and access management at the US 30/Sykes Road intersection and provision of a dual left-turn lane from US 30 onto Gable Road in conjunction with installation of raised median and lane realignment treatments at the US 30/Gable Road intersection. No safety improvements are currently funded at either intersection.

Crash Data Analysis

The TSP also reviewed segment crash data within the study area, particularly along US 30. The TSP noted that the segment of US 30 between Gable Road and St. Helens Street exceeds the statewide average for similar facilities. Inspection of the crash data revealed that a majority of the crashes occurred at intersections, which is to be expected given the frequent and relatively closely spaced access points and street intersections along US 30.

Intersection Crash Data Analysis

The TSP also documented individual intersection crash data at key locations. Review of the reported crashes confirmed that the US 30/Gable Road intersection was experiencing a high number of crashes and found that turn lane and access management improvements identified by ODOT should improve intersection safety. To date, no major improvements have been made at the intersection.

Other Observations

Citizen comments and observations made during the field walking tour of the Columbia Boulevard and St. Helens Street corridors (Business and Property Owners Meeting #1/CAC Meeting #1) identified wrong-way traffic movements occurring on Columbia Boulevard at Milton Way. Specifically, vehicles traveling southbound on Milton Way were observed to make a southbound right-turn onto Columbia Boulevard and travel westbound (within eastbound travel lanes) on Columbia Boulevard to reach the south continuation of Milton Way as shown in Exhibit 1. Meeting participants further noted that some drivers on Milton Way make a southbound right-turn onto Columbia Boulevard and travel westbound (within eastbound travel lanes) across the railroad tracks to then turn right on US 30.

Exhibit 1: Wrong-Way Turn Movement Patterns at Milton Way/Columbia Boulevard



Both of the turn movement patterns depicted in Exhibit 1 are illegal; however, no crashes have been reported at the Milton Way/Columbia Boulevard intersection over the last five-year period based on crash data provided by the City of St. Helens Police Department and ODOT.

Feedback obtained at the December 2013 Technical Advisory Committee and Citizens Advisory Committee meetings indicated that there is a strong desire to maintain the ability of drivers southbound on Milton Way to cross Columbia Boulevard and continue south on Milton Way. City staff noted that efforts previously undertaken by the City to restrict turns at Milton Way to left-turns only (eliminating the ability to cross Columbia Boulevard to continue south on Milton Way) were removed due to citizen complaint. Meeting participants noted that no other convenient alternatives are currently available for traffic westbound on St. Helens Street to reach Milton Way south of Columbia Boulevard and also that the automobile dealership located at the Milton Way/Columbia Boulevard intersection would be impacted by turn movement restrictions at Milton Way. The alternatives analysis

conducted as part of this corridor study should consider options to address the turn movement and connectivity needs at this location.

BICYCLE INFRASTRUCTURE ASSESSMENT

Since the time the TSP was prepared, ODOT has adopted an analysis procedure to evaluate bicycle infrastructure. This process, known as the Bicycle Level of Traffic Stress (LTS) methodology, can be used to evaluate the existing bicycle infrastructure and environment. As applied by ODOT, this method classifies four levels of traffic stress that a cyclist can experience on the roadway, ranging from LTS 1 (which represents little traffic stress) to LTS 4 (which represents high stress). A road segment with LTS 1 generally has low traffic speeds and low volumes and is suitable for all cyclists, including children. A road segment with LTS 4 generally has high speeds, high volumes and is perceived as unsafe by most adults. It is desirable to achieve an LTS 2 on most roadways to appeal to a majority of the bike-riding population. The LTS methodology originated with a document titled, "Low Stress Bicycling and Network Connectivity," published by the Mineta Transportation Institute.

The calculated LTS for the streets within the study area is shown in Figure 5. As shown, the calculated LTS for US 30 and the couplet exceed LTS 2. The Corridor Plan should contemplate solutions that lower the LTS at these locations. Key observations from the LTS review include:

- Generally, the LTS is lower on the eastern side of the study area (which primarily has residential land use) and increases toward US 30.
- The entire length of US 30 is currently at LTS 3 due to the higher roadway speed, multiple travel lanes, and the right turn configuration at intersections along the roadway.
- Most of the one-way segments of St. Helens Street and Columbia Boulevard are also at LTS 3 due to the number of vehicle lanes in each direction and the width of the bike lanes.
- The segment of Columbia Boulevard rated LTS 2 has a lower posted speed limit and only one vehicle lane per direction.
- The LTS ratings can be lowered in most areas by increasing the width of the bike lane and by changing the right turn configurations at intersections so that the right turn lane length is less than 150 feet long (shortening right-turn lanes along US 30 may not be possible due to competing vehicular storage needs and ODOT design requirements).
- The addition of a marked or physical buffer between the bike lane and the vehicular lane would also improve the LTS rating, especially in the one-way segments of St. Helens Street and Columbia Boulevard.

Several of the projects included in the City's current TSP will improve the LTS score. The corridor plan should build upon this work and identify additional projects to further enhance bicycle travel along the corridors. *Appendix "C" contains additional information related to the LTS estimate included in this analysis.*



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- Legend
- LTS 1 —
 - LTS 2 —
 - LTS 3 —
 - LTS 4 —

Level of Traffic Stress (LTS)
St Helens, Oregon

Figure
5

YEAR 2031 TRAFFIC CONDITIONS

This section summarizes the planned improvements identified in the TSP for the roadway system as well as the pedestrian and bicycle systems. This section also presents opportunities to further enhance the transportation system in coordination with and beyond the improvements identified in the TSP.

The primary focus of the year 2031 traffic conditions analysis presented in the 2011 TSP was to address the long-term capacity needs at identified study intersections. Based on a review of the TSP, there are four intersections located within the study area that are expected to operate over capacity in the 2031, including US 30/Pittsburg Road, US 30 Wyeth Street, US 30/Gable Road, and 12th Street/Columbia Boulevard. The TSP includes projects to address the long term needs at each intersection. As indicated previously, the vehicle traffic counts confirm the weekday p.m. peak hour analysis provided in the TSP is an appropriate representation of peak vehicular travel demand along the corridors. Consequently there was no need to project future traffic volumes for other times of day or to reevaluate year 2031 traffic conditions.

PLANNED IMPROVEMENTS

The recommended TSP projects within the study are summarized below to provide context for the Corridor Master Plan.

Roadway Improvements

Figure 7-7 of the TSP illustrates the location of the planned roadway improvements within St. Helens. Within the study area, these improvements are not projected to be needed until the end of the planning horizon and are included in the long-term (2022 to 2031) transportation improvement program. The relevant projects in the study area and their respective timing are shown in Table 1 (which was obtained directly from the TSP).

Table 1: Long-Term (2022 to 2031) Transportation Improvement Program

| Project No. | Project Location | Project Description | Estimated Cost |
|------------------|--|--------------------------------------|----------------|
| L01 ¹ | US 30/Gable Road | Install westbound right-turn lane | \$485,000 |
| L02 ² | US 30/Pittsburg Road | Install traffic signal | \$400,000 |
| L03 ² | US 30/Vernonia Road | Install traffic signal | \$400,000 |
| L04 | 12 th Street/Columbia Blvd. | Install traffic signal or roundabout | \$250,000 |

¹Project will require coordination/approval by ODOT and ODOT Rail Division. Engineering studies, traffic analysis, and conformance with ODOT standards will be evaluated as projects are developed.

²Project must meet traffic signal warrants and receive approval from State Traffic Engineer. Engineering studies, signal warrant and traffic analysis, and conformance with ODOT standards will be evaluated as projects are developed.

Pedestrian Improvements

Figure 7-5 of the TSP illustrates the location of the planned pedestrian improvements within St. Helens. As shown, there are several projects to improve pedestrian crossings along US 30, Columbia Boulevard,

and St. Helens Street. The pedestrian crossing improvements may include traffic signal modifications such as leading pedestrian interval and pedestrian countdown signals along US 30 as well as curb extensions, raised median islands, rectangular rapid flashing beacons, or pedestrian hybrid signal treatments along Columbia Boulevard and St. Helens Street.

The corridor master plan effort should evaluate opportunities to incorporate the TSP-identified improvements into the final plan. In addition, project stakeholder feedback identified the need to further assess improvement opportunities at key crossing locations specifically including:

- Safety/sight-distance at 15th Street/Columbia Boulevard;
- Safety/sight-distance at 1st Street/Columbia Boulevard;
- Safety/sight-distance at 1st Street/St Helens Street;
- Signal timing/crossing conditions at US 30/Columbia Boulevard;
- Crossing conditions at Milton Way/Columbia Boulevard; and
- Crossing conditions at the Wyeth Street/US 30 intersection¹.

Also shown in Figure 7-5, there are several additional planned improvements along roadways adjacent to the study area, including new sidewalks and multi-use paths. While not directly in the study area, these projects are expected to increase pedestrian activity within the study area and could be developed in support of the current corridor study recommendations. Table 2 summarizes the near-term pedestrian improvement projects within and adjacent to the study area (Table 2 was obtained from the TSP).

Table 2: Near-Term (2011 to 2016) Transportation Improvement Program

| Project No. | Project Location | Project Description | Estimated Cost |
|-------------|---|--|----------------|
| N19 | 12 th Street (Columbia Blvd. to Old Portland Road) | Add curbs and sidewalks | \$580,000 |
| N22 | Columbia Boulevard (Sykes Road to US 30) | Add curbs and sidewalks | \$1,353,000 |
| N24 | Sykes Road (Columbia Blvd. to US 30) | Add curbs and sidewalks | \$190,000 |
| N27 | Gable Road (Bachelor Flat to US 30) | Add curbs and sidewalks | \$995,000 |
| N32 | Columbia Blvd./St. Helens Couplet | Install curb extensions (4 locations) | \$106,000 |
| N33 | Columbia Blvd. Couplet to 2 nd Street | Install curb extensions and island refuges (8 locations) | \$200,000 |
| N34 | Columbia Blvd./1 st Street | Install 1 striped crosswalk and 3 new ADA ramps | \$10,000 |
| N35 | St. Helens Street | Install curb extensions (4 locations) | \$106,000 |
| N36 | US 30 Corridor | Install Pedestrian Countdown Heads (5 Locations) | \$15,000 |

¹ Based on stakeholder feedback, ODOT will be conducting traffic counts at this intersection within the next month. The pedestrian, bicycle, and vehicular count information will then be used by the project team to assess improvement needs and potential options. This additional information will be provided to project stakeholders as it becomes available.

These improvements will enhance pedestrian connectivity in the area, establishing a more walkable neighborhood in St. Helens. Curb extensions and sidewalks will add pedestrian access to locations that are currently challenging to pedestrians, and striped crosswalks and island refuges can help facilitate the crossing of key roadways within the study area.

Bicycle Improvements

Figure 7-6 of the TSP illustrates the location of the planned bicycle improvements within St. Helens. As shown, two projects were previously identified to improve bicycle crossings along US 30 (one at Gable Road and one at St. Helens Street). The US 30 bicycle crossing improvements may include additional signing and striping to help facilitate bicycle crossings and/or the addition of bicycle detection at the two respective traffic signals. Bicycle detection improvements could include pavement markers to indicate where cyclists can actuate a signal as well as modifying the sensitivity of loop detectors to improve bicycle activation. The corridor study should evaluate opportunities to incorporate these improvements into the final plan.

In addition to the TSP-recommended improvements, potential improvement opportunities identified through the current corridor master planning effort include:

- Widening the existing bicycle lanes along Columbia Boulevard and St. Helens Street (potentially in conjunction with widening of select on-street parking areas);
- Adding buffers to the bicycle lanes along US 30 (a re-striping activity that would provide an additional striped pavement area between the bicycle lane and the closest vehicular travel lane);
- Improving bicycle paths through the Columbia Boulevard/US 30 intersection;
- Improving left and right-turn lane striping/geometric configurations at key intersections; and/or
- Incorporating bicycle parking in the commercial areas along US 30, Columbia Boulevard, and St. Helens Street as well as in the Olde Towne, Downtown, and Riverfront areas.

Also shown in Figure 7-6, there are several additional identified bicycle improvements along roadways adjacent to the study area, including new on-street bike lanes, shared roadways, and multi-use paths. While not directly in the study area, construction of these projects will improve connectivity of the bicycle network and create a more extensive environment for cyclists in St. Helens. Adding bike lanes should draw more cyclists to the area and reconfiguring striping and signage will also create a more bike-friendly environment. Table 3 summarizes the near-term bicycle improvement projects within and adjacent to the study area (obtained from the TSP).

Table 3: Near-Term (2011 to 2016) Transportation Improvement Program

| Project No. | Project Location | Project Description | Estimated Cost |
|-------------|---|--|----------------|
| N05 | 12 th Street (Columbia Blvd. to Old Portland Road) | Widen roadway and add bike lanes | \$364,000 |
| N09 | Columbia Boulevard (Sykes Road to US 30) | Add bike lanes | \$30,000 |
| N13 | Gable Road (Bachelor Flat to US 30) | Widen roadway and add bike lanes | \$502,000 |
| N16 | US 30/St. Helens Street | Reconfigure bike lane striping across right turn lane | \$5,000 |
| N17 | US 30/Gable Road | Enhance existing bicycle facilities with pavement markings and signage | \$5,000 |

SUMMARY

Key findings to date include:

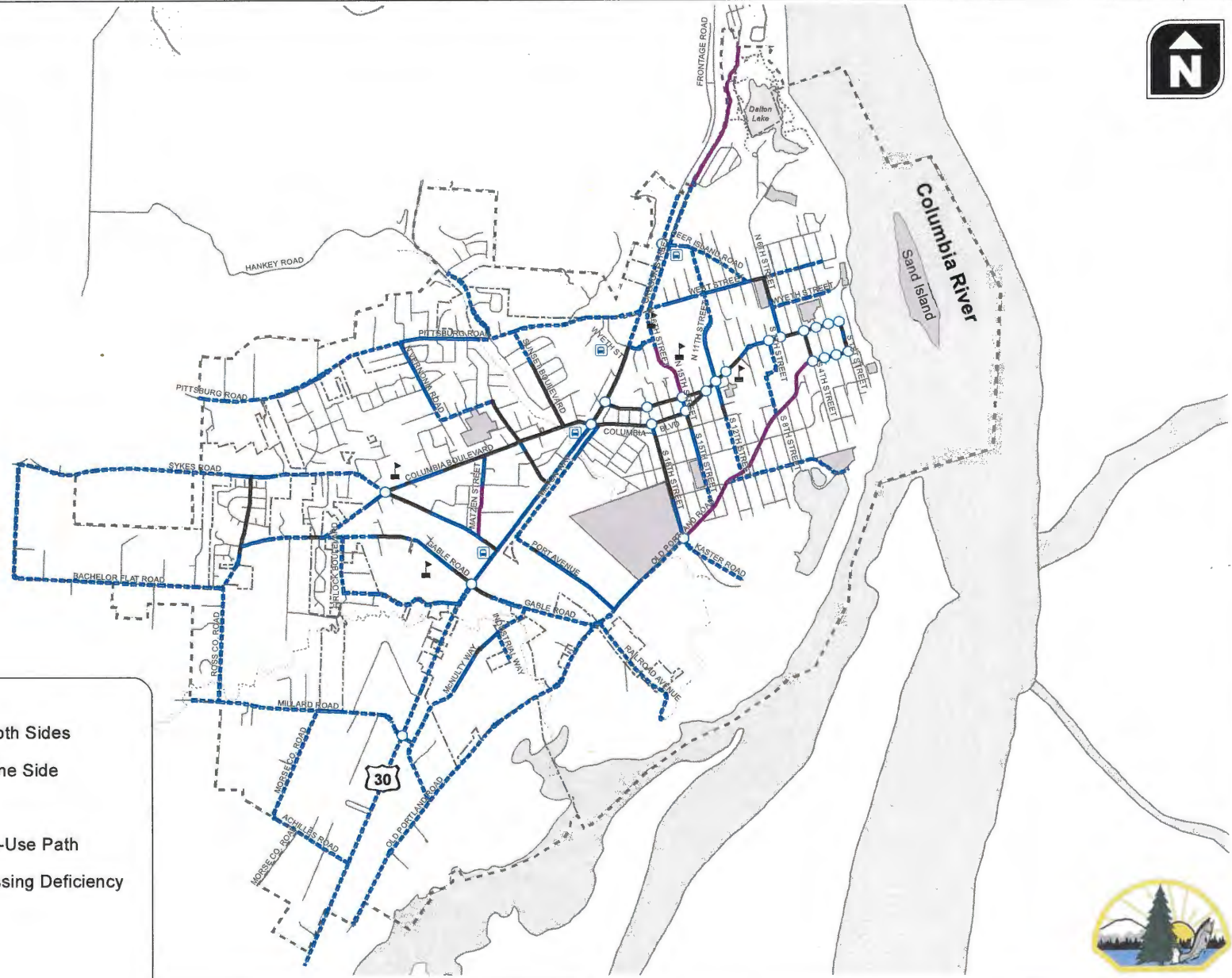
- Traffic demand along the Columbia Boulevard and St. Helens one-way couplet facilities is below the capacity of the two roadways east of US 30. As such, there may be opportunities to reconfigure the roadway cross sections while still preserving adequate capacity. In particular, it appears that the eastbound right-turn lane on Columbia Boulevard at 18th Street could be eliminated (at least from an intersection capacity perspective).
- The pedestrian and bicycle volume data offers insights as to prominent travel routes today, as well as those locations that are potentially less friendly to non-auto trips. This information could be used to help assess where near-term pedestrian and bicycle improvements could be focused.
- The vehicle traffic counts confirm the weekday p.m. peak hour analysis provided in the TSP is an appropriate representation of peak vehicular travel demand along the corridors.
- The upcoming alternatives analysis should consider options to eliminate wrong-way traffic movements occurring on Columbia Boulevard at Milton Way while ensuring sufficient connectivity and circulation to homes and businesses located along Milton Way.
- The bicycle level of stress evaluation provides insights as to areas where there are improvement needs and offers basic insights as to what improvements might be made.
- The crash data points to the need for thoughtful consideration of improvement opportunities on US 30 at Gable Road and Sykes Road.
- The list of planned improvements identified in the TSP offers insight as to previously identified infrastructure needs in the community, forming a context for the current planning effort and also leaving room for additional improvement projects to be identified during the Corridor planning process.

- In addition to the TSP-recommended bicycle improvement needs, potential improvement opportunities identified through the current corridor master planning effort include:
 - Widening the existing bicycle lanes along Columbia Boulevard and St. Helens Street (potentially in conjunction with widening of select on-street parking areas);
 - Adding buffers to the bicycle lanes along US 30 (a re-striping activity that would provide an additional striped pavement area between the bicycle lane and the closest vehicular travel lane);
 - Improving bicycle paths through the Columbia Boulevard/US 30 intersection;
 - Improving left and right-turn lane striping/geometric configurations at key intersections; and/or
 - Incorporating bicycle parking in the commercial areas along US 30, Columbia Boulevard, and St. Helens Street as well as in the Olde Towne, Downtown, and Riverfront areas.










- Other areas requiring further review during upcoming stages of the project include, but are not limited to:
 - Safety/sight-distance at 15th Street/Columbia Boulevard;
 - Safety/sight-distance at 1st Street/Columbia Boulevard;
 - Safety/sight-distance at 1st Street/St Helens Street;
 - Crossing conditions at US 30/Columbia Boulevard (signal timing/crosswalk length);
 - Crossing conditions at Milton Way/Columbia Boulevard;
 - Crossing conditions at the Wyeth Street/US 30 intersection;
 - Lane configurations at the St Helens Street/Columbia Boulevard couplet terminus;
 - Lane Configurations at the Columbia Boulevard/18th Street intersection;
 - Cross sections along Columbia Boulevard between 7th Street and 1st Street; and
 - Cross sections along St Helens Street between 4th Street and 1st Street.

The maintenance and life cycle costs associated with each of the potential improvements identified above will be considered during the upcoming design phase of the corridor study.

Appendix A TSP Figures



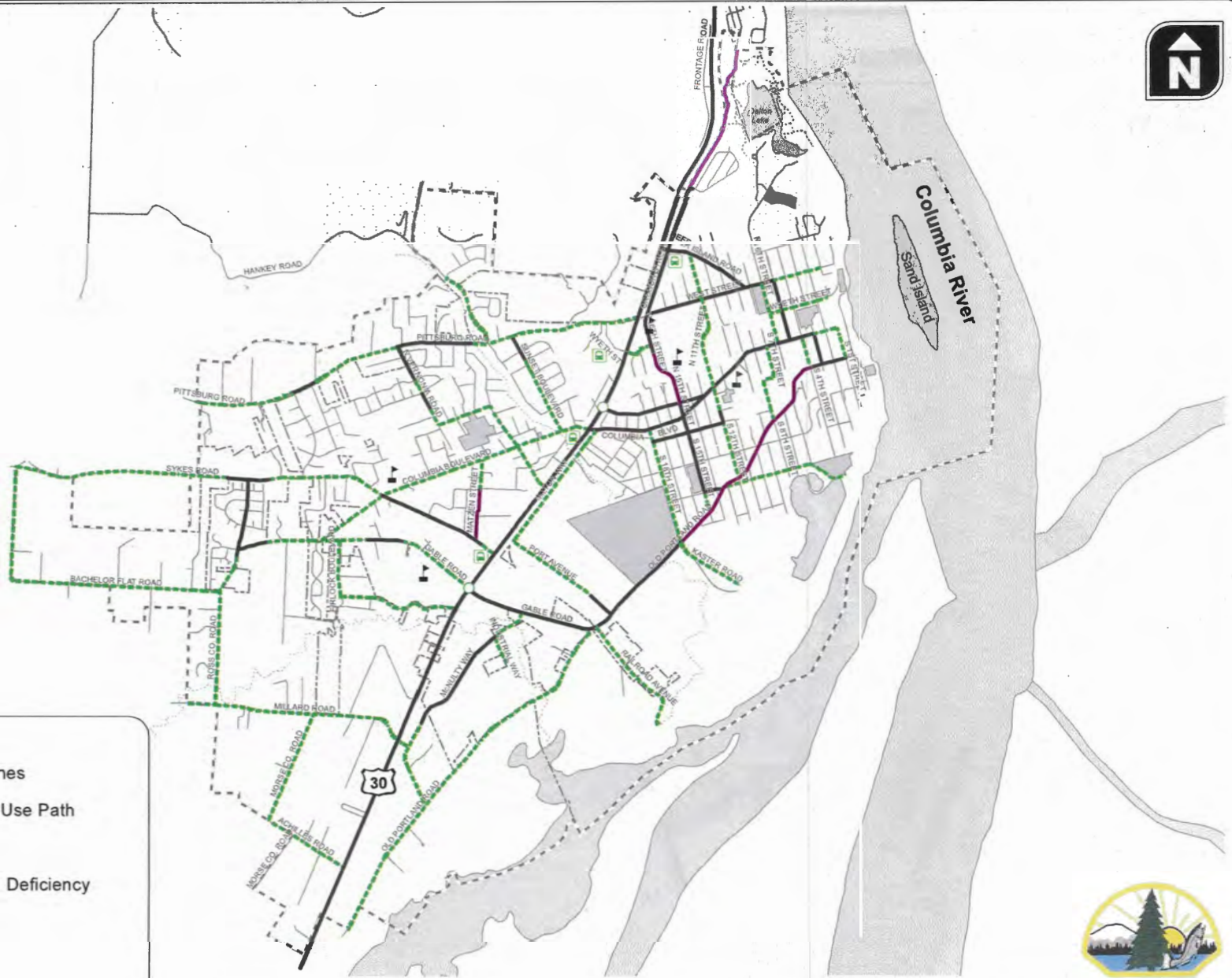
LEGEND

-  Sidewalks on Both Sides
-  Sidewalks on One Side
-  No Sidewalks
-  Existing Shared-Use Path
-  Pedestrian Crossing Deficiency
-  Transit Stop
-  Schools
-  City UGB
-  City Limits

**EXISTING PEDESTRIAN FACILITIES AND KNOWN DEFICIENCIES
ST. HELENS, OREGON**



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LEGEND

- Existing Bike Lanes
- Existing Shared-Use Path
- No Bike Lanes
- Bicycle Crossing Deficiency
- Transit Stops
- Schools
- City UGB
- City Limits

**EXISTING BICYCLE FACILITIES AND KNOWN DEFICIENCIES
ST. HELENS, OREGON**

FIGURE
3-6



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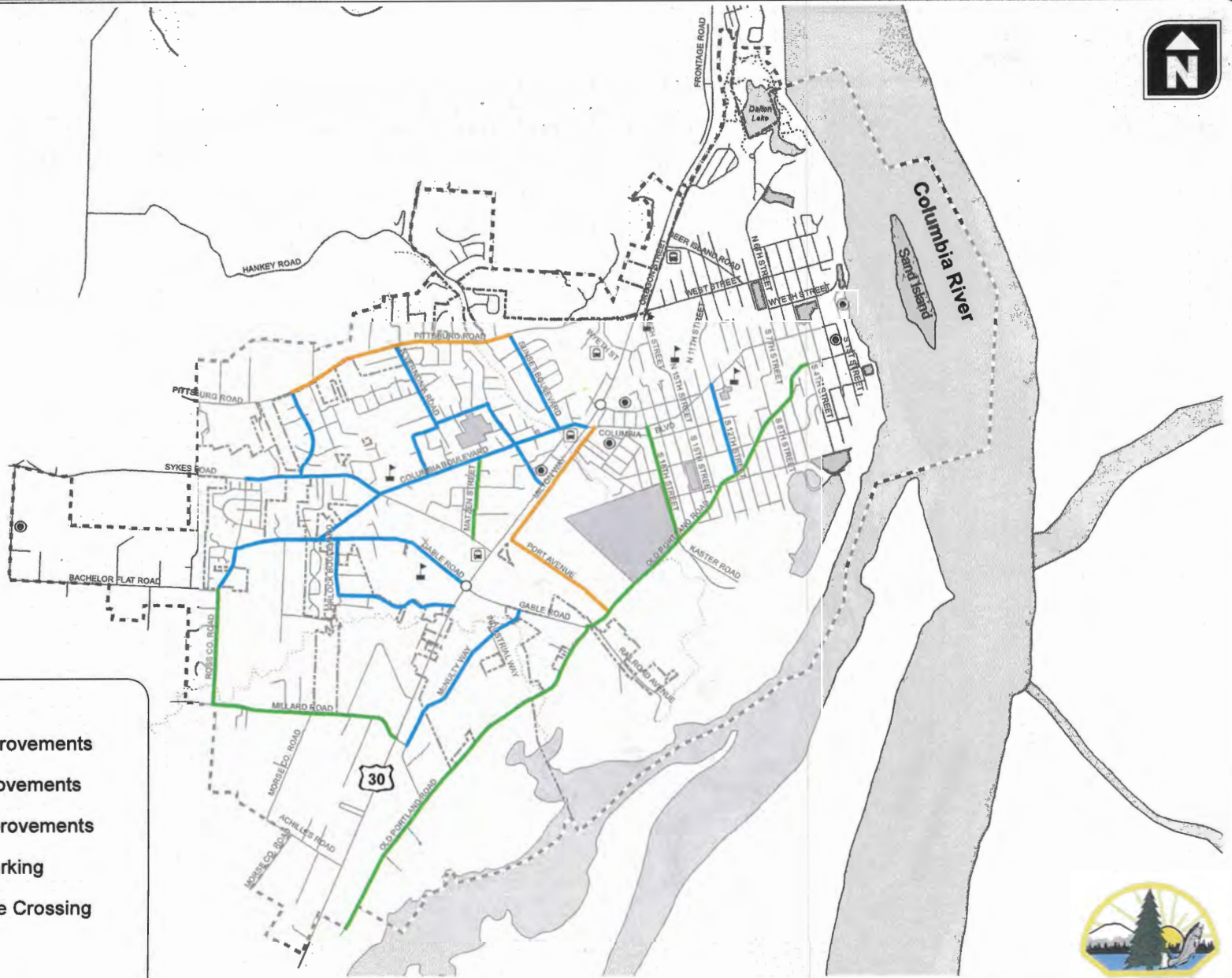
LEGEND

- Near-Term Improvements
- Mid-Term Improvements
- Long-Term Improvements
- Improve Pedestrian Crossing
- ☐ Transit Stop
- - - - - City UGB
- ▭ City Limits



**PEDESTRIAN SYSTEM PLAN
ST. HELENS, OREGON** **FIGURE 7-5**

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LEGEND

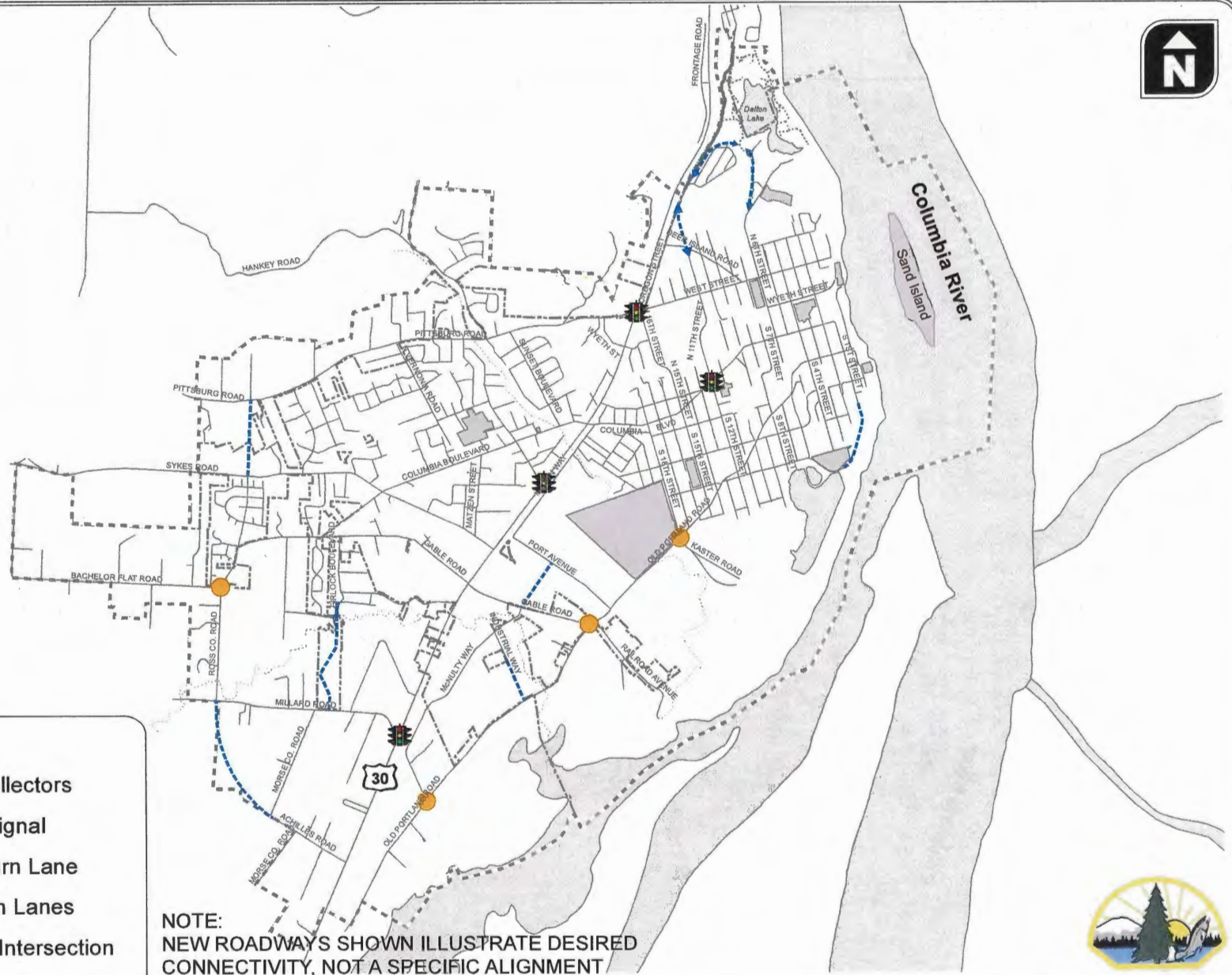
- Near-Term Improvements
- Mid-Term Improvements
- Long-Term Improvements
- Add Bicycle Parking
- Improve Bicycle Crossing
- ☐ Transit Stops
- - - City UGB
- ▭ City Limits

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**BICYCLE SYSTEM PLAN
ST. HELENS, OREGON**

FIGURE
7-6



LEGEND

- Proposed Collectors
- Add Traffic Signal
- Add Right-Turn Lane
- Add Left-Turn Lanes
- Reconfigure Intersection
- City Limits
- City UGB

NOTE:
NEW ROADWAYS SHOWN ILLUSTRATE DESIRED CONNECTIVITY, NOT A SPECIFIC ALIGNMENT



ROADWAY PLAN
ST. HELENS, OREGON **FIGURE 7-7**

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Appendix B Traffic Count Data

**Transportation Development Division
Transportation System Monitoring Unit
Vehicular Volume**

Time settings

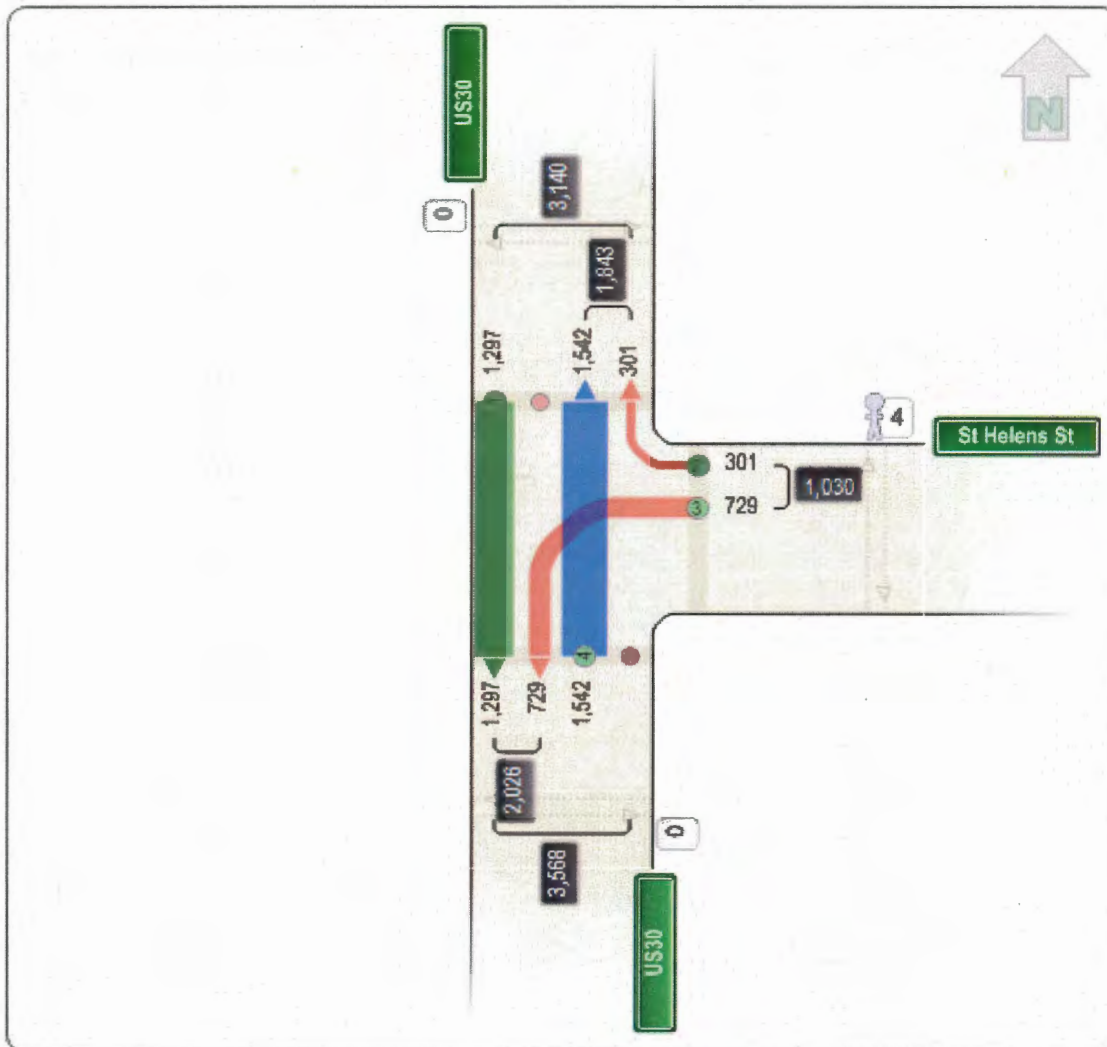
Date: 9/11/2013
Hours: 4:00 PM-6:00 PM
Weather: Clear

Source

Site Number: 38449
Mile Point: 28.67
Street Number: 092
Vehicle Type: Vehicles
Crossing Flow: Pedestrians

Source Description

Location Description: US30 and St Helens St
County: Columbia
City: St. Helens



**Summary of Traffic Count
Transportation Development Division**

Site: 38449
County: Columbia
City: St. Helens

Date: 9/11/2013
Hours: 4:00 PM-6:00 PM
Highway #: 092

Milepoint: 28.67
Count Number: 1.00

Location: US30 and St Helens St
Weather: Clear

| Time of Day | Summary By Movements | | | | | TOTAL | Entering Volumes | | |
|-------------|----------------------|-----|-----|------|--|-------|------------------|------|-------|
| | N-S | E-N | E-S | S-N | | | North | East | South |
| 16:00 | 148 | 36 | 82 | 201 | | 467 | 148 | 118 | 201 |
| 16:15 | 147 | 34 | 80 | 184 | | 445 | 147 | 114 | 184 |
| 16:30 | 161 | 37 | 91 | 209 | | 498 | 161 | 128 | 209 |
| 16:45 | 157 | 50 | 94 | 187 | | 488 | 157 | 144 | 187 |
| 17:00 | 204 | 43 | 104 | 190 | | 541 | 204 | 147 | 190 |
| 17:15 | 168 | 38 | 106 | 194 | | 506 | 168 | 144 | 194 |
| 17:30 | 160 | 33 | 80 | 199 | | 472 | 160 | 113 | 199 |
| 17:45 | 152 | 30 | 92 | 178 | | 452 | 152 | 122 | 178 |
| Total Count | 1297 | 301 | 729 | 1542 | | 3869 | 1297 | 1030 | 1542 |
| 24hr Factor | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 |
| 24hr Volume | 1297 | 301 | 729 | 1542 | | 3869 | 1297 | 1030 | 1542 |

**Summary Of Bicycle Count
Transportation Development Division**

Site: 38449
County: Columbia
City: St. Helens

Date: 9/11/2013
Hours: 4:00 PM-6:00 PM
Highway #: 092

Milepoint: 28.67
Count Number: 1.00

Location: US30 and St Helens St
Weather: Clear

| Time of Day | Summary By Movements | | | | | TOTAL | Entering Volumes | | |
|-------------|----------------------|-----|-----|-----|--|-------|------------------|------|-------|
| | N-S | E-N | E-S | S-N | | | North | East | South |
| 16:00 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 16:15 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 16:30 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 16:45 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 17:00 | 0 | 0 | 2 | 0 | | 2 | 0 | 2 | 0 |
| 17:15 | 0 | 0 | 0 | 2 | | 2 | 0 | 0 | 2 |
| 17:30 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 17:45 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| | | | | | | | | | |
| Total Count | 0 | 0 | 2 | 2 | | 4 | 0 | 2 | 2 |
| 24hr Factor | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 |
| 24hr Volume | 0 | 0 | 2 | 2 | | 4 | 0 | 2 | 2 |

**Summary Of Pedestrian Count
Transportation Development Division**

Site: 38449
County: Columbia
City: St. Helens

Date: 9/11/2013
Hours: 4:00 PM-6:00 PM
Highway #: 092

Milepoint: 28.67
Count Number: 1.00

Location: US30 and St Helens St
Weather: Clear

| Time of Day | Pedestrian | | |
|-------------|------------|------|-------|
| | North | East | South |
| 16:00 | | 2 | |
| 16:15 | | | |
| 16:30 | | 1 | |
| 16:45 | | | |
| 17:00 | | | |
| 17:15 | | | |
| 17:30 | | | |
| 17:45 | | 1 | |
| Total | 0 | 4 | 0 |

Transportation Development Division Transportation System Monitoring Unit Vehicular Volume

Time settings

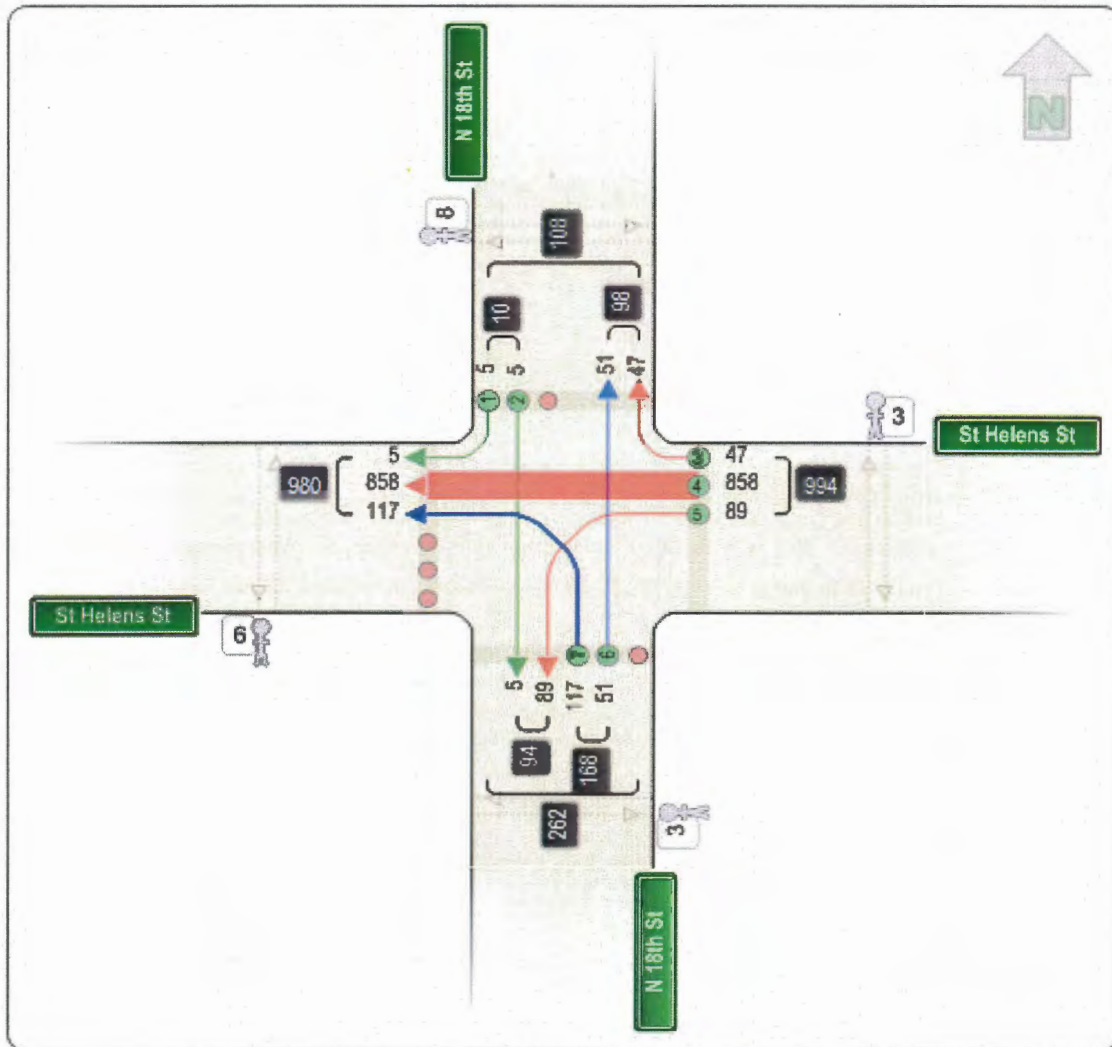
Date: 9/9/2013
Hours: 4:00 PM-6:00 PM
Weather: Clear

Source

Site Number: 38450
Mile Point: 0.26
Street Number: 2744
Vehicle Type: Vehicles
Crossing Flow: Pedestrians

Source Description

Location Description: St Helens St and N 18th St
County: Columbia
City: St. Helens



**Summary of Traffic Count
Transportation Development Division**

Site: 38450
County: Columbia
City: St. Helens

Date: 9/9/2013
Hours: 4:00 PM-6:00 PM
Highway #: 2744
St Helens St and N 18th
Location: St
Weather: Clear

Milepoint: 0.26
Count Number: 1.00

| Time of Day | Summary By Movements | | | | | | | | Entering Volumes | | | |
|-------------|----------------------|-----|-----|-----|-----|-----|-----|--|------------------|-------|------|-------|
| | N-S | N-W | E-N | E-S | E-W | S-N | S-W | | TOTAL | North | East | South |
| 16:00 | 1 | 2 | 7 | 13 | 121 | 8 | 17 | | 169 | 3 | 141 | 25 |
| 16:15 | 0 | 0 | 6 | 14 | 105 | 6 | 9 | | 140 | 0 | 125 | 15 |
| 16:30 | 3 | 0 | 5 | 16 | 116 | 5 | 16 | | 161 | 3 | 137 | 21 |
| 16:45 | 0 | 0 | 7 | 9 | 102 | 5 | 17 | | 140 | 0 | 118 | 22 |
| 17:00 | 1 | 2 | 8 | 8 | 154 | 15 | 18 | | 206 | 3 | 170 | 33 |
| 17:15 | 0 | 0 | 5 | 18 | 88 | 7 | 14 | | 132 | 0 | 111 | 21 |
| 17:30 | 0 | 1 | 3 | 8 | 87 | 5 | 16 | | 120 | 1 | 98 | 21 |
| 17:45 | 0 | 0 | 6 | 3 | 85 | 0 | 10 | | 104 | 0 | 94 | 10 |
| | | | | | | | | | | | | |
| Total Count | 5 | 5 | 47 | 89 | 858 | 51 | 117 | | 1172 | 10 | 994 | 168 |
| 24hr Factor | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 |
| 24hr Volume | 5 | 5 | 47 | 89 | 858 | 51 | 117 | | 1172 | 10 | 994 | 168 |

**Summary Of Bicycle Count
Transportation Development Division**

Site: 38450 Date: 9/9/2013
 County: Columbia Hours: 4:00 PM-6:00 PM
 City: St. Helens Highway #: 2744
 Milepoint: 0.26 Location: St
 Count Number: 1.00 Weather: Clear

| Time of Day | Summary By Movements | | | | | | | | Entering Volumes | | | |
|-------------|----------------------|-----|-----|-----|-----|-----|-----|--|------------------|-------|------|-------|
| | N-S | N-W | E-N | E-S | E-W | S-N | S-W | | TOTAL | North | East | South |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 16:15 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | | 1 | 0 | 1 | 0 |
| 16:30 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | | 1 | 0 | 1 | 0 |
| 16:45 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | | 1 | 0 | 1 | 0 |
| 17:00 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | | 4 | 1 | 2 | 1 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 17:30 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | | 5 | 0 | 5 | 0 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | |
| Total Count | 1 | 0 | 0 | 1 | 9 | 0 | 1 | | 12 | 1 | 10 | 1 |
| 24hr Factor | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 |
| 24hr Volume | 1 | 0 | 0 | 1 | 9 | 0 | 1 | | 12 | 1 | 10 | 1 |

**Summary Of Pedestrian Count
Transportation Development Division**

Site: 38450
County: Columbia
City: St. Helens

Date: 9/9/2013
Hours: 4:00 PM-6:00 PM
Highway #: 2744
St Helens St and N 18th
Location: St
Weather: Clear

Milepoint: 0.26
Count Number: 1.00

| Time of Day | Pedestrian | | | |
|--------------|------------|----------|----------|----------|
| | North | East | South | West |
| 16:00 | | 1 | | |
| 16:15 | | | | |
| 16:30 | | | | 1 |
| 16:45 | 1 | 1 | | |
| 17:00 | 2 | 1 | 2 | |
| 17:15 | 4 | | | 4 |
| 17:30 | 1 | | | 1 |
| 17:45 | | | 1 | |
| Total | 8 | 3 | 3 | 6 |

Transportation Development Division Transportation System Monitoring Unit Vehicular Volume

Time settings

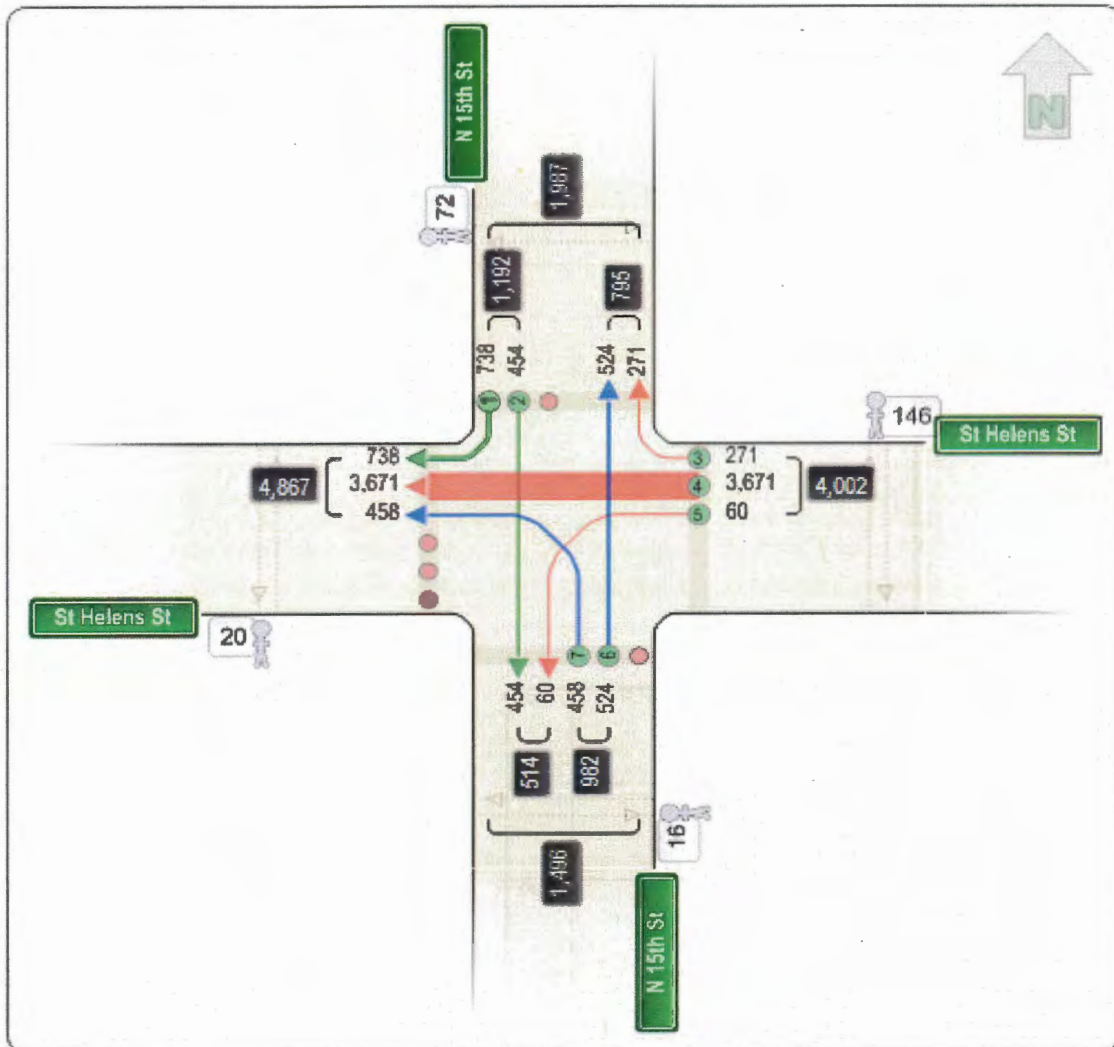
Date: 9/10/2013
Hours: 6:00 AM-10:00 PM
Weather: Clear

Source

Site Number: 38451
Mile Point: 0.11
Street Number: 2744
Vehicle Type: Vehicles
Crossing Flow: Pedestrians

Source Description

Location Description: St Helens St and N 15th St
County: Columbia
City: St. Helens



Summary of Traffic Count Transportation Development Division

Site: 38451
County: Columbia
City: St. Helens

Date: 9/10/2013
Hours: 6:00 AM-10:00 PM
Highway #: 2744

Milepoint: 0.11
Count Number: 1.00

Location: St Helens St and N 15th St
Weather: Clear

| Time of Day | Summary By Movements | | | | | | | | | Entering Volumes | | |
|-------------|----------------------|-----|-----|-----|-----|-----|-----|--|-------|------------------|------|-------|
| | N-S | N-W | E-N | E-S | E-W | S-N | S-W | | TOTAL | North | East | South |
| 6:00 | 11 | 9 | 6 | 2 | 92 | 5 | 10 | | 135 | 20 | 100 | 15 |
| 6:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 6:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 6:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 7:00 | 56 | 45 | 25 | 2 | 180 | 30 | 13 | | 351 | 101 | 207 | 43 |
| 7:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 7:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 7:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 8:00 | 48 | 76 | 25 | 4 | 196 | 56 | 16 | | 421 | 124 | 225 | 72 |
| 8:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 8:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 8:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 9:00 | 25 | 17 | 13 | 0 | 189 | 10 | 29 | | 283 | 42 | 202 | 39 |
| 9:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 9:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 9:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 10:00 | 21 | 52 | 12 | 5 | 202 | 21 | 28 | | 341 | 73 | 219 | 49 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 11:00 | 19 | 49 | 21 | 2 | 311 | 21 | 46 | | 469 | 68 | 334 | 67 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 12:00 | 16 | 43 | 8 | 5 | 273 | 22 | 41 | | 408 | 59 | 286 | 63 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 13:00 | 25 | 43 | 12 | 6 | 298 | 44 | 39 | | 467 | 68 | 316 | 83 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 14:00 | 28 | 31 | 32 | 7 | 285 | 59 | 31 | | 473 | 59 | 324 | 90 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 15:00 | 38 | 102 | 30 | 3 | 243 | 42 | 37 | | 495 | 140 | 276 | 79 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 16:00 | 9 | 13 | 4 | 0 | 69 | 7 | 5 | | 107 | 22 | 73 | 12 |
| 16:15 | 6 | 12 | 6 | 1 | 57 | 8 | 8 | | 98 | 18 | 64 | 16 |
| 16:30 | 9 | 15 | 3 | 2 | 69 | 14 | 9 | | 121 | 24 | 74 | 23 |

| | | | | | | | | | | | | |
|-------------|-----|-----|-----|-----|------|-----|-----|--|------|------|------|-----|
| 16:45 | 6 | 14 | 2 | 0 | 56 | 10 | 8 | | 96 | 20 | 58 | 18 |
| 17:00 | 8 | 26 | 9 | 0 | 63 | 18 | 9 | | 133 | 34 | 72 | 27 |
| 17:15 | 9 | 21 | 11 | 0 | 62 | 13 | 12 | | 128 | 30 | 73 | 25 |
| 17:30 | 5 | 8 | 2 | 1 | 61 | 8 | 3 | | 88 | 13 | 64 | 11 |
| 17:45 | 7 | 8 | 4 | 1 | 58 | 13 | 9 | | 100 | 15 | 63 | 22 |
| 18:00 | 24 | 32 | 8 | 6 | 212 | 29 | 20 | | 331 | 56 | 226 | 49 |
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 19:00 | 25 | 32 | 8 | 0 | 157 | 33 | 23 | | 278 | 57 | 165 | 56 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 20:00 | 15 | 13 | 3 | 4 | 142 | 9 | 12 | | 198 | 28 | 149 | 21 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 21:00 | 2 | 9 | 2 | 3 | 62 | 4 | 8 | | 90 | 11 | 67 | 12 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | |
| Total Count | 412 | 670 | 246 | 54 | 3337 | 476 | 416 | | 5611 | 1082 | 3637 | 892 |
| 24hr Factor | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | | 1.1 | 1.1 | 1.1 | 1.1 |
| 24hr Volume | 454 | 737 | 271 | 60 | 3671 | 524 | 458 | | 6173 | 1191 | 4001 | 982 |

Summary Of Bicycle Count Transportation Development Division

Site: 38451
County: Columbia
City: St. Helens

Date: 9/10/2013
Hours: 6:00 AM-10:00 PM
Highway #: 2744

Milepoint: 0.11
Count Number: 1.00

Location: St Helens St and N 15th St
Weather: Clear

| Time of Day | Summary By Movements | | | | | | | | Entering Volumes | | |
|-------------|----------------------|-----|-----|-----|-----|-----|-----|-------|------------------|------|-------|
| | N-S | N-W | E-N | E-S | E-W | S-N | S-W | TOTAL | North | East | South |
| 6:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 |
| 6:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:00 | 1 | 1 | 3 | 0 | 1 | 2 | 0 | 8 | 2 | 4 | 2 |
| 7:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 3 | 0 | 3 | 0 |
| 8:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9:00 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| 9:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:00 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 5 | 2 | 1 | 2 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:00 | 0 | 0 | 1 | 0 | 4 | 1 | 0 | 6 | 0 | 5 | 1 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:00 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 4 | 2 | 2 | 0 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:00 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 2 | 0 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:00 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 4 | 2 | 1 | 1 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:00 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 5 | 2 | 3 | 0 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:00 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| 16:15 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 |
| 16:30 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |

| | | | | | | | | | | | | |
|-------------|-----|-----|-----|-----|-----|-----|-----|---|-----|-----|-----|-----|
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:00 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17:30 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| 17:45 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 |
| 18:00 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 2 |
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19:00 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 5 | 1 | 3 | 1 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20:00 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 4 | 1 | 2 | 1 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | |
| Total Count | 4 | 11 | 13 | 0 | 21 | 11 | 1 | | 61 | 15 | 34 | 12 |
| 24hr Factor | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | | 1.1 | 1.1 | 1.1 | 1.1 |
| 24hr Volume | 5 | 13 | 15 | 0 | 24 | 13 | 2 | | 68 | 17 | 38 | 14 |

Summary Of Pedestrian Count Transportation Development Division

Site: 38451
 County: Columbia
 City: St. Helens

Date: 9/10/2013
 Hours: 6:00 AM-10:00 PM
 Highway #: 2744
 St Helens St and N 15th

Milepoint: 0.11
 Count Number: 1.00

Location: St
 Weather: Clear

| Time of Day | Pedestrian | | | |
|-------------|------------|------|-------|------|
| | North | East | South | West |
| 6:00 | | | | |
| 6:15 | | | | |
| 6:30 | | | | |
| 6:45 | | | | |
| 7:00 | 7 | 23 | 1 | 5 |
| 7:15 | | | | |
| 7:30 | | | | |
| 7:45 | | | | |
| 8:00 | 5 | 17 | 1 | 3 |
| 8:15 | | | | |
| 8:30 | | | | |
| 8:45 | | | | |
| 9:00 | 9 | 3 | 1 | |
| 9:15 | | | | |
| 9:30 | | | | |
| 9:45 | | | | |
| 10:00 | 4 | 15 | 1 | 2 |
| 10:15 | | | | |
| 10:30 | | | | |
| 10:45 | | | | |
| 11:00 | 4 | 1 | 2 | |
| 11:15 | | | | |
| 11:30 | | | | |
| 11:45 | | | | |
| 12:00 | 4 | 4 | | 1 |
| 12:15 | | | | |
| 12:30 | | | | |
| 12:45 | | | | |
| 13:00 | 1 | 4 | 1 | 2 |
| 13:15 | | | | |
| 13:30 | | | | |
| 13:45 | | | | |
| 14:00 | 5 | 3 | | 1 |
| 14:15 | | | | |
| 14:30 | | | | |
| 14:45 | | | | |
| 15:00 | 18 | 53 | | 6 |
| 15:15 | | | | |
| 15:30 | | | | |
| 15:45 | | | | |
| 16:00 | | | | |
| 16:15 | | | | |
| 16:30 | 6 | 2 | 1 | |

| | | | | |
|-------|----|-----|----|----|
| 16:45 | | 6 | | |
| 17:00 | | | | |
| 17:15 | | 3 | 2 | |
| 17:30 | | 3 | | |
| 17:45 | | | | |
| 18:00 | 3 | | 1 | |
| 18:15 | | | | |
| 18:30 | | | | |
| 18:45 | | | | |
| 19:00 | 3 | 4 | 2 | |
| 19:15 | | | | |
| 19:30 | | | | |
| 19:45 | | | | |
| 20:00 | | 4 | 2 | |
| 20:15 | | | | |
| 20:30 | | | | |
| 20:45 | | | | |
| 21:00 | 3 | 1 | 1 | |
| 21:15 | | | | |
| 21:30 | | | | |
| 21:45 | | | | |
| Total | 72 | 146 | 16 | 20 |

Transportation Development Division Transportation System Monitoring Unit Vehicular Volume

Time settings

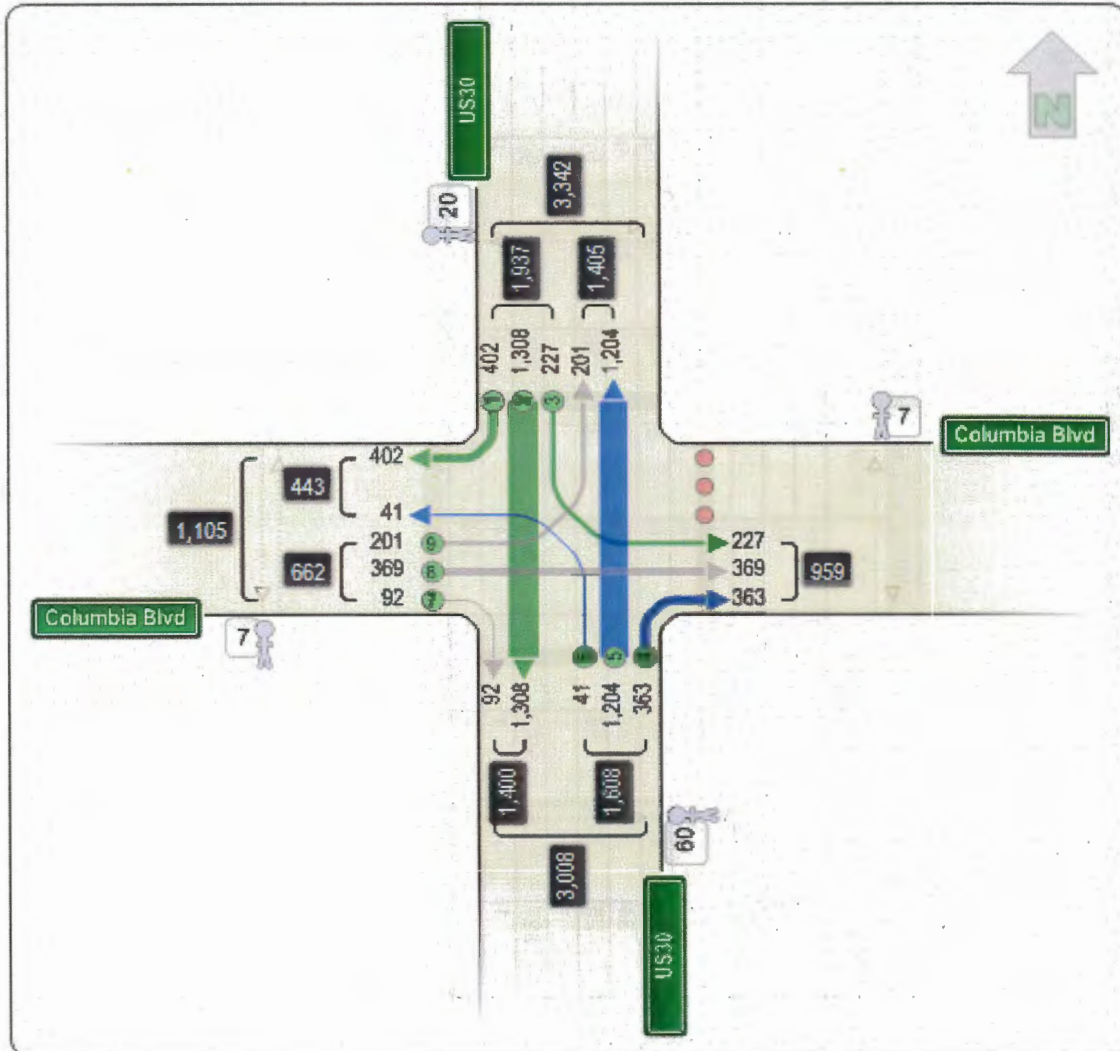
Date: 9/10/2013
Hours: 4:00 PM-6:00 PM
Weather: Clear

Source

Site Number: 38452
Mile Point: 28.56
Street Number: 092
Vehicle Type: Vehicles
Crossing Flow: Pedestrians

Source Description

Location Description: US30 and Columbia Blvd
County: Columbia
City: St. Helens



**Summary of Traffic Count
Transportation Development Division**

Site: 38452
County: Columbia
City: St. Helens

Date: 9/10/2013
Hours: 4:00 PM-6:00 PM
Highway #: 092

Milepoint: 28.56
Count Number: 1.00

Location: US30 and Columbia Blvd
Weather: Clear

| Time of Day | Summary By Movements | | | | | | | | | | Entering Volumes | | | |
|-------------|----------------------|------|-----|------|-----|-----|-----|-----|-----|--|------------------|-------|-------|------|
| | N-E | N-S | N-W | S-N | S-E | S-W | W-N | W-E | W-S | | TOTAL | North | South | West |
| 16:00 | 30 | 157 | 42 | 143 | 48 | 3 | 23 | 49 | 19 | | 514 | 229 | 194 | 91 |
| 16:15 | 25 | 172 | 51 | 123 | 46 | 7 | 26 | 40 | 6 | | 496 | 248 | 176 | 72 |
| 16:30 | 35 | 160 | 57 | 151 | 51 | 5 | 31 | 62 | 11 | | 563 | 252 | 207 | 104 |
| 16:45 | 30 | 148 | 43 | 139 | 41 | 6 | 24 | 43 | 11 | | 485 | 221 | 186 | 78 |
| 17:00 | 23 | 224 | 55 | 154 | 46 | 5 | 30 | 44 | 16 | | 597 | 302 | 205 | 90 |
| 17:15 | 25 | 174 | 47 | 146 | 46 | 5 | 18 | 48 | 10 | | 519 | 246 | 197 | 76 |
| 17:30 | 34 | 145 | 42 | 175 | 39 | 7 | 21 | 45 | 9 | | 517 | 221 | 221 | 75 |
| 17:45 | 25 | 128 | 65 | 173 | 46 | 3 | 28 | 38 | 10 | | 516 | 218 | 222 | 76 |
| | | | | | | | | | | | | | | |
| Total Count | 227 | 1308 | 402 | 1204 | 363 | 41 | 201 | 369 | 92 | | 4207 | 1937 | 1608 | 662 |
| 24hr Factor | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 |
| 24hr Volume | 227 | 1308 | 402 | 1204 | 363 | 41 | 201 | 369 | 92 | | 4207 | 1937 | 1608 | 662 |

Summary Of Bicycle Count Transportation Development Division

Site: 38452
County: Columbia
City: St. Helens

Date: 9/10/2013
Hours: 4:00 PM-6:00 PM
Highway #: 092

Milepoint: 28.56
Count Number: 1.00

Location: US30 and Columbia Blvd
Weather: Clear

| Time of Day | Summary By Movements | | | | | | | | | | Entering Volumes | | | |
|-------------|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|------------------|-------|-------|------|
| | N-E | N-S | N-W | S-N | S-E | S-W | W-N | W-E | W-S | | TOTAL | North | South | West |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | | 1 | 0 | 0 | 1 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 16:30 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | 2 | 2 | 0 | 0 |
| 16:45 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | | 3 | 2 | 0 | 1 |
| 17:00 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | 1 | 1 | 0 | 0 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | | 1 | 0 | 0 | 1 |
| 17:30 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | | 2 | 1 | 0 | 1 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | | | |
| Total Count | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | | 10 | 6 | 0 | 4 |
| 24hr Factor | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 |
| 24hr Volume | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | | 10 | 6 | 0 | 4 |

Summary Of Pedestrian Count
Transportation Development Division

Site: 38452
 County: Columbia
 City: St. Helens

Date: 9/10/2013
 Hours: 4:00 PM-6:00 PM
 Highway #: 092

Milepoint: 28.56
 Count Number: 1.00

Location: US30 and Columbia Blvd
 Weather: Clear

| Time of Day | Pedestrian | | | |
|--------------|------------|----------|-----------|----------|
| | North | East | South | West |
| 16:00 | 4 | | 8 | |
| 16:15 | 3 | 1 | 13 | 3 |
| 16:30 | 6 | | 3 | 1 |
| 16:45 | 1 | 2 | 9 | |
| 17:00 | 2 | 1 | 5 | |
| 17:15 | 2 | | 9 | |
| 17:30 | 2 | 3 | 11 | |
| 17:45 | | | 2 | 3 |
| Total | 20 | 7 | 60 | 7 |

Transportation Development Division Transportation System Monitoring Unit Vehicular Volume

Time settings

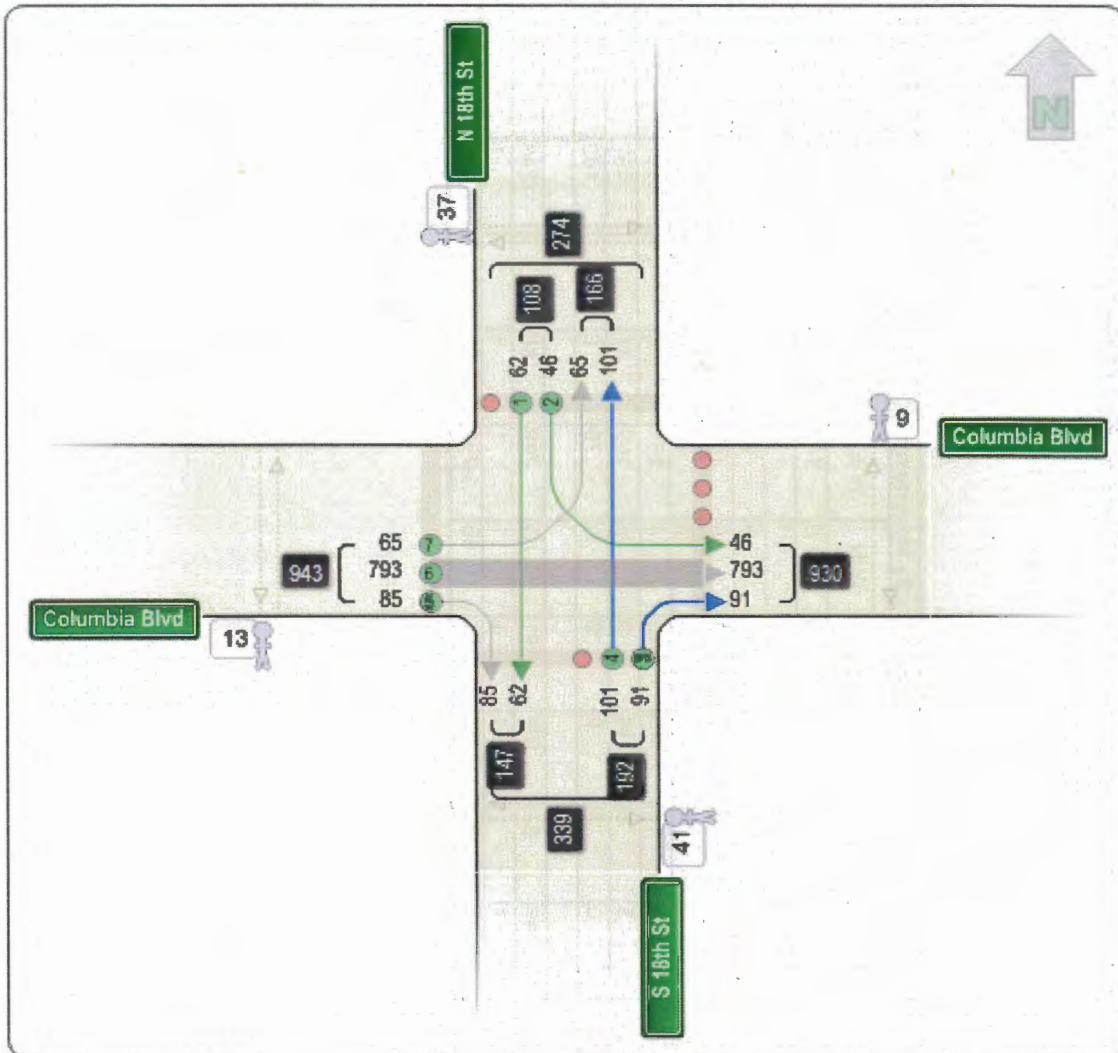
Date: 9/9/2013
Hours: 4:00 PM-6:00 PM
Weather: Clear

Source

Site Number: 38453
Mile Point: 1.53
Street Number: 2718
Vehicle Type: Vehicles
Crossing Flow: Pedestrians

Source Description

Location Description: Columbia Blvd and 18th St
County: Columbia
City: St. Helens



**Summary of Traffic Count
Transportation Development Division**

Site: 38453
County: Columbia
City: St. Helens

Date: 9/9/2013
Hours: 4:00 PM-6:00 PM
Highway #: 2718

Milepoint: 1.53
Count Number: 1.00

Location: Columbia Blvd and 18th St
Weather: Clear

| Time of Day | Summary By Movements | | | | | | | | Entering Volumes | | | |
|-------------|----------------------|-----|-----|-----|-----|-----|-----|--|------------------|-------|-------|------|
| | N-E | N-S | S-N | S-E | W-N | W-E | W-S | | TOTAL | North | South | West |
| 16:00 | 9 | 8 | 15 | 11 | 8 | 103 | 10 | | 164 | 17 | 26 | 121 |
| 16:15 | 8 | 6 | 8 | 10 | 10 | 113 | 9 | | 164 | 14 | 18 | 132 |
| 16:30 | 11 | 14 | 11 | 16 | 9 | 96 | 12 | | 169 | 25 | 27 | 117 |
| 16:45 | 6 | 3 | 12 | 14 | 16 | 103 | 13 | | 167 | 9 | 26 | 132 |
| 17:00 | 7 | 8 | 17 | 10 | 13 | 92 | 16 | | 163 | 15 | 27 | 121 |
| 17:15 | 2 | 14 | 15 | 13 | 4 | 101 | 8 | | 157 | 16 | 28 | 113 |
| 17:30 | 3 | 6 | 14 | 9 | 5 | 109 | 11 | | 157 | 9 | 23 | 125 |
| 17:45 | 0 | 3 | 9 | 8 | 0 | 76 | 6 | | 102 | 3 | 17 | 82 |
| | | | | | | | | | | | | |
| Total Count | 46 | 62 | 101 | 91 | 65 | 793 | 85 | | 1243 | 108 | 192 | 943 |
| 24hr Factor | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 |
| 24hr Volume | 46 | 62 | 101 | 91 | 65 | 793 | 85 | | 1243 | 108 | 192 | 943 |

**Summary Of Bicycle Count
Transportation Development Division**

Site: 38453
County: Columbia
City: St. Helens

Date: 9/9/2013
Hours: 4:00 PM-6:00 PM
Highway #: 2718

Milepoint: 1.53
Count Number: 1.00

Location: Columbia Blvd and 18th St
Weather: Clear

| Time of Day | Summary By Movements | | | | | | | | Entering Volumes | | | |
|-------------|----------------------|-----|-----|-----|-----|-----|-----|---|------------------|-------|-------|------|
| | N-E | N-S | S-N | S-E | W-N | W-E | W-S | | TOTAL | North | South | West |
| 16:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 |
| 17:00 | 0 | 2 | 0 | 0 | 0 | 2 | 1 | | 5 | 2 | 0 | 3 |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | | 3 | 0 | 0 | 3 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | | 1 | 0 | 0 | 1 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | | 3 | 0 | 0 | 3 |
| | | | | | | | | | | | | |
| Total Count | 0 | 2 | 0 | 0 | 0 | 11 | 1 | | 14 | 2 | 0 | 12 |
| 24hr Factor | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 |
| 24hr Volume | 0 | 2 | 0 | 0 | 0 | 11 | 1 | | 14 | 2 | 0 | 12 |

**Summary Of Pedestrian Count
Transportation Development Division**

Site: 38453
County: Columbia
City: St. Helens

Date: 9/9/2013
Hours: 4:00 PM-6:00 PM
Highway #: 2718

Milepoint: 1.53
Count Number: 1.00

Location: Columbia Blvd and 18th St
Weather: Clear

| Time of Day | Pedestrian | | | |
|--------------|------------|----------|-----------|-----------|
| | North | East | South | West |
| 16:00 | 3 | 3 | 7 | 4 |
| 16:15 | 11 | 4 | 7 | 2 |
| 16:30 | 10 | | 11 | 2 |
| 16:45 | 6 | | 6 | 1 |
| 17:00 | | | 1 | |
| 17:15 | 2 | | 3 | 3 |
| 17:30 | 3 | 1 | 5 | |
| 17:45 | 2 | 1 | 1 | 1 |
| Total | 37 | 9 | 41 | 13 |

**Transportation Development Division
 Transportation System Monitoring Unit
 Vehicular Volume**

Time settings

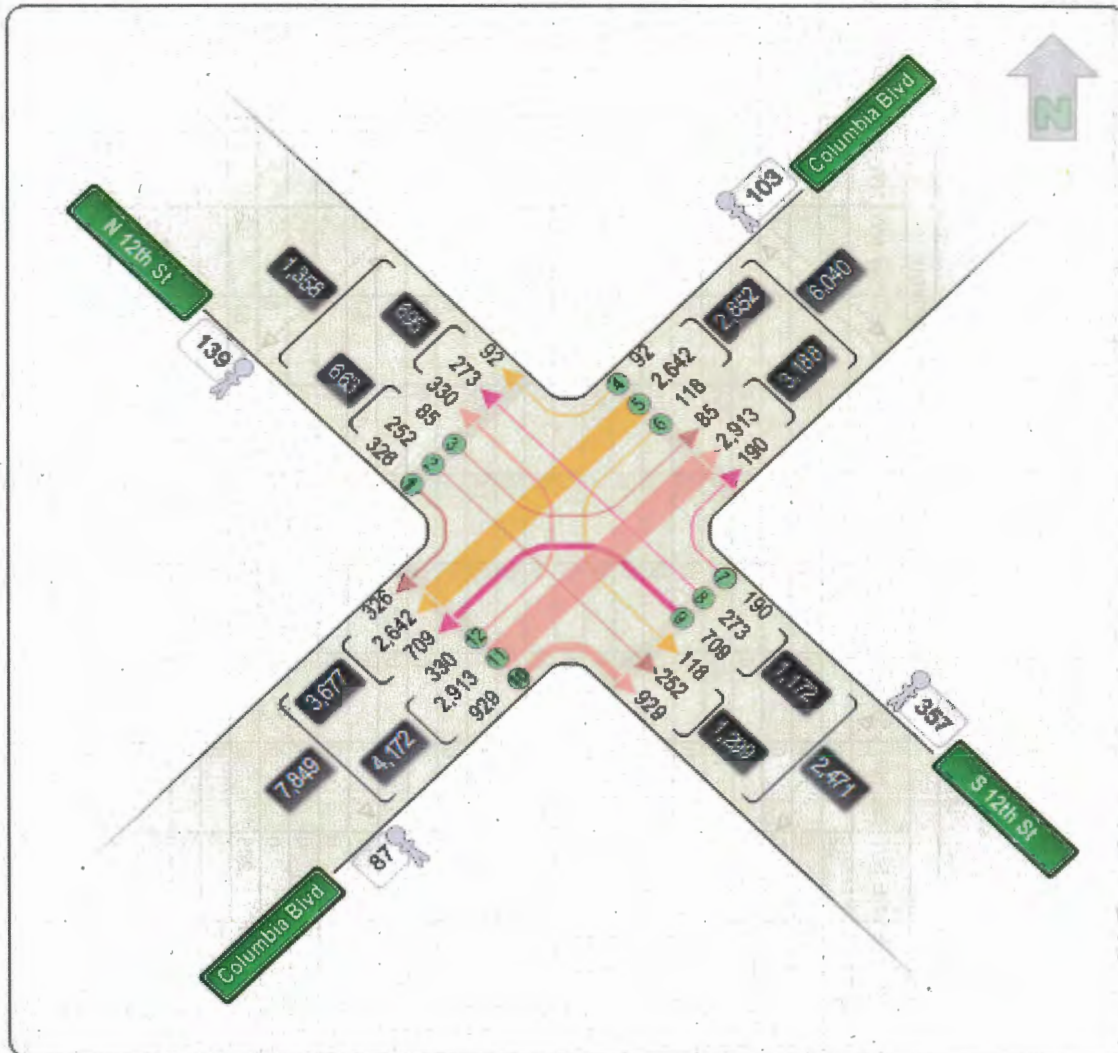
Date: 9/9/2013
 Hours: 6:00 AM-10:00 PM
 Weather: Clear

Source

Site Number: 38454
 Mile Point: 1.88
 Street Number: 2718
 Vehicle Type: Vehicles
 Crossing Flow: Pedestrians

Source Description

Location Description: Columbia Blvd and 12th St
 County: Columbia
 City: St. Helens



| | | | | | | | | | | | | | | | | | | |
|-------------|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|---|------|------|------|------|-----|
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:00 | 16 | 245 | 7 | 17 | 55 | 31 | 248 | 58 | 28 | 8 | 22 | 34 | | 769 | 268 | 103 | 334 | 64 |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 15:00 | 9 | 202 | 6 | 6 | 57 | 16 | 212 | 83 | 37 | 1 | 18 | 27 | | 674 | 217 | 79 | 332 | 46 |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 16:00 | 2 | 47 | 2 | 3 | 15 | 2 | 61 | 21 | 5 | 0 | 5 | 7 | | 170 | 51 | 20 | 87 | 12 |
| 16:15 | 0 | 47 | 2 | 2 | 9 | 10 | 72 | 13 | 18 | 0 | 5 | 7 | | 185 | 49 | 21 | 103 | 12 |
| 16:30 | 1 | 66 | 3 | 4 | 12 | 6 | 60 | 23 | 8 | 0 | 2 | 3 | | 188 | 70 | 22 | 91 | 5 |
| 16:45 | 0 | 47 | 2 | 0 | 11 | 5 | 65 | 18 | 8 | 0 | 6 | 8 | | 170 | 49 | 16 | 91 | 14 |
| 17:00 | 3 | 57 | 2 | 2 | 14 | 4 | 57 | 33 | 2 | 0 | 2 | 5 | | 181 | 62 | 20 | 92 | 7 |
| 17:15 | 4 | 46 | 3 | 2 | 16 | 5 | 59 | 15 | 13 | 2 | 4 | 8 | | 177 | 53 | 23 | 87 | 14 |
| 17:30 | 5 | 47 | 1 | 4 | 6 | 1 | 60 | 22 | 7 | 1 | 3 | 2 | | 159 | 53 | 11 | 89 | 6 |
| 17:45 | 1 | 39 | 2 | 3 | 15 | 4 | 55 | 23 | 9 | 0 | 4 | 9 | | 164 | 42 | 22 | 87 | 13 |
| 18:00 | 9 | 170 | 5 | 4 | 31 | 19 | 180 | 75 | 27 | 4 | 22 | 19 | | 565 | 184 | 54 | 282 | 45 |
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 19:00 | 8 | 117 | 5 | 11 | 49 | 22 | 115 | 58 | 24 | 3 | 11 | 15 | | 438 | 130 | 82 | 197 | 29 |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 20:00 | 1 | 79 | 1 | 3 | 21 | 16 | 86 | 35 | 6 | 3 | 7 | 3 | | 261 | 81 | 40 | 127 | 13 |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 21:00 | 3 | 35 | 2 | 1 | 16 | 9 | 53 | 14 | 7 | 1 | 8 | 5 | | 154 | 40 | 26 | 74 | 14 |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| Total Count | 107 | 2401 | 83 | 172 | 644 | 248 | 2648 | 844 | 300 | 77 | 229 | 296 | | 8049 | 2591 | 1064 | 3792 | 602 |
| 24hr Factor | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| 24hr Volume | 118 | 2642 | 92 | 190 | 709 | 273 | 2913 | 929 | 330 | 85 | 252 | 326 | | 8854 | 2851 | 1171 | 4172 | 663 |

Summary Of Bicycle Count Transportation Development Division

Site: 38454
County: Columbia
City: St. Helens

Date: 9/9/2013
Hours: 6:00 AM-10:00 PM
Highway #: 2718

Milepoint: 1.88
Count Number: 1.00

Location: Columbia Blvd and 12th St
Weather: Clear

| Time of Day | Summary By Movements | | | | | | | | | | | | | TOTAL | Entering Volumes | | | |
|-------------|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|-------|------------------|------------|------------|------------|
| | NE-SE | NE-SW | NE-NW | SE-NE | SE-SW | SE-NW | SW-NE | SW-SE | SW-NW | NW-NE | NW-SE | NW-SW | | | North-East | South-East | South-West | North-West |
| 6:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | | 3 | 0 | 1 | 1 | 1 |
| 6:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 6:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 6:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 7:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | | 2 | 0 | 0 | 1 | 1 |
| 7:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 7:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 7:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 8:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 8:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 8:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 8:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 9:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 9:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 9:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 9:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 10:00 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | | 4 | 1 | 0 | 3 | 0 |
| 10:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 10:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | | 2 | 0 | 0 | 2 | 0 |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 12:00 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | | 6 | 1 | 0 | 5 | 0 |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 13:00 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | | 2 | 1 | 0 | 1 | 0 |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | | | | |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 2 | 1 | |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 16:00 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 | 0 | |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| 17:00 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | |
| 17:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 17:30 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| 18:00 | 0 | 3 | 1 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 1 | 9 | 4 | 0 | 4 | 1 | |
| 18:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 18:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 18:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 19:00 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 3 | 0 | |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 20:00 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 4 | 2 | 0 | 2 | 0 | |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Count | 0 | 11 | 1 | 0 | 0 | 1 | 25 | 12 | 3 | 2 | 2 | 1 | 58 | 12 | 1 | 40 | 5 | |
| 24hr Factor | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | |
| 24hr Volume | 0 | 13 | 2 | 0 | 0 | 2 | 28 | 14 | 4 | 3 | 3 | 2 | 64 | 14 | 2 | 44 | 6 | |

**Summary Of Pedestrian Count
Transportation Development Division**

Site: 38454
County: Columbia
City: St. Helens

Date: 9/9/2013
Hours: 6:00 AM-10:00 PM
Highway #: 2718

Milepoint: 1.88
Count Number: 1.00

Location: Columbia Blvd and 12th St
Weather: Clear

| Time of Day | Pedestrian | | | |
|-------------|------------|------------|------------|------------|
| | North-East | South-East | South-West | North-West |
| 6:00 | | 7 | 4 | 2 |
| 6:15 | | | | |
| 6:30 | | | | |
| 6:45 | | | | |
| 7:00 | 8 | 21 | 6 | 32 |
| 7:15 | | | | |
| 7:30 | | | | |
| 7:45 | | | | |
| 8:00 | 3 | 8 | 3 | 12 |
| 8:15 | | | | |
| 8:30 | | | | |
| 8:45 | | | | |
| 9:00 | | 14 | 4 | |
| 9:15 | | | | |
| 9:30 | | | | |
| 9:45 | | | | |
| 10:00 | 8 | 9 | 10 | |
| 10:15 | | | | |
| 10:30 | | | | |
| 10:45 | | | | |
| 11:00 | 2 | 22 | 11 | 6 |
| 11:15 | | | | |
| 11:30 | | | | |
| 11:45 | | | | |
| 12:00 | 4 | 21 | 7 | 4 |
| 12:15 | | | | |
| 12:30 | | | | |
| 12:45 | | | | |

| | | | | |
|-------|-----|-----|----|-----|
| 13:00 | 5 | 36 | 5 | 13 |
| 13:15 | | | | |
| 13:30 | | | | |
| 13:45 | | | | |
| 14:00 | 14 | 67 | 5 | 33 |
| 14:15 | | | | |
| 14:30 | | | | |
| 14:45 | | | | |
| 15:00 | 10 | 34 | 11 | 12 |
| 15:15 | | | | |
| 15:30 | | | | |
| 15:45 | | | | |
| 16:00 | 1 | 8 | 2 | |
| 16:15 | 3 | 9 | | 2 |
| 16:30 | 8 | 7 | 1 | 4 |
| 16:45 | | 7 | 2 | |
| 17:00 | 3 | | | 1 |
| 17:15 | 3 | 5 | | 2 |
| 17:30 | 2 | 3 | 1 | 2 |
| 17:45 | | 5 | | |
| 18:00 | 12 | 22 | 7 | 9 |
| 18:15 | | | | |
| 18:30 | | | | |
| 18:45 | | | | |
| 19:00 | 4 | 22 | 2 | 3 |
| 19:15 | | | | |
| 19:30 | | | | |
| 19:45 | | | | |
| 20:00 | 10 | 9 | | 1 |
| 20:15 | | | | |
| 20:30 | | | | |
| 20:45 | | | | |
| 21:00 | 3 | 21 | 6 | 1 |
| 21:15 | | | | |
| 21:30 | | | | |
| 21:45 | | | | |
| Total | 103 | 357 | 87 | 139 |

Transportation Development Division Transportation System Monitoring Unit Vehicular Volume

Time settings

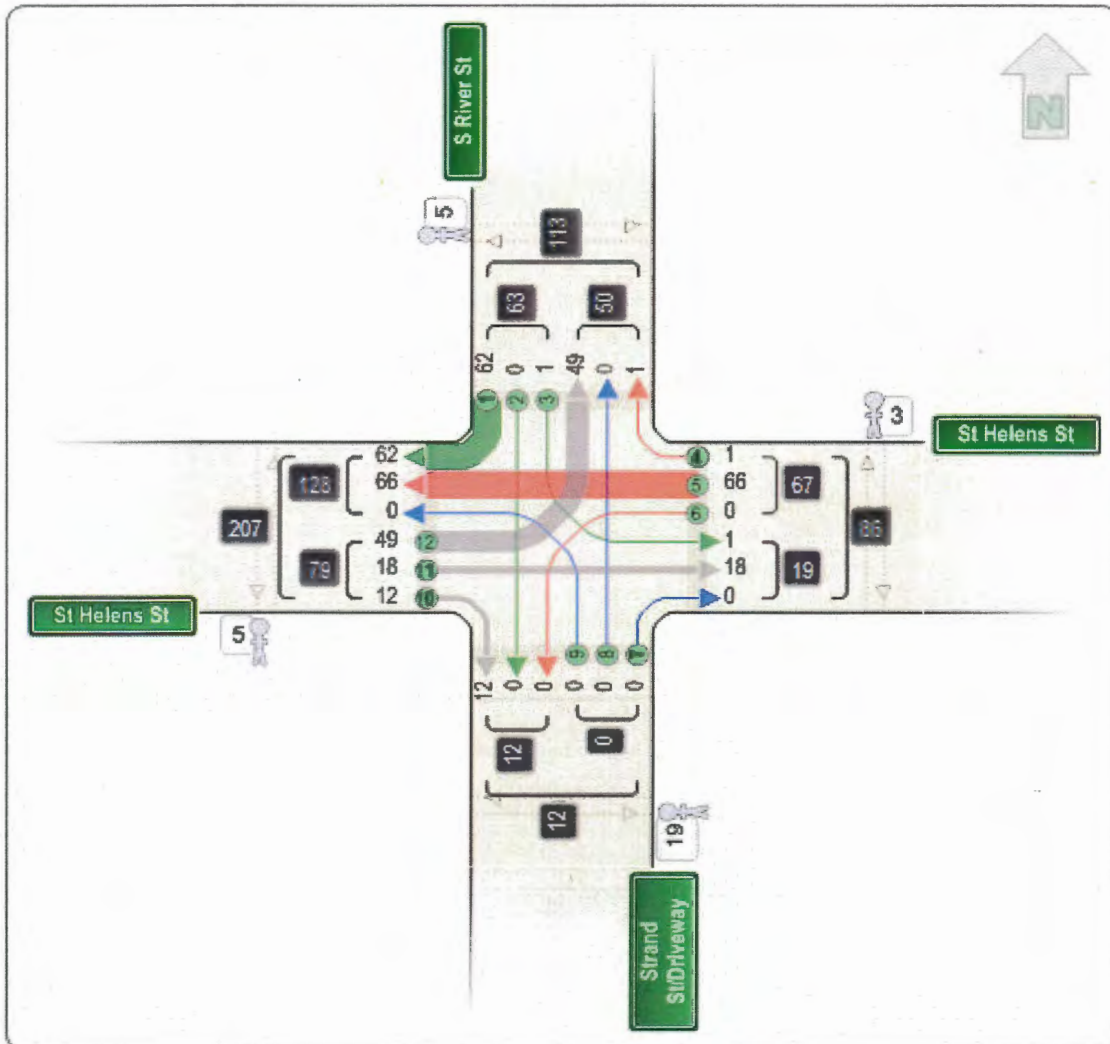
Date: 9/10/2013
Hours: 4:00 AM-6:00 AM
Weather: Clear

Source

Site Number: 38455
Street Number: 000
Vehicle Type: Vehicles
Crossing Flow: Pedestrians

Source Description

Location Description: St Helens St and S River St
County: Columbia
City: St. Helens



**Summary of Traffic Count
Transportation Development Division**

Site: 38455
County: Columbia
City: St. Helens

Date: 9/10/2013
Hours: 4:00 AM-6:00 AM
Highway #: 000

Milepoint:
Count Number: 1.00

Location: St Helens St and S River St
Weather: Clear

| Time of Day | Summary By Movements | | | | | | | | | | | | | Entering Volumes | | | |
|-------------|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|------------------|------|-------|------|
| | N-E | N-S | N-W | E-N | E-S | E-W | S-N | S-E | S-W | W-N | W-E | W-S | TOTAL | North | East | South | West |
| 4:00 | 0 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 0 | 4 | 6 | 3 | 29 | 8 | 8 | 0 | 13 |
| 4:15 | 0 | 0 | 5 | 0 | 0 | 4 | 0 | 0 | 0 | 2 | 3 | 1 | 15 | 5 | 4 | 0 | 6 |
| 4:30 | 0 | 0 | 7 | 1 | 0 | 5 | 0 | 0 | 0 | 10 | 2 | 5 | 30 | 7 | 6 | 0 | 17 |
| 4:45 | 0 | 0 | 4 | 0 | 0 | 10 | 0 | 0 | 0 | 9 | 2 | 1 | 26 | 4 | 10 | 0 | 12 |
| 5:00 | 0 | 0 | 7 | 0 | 0 | 18 | 0 | 0 | 0 | 6 | 1 | 0 | 32 | 7 | 18 | 0 | 7 |
| 5:15 | 1 | 0 | 13 | 0 | 0 | 15 | 0 | 0 | 0 | 6 | 1 | 0 | 36 | 14 | 15 | 0 | 7 |
| 5:30 | 0 | 0 | 10 | 0 | 0 | 3 | 0 | 0 | 0 | 5 | 1 | 1 | 20 | 10 | 3 | 0 | 7 |
| 5:45 | 0 | 0 | 8 | 0 | 0 | 3 | 0 | 0 | 0 | 7 | 2 | 1 | 21 | 8 | 3 | 0 | 10 |
| Total Count | 1 | 0 | 62 | 1 | 0 | 66 | 0 | 0 | 0 | 49 | 18 | 12 | 209 | 63 | 67 | 0 | 79 |
| 24hr Factor | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 24hr Volume | 1 | 0 | 62 | 1 | 0 | 66 | 0 | 0 | 0 | 49 | 18 | 12 | 209 | 63 | 67 | 0 | 79 |

**Summary Of Bicycle Count
Transportation Development Division**

Site: 38455
County: Columbia
City: St. Helens

Date: 9/10/2013
Hours: 4:00 AM-6:00 AM
Highway #: 000

Milepoint:
Count Number: 1.00

Location: St Helens St and S River St
Weather: Clear

| Time of Day | Summary By Movements | | | | | | | | | | | | | Entering Volumes | | | | |
|-------------|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|------------------|-------|------|-------|------|
| | N-E | N-S | N-W | E-N | E-S | E-W | S-N | S-E | S-W | W-N | W-E | W-S | | TOTAL | North | East | South | West |
| 4:00 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 1 | | 6 | 0 | 2 | 0 | 4 |
| 4:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | | 2 | 0 | 0 | 0 | 2 |
| 4:30 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | 1 | 0 | 1 | 0 | 0 |
| 4:45 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | | 3 | 0 | 1 | 0 | 2 |
| 5:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 5:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | | 1 | 0 | 0 | 0 | 1 |
| 5:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| 5:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| Total Count | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 8 | 1 | | 13 | 0 | 4 | 0 | 9 |
| 24hr Factor | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 |
| 24hr Volume | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 8 | 1 | | 13 | 0 | 4 | 0 | 9 |

**Summary Of Pedestrian Count
Transportation Development Division**

Site: 38455
County: Columbia
City: St. Helens

Date: 9/10/2013
Hours: 4:00 AM-6:00 AM
Highway #: 000
St Helens St and S River
Location: St
Weather: Clear

Milepoint:
Count Number: 1.00

| Time of Day | Pedestrian | | | |
|--------------|------------|----------|-----------|----------|
| | North | East | South | West |
| 4:00 | 1 | 2 | 2 | |
| 4:15 | 2 | | 3 | |
| 4:30 | | | | 1 |
| 4:45 | 1 | 1 | 5 | 2 |
| 5:00 | | | 6 | |
| 5:15 | | | 1 | 1 |
| 5:30 | 1 | | 2 | 1 |
| 5:45 | | | | |
| Total | 5 | 3 | 19 | 5 |

Transportation Development Division Transportation System Monitoring Unit Vehicular Volume

Time settings

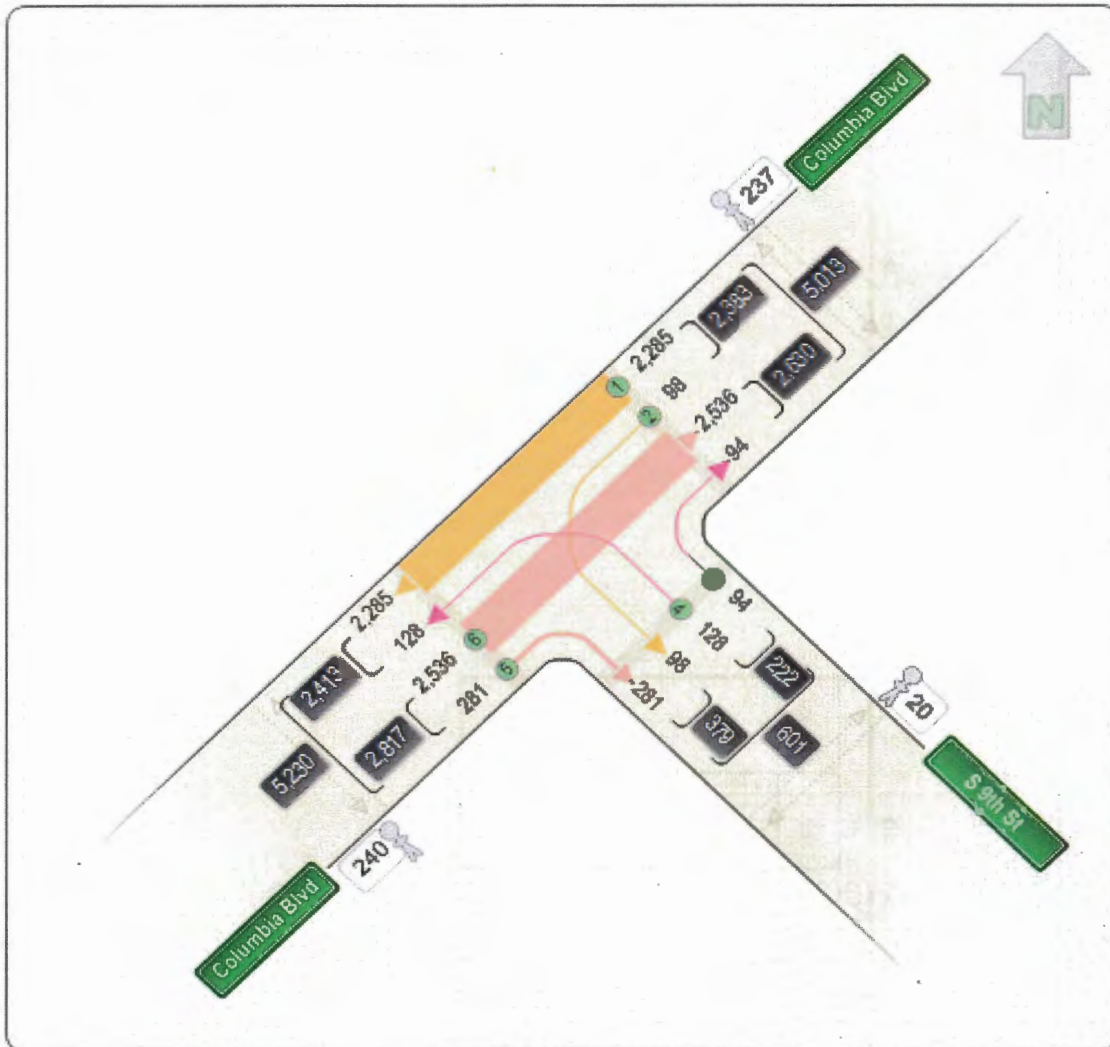
Date: 9/10/2013-9/11/2013
 Hours: 9/10/2013 6:00 AM-9/11/2013 6:00 AM
 Weather: Clear

Source

Site Number: 38456
 Mile Point: 2.03
 Street Number: 2718
 Vehicle Type: Vehicles
 Crossing Flow: Pedestrians

Source Description

Location Description: Columbia Blvd and 9th St
 County: Columbia
 City: St. Helens



| | | | | | | | | | | | |
|-------------|----|------|----|-----|------|-----|------|------|-----|------|---|
| 10:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:00 | 4 | 201 | 3 | 5 | 238 | 25 | 476 | 205 | 8 | 263 | |
| 11:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 11:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 11:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 12:00 | 5 | 190 | 4 | 8 | 230 | 9 | 446 | 195 | 12 | 239 | |
| 12:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 12:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 12:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 13:00 | 12 | 216 | 0 | 7 | 203 | 18 | 456 | 228 | 7 | 221 | |
| 13:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 13:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 13:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 14:00 | 9 | 186 | 26 | 23 | 217 | 30 | 491 | 195 | 49 | 247 | |
| 14:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 14:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 14:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 15:00 | 2 | 166 | 4 | 6 | 194 | 7 | 379 | 168 | 10 | 201 | |
| 15:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 15:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 15:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 16:00 | 2 | 44 | 1 | 1 | 49 | 0 | 97 | 46 | 2 | 49 | |
| 16:15 | 1 | 43 | 0 | 1 | 51 | 2 | 98 | 44 | 1 | 53 | |
| 16:30 | 0 | 53 | 0 | 0 | 73 | 1 | 127 | 53 | 0 | 74 | |
| 16:45 | 0 | 34 | 0 | 3 | 56 | 3 | 96 | 34 | 3 | 59 | |
| 17:00 | 0 | 54 | 2 | 0 | 46 | 1 | 103 | 54 | 2 | 47 | |
| 17:15 | 0 | 55 | 0 | 0 | 60 | 0 | 115 | 55 | 0 | 60 | |
| 17:30 | 0 | 36 | 0 | 1 | 41 | 2 | 80 | 36 | 1 | 43 | |
| 17:45 | 0 | 36 | 0 | 1 | 48 | 3 | 88 | 36 | 1 | 51 | |
| 18:00 | 0 | 47 | 0 | 1 | 29 | 1 | 78 | 47 | 1 | 30 | |
| 18:15 | 0 | 40 | 1 | 0 | 36 | 2 | 79 | 40 | 1 | 38 | |
| 18:30 | 0 | 37 | 0 | 1 | 43 | 1 | 82 | 37 | 1 | 44 | |
| 18:45 | 0 | 40 | 0 | 1 | 53 | 1 | 95 | 40 | 1 | 54 | |
| 19:00 | 1 | 110 | 0 | 2 | 132 | 4 | 249 | 111 | 2 | 136 | |
| 19:15 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 3 | |
| 19:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 19:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 20:00 | 0 | 98 | 0 | 1 | 106 | 3 | 208 | 98 | 1 | 109 | |
| 20:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 20:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 20:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 21:00 | 1 | 44 | 1 | 1 | 64 | 0 | 111 | 45 | 2 | 64 | |
| 21:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 21:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 21:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 22:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 22:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 22:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 22:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 23:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 23:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 23:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total Count | 98 | 2285 | 94 | 128 | 2536 | 281 | 5422 | 2383 | 222 | 2817 | |

| | | | | | | | | | | | |
|-------------|----|------|----|-----|------|-----|--|------|------|-----|------|
| 24hr Factor | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 |
| 24hr Volume | 98 | 2285 | 94 | 128 | 2536 | 281 | | 5422 | 2383 | 222 | 2817 |

| | | | | | | | | | | | |
|-------------|---|---|---|---|---|---|--|---|---|---|---|
| 24hr Factor | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 |
| 24hr Volume | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 |

**Summary Of Pedestrian Count
Transportation Development Division**

Site: 38456
County: Columbia
City: St. Helens

Date: 9/10/2013-9/11/2013
Hours: 9/11/2013 6:00 AM
Highway #: 2718

Milepoint: 2.03
Count Number: 1.00

Location: Columbia Blvd and 9th St
Weather: Clear

| Time of Day | Pedestrian | | |
|-------------|------------|------------|------------|
| | North-East | South-East | South-West |
| 0:00 | | | |
| 0:15 | | | |
| 0:30 | | | |
| 0:45 | | | |
| 1:00 | | | |
| 1:15 | | | |
| 1:30 | | | |
| 1:45 | | | |
| 2:00 | | | |
| 2:15 | | | |
| 2:30 | | | |
| 2:45 | | | |
| 3:00 | | | |
| 3:15 | | | |
| 3:30 | | | |
| 3:45 | | | |
| 4:00 | | | |
| 4:15 | | | |
| 4:30 | | | |
| 4:45 | | | |
| 5:00 | | | |
| 5:15 | | | |
| 5:30 | | | |
| 5:45 | | | |
| 6:00 | 2 | | |
| 6:15 | | | |
| 6:30 | | | |
| 6:45 | | | |
| 7:00 | 42 | | 10 |
| 7:15 | | | |
| 7:30 | | | |
| 7:45 | | | |
| 8:00 | 7 | 1 | 9 |
| 8:15 | | | |
| 8:30 | | | |
| 8:45 | | | |
| 9:00 | 24 | 2 | 8 |
| 9:15 | | | |
| 9:30 | | | |
| 9:45 | | | |
| 10:00 | 14 | | 13 |
| 10:15 | | | |
| 10:30 | | | |

| | | | |
|-------|-----|----|-----|
| 10:45 | | | |
| 11:00 | 16 | | 11 |
| 11:15 | | | |
| 11:30 | | | |
| 11:45 | | | |
| 12:00 | 6 | 1 | 3 |
| 12:15 | | | |
| 12:30 | | | |
| 12:45 | | | |
| 13:00 | 10 | | 10 |
| 13:15 | | | |
| 13:30 | | | |
| 13:45 | | | |
| 14:00 | 18 | 12 | 76 |
| 14:15 | | | |
| 14:30 | | | |
| 14:45 | | | |
| 15:00 | 4 | | 20 |
| 15:15 | | | |
| 15:30 | | | |
| 15:45 | | | |
| 16:00 | 2 | | 7 |
| 16:15 | 2 | 1 | 2 |
| 16:30 | 1 | 1 | 6 |
| 16:45 | 4 | | 1 |
| 17:00 | 1 | | 4 |
| 17:15 | 3 | | 5 |
| 17:30 | 1 | | 4 |
| 17:45 | 7 | | 3 |
| 18:00 | 4 | | 6 |
| 18:15 | 3 | | 5 |
| 18:30 | 2 | | 2 |
| 18:45 | 4 | | 3 |
| 19:00 | 21 | 2 | 11 |
| 19:15 | 8 | | |
| 19:30 | 12 | | |
| 19:45 | | | |
| 20:00 | 7 | | 15 |
| 20:15 | | | |
| 20:30 | | | |
| 20:45 | | | |
| 21:00 | 12 | | 6 |
| 21:15 | | | |
| 21:30 | | | |
| 21:45 | | | |
| 22:00 | | | |
| 22:15 | | | |
| 22:30 | | | |
| 22:45 | | | |
| 23:00 | | | |
| 23:15 | | | |
| 23:30 | | | |
| 23:45 | | | |
| Total | 237 | 20 | 240 |

Appendix C LTS Data

| | Description | Class | Func. Class | One-way | Speed (mph) | # of Lanes* | Lane width** | Lane blockage | Turn Length (ft) | LTS | Notes |
|----|--|------------------------|----------------|---------|-------------|-------------|----------------|---------------|------------------|------------|---|
| 1 | St. Helens St. from S 4th St to 1st St | Mixed traffic | Minor Arterial | | 25 | 2 | | | | 3 | Originally LTS 2, but X factor of diagonal parking bumps up to LTS 3 |
| 2 | S 1st St from St. Helens to Columbia Blvd. | Mixed traffic | Collector | | 20 | 2 | | | | 2 | |
| 3 | Columbus Blvd. from S 1st St to S 3rd St | Bike lane with parking | Collector | | 25 | 1 | 15 | Rare | | 1 | |
| 4 | Columbus Blvd. from S 3rd St to S 4th St | Bike lane with parking | Minor Arterial | | 25 | 1 | 16 EB, 14 WB | Rare | | 1 EB, 2 WB | Ground measurements would be helpful |
| 5 | Columbus Blvd from S 4th St to 5th ST | Bike lane with parking | Minor Arterial | | 25 | 1 | 14 | Rare | | 2 | Ground measurements would be helpful |
| 6 | Columbus Blvd from S 5th St to 6th ST | Bike lane with parking | Minor Arterial | | 25 | 1 | 13.5 EB, 15 WB | Rare | | 3 EB, 1 WB | Ground measurements would be helpful |
| 7 | Columbus Blvd from S 6th St to 7th St | Bike lane with parking | Minor Arterial | | 25 | 1 | 14 EB, 15 WB | Rare | | 2 EB, 1 WB | |
| 8 | Columbus Blvd. from S 7th to S 9th St | Bike lane no parking | Minor Arterial | | 25 | 1 | 5 | Rare | | 2 | Ground measurements would be helpful |
| 9 | Columbus Blvd. from S 9th St to 11th St | Bike lane no parking | Minor Arterial | | 20 | 1 | 5.5 | | EB 90 | 2 | School Zone. Intersection Approach Used for EB, assuming turning speed 15 mph |
| 10 | Columbus Blvd. from S 11th St to 12th St | Bike lane with parking | Minor Arterial | | 20 | 1 | 12 EB, 9 WB | Rare | | 3 | School Zone. |

| | Description | Class | Func. Class | One-way | Speed (mph) | # of Lanes* | Lane width** | Lane blockage | Turn Length (ft) | LTS | Notes |
|----|--|------------------------|----------------|---------|-------------|-------------|--------------|---------------|------------------|-----|---|
| 11 | Columbus Blvd. from S 12th St to 13th St | Bike lane with parking | Minor Arterial | | 25 | 1 | 12 | Rare | | 3 | Ground measurements would be helpful |
| 12 | St Helens St. from S 13th St to 14th St | Bike lane with parking | Minor Arterial | One-way | 25 | 1 | 14 | Rare | | 2 | Start of one-way traffic |
| 13 | St Helens St. from S 14th to 21st St | Bike lane with parking | Minor Arterial | One-way | 25 | 2 | 13 | Rare | | 3 | Ground measurements would be helpful |
| 14 | St Helens St. from S 21st St to US 30 | Mixed traffic | Minor Arterial | One-way | 25 | 3 | | Rare | | 4 | Intersection Approach Used, assuming turning speed 15 mph |
| 15 | Columbus Blvd. from Bradley St to US 30 | Mixed traffic | Minor Arterial | | 25 | 2 | | | | 4 | West leg of Columbia/US 30 analyzed to see EB approach. Intersection Approach Used, shared turn lane. |
| 16 | Columbus Blvd. from US 30 to S 19th St | Bike lane with parking | Minor Arterial | One-way | 20 | 2 | 13 | Rare | | 3 | Bus blockage. |
| 17 | Columbus Blvd. from S 19th St to S 18th St | | Minor Arterial | One-way | 20 | 2 | 14.5 | | 75 | 3 | Intersection Approach Used, assuming turning speed 15 mph |
| 18 | Columbus Blvd. from S 18th St to 13th St | Bike lane with parking | Minor Arterial | One-way | 25 | 2 | 13 | Rare | | 3 | Ground measurements would be helpful |
| 19 | US 30 from Pittsburg Rd to Gable Rd | Bike lane no parking | Major Arterial | | 35 | 2 | | | All > 150 | 3 | Intersection Approach Used, assuming turning speed 15 mph |

* for lanes, counts both direction if mixed traffic, one direction if bike lane

** includes width of parking if there is street parking

TECHNICAL MEMORANDUM #4:

Land Use and Urban Design

ST. HELENS - US 30 & COLUMBIA BLVD./ST. HELENS ST. CORRIDOR MASTER PLAN

December 2013



KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING



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|---|-----------|
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This project is partially funded by a grant from the Transportation and 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 Moving Ahead for Progress in the 21st Century (MAP-21), local government, and the State of Oregon funds.

The contents of this document do not necessarily reflect views or policies of the State of Oregon.

Introduction

The City of St. Helens has been awarded a Transportation and Growth Management (TGM) grant in order to develop a Corridor Plan for the US 30, and Columbia Blvd / St Helens Street and Old Towne/1st Street corridors. The Plan will reflect the community's vision of how these areas should appear and function in the future, and to determine how the plans can be implemented. The Plans will focus primarily on how the major streets and intersections in these areas are designed and improved over time to ensure that vehicles, bicyclists and pedestrians have ready access to local businesses and can travel safely and comfortably within and between these different parts of town.

As one of the initial steps in the corridor planning process, the City's project team is preparing a series of technical memoranda describing existing and projected future conditions in the study area, including land use, urban design, access and relevant plans and policies, as well as different strategies or approaches that may be used to meet the goals for the corridor. This memo focuses on land use and urban design conditions in the area and addresses the following topics:

- Existing and future land use plans and projections
- Development code requirements
- Urban design conditions, i.e., the design character of uses within the planning area
- Non-conforming uses and code issues
- Conclusions about how the conditions and character of the area relates to possible Streetscape Design tools or options



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Existing and Future Land Use Plans and Projections

Following is a summary of land use characteristics of each corridor segment, including current land use and expectations regarding future land use.

US 30 CORRIDOR SEGMENT

Land on the west side of US 30 is zoned and used primarily for commercial development. Figures 1 and 2 show land use patterns and building footprints in the northern and southern portions of the area. Consistent with the area's zoning, the area is primarily characterized by highway commercial developments including grocery stores, pharmacies, hotels, restaurants, banks and a variety of other retail and commercial businesses. There are relatively few vacant properties in this area although some parcels have relatively large parking lots, with buildings taking up a relatively small portion of the site, representing some opportunities for future additional development or redevelopment. Within about 150 feet from the highway, land uses alternate between commercial and residential development.

The Portland and Western rail line parallels US 30 to the east, with a landscaping strip separating the highway from the rail corridor. As

Figure 1. Existing Land Use - US 30 North



EXISTING AND FUTURE LAND USE PLANS AND PROJECTIONS

a result, no businesses directly front the highway's east side. Milton Way parallels US 30 and the rail line approximately 150 from US 30 between Port Avenue and Columbia Blvd, providing access to land east of the rail line in this area. Land uses along Milton Way are a mix of commercial, industrial and residential uses. Commercial uses are generally located in the vicinity of intersections of Gable Road, St. Helens Street and Columbia Boulevard. A mix of industrial and commercial uses are located north of Gable Road along Milton Way and residential uses are located between this area and the Houlton business area near St. Helens and Columbia.

Land use projections prepared for the City's Transportation System Plan assumed continued development of this area, consistent with zoning in the area, with additional potential development on properties with the capacity for more development based on the parcel size, amount of existing development and remaining additional capacity.

Figure 2. Existing Land Use - US 30 South



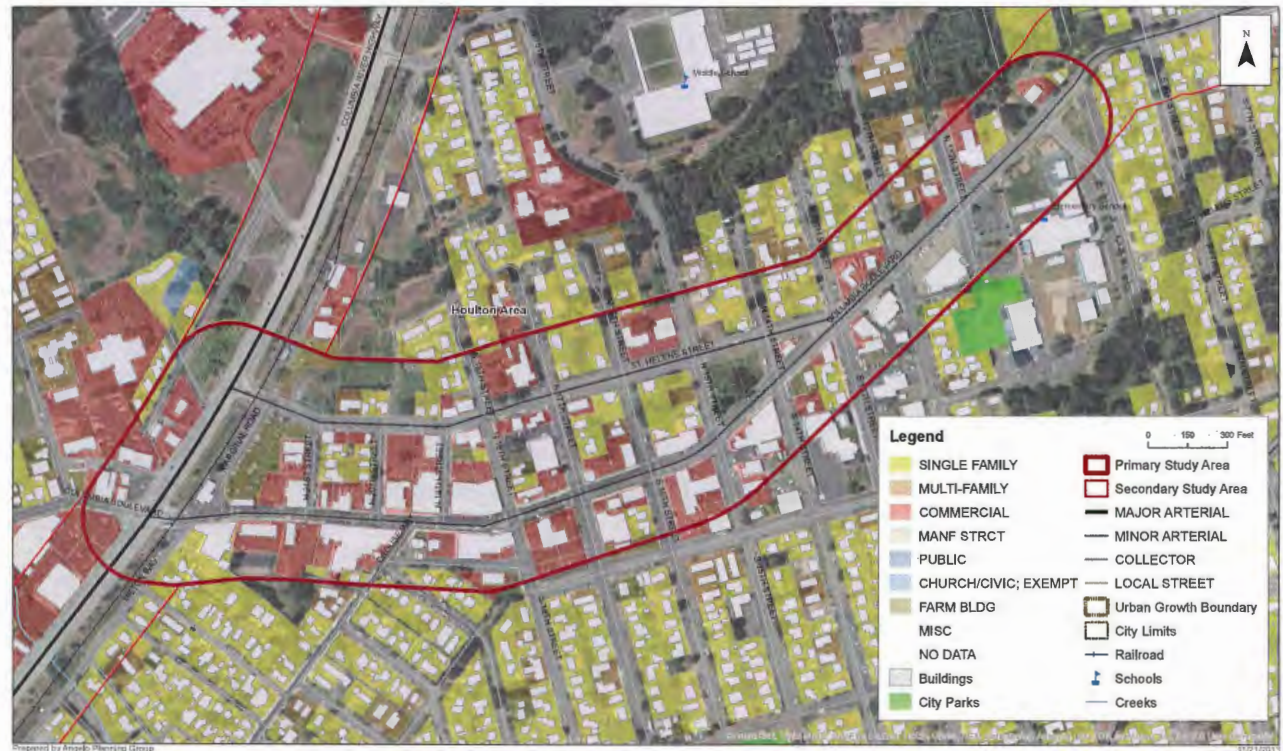
HOULTON (ST. HELENS STREET/COLUMBIA BLVD.) CORRIDOR SEGMENT

This area is a key shopping district for residents and visitors to St. Helens and also serves as a gateway to the Olde Towne area. Land in this area is generally zoned and used for commercial use although the character of uses differs along the two streets. Along Columbia Blvd. between US 30 and 12th Street, virtually all properties on both sides of the road are zoned and used for commercial businesses. Many properties in this area are substantially built out, with buildings covering the majority or all of the parcel, although some sites feature larger parking areas. Most buildings along Columbia are located relatively close to the sidewalk. A wide variety of retail and commercial uses are located in the area, including restaurants, auto parts stores, insurance agencies, medical uses, a grocery store and many others.

Along St. Helens Street, there is more of a mix of commercial and residential uses and the pattern of development is less built up, with larger areas devoted to parking and a larger percentage of buildings set farther back from the street. The property between 14th and 15th Streets and Columbia and St. Helens is vacant. This and a number of partially vacant or underutilized properties in this area represent opportunities for future redevelopment. Future land use projections prepared for the TSP assumed additional development in this area during the 20-year planning horizon.

The Lewis and Clark Elementary School is located at the eastern end of the corridor, just west of 9th Street and area between the school and the Olde Towne area is primarily used for housing although the area is zoned for a mix of housing, retail and commercial uses.

Figure 3. Existing Land Use - Houlton



OLDE TOWNE CORRIDOR SEGMENT

For the purposes of this study, this segment includes land along Columbia Blvd. between approximately 8th and 1st Streets, the area along 1st Street between Columbia and St. Helens, and St. Helens Street between 1st and 4th Streets. The area along Columbia Blvd. is zoned for mixed use although the majority of properties are used for housing. The same is generally true for the portion of 1st Street in this area, which is zoned for a combination of mixed use and apartment residential use. However at St. Helens Street and to the south, land uses transition to retail and commercial uses in the Olde Towne business area (also home to City Hall and the Columbia County Courthouse and services building). Most properties along the St. Helens Street portion of this corridor segment also are home to commercial businesses. There are relatively few vacant parcels in this area although some of the buildings along 1st are vacant and some of the properties with single-family homes potentially could be used more intensively

in the future, given uses allowed in the City's mixed use (MU) and apartment residential (AR) zones.

Figure 4. Existing Land Use - Olde Towne



Summary of Development Code Requirements

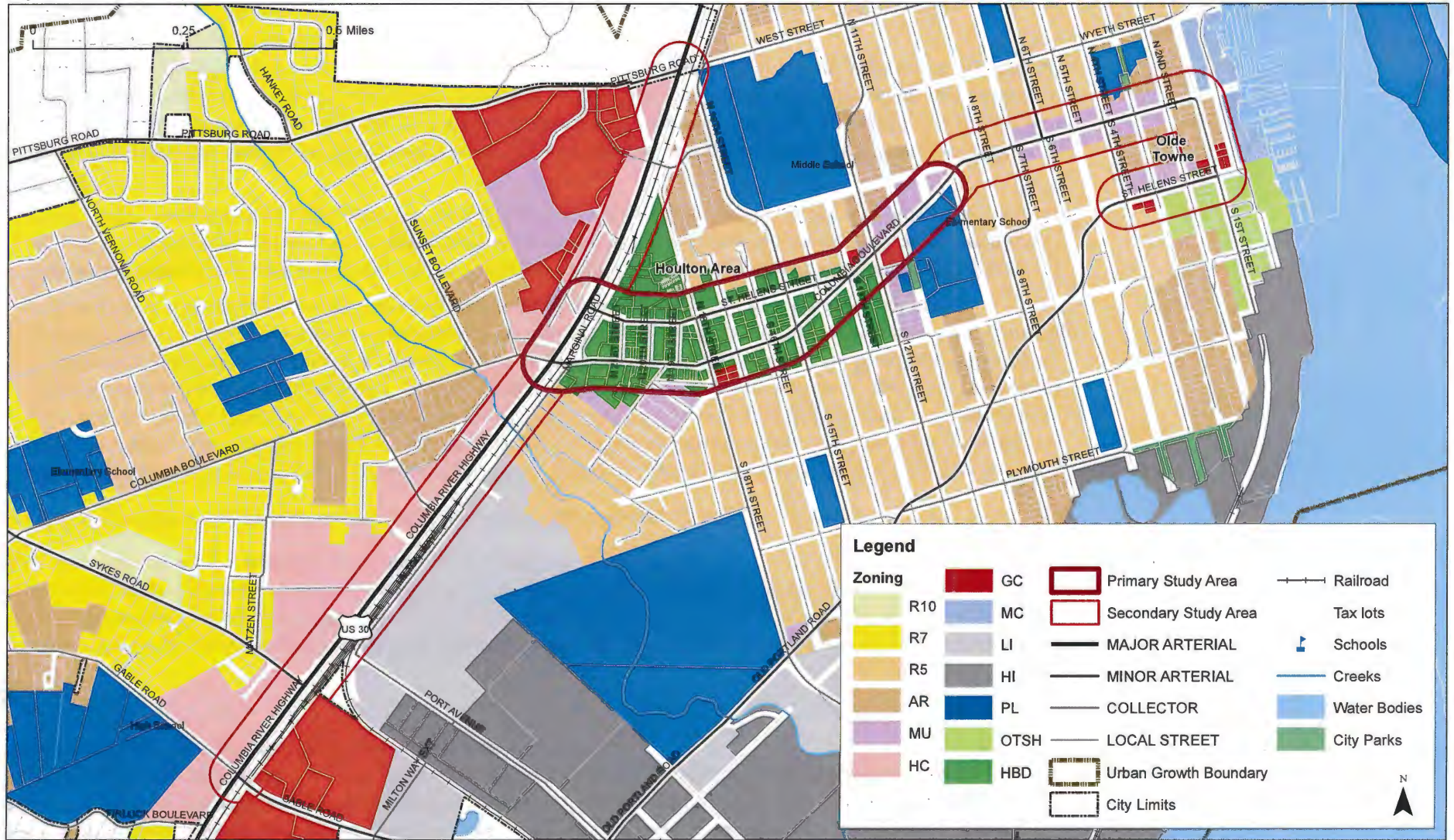
Study area zoning, described briefly in the previous section, regulates the way in which sites within the corridor planning area can develop, including allowed land uses, building heights, building setbacks, lot coverage, and landscaping requirements. These elements affect the way the site is experienced from the sidewalk or street. Elements like vehicle and bicycle parking also can impact the way people experience the streetscape. Development regulations are established in the City's Community Development Code, Title 17 of the St. Helens Municipal Code (SHMC). Zoning regulations are found in SHMC Chapter 17.32.

Figure 5 shows the zoning designations in the study area. Table 1 summarizes applicable zones by study area segments. Several of the zones are found in more than one of the study area segments – e.g., General Commercial, General Residential, and Apartment Residential – while other zones are more unique to the study area segments. The Highway Commercial (HC), Houlton Business District (HBD), and Olde Towne St. Helens (OTSH) zones are the predominant and characteristic zones of the US 30, Houlton, and Old Towne segments in the study area, respectively.

Table 1. Zoning in Study Area Segments

| | Highway | Houlton | Olde Towne |
|---------------------------------|---------|---------|------------|
| Highway Commercial (HC) | X | | |
| General Commercial (GC) | X | X | X |
| Marine Commercial (MC) | | | X |
| Light Industrial (LI) | X | | |
| General Residential (R-5) | X | X | X |
| Apartment Residential (AR) | X | X | X |
| Mixed Use (MU) | | X | X |
| Public Lands (PL) | | X | |
| Houlton Business District (HBD) | | X | |
| Olde Towne St. Helens (OTSH) | | | X |

Figure 5. Project Area Zoning



Prepared by Angelo Planning Group

11/20/2013

The following sub-sections provide an overview of zoning regulations regarding permitted uses, maximum building heights, minimum and maximum building setbacks, maximum lot coverage, and minimum landscaping requirements in study area zones. Parking and building design, which the code addresses in supplemental developmental regulations, are also summarized. Many of these regulations are also discussed in Technical Memorandum #1, so the following sub-sections include references to that report as well.

USES

Table 2 below presents a summary of the types of uses permitted outright and permitted conditionally in zones in the study area. The use provisions specify that zones other than the residential zones (with some exceptions) are subject to site development provisions in SHMC Chapter 17.96 as well as other supplemental development regulations in the code. Conditional uses are subject to provisions in SHMC Chapter 17.100.

Use provisions outlined in Table 2 compare in the following ways between zones.

- **Commercial zones.** The Highway Commercial (HC) and General Commercial (GC) zones are similar in their use provisions. The HC zone specifies that retail services and offices that are permitted outright be motorist-oriented, including drive-ups and drive-throughs. Civic/cultural services (e.g., libraries) and housing above allowed uses are permitted outright in the GC zone, while multi-dwelling unit buildings and care/residential facilities are permitted conditionally. Residential care facilities and multi-dwelling unit buildings are not permitted in the HC zone. The Marine Commercial (MC) zone blends residential (houseboats and multi-dwelling housing) and commercial uses that are oriented toward marine residential and recreational uses.
- **Residential zones.** Uses permitted outright are the same for the R-5 and Apartment Residential (AR) zones except for multi-dwelling units, which are permitted outright in the AR zone but only conditionally in the R-5 zone. There are also more uses permitted conditionally in the AR zone, including schools, hospitals, and care facilities.
- **Mixed use zone.** The Mixed Use (MU) zone blends City commercial and residential zones. It permits commercial uses like those in the GC zone, which do not have to be vehicle-/motorist-oriented to be permitted outright as is required in the HC zone. Like the R-5 zone, the MU zone permits multi-dwelling unit buildings and auxiliary dwelling units only conditionally, however like other commercial zones, multi-dwelling units are permitted over ground floor nonresidential uses outright.
- **HBD and OTSH zones.** The Houlton Business District (HBD) and Olde Towne St. Helens (OTSH) zones are essentially mixed use zones which combine the permitted uses of the AR, GC, and PL (Public Lands) zones,

SUMMARY OF DEVELOPMENT CODE REQUIREMENTS

allowing for a variety of uses that can be developed and redeveloped in the HBD and OTSH zones, which is a major City objective. The same sets of uses are permitted in the HBD and OTSH zones. As will be discussed in following sub-sections, they also share the same development regulations. The main distinction between the zones is the set of architectural design guidelines that have been adopted for the OTSH zone.

Table 2. Summary of Permitted Uses in Study Area Zones

| Zone | Uses | |
|---|---|---|
| <p>1 Pursuant to SHMC 17.16.010, minor public facilities include the following public service improvements developed by or for a public agency:</p> <p>(a) Minor utility structures, except substations, but including poles, lines, pipes or other such facilities.</p> <p>(b) Sewer, storm drainage, or water system structures except treatment plants, reservoirs, or trunk lines, but including reconstruction of existing facilities, pump stations, manholes, valves, hydrants or other portions of the collection, treatment and distribution systems located within public property or specified easement.</p> <p>(c) Street improvements within existing development including sidewalks, curbs, gutters, catch basins, paving, signs and traffic control devices and street lights.</p> <p>(d) Transit improvements, such as shelters or pedestrian and bicycle safety improvements, located within public right-of-way or on public property.</p> | <p>Uses Permitted Outright</p> <ul style="list-style-type: none"> ▪ Retail sales establishments, motorist-oriented ▪ Offices, motorist-oriented services ▪ Personal and business services ▪ Eating and drinking establishments ▪ Most drive-in/drive-up/drive-through services ▪ Vehicle sales, services, and repair ▪ Parking lots ▪ Produce stands ▪ Minor public facilities¹ | <p>Uses Permitted Conditionally</p> <ul style="list-style-type: none"> ▪ Retail establishments, not motorist-oriented ▪ Dwelling units above outright permitted uses ▪ Hospitals ▪ Parks and recreational facilities ▪ Schools ▪ Religious assembly ▪ Major public facilities² |
| <p>2 Major public facilities include any public service improvement or structure developed by or for a public agency that is not defined as a minor public facility.</p> | <p>Uses Permitted Outright</p> <ul style="list-style-type: none"> ▪ Retail sales establishments ▪ Offices ▪ Personal and business services ▪ Dwellings above permitted uses ▪ Eating and drinking establishments ▪ Small equipment sales, rental and repairs ▪ Retail product maintenance and repair ▪ Cultural and library services ▪ Produce stands ▪ Minor public facilities | <p>Uses Permitted Conditionally</p> <ul style="list-style-type: none"> ▪ Drive-up businesses and services ▪ Parking lots ▪ Vehicle repair, service, and sales ▪ Transit and rail stations ▪ Bars ▪ Bed and breakfast facilities and boarding houses ▪ Child care facility/nursery ▪ Hospitals and senior or convalescent care facilities ▪ Residential facilities ▪ Multi-dwelling units ▪ Parks and recreational facilities ▪ Schools ▪ Civic assembly ▪ Religious assembly ▪ Major public facilities |

| Zone | Uses | |
|------------------------|--|---|
| Marine Commercial (MC) | <p>Uses Permitted Outright</p> <ul style="list-style-type: none"> ▪ Boat and boat-oriented facilities and services (e.g., moorage, equipment sales, service, storage, rental, or repair) ▪ Retail sales, marine recreation-oriented ▪ Retail sale, tourist-oriented ▪ Eating and drinking establishments ▪ Houseboats ▪ Dwellings located above permitted uses ▪ Parking lots ▪ Public parks and public recreational facilities ▪ Minor public facilities | <p>Uses Permitted Conditionally</p> <ul style="list-style-type: none"> ▪ Commercial amusement and recreational facilities and private parks ▪ Multi-dwelling units ▪ Private parks ▪ Major public facilities |
| Light Industrial (LI) | <p>Uses Permitted Outright</p> <ul style="list-style-type: none"> ▪ Manufacturing, repairing, compounding, research, assembly, fabricating, or processing activities of prepared materials, without off-site impacts ▪ Laboratories and research services ▪ Warehousing, enclosed ▪ Wholesale trade ▪ Equipment sales, storage, repair, and rentals ▪ Building supply including outdoor storage ▪ Mini storage and storage site ▪ Vehicle sales, service, repair, and painting. ▪ Parking lots ▪ Minor public facilities | <p>Uses Permitted Conditionally</p> <ul style="list-style-type: none"> ▪ Manufacturing, repairing, compounding, research, assembly, fabricating, processing or packing of resource materials, with some off-site impacts ▪ Industrial park to combine light manufacturing, offices, and complementary related commercial uses ▪ Wrecking and junkyards ▪ Eating and drinking establishments and bars ▪ Child care facilities ▪ Public parks and public and private recreational and amusement facilities ▪ Major public facilities |

SUMMARY OF DEVELOPMENT CODE REQUIREMENTS

| Zone | Uses | |
|-----------------------------------|---|---|
| <p>General Residential (R-5)</p> | <p>Uses Permitted Outright</p> <ul style="list-style-type: none"> ▪ Single-dwelling unit, detached ▪ Single-dwelling units, attached (five units maximum) ▪ Duplex dwelling units ▪ Public parks ▪ Residential facilities and homes ▪ Minor public facilities | <p>Uses Permitted Conditionally</p> <ul style="list-style-type: none"> ▪ Auxiliary dwelling units ▪ Multi-dwelling units ▪ Bed and breakfast and boarding houses ▪ Children’s day care/nursery ▪ Elderly/convalescent home ▪ Private parks and commercial recreation facilities ▪ Cultural exhibits and library services ▪ Religious assembly ▪ Neighborhood stores/plazas ▪ Major public facilities |
| <p>Apartment Residential (AR)</p> | <p>Uses Permitted Outright</p> <ul style="list-style-type: none"> ▪ Single-dwelling unit, detached ▪ Single-dwelling units, attached (five units maximum) ▪ Duplex dwelling units ▪ Multi-dwelling units ▪ Public parks ▪ Residential facilities and homes ▪ Minor public facilities | <p>Uses Permitted Conditionally</p> <ul style="list-style-type: none"> ▪ Auxiliary dwelling units ▪ Multi-dwelling units ▪ Hospitals and care homes ▪ Schools and related facilities ▪ Bed and breakfast and boarding houses ▪ Children’s day care/nursery ▪ Private parks and commercial recreation facilities ▪ Cultural exhibits and library services ▪ Civic assembly ▪ Religious assembly ▪ Neighborhood stores/plazas ▪ Parking facilities ▪ Major public facilities |

| Zone | Uses | |
|-------------------|---|--|
| Mixed Use (MU) | <p>Uses Permitted Outright</p> <ul style="list-style-type: none"> ▪ Retail sales establishments ▪ Offices ▪ Personal and business services ▪ Eating and drinking establishments ▪ Small equipment sales, rental and repairs ▪ Retail product maintenance and repair ▪ Cultural and library services ▪ Produce stands ▪ Dwellings: single-dwelling detached or attached, duplexes, and multi-dwelling above permitted uses ▪ Residential facilities and homes ▪ Minor public facilities | <p>Uses Permitted Conditionally</p> <ul style="list-style-type: none"> ▪ Drive-up businesses and services ▪ Parking lots ▪ Vehicle repair, service, and sales ▪ Transit and rail stations ▪ Bars ▪ Bed and breakfast facilities and boarding houses ▪ Child care facility/nursery ▪ Hospitals and senior or convalescent care facilities ▪ Residential facilities and homes ▪ Multi-dwelling units ▪ Auxiliary dwelling units ▪ Dwellings on same level as nonresidential use ▪ Parks and recreational facilities ▪ Schools ▪ Religious assembly ▪ Major public facilities |
| Public Lands (PL) | <p>Uses Permitted Outright</p> <ul style="list-style-type: none"> ▪ Cultural exhibits and library services ▪ Parks and playgrounds ▪ Schools and colleges ▪ Minor public facilities | <p>Uses Permitted Conditionally</p> <ul style="list-style-type: none"> ▪ Hospitals ▪ Major public facilities |

| Zone | Uses | |
|---|---|--|
| <p>Houlton Business District (HBD) and Olde Towne St. Helens (OTSH)</p> | <p>Uses Permitted Outright</p> <ul style="list-style-type: none"> ▪ Dwellings above nonresidential permitted uses (single-family, duplex, townhouse, and multi-family dwellings) ▪ Historic residential structures, with or without auxiliary dwelling unit ▪ Transient housing ▪ Public and institutional uses ▪ Cultural/historical exhibits and library services ▪ Education and research facilities ▪ Government administrative facilities/offices ▪ Civic assembly ▪ Parks and recreation facilities ▪ Public parking lots ▪ Schools and colleges ▪ Artisan workshops and art studios/galleries ▪ Bed and breakfast facilities ▪ Retail sales establishments ▪ Produce stands ▪ Small equipment sales, rental, and repairs ▪ Retail product repair and maintenance facilities/services ▪ Offices ▪ Business and personal services, including health and fitness clubs ▪ Eating and drinking establishments and bars ▪ Major and minor public facilities | <p>Uses Permitted Conditionally</p> <ul style="list-style-type: none"> ▪ Transit and rail stations ▪ Business with outdoor storage ▪ Vehicle repair, service, and sales ▪ Drive-up businesses and services ▪ Child care facility/day nursery ▪ Hospitals, clinics, and care homes ▪ Religious assembly ▪ Private parking lots/facilities |

Unless they have particular off-site impacts, the uses described above and in Attachment __ may not affect the streetscape as much as other development regulations. These other development regulations are discussed in the following sub-sections.

BUILDING HEIGHT

Building heights, in conjunction with building setbacks in cases when there are no or minimal setbacks, help provide a sense of enclosure and place along a street and corridor. Limiting heights contributes to the character of an area (e.g., a traditional or small town feeling) and its human scale and orientation.

As shown in Table 3, in the study area maximum building heights are generally limited to roughly three to four stories in the commercial and mixed use zones (HC, GC, MU, HBD, and OTSH), and two to three stories in the residential zones (R-5 and AR).³ Building heights are determined on an individual basis in the more specialized MC and PL zones.

SHMC 17.68.040 establishes additional limitations and exceptions to building height regulations in individual zones. These provisions include building height criteria related to scenic resources, which affects only the Olde Towne segment of the study area. These requirements specify that no new development over one story (or 15 feet in height) on lots fronting South 2nd Street, North and South 1st Street, and River Street in the study area shall significantly obstruct⁴ views of the Columbia River.

Another set of height-related development regulations are City vision clearance area regulations (SHMC Chapter 17.76). These provisions, also addressed in Technical Memorandum #1, more directly address the streetscape. They create a triangular area at the intersection of streets, railroads, and driveways in which there shall be no obstructions taller than three feet, except “the occasional utility pole” and trees whose branches must be removed up to eight feet in height.

Table 3. Development Standards in Study Area Zones

| Zone/Corridor Segment | Building Height (Maximum) | Building Setback (Minimum/Maximum) | Lot Coverage (Maximum) | Landscaping (Minimum) |
|---|---|---|------------------------|------------------------|
| Highway Commercial (HC) | 40 feet | No setbacks specified ^a | 90% | 10% of gross land area |
| General Commercial (GC)/ All corridor segments | 45 feet | No setbacks specified ^a | 90% | 10% of gross land area |
| Marine Commercial (MC)/ Olde Towne | Case-by-case determination ^b | No setbacks specified ^a | 90% | 10% of gross land area |
| Light Industrial (LI)/US 30 | 75 feet ^c | Standards shall be determined by proximity to residential zones, anticipated off-site impacts, and other supplemental code chapters | | |

- 3 The exception is the LI zone, found in the Highway segment of the study area. SHMC 17.68.020 permits buildings up to 75 feet (roughly six to seven stories) in industrial zones, given requirements related to total building floor area and yard setbacks as a percentage of height requirements in adjacent zones. However, existing development in this area of LI zoning is generally not this tall.
- 4 SHMC 17.68.040(3) defines significantly obstruct as: "...restrict(ing) the ability to see the full view of the Columbia River by more than 50 percent. This shall apply to an accumulation of view from all living spaces with view at time of new development application."

- SFR Single-family/single-dwelling residential
- MFR Multi-family/multi-dwelling residential
- a Proposed setbacks are subject to site development review, SHMC Chapter 17.96.
- b Buffers and screens must be provided according to proposed use and existing adjacent use, pursuant to the matrix (Figure 13) in SHMC 17.72.130.
- c With provisions regarding total floor area and yard setbacks related to building height regulations in adjacent zones (SHMC 17.68.020)
- d Except for multi-dwelling housing, SHMC 17.64.030 establishes special development standards for multi-dwelling housing.

SUMMARY OF DEVELOPMENT CODE REQUIREMENTS

- e Single-dwelling units and duplexes shall comply with R-5 standards, and multi-dwelling units and units above permitted uses must comply with AR standards.
- f The maximum setback in the Olde Towne St. Helens and Houlton Business Districts can be increased if the increased setback is used for pedestrian-oriented amenities, such as a sidewalk cafe, plaza, or courtyard, pursuant to SHMC 17.32.170 and SHMC 17.32.175(4).
- g Development featuring 100% lot coverage may be approved with payment of a lot coverage fee to the Olde Towne St. Helens and Houlton Business District community capital improvement accounts, pursuant to SHMC 17.32.170 and SHMC 17.32.175.

| Zone/Corridor Segment | Building Height (Maximum) | Building Setback (Minimum/Maximum) | Lot Coverage (Maximum) | Landscaping (Minimum) |
|---|---|---|--|-----------------------------|
| General Residential (R-5)/ All Corridor Segments | 35 feet | Front: 20 feet Side: 5 feet (SFR and duplex), 10 feet (MFR and corner lots) Rear: 10 feet | 35% (SFR detached) 50% (SFR attached and MFR) | 25% ^d |
| Apartment Residential (AR)/ Houlton and Olde Towne | 35 feet | Front: 20 feet Side: 5 feet (SFR detached), 10 feet (SFR attached, duplex, MFR, and corner lots) Rear: 10 feet | 50% | 25% ^d |
| Mixed Use (MU) ^e /Houlton and Olde Towne | 45 feet | Buffer and screening requirements ^b | 90% (non-residential) | - |
| Public Lands (PL)/Houlton | Case-by-case determination ^b | Standards shall be determined by proximity to residential zones, anticipated off-site impacts, and other supplemental code chapters | | |
| Houlton Business District (HBD)/Houlton | 45 feet ^b | Front: No min setback, zero max setback ^f Side and Rear: No min setback (adjacent to non-residential zone) or 1 foot per foot of building wall height (non-residential use adjacent to residential zone), min 10 feet | 90%** | 10% open space** |
| Olde Towne St. Helens (OTSH)/Olde Towne | 45 feet ^b | Front: No min setback, zero max setback ^f Side and Rear: No min setback (adjacent to non-residential zone) or 1 foot per foot of building wall height (non-residential use adjacent to residential zone), min 10 feet | 90% ^g | 10% open space ^h |

BUILDING SETBACKS

As noted in the previous section, building setbacks – particularly front and side building setbacks – can play a significant role in the sense of enclosure and place experienced on the sidewalk and street. This is of particular importance in the HBD and OTSH zones, where the City would like to encourage more development and redevelopment.

Building setbacks for zones in the study area are summarized in Table 3. Many setbacks are determined during the development review process. However, the HBD and OTSH zones make a point of bringing buildings up to the property lines except when sites are adjacent to residential zones or are providing pedestrian amenities like seating and plazas in the front yard setback.

The requirements for uses along those streets are as follows:

- **Major arterials (US 30).** Setback distance required by the zoning district plus 50 feet measured from the centerline of the street.
- **Minor arterials (Columbia Boulevard and St. Helens Street).** Setback distance required by the zoning district plus 30 feet measured from the centerline of the street.
- **Collectors (1st Street).** Setback distance required by the zoning district plus 25 feet measured from the centerline of the street.

LOT COVERAGE AND LANDSCAPING

In the same way that setbacks regulate where buildings will be located on a site, lot coverage requirements regulate the extent to which buildings can cover a site. Like setbacks, this also influences how people experience buildings from the sidewalk and street. The commercial and mixed use zones that account for most of the zoning in the study area (HC, GC, MC, MU, HBD, and OTSH) allow for relatively high lot coverages. In the HBD and OTSH zones, where the City wants to encourage development and redevelopment and reinforce a traditional small city look and feel, 100% coverage is permitted in exchange for payment of a fee to district capital improvement accounts (SHMC 17.32.170 and SHMC 17.32.175).

Landscaping requirements are related to lot coverage standards in the City's code and also affect the look and feel of development in an area. As can be seen in Table 3, whatever part of the lot is not covered by a building needs to be landscaped. City landscaping and screening provisions (SHMC Chapter 17.72) apply to construction of new structures and to changes of use, and not to single-family and two-family dwelling units or to uses that do not require site design review or a conditional use permit.

As is also discussed in Technical Memorandum #1, landscaping and screening provisions primarily address on-site requirements. Landscaping in the right-of-way (e.g., street trees) is part of the streetscape. SHMC Chapter 12.06 (Street Trees) and SHMC 17.72.030 (Street trees) specify the conditions under which the City and property owners must provide street trees as well as exceptions to those conditions.

OTHER DEVELOPMENT REQUIREMENTS

Vehicle Parking and Loading

Minimum off-street parking requirements are established according to land use in SHMC 17.80. Parking issues that most affect the streetscape are whether parking is permitted between the building and the sidewalk (in the front yard setback) and the extent to which parking requirements must be met on-site, i.e., how much of the site is devoted to parking. Of the zones in the study area, only the HBD and OTSH address these issues.

There are maximum zero-foot front yard setbacks in the HBD and OTSH zones, which do not allow for parking between buildings and the street.

No additional on-site parking is required for sites when existing development covers more than 50% of the site area; there is a change of use; or remodeling being done does not change the footprint of existing development.

New development may use on-street parking spaces in adjacent right-of-way to help meet off-street parking requirements. Alternately, new development can buy out of on-site parking requirements by contributing to the districts' capital improvement accounts for the provision of future parking facilities in the districts.

Bicycle Parking

Providing bicycle parking is important in encouraging biking in a community, and it also can be a contributing element of the streetscape. Currently, bicycle parking is required for multi-family residential, commercial, civic/institutional, and industrial uses in St. Helens, pursuant to SHMC 17.80.020(15). The minimum number of required bicycle parking spaces is generally scaled to the number of required vehicle parking spaces. Bicycle parking must be constructed within 50 feet of primary building entrances and not within landscape areas or pedestrian ways. Cover should be provided where possible.

Building Design

Generally, there are no building design standards or guidelines in the City of St. Helens. However, the City has determined that it is important to develop architectural design guidelines for the Olde Towne St. Helens district in order

to support development and design that is complementary to historic buildings and the traditional feel of the district, particularly in terms of materials, scale, features, and orientation. Guidelines and a review process have been adopted into the code (SHMC 17.32.170). The guidelines address awnings and canopies, building façades/entries, building lighting, building signage, and building setback, orientation, and bulk. Historic photos of Olde Towne are included in the guidelines for reference.

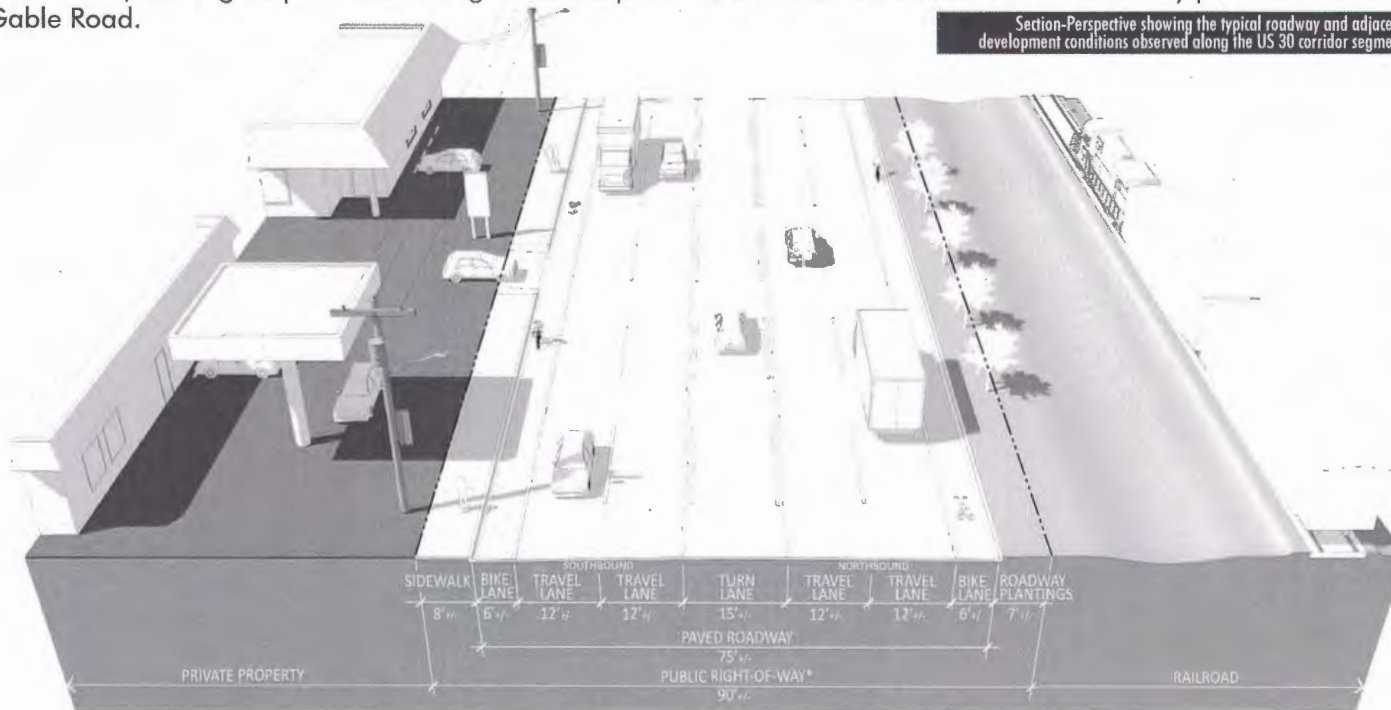
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Urban Design Conditions

This section summarizes physical and environmental characteristics that will have implications for enhancing the design of streets and future development in each corridor segment of the project area. This will help advance the overall goal of creating viable, aesthetically pleasing, safe and sustainable business districts in these areas. A description of each corridor segment summarizes the roadway configuration, pedestrian facilities, and adjacent development. Graphic section-perspectives show the typical conditions observed in each corridor segment, providing a visual analysis of the relationships between each of these spaces.

US 30

The US 30 corridor segment is a major arterial characterized by a wide concrete roadway with four lanes of traffic, a continuous center turn lane, and north- and southbound bicycle lanes on each side of the street. The roadway widens to provide right-turn only lanes at three signalized intersections, each of which provide striping and crosswalk signals for pedestrian crossing. This segment currently lacks pedestrian refuge islands or planted medians at any intersection, although a pedestrian refuge island is provided at the US 30 entrance to the Safeway just north of Gable Road.



URBAN DESIGN CONDITIONS



East side of US 30



Typical crosswalk conditions



Typical back of sidewalk condition - lack of screening

Pedestrian facilities on the west side of the street consist of a narrow curb-tight sidewalk with frequent utility poles occurring behind the sidewalk. Very few, if any, pedestrian amenities or street trees exist. The east side of the street is predominately grassy drainage ditch lined with occasional groupings of small to medium sized ornamental trees, beyond which is a railroad right-of-way with a high frequency of daily freight trains. Crosswalks and curb ramps are provided for pedestrians at signalized intersections.

Adjacent development is primarily situated along the west side of US 30, and consists of service-related and retail businesses with various setbacks ranging from zero to 100+ feet. Buildings are predominately single-story and utilitarian in character, lacking a cohesive definitive architectural style. Business frontages consist predominately of asphalt-paved parking and vehicular-oriented areas, very few of which have adequate edge screening or interior landscape areas.

Based on these conditions, this corridor segment lacks an overall identity, or a sense of place. Public and private spaces are not clearly distinguished from one another, nor do they provide amenities for pedestrians to feel welcome. The corridor is generally oriented towards vehicular users, resulting in ready access for vehicles but creating intimidating conditions for pedestrians to easily move through or around.

Streetscape improvements within the ODOT right-of-way along the east side of US 30 are generally favored by railroad representatives, however special consideration must be given to any physical improvements to ensure they do not impact operations or safety. For example, clearly designated pedestrian pathways are encouraged, granted they are located at least 25 feet from the tracks or within the outer 10 feet of the right-of-way. Landscaping is permissible, however, trees and shrubs must be located so that they do not interfere with railroad operations. Fencing is also permissible, granted it is tall enough to discourage people from climbing over it, and it is located on both sides of the tracks. Pedestrian and bicycle improvements at railroad crossings are generally supported, so long as clear sight distances are maintained. Since ODOT Rail owns the right-of-way within which the railroad operates, any proposed improvements would need to be coordinated through ODOT Rail.



HOULTON AREA

The Houlton corridor segment consists of the Columbia Boulevard / St. Helens Street couplet, which turns into Columbia Boulevard at the 13th Street intersection. The asphalt roadway typically consists of two travel lanes, one to two bike lanes, and parallel parking on each side of the street. Striped crosswalks are provided for pedestrian crossing at each intersection. New curb ramps have relatively recently been installed at a number of intersections; however, other intersections lack adequate curb ramps. Curbs are observed to range in height from flush with the roadway to over 8" in height in some locations. This corridor segment is separated from US 30 by a 100-foot wide railroad right-of-way.

Pedestrian facilities generally consists of narrow, curb-tight, concrete sidewalks with utility poles, fire hydrants, and roadway signs occurring just behind the curb, constricting the path of travel at each location. Due to the difficulty of planting trees in the underlying layer of basalt rock, this segment area currently has no street trees, though isolated clusters of small ornamental trees in container planters occur in the right-of-way in some locations. Relatively few pedestrian amenities exist along this corridor segment, although customized benches have been provided just behind the sidewalk in some locations. Cobra-style roadway lighting provides the only pedestrian illumination



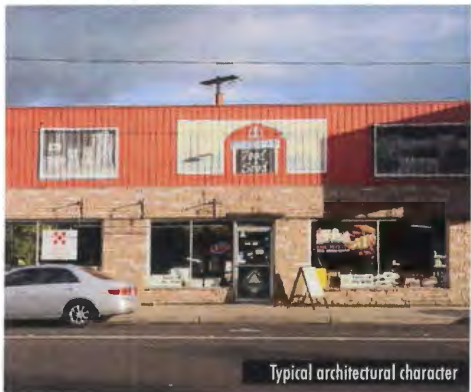
Typical roadway conditions



Typical pedestrian crosswalk



URBAN DESIGN CONDITIONS



during night-time hours. An ornamental landscape area with a fountain feature marks the St. Helens St. and Columbia Blvd intersection, although this is the only landscape feature along this corridor segment. Seasonal decorations such as cornstalks, scarecrows, and American flags are placed along the street by neighborhood and business associations during holiday celebrations.

Adjacent development is predominately commercial and civic in nature, with some vacant lots and single-family residences occurring in between Columbia and St. Helens, and along the north side of the corridor segment. Buildings are one- to two-story, and have setbacks ranging from zero to 20+ feet. Architecturally, many retail buildings are of the early 20th century commercial vernacular, with some articulation of the facades. Many buildings have glass fronts, allowing for some visibility between the insides of the businesses and the public street. Many buildings that are set back from the sidewalk have attempted to create pedestrian-oriented spaces in front, though most are separated from the sidewalk with small parking lots. Very few properties have landscaped areas along this segment, though some mature trees are observed in this project segment.

Based on these conditions, this corridor segment has an identity that lacks a clear distinction, though some "pockets" exhibit some consistency in character and feel. Public and private spaces are not generally distinguished from one another, although there are a few exceptions. This corridor segment is more pedestrian-oriented than US 30; however, sidewalks are generally too narrow and travel lanes are excessively wide for this street classification, and the lack of amenities does little to make pedestrians want to linger.

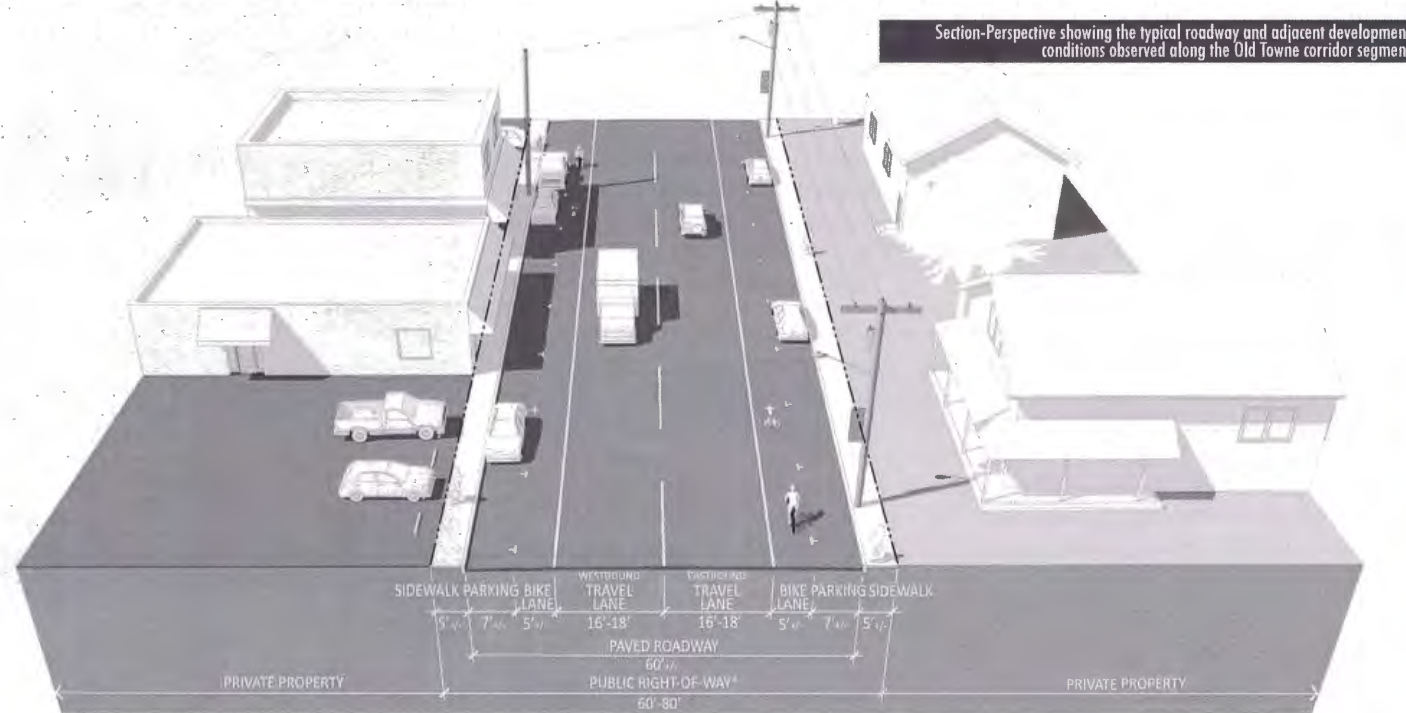
The extensive system overhead utility lines along Columbia Boulevard and St. Helens Street visually clutters the streetscape and can significantly impact many potential streetscape improvements by limiting, for example, locations of street trees and constricting pedestrian routes. Undergrounding existing overhead utilities is an effective way to reduce this visual clutter, opening up valuable space in a constricted pedestrian environment for a number of streetscape improvements. However, the high costs associated with excavating bedrock and undergrounding utility lines and vaults can be prohibitively expensive, but may be combined with other municipal and/or privately funded projects in the vicinity.



OLD TOWNE

The Old Towne study area is split into two segments: Uppertown, or the area above Dispaine's Hill, and Lowertown, the area below Dispaine's Hill. Similar to the Houlton area, the roadway in the Old Towne corridor segment consists of two travel lanes, two bike lanes, and parallel parking on each side of the street. However, a large basalt outcropping encroaches the roadway on Columbia Blvd. and on S. 1st Street, having significant impact on the roadway cross section. Additionally, the St. Helens Street portion of this corridor segment consists of a wider roadway with angle-in parking between 1st and 4th Streets. Striped crosswalks are provided for pedestrian crossings at nearly every intersection of the Old Towne corridor segment.

Pedestrian facilities also are similar to those in the Houlton area, with narrow, curb-tight concrete sidewalks and few pedestrian amenities. Utility poles with cobra-style roadway lighting are located just behind the curb, as well as fire hydrants and roadway signs. Broken sections of sidewalk are observed at some locations, and are either in disrepair, or have been paved over with asphalt. Street trees are also absent from this corridor segment, with the exception of four maple trees on the south side of Columbia Blvd. between 2nd and 3rd Streets. This also is likely a function of the difficulty of planting street trees in areas where the underlying basalt layer forms a natural barrier.



URBAN DESIGN CONDITIONS

Adjacent development is a mix of one- to two-story commercial buildings and single family residences, parking lots and vacant lots. Setbacks range from zero to 20+ feet, and consist primarily of minimally-landscaped front yards and parking areas. Very few commercial buildings are architecturally significant, though many residences are craftsman bungalows that have been well-maintained and have a strong presence along this corridor segment.

The Old Towne area has a strong residential character along the eastern end of the segment, though lacks a consistent set of facilities and amenities for pedestrians. The western end of the segment lacks a clear character due to the inconsistent quality and frequency of adjacent development. The basalt outcrops present significant barriers to pedestrian and bicycle movement in these areas, limiting sight lines and acting to divide this portion of the project area into three distinct segments. Like Houlton, Old Towne is more geared towards pedestrians than US 30; however, the sidewalks are also generally too narrow and the travel lanes are excessively wide to make travel for pedestrian feel safe and comfortable.



Non-Conforming Uses and Code Violations

While non-conforming uses and code violations are not significant issues in the study area from the perspective of City staff, there are a number of issues that the City has identified as challenges in the study area, particularly in the US 30 and Houlton segments of the study area. These issues are discussed below. Example images are provided to illustrate the issues being discussed, although many of the images come from other communities.

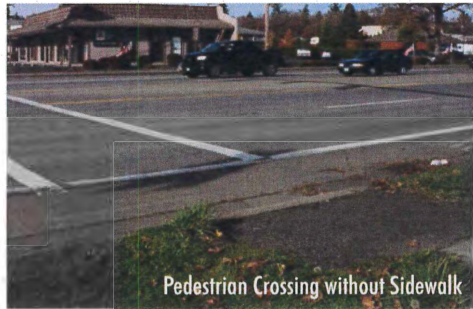
US 30

Built-out nature of the area. There are relatively few undeveloped parcels in the Highway segment. This may limit the amount of redevelopment that will occur in the area in the foreseeable future and, thus, limit the use of redevelopment to help directly fund streetscape improvement projects (e.g., establishing planting strips, medians, etc.).

Older nature of development in the area. Much of the development in the US 30 segment occurred before current code provisions were implemented. As a result, development in this area may not be consistent with current requirements for streetscape and site elements such as parking or landscaping. This makes these uses non-conforming in this respect and may present challenges for property owners during an expansion or redevelopment process.

Signs. There have been difficulties with highway signs and temporary signs in this area, particularly on the railroad side of the highway and at key intersections. Temporary signs often are not consistent with city standards and/or remain in place beyond the duration allowed.





Lack of Landscape Cover. Many properties along US 30 appear to lack the minimum amount (10%) of landscape coverage, which detracts from civic identity.

Pedestrian Crossings. Several intersections exhibit sub-par pedestrian crossing features, including curb ramps and detectable warning strips. Though the latter may not necessarily be in violation of the City's code, there are a number of locations where pedestrian crossings across US 30 terminate at a curb, or at a curb ramp with no sidewalk.

HOULTON AND OLDE TOWNE

Older nature of development in Houlton. As in the Highway segment, the age of existing development in Houlton means that it is not always consistent with current requirements for streetscape and site elements such as parking or landscaping.

Ground floor residential uses. These are no longer permitted uses in Houlton, resulting in a number of non-conforming uses. There is concern that if these uses become vacant and do not redevelop in the future, they may become derelict uses and degrade the character and quality of the streetscape.

Setbacks and off-street parking. Buildings are required to be built close to the street in the Houlton and Olde Towne area pursuant to existing requirements. As a result, parking must be placed on the side of or behind buildings. There may be some uses in these areas that do not conform to these setback requirements.

Parking. On-street parking spaces may be counted towards meeting off-street parking requirements in Houlton and Olde Towne, so that development may be able to provide a few less off-street parking spaces. Buildings that occupy 50% or more of a site are exempt from meeting off-street parking requirements, which may make them more reliant on on-street parking. In these and other cases, on-street parking is an important asset and streetscape improvements that reduce on-street parking may face resistance from local businesses.

Street trees and planters. Both private and public improvements can trigger the requirement for the City or property owners to provide street trees or planters. The City Council can waive those requirements under certain circumstances. The corridor planning project represents an opportunity to refine that process and set criteria for making those decisions based on analysis and recommendations generated during this process.



Conclusions

US 30. The pattern and character of development in this corridor segment from land use, zoning and urban design character is very vehicle-oriented as would be expected along a state highway. Short of undergoing a very significant transformation through major redevelopment, this character is not likely to change in the near future. However, enhancements to the streetscape in this area can improve the overall appearance of the corridor and improve the safety and comfort of pedestrians and bicycles. The design of targeted improvements should focus on the following:

- Provide more landscaping and greenery along the east side of the road.
- Establish an enhanced landscaping plan for the west side of the road adjacent to the rail line.
- Enhance pedestrian crossings, particularly at key intersections.
- Establish gateway features either at entrances to the town or at key intersections (Gable and Columbia/St. Helens).
- Consider implementation of a landscaped central median along portions of the road to enhance its appearance, manage access and improve safety.
- Consider updating standards for parking lot landscaping and design to increase landscaping and improve pedestrian connections and encourage businesses to voluntarily make such improvements, possibly through some kind of business association.

Houlton. This is a key shopping and business district for residents and visitors, as well as a gateway to the Olde Towne area. It currently features wide rights-of-way and limited pedestrian amenities. Land use patterns and design standards have the potential to encourage a mix of land uses and a relatively pedestrian-oriented district with building built close to the sidewalk, parking located to the side or rear of buildings and requirements for future street trees (in containers) and/or other landscaping. The design of future streetscape improvements in this area should include:

- Improve pedestrian crossings through pavement treatments, curb extensions or other strategies.
- Use excess right-of-way to enhance landscaping, as well as bicycle and pedestrian facilities and create a narrower feel to the road that can help slow traffic.
- Establish a gateway feature and improved signage at the intersection of Columbia Blvd and US 30 to draw

people into the Houlton area and toward Olde Towne.

- Provide improved pedestrian amenities (e.g., pedestrian scale light, street furniture, etc.) to create more of sense of place and unique identity for the area; use signage both for this purpose and to guide people to Olde Towne.
- Consider creating a small park or pedestrian plaza somewhere in the area to serve as an amenity and gathering place for residents and visitors.

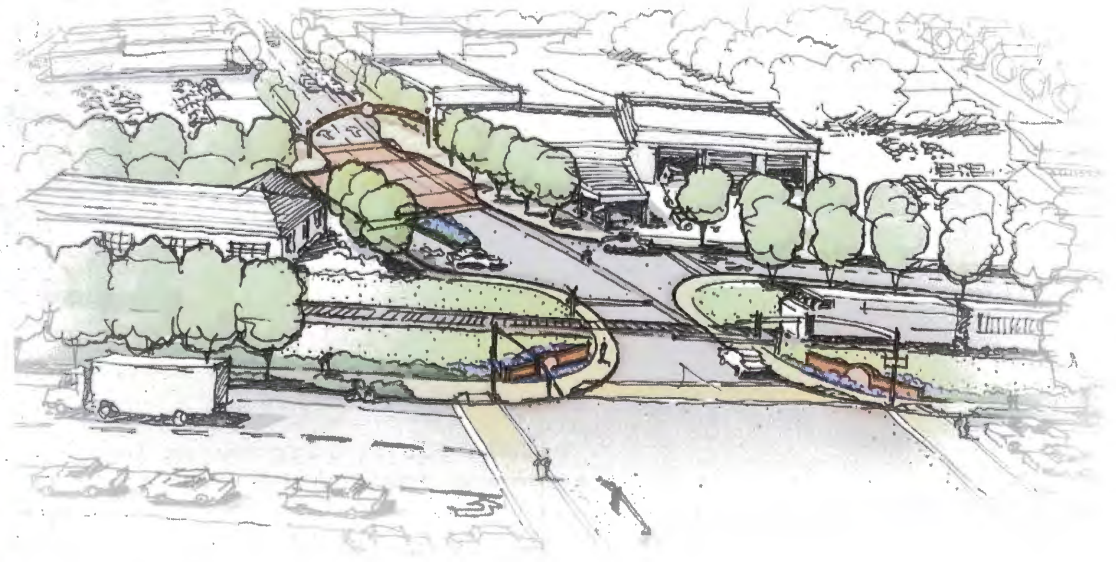
Old Towne. This corridor segment represents an opportunity for more future mixed use development and helps draw people towards civic uses and businesses north of St. Helens Street and activities on the Riverfront. It has a strong residential character but pedestrian and bicycle facilities are constrained. Streetscape improvements in this area should include:

- Continue signage from the Houlton area guiding people towards Olde Towne and the Columbia River.
- Improve facilities for bicyclists and pedestrians, working within constraints posed by topography and geology.
- Ensure that on and off-street parking requirements and availability are integrated to meet the needs of existing and future land uses and businesses in the area.

APPENDIX C. MILTON WAY/ COLUMBIA BOULEVARD INTERSECTION CONCEPT OPTIONS

During the Corridor Master Planning process, two basic options were considered for potential future improvements to the intersection of Milton Way and Columbia Boulevard, in combination with a proposed gateway in that area. Each option was intended to support creation of a gateway and address safety issues associated with people traveling south on Milton Way through this intersection. Currently, drivers travel the wrong way on Columbia Boulevard for a short distance to access Milton Way south of Columbia. One option would facilitate or legitimize that movement, while the other would make it more difficult than it is today to further discourage or prevent it. These options are described in the text below and the following graphics.

A. ALLOW southbound movement to Milton Way. A separate westbound left-turn lane from Columbia Boulevard to Milton Way would be added in this option. This potential modification would provide a way for motorists to continue south along Milton Way without traveling the wrong way on Columbia Boulevard. This modification also includes narrowing the east leg of the US 30/Columbia Boulevard intersection to a single lane with continuous bike lane striping from US 30 to east of Milton Way. The primary benefit of this alternative would be to continue to provide direct access southbound on Milton Way and to adjacent neighborhoods. The primary disadvantages would be to narrow Columbia Boulevard to one lane between US 30 and Milton Way and to continue to create potential conflicts between vehicles and pedestrians in this area.



B. PREVENT southbound movement to Milton Way. A “splitter island” would be installed at the northbound approach to the Milton Way/Columbia Boulevard intersection. This island would prevent southbound motorists on Milton Way north of Columbia Boulevard from traveling the wrong way on Columbia Boulevard to continue south along Milton Way. The island offers the added benefit of providing pedestrians along Columbia Boulevard with a refuge while crossing Milton Way. This option was subsequently refined to also extend the curb and create a plaza adjacent to the Chamber of Commerce building. This would narrow the intersection, further discouraging the movement to southbound Milton Way.



The St. Helens City Council ultimately recommended Option B, as described and illustrated in the Corridor Master Plan. The schematic design shown in the proposed option would enable city bus and fire trucks to turn right onto southbound Milton Way from US 30/Columbia, as well as trucks with a wheel base of 40 feet (WB40 truck classification) or less. This equates to a truck that is a little more than 40-feet long and has a cab that is approximately 33-feet long. Larger trucks (e.g., WB62 and WB67 vehicles) would not be able to make this turning movement without refinements to the design of the intersection.



APPENDIX D. IMPLEMENTING POLICIES AND ORDINANCES

St. Helens Corridor Master Plan - Memorandum

To: Jacob Graichen, City of St. Helens
Naomi Zwerdling, Oregon Department of Transportation

From: Matt Hastie and Shayna Rehberg, Angelo Planning Group

CC:

Date: January 12, 2014

Re: **Revised Implementing Policies and Ordinances (Subtask 7.2)**

Overview

Conclusions from the Land Use and Urban Design report (Technical Memorandum #4) and recommendations from the Corridor Master Plan Design Options and Evaluation Report were developed into draft policy and code changes that were proposed in the first draft of this memorandum. These changes are needed in order to implement the Corridor Master Plan.

The proposed changes are presented in “adoption-ready” format, which means that language that is proposed to be added is underlined and language that is proposed to be removed is ~~struck through~~. In a few cases underlined language is presented in [brackets], which indicate language options to be considered by the reviewers.

An initial draft of this proposed policy and code language has been reviewed by the Project Management Team, Technical Advisory Committee, and Citizen Advisory Committee and has been revised to reflect their comments. It will now be forwarded as part of the Corridor Master Plan for public hearing and review. Further refinements to the amendments will continue to be made, as needed as the result of results of Planning Commission and City Council work sessions and public hearings, as well as other public comments.

Implementing Policies

Existing economic development policies in the Comprehensive Plan and transportation policies in the 2011 Transportation System Plan (TSP) address many of the guiding principles developed for this project (*Vision, Goals and Guiding Principles*, Final Draft February 3, 2014). However, it is recommended that a few new policies be added to address project principles primarily related to improving the aesthetics and increasing multimodal access in the US 30, Columbia Boulevard, and St. Helens Street corridors.

Comprehensive Plan

19.08.020 Economic goals and policies.

(3) Policies. It is the policy of the city of St. Helens to:

(a) Develop program strategies with other agencies, groups and businesses in an effort to improve the local economy...

(b) Assist in programs to attract diverse businesses and industries ~~in terms of diversification and nonpollution rather than accept any business or industry which may wish to locate here; additionally, to prohibit industries with levels of pollution or other effects which would outweigh economic benefits or threaten the existing quality of living.~~

(c) Work with applicable agencies at the state and federal levels in enacting controls and performance standards for industrial operators to reduce the possibility of adverse impacts on the environment.

(d) Encourage enterprises offering local residents a far greater selection of goods and services to locate here.

(e) Make waterfront development a high priority.

(f) Develop and implement public facility designs and development standards to revitalize businesses and business districts in the US 30 and Columbia Boulevard/St. Helens Street Corridor Master Plan area.

(g) Create gateways and improve access and wayfinding signage to Houlton Business District and Historic Downtown.

(h) Improve the appearance, attractiveness, and safety of the Houlton Business District and Historic Downtown, through an enhanced street design that includes street trees, landscaping and more public spaces and pedestrian amenities.

~~(fi)~~ Develop the local tourist and recreation sectors of the economy.

~~(gi)~~ Allocate adequate amounts of land for economic growth and support the creation of commercial and industrial focal points.

~~(hk)~~ Identify special locations for industrial activities that will assist in energy conservation.

~~(il)~~ Discourage the leapfrog development of industrial lands, unless there is a program to provide sewer and water to intervening properties.

~~(jm)~~ Make commercial designation large enough to accommodate a large variety of commercial development with sufficient buffers.

~~(kn)~~ Encourage land uses that are compatible with the transportation facilities.

19.12.080 Highway commercial category goals and policies.

(2) Policies. It is the policy of the city of St. Helens to:

(a) Designate as highway commercial such areas along portions of U.S. 30 where highway business has already become well established.

(b) Designate as highway commercial such areas at major road intersections where access to business sites does not conflict with safe traffic movement.

(c) Encourage enterprises which cater to the traveling public to locate in this designation.

(d) Encourage curbing along Highway 30 and limit the number of curb-cuts to minimize traffic hazards as a result of conflicts between through traffic and shopper traffic.

(e) Preserve areas for business use by limiting incompatible uses within them.

(f) Improve the appearance and safety of US 30 and sites along US 30, through means such as landscaped medians, banner poles, landscaping along the highway right-of-way, and landscaping in parking lots.

(g) Encourage undergrounding of overhead utilities.

Transportation System Plan

Section 2 Goals and Policies

Non-motorized and Transit Modes Policies

It is the policy of the City of St. Helens to:

p) Develop a plan for walking trails.

q) Maintain, implement, and update the City's bikeway plan.

r) Provide safe and convenient bicycle access to all parts of the community through a signed network of on- and off-street facilities, low-speed streets, and secured bicycle parking.

s) Promote safe, convenient, and fun opportunities for children to bicycle and walk to and from schools.

t) Improve and expand walkways to existing and planned schools, parks, senior residential areas, and commercial areas. In particular, improve pedestrian and bicycle connectivity (including wayfinding to points of interest) between the US 30 and Columbia Boulevard/St. Helens Street corridors and adjacent open spaces and parks, trail and bicycle networks, transit stops, and neighborhoods; see US

30 & Columbia Boulevard/St Helens Street Corridor Master Plan (Ordinance No. _____, Attachment _____).

- u) Work with Columbia County and other agencies in their efforts to meet the needs of the transportation disadvantaged in the community.
- v) Encourage increased opportunities for local and regional public transit facilities.
- w) Support public transit planning in Columbia County. Transit improvements within city limits shall be guided by the findings and recommendations of the County Community-wide Transit Plan, as adopted by Columbia County.
- x) Work in partnership with the County in planning for public transit facilities located within city limits and, when feasible, facilitate the setting and operation of such facilities.

Economic Development Policies

It is the policy of the City of St. Helens to:

- y) Improve rail and water connections to enhance and provide economic opportunity.
- z) Maintain a road and multimodal transportation network that contributes to the viability of existing commercial areas.
 - aa) Acknowledge and support future expansion of both freight and potential commuter rail operations along the Lower Columbia River and continue to work with ODOT and Portland & Western Railroad and Columbia County Rider to take advantage of this growth and to mitigate potential conflicts.
 - bb) Continue to explore the viability of waterfront shuttle service as an alternative to private vessel/vehicle use along the city's waterfront and to enhance connectivity to waterfront amenities and recreational venues.

Natural Resources and Recreation Policies

It is the policy of the City of St. Helens to:

- cc) Develop a multi-modal transportation system that avoids reliance upon one form of transportation as well as minimizes energy consumption and air quality impacts.
- dd) Encourage development patterns that decrease reliance on single occupancy vehicles.
- ee) Minimize and mitigate the adverse impacts that transportation-related construction has on the natural environment, including impacts to wetlands, estuaries, and other wildlife habitat.
- ff) Identify opportunities for integrating sustainable design strategies into streetscape design and implement them where appropriate.
- ~~ffg~~) Maintain and enhance access to parks and recreational and scenic resources. Look for opportunities to connect these community resources through pedestrian and bicycle trails.
- ~~ggh~~) Create a nature trail around portions of Dalton Lake that provides recreational (e.g. walking, hiking and biking) opportunities for city residents and visitors.
- ~~hhi~~) Create a trail system along the waterfront that will provide access to the river, and connect existing and potential waterfront parks and amenities.

Community Policies

It is the policy of the City of St. Helens to:

- ~~hij~~) Design, enhance, and maintain safe and secure access between residential neighborhoods and community gathering areas such as, parks, schools, public plazas, and natural areas.
- ~~jjk~~) Provide transportation improvements that protect the area's historical character and neighborhood identity.
- ~~kl~~) Require new development to include pedestrian, bicycle, and transit-supportive improvements within the right-of-way in accordance with adopted city policies and standards.
- mm) Balance the need for local access and traffic calming with through-traffic and emergency vehicle movements (particularly in the US 30 corridor).

Implementing Ordinances

Ordinances to implement the St. Helens Corridor Master Plan consist primarily of amendments to the City of St. Helens Community Development Code, which is Title 17 in the St. Helens Municipal Code (SHMC).

As discussed in the Corridor Master Plan Design Options and Evaluation Report, development code changes and strategies focus on the following concepts:

- Pedestrian connections through parking lots to US 30
- Landscaping standards for parking lots and yards fronting US 30, Columbia Boulevard, and St. Helens Street
- Street trees in planter/landscape strips along Columbia Boulevard and St. Helens Street
- Pedestrian amenities (e.g., pedestrian-scale lighting, street furniture, etc.) along Columbia Boulevard and St. Helens Street
- Parklets in on-street parking spaces

These code concepts are discussed in terms of pedestrian access standards, landscaping standards, pedestrian amenity standards, and parklet procedures and guidelines in the following sections. Code amendments that are recommended in the following sections come primarily from the following sources:

- Existing St. Helens code language that has been re-arranged and/or slightly modified;
- Oregon Transportation and Growth Management's Model Development Code for Small Cities, 3rd Edition ("Model Code"); and
- Web pages and manuals regarding parklets from City of Portland, City of San Francisco, and the University of California Los Angeles (UCLA).

As noted in the overview, this proposed code language will be reviewed and revised by City and ODOT staff, project Citizens and Technical Advisory Committees and the City's Planning Commission and Council before being forwarded as part of the Corridor Master Plan for public hearing and review.

Pedestrian Access Standards

Existing pedestrian access and circulation provisions in SHMC 17.84.050 (Required walkway location) establish walkway requirements between buildings on a site and between building entrances and streets. They also require separated or demarcated walkways when crossing motor vehicle traffic ways in parking lots. Principles developed for the St. Helens Corridor Master Plan include increasing pedestrian access and connectivity in the project area, which is particularly needed between buildings fronting US 30 and sidewalks, bicycle lanes, and transit facilities on US 30.

Recommendation: It is recommended that walkways be required across large parking lots in St. Helens, many of which are likely to front US 30. It is proposed that these requirements be included in the pedestrian access and circulation requirements in Chapter 17.84 SHMC, which apply to construction of new structures, to remodeling of existing structures, and to changes of use which increase on-site parking or loading requirements or change access requirements. The spacing interval of 150 feet is generally based on half of the existing pedestrian/bicycle accessway spacing requirement in St. Helens (approximately 300 feet) for blocks 600 feet or more in length (SHMC 17.152.040(2)(b)).

17.84.050 Required walkway location.

(1) Walkways shall extend from the ground floor entrances or from the ground floor landing of stairs, ramps, or elevators of all commercial, institutional, and industrial uses, to the streets which provide the required access and egress. Walkways shall provide convenient connections between buildings in multi-building commercial, institutional, and industrial complexes. Walkways also shall provide access to existing and planned transit stops adjacent to the development site. Unless impractical, walkways should be constructed between a new development and neighboring developments.

(2) Within all attached housing and multifamily developments, each residential dwelling shall be connected by walkway to the vehicular parking area, and common open space and recreation facilities.

(3) Where a site for proposed commercial, institutional, or multifamily development is located within at least one-quarter mile of an existing or planned transit stop, the proposed pedestrian circulation system must ~~include demonstrate~~ a safe and direct pedestrian ~~route~~ walkway from building entrances to the transit stop or to a public right-of-way that provides access to the transit stop.

(4) In parking lots one acre or larger, pedestrian walkways shall connect from buildings to sidewalks in the adjacent rights-of-way, and shall be provided at least every 150 feet between rows of parking.

(45) Wherever required walkways cross vehicle access driveways or parking lots, such crossings shall be designed and located for pedestrian safety. Required walkways shall be physically separated from motor vehicle traffic and parking by either a minimum six-inch vertical separation (curbed) or a minimum three-foot horizontal separation, except that pedestrian crossings of traffic aisles are permitted for distances no greater than 36 feet if appropriate landscaping, pavement markings, or contrasting pavement materials are used. Walkways shall be a minimum of four feet in width, exclusive of vehicle overhangs and obstructions such as mailboxes, benches, bicycle racks, and sign posts, and shall be in compliance with ADA standards.

(56) Required walkways shall be paved with hard-surfaced materials such as concrete, asphalt, stone, brick, etc. Walkways ~~may~~ shall be required to be lighted and/or signed as needed for safety purposes. Soft-surfaced public use pathways may be provided only if such pathways are provided in addition to required pathways.

Landscaping Standards

Existing City development code requirements for landscaping and screening (Chapter 17.72 SHMC) apply to construction of new structures, remodeling of existing structures, and to changes of use that increase on-site parking or loading requirements or change access requirements. The following sections address standards related to parking lot landscaping, yard landscaping, and street trees, and how they can implement the Corridor Master Plan vision, goals, and principles.

Parking Lot Landscaping

The vision, goals, and principles developed for the St. Helens Corridor Master Plan commit to improving the aesthetics and desirability of the project area, which in part entails “greening”, softening, and beautifying typically less attractive areas like parking lots. Recommended code changes related to landscape screening of parking lots and landscaping requirements inside parking lots are addressed below.

Screening

The screening of parking lots is particularly important for improving the streetscape where parking lots are adjacent to right-of-way in the project area. This is most common along US 30 where parking lots are permitted between buildings and the right-of-way.

Recommendation: It is recommended that code provisions be modified for screening that is required between parking lots and the right-of-way on US 30. This includes setting buffer requirements between parking lots and US 30 that are not currently called for in the development code. In addition, the City has requested that screening provisions be specified for roof-mounted service facilities and equipment, a related issue of aesthetics in the project area and elsewhere in the City. Last, it is recommended that existing requirements under the screening provisions related to interior parking lot landscaping – technically not screening – be moved to a new subsection, which is addressed in the next section of this memorandum.

17.72.110. Screening – Special provisions.

(1) Screening of Parking and Loading Areas.

[...]

(b) Screening of parking (larger than three spaces) and loading areas (larger than 400 square feet) is required. The specifications for this screening are as follows:

(i) Landscaped parking areas shall include special design features which effectively screen the parking lot areas from view. These design features may include the use of landscaped berms, decorative walls, and raised planters. Berms, planters, and other forms of vegetative

landscaping are permitted for screening that fronts US 30. Walls are prohibited for screening that fronts US 30;

(ii) Landscape planters may be used to define or screen the appearance of off-street parking areas from the public right-of-way;

(iii) Materials to be installed should achieve a balance between low-lying and vertical shrubbery and trees;

~~(iv) Trees shall be planted in landscaped islands in all parking areas, and shall be equally distributed and on the basis of one tree for each seven parking spaces in order to provide a canopy effect; and~~

~~(v) The minimum dimension of the landscape islands shall be three feet and the landscaping shall be protected from vehicular damage by some form of wheel guard or curb.~~

(2) Screening of Service Facilities. Except for single-dwelling units and duplexes, service facilities such as gas meters and air conditioners which would otherwise be visible from a public street, customer or resident parking area, any public facility or any residential area shall be screened from view by placement of a solid wood fence or masonry wall between five and eight feet in height or evergreens already to correct height minimums. All refuse materials shall be contained within the screened area. Rooftop service facilities and equipment shall be screened from view from adjacent streets and adjacent properties in one of the following ways:

(a) A parapet wall of adequate height;

(b) A screen around the equipment that is made of a primary exterior finish material used on other portions of the building; or

(c) Setback such that it is not visible from the public street(s) and adjacent properties.

[...]

17.72.130 Buffer matrix.

(1) The buffer matrix (Figure 13) shall be used in calculating widths of buffering and screening to be installed between proposed uses and abutting zoning districts or specified types of streets.

(2) An application for a variance to the standards required in Figure 13 shall be processed in accordance with Chapter 17.108 SHMC.

| Existing Abutting Use of Zoning District | Parking Lot | Parking Lot |
|--|-----------------------|-----------------------|
| | 4-50 spaces | 51 or more spaces |
| Detached Single-Family (R-10, R-7, R-5) | 10' S | 20' S |
| Attached Dwelling Units (1 story) | 10' S | 20' S |
| Attached Dwelling Units (2 or more stories) | 10' S | 20' S |
| Mobile Home Parks | 10' S | 20' S |
| Any Arterial Street (except US 30) | 0' | 0' |
| <u>US 30</u> | <u>5'</u> <u>S</u> | <u>5'</u> <u>S</u> |
| Commercial Uses | 0' | 0' |

| Existing Abutting Use of Zoning District | Parking Lot 4-50 spaces | Parking Lot 51 or more spaces |
|--|----------------------------|----------------------------------|
| Industrial Park | 0' | 0' |
| Heavy Industrial | 0' | 0' |
| Any Parking Lot with 4-50 spaces | 0' | 0' |
| Any Parking Lot with 51 or more spaces | 0' | 0' |

“S” indicates screening required

Interior parking lot landscaping

As noted above, there are some existing standards for interior parking lot landscaping found in the screening requirements for parking lots. However, the existing standards do not provide a threshold parking lot size to which the standards apply, set relatively small minimum dimension for the landscape islands, and do not address planting other than trees in the islands.

Recommendation: It is recommended that existing requirements be moved from the landscape screening section to a new subsection for interior parking lot landscaping. This new subsection includes existing standards about the spacing/frequency of landscape islands in parking lots as well as larger minimum dimension standards and additional requirements about planting other than trees, based on state Model Code provisions.

17.72.130 Buffer matrix...

17.72.140 Interior parking lot landscaping.

(1) All parking areas with more than 20 spaces shall provide landscape islands with trees that provide a canopy effect and break up the parking area into rows of not more than 7 contiguous parking spaces.

(2) Landscape islands and planters shall have dimensions of not less than 48 square feet of area and no dimension of less than 6 feet, to ensure adequate soil, water, and space for healthy plant growth.

(3) All required parking lot landscape areas not otherwise planted with trees must contain a combination of shrubs and groundcover plants so that, within two years of planting, not less than 50 percent of that area is covered with living plants.

(4) The landscaping shall be protected from vehicular damage by some form of wheel guard or curb permanently fixed to the ground.

Yard Landscaping

There are no front yard setbacks required in the Highway Commercial (HC) zone, the predominant zone along US 30 in the project area, and there is a zero front yard setback in the Houlton Business District and Olde Towne St. Helens District. The development code allows the maximum setback in Houlton and Olde Towne to be increased if the increased setback is used for pedestrian-oriented amenities, such as a sidewalk cafe, plaza, or courtyard (SHMC 17.32.170 and SHMC 17.32.175(4)). Similar to the enhanced landscaping and screening standards recommended for parking lots adjacent to US 30, setbacks with landscaping and pedestrian amenities in yards that front US 30 will serve to “green”, beautify, and improve pedestrian conditions in this part of the project area.

Recommendation: It is recommended that a minimum setback for yards fronting US 30 be established in the HC zone, and that landscaping and pedestrian-oriented amenities be required in this setback.

17.32.100 Highway commercial – HC.

(4) Standards. In the HC zone the following standards shall apply:

(a) The maximum building height shall be 40 feet.

(b) The minimum yard (as defined by Chapter 17.16 SHMC) adjacent to US 30 shall be 10 feet. The setback shall be occupied by landscaping or pedestrian-oriented amenities (such as a walkway, seating, or a plaza, including such amenities as part of a transit stop) in addition to landscaping. Landscaping in the setback may be credited toward the minimum landscape requirement for the site established in subsection (f).

~~(b)~~ Outdoor storage abutting or facing a lot in a residential zone shall comply with Chapter 17.72 SHMC.

~~(d)~~ Parking shall comply with Chapter 17.80 SHMC.

~~(e)~~ Maximum lot coverage including all impervious surfaces shall be 90 percent.

~~(f)~~ Minimum landscaping shall be 10 percent of gross land area associated with the use.

Street Trees

Existing code (SHMC 17.152.060(2)) requires at least five feet separation between the curb and sidewalk (i.e., planter strip) for arterials and collectors, with some exceptions. For example, the separation may be different if otherwise indicated in street designs in the TSP or in other adopted street plans. Subsection (3) establishes that maintenance of sidewalks, planter strips, and curbs is the responsibility of the adjacent property owner.

Pursuant to SHMC Chapter 12.06 (Street Trees), the City or a development applicant is required to plant street trees where there is a lack of street trees, which is defined as the absence of trees for 100 lineal feet or more along one or both sides of the street. The City or applicant must provide street trees when involved in the following:

- Replacing or substantially repairing 30 lineal feet or more of sidewalk;
- Performing an asphalt overlay of the entire street width for a street section longer than 50 feet; or
- Making underground utility repairs that require any of the work described above.

In addition, street tree provisions in SHMC 17.72.030 require that all development fronting a public street, a private street, or a private driveway more than 100-feet long provide street trees and provide the trees according to a City-approved plan. Exemptions to street tree requirements may be granted under a specified set of conditions including that the tree could not be supported by the ground/soil conditions within the public right-of-way. In cases of exemption, the applicant may be required to provide a landscaping easement outside of the public right-of-way or pay a fee to the City commensurate with the cost of the trees that would have otherwise been provide.

Existing street tree provisions in Chapter 17.72 SHMC address the location, spacing, size, and species of the trees. Particular street tree species are suited to the corridor segments in the project area. Existing spacing standards (e.g., 20 feet maximum spacing for trees up to 25 feet tall and 30 feet maximum spacing for trees 25 to 40 feet tall) were reviewed and found to provide a density of trees in the project area that is consistent with the principles and recommended designs of the Corridor Master Plan.

Recommendation: It is recommended that landscaping requirements be modified to specify trees that are suited to the soils and conditions in the project area corridor segments. These trees should be spaced relatively closely in the Houlton and Olde Towne corridor segments, except when other spacing standards related to intersections and utilities apply.

17.72.030 Street trees.

[...]

(2) Certain trees can severely damage utilities, streets, and sidewalks or can cause personal injury. Approval of any planting list shall be subject to review by the director. ~~(List~~ A list of suggested

appropriate tree species is located at the end of this chapter.} Additional or alternative tree species also may be recommended by the applicant or determined by the Director based on information provided in adopted city plans, policies, ordinances, studies or resolutions. Proposals by the applicant shall require approval by the Director.

17.72.060 Exemptions

(4) If one or more conditions described in subsection (2) of this section are shown to exist on the site, the director may require the following to fulfill the street tree requirements of this chapter:

(b) An applicant may, with the consent of the director, elect to compensate the city for costs commensurate with the number of street trees that would have otherwise been required for the site. The fee, established by resolution of the city council, will be generally based on the city's ~~approved~~ street tree list in Chapter 17.72 SHMC and market value of the tree(s).

Pedestrian Amenity Requirements

Existing street improvement standards require that street lights to be provided "in accordance with regulations adopted by the city's direction," and that, at a minimum, "there shall be a street light at each street intersection" (SHMC 17.152.030(24)). There is not further guidance – or references to guidance – about the location, type, or design of lighting. The code also currently does not include requirements for providing street furniture or other pedestrian amenities in the planter/landscape strip as part of development. Pedestrian amenities such as seating, waste receptacles, and pedestrian-scale street lighting are envisioned as part of the streetscape in Houlton and Olde Towne in the Corridor Master Plan.

Recommendation: It is recommended that provisions be added to landscaping standards that require development to either contribute toward or provide pedestrian amenities in the planter/landscape strip adjacent to the development site. The contribution toward or provision of amenities would be based on the general vision of amenities in the Corridor Master Plan. The fee would be established by resolution and will be collected to, ideally, enable the installation of amenities by the City as part of a single uniform project and process.

Specific code requirements for pedestrian amenities and/or calculation of a fee-in-lieu resolution would be prepared as part of a follow-up process to the Corridor Master Plan project to ensure that all aspects of these requirements are carefully considered and do not act as an impediment to development or redevelopment in the area. However, amendments to the City's lighting standards are recommended at this time to ensure provision of pedestrian scale lighting in the Columbia Boulevard/St. Helens Street corridor, consistent with the Corridor Master Plan.

Examples of and guidelines for pedestrian amenities including pedestrian-scale lighting and street furniture also should be provided in the City Engineering Standards Manual, which the development code can refer to.

Chapter 17.152

STREET AND UTILITY IMPROVEMENT STANDARDS

17.152.030 Streets.

[...]

(24) Street Light Standards. Street lights shall be installed in accordance with regulations adopted by the city's direction. At the very least, there shall be a street light at each street intersection. In addition, lighting within the Columbia Boulevard/St. Helens Street Corridor Master Plan area shall be installed in accordance with the US30 and Columbia Boulevard/St. Helens Street Corridor Master Plan (Ordinance No. _____, Attachment _____) and shall be:

(a) Pedestrian-scale lighting between 12 to 18 feet in height;

(b) Uniform in design;

(c) Placed in the planter/landscape strip or curb extension (e.g., at street corners) when possible;
and

(d) Spaced no more than 100 feet apart along the block face.

Chapter 18.20

TRAFFIC DEVICES AND STREET ILLUMINATION

18.20.050 Street Illumination.

Street lighting shall be designed by Columbia River ~~Public~~ People's Utility District (CRPUD), except within the Columbia Boulevard/St. Helens Street Corridor Master Plan area; see SHMC 17.152.030(24). This shall be done at the applicant's initiative and expense. The lighting plan shall be included with the submittals to the city. Lamp type used should be uniform.

Parklet Procedures, Standards, and Guidelines

Parklets are envisioned at several locations throughout the Houlton and Olde Towne corridor segments, both in on-street parking spaces and in curb extension areas. New procedures, standards, and guidelines are needed in order to allow and implement parklets in St. Helens, particularly in on-street parking spaces. Other communities have regulated these types of parklets in street/traffic and building code, but not development code. They have provided a permitting process and guidelines for design, construction, and maintenance. For example, Portland’s “Street Seats” program is implemented through a permitting process developed and administered by the Portland Bureau of Transportation (PBOT).

Recommendation: It is recommended that procedures and guidelines for establishing parklets in on-street parking spaces be provided in the City Engineering Standards Manual (SHMC Title 18). These procedures and guidelines are primarily based on those from the “Street Seats” program in Portland¹, which also relies heavily on recommendations from the UCLA Luskin School of Public Affairs’ *Reclaiming the Right-of-Way: A Toolkit for Creating and Implementing Parklets* (September 2012)² and City of San Francisco’s *Parklet Manual* (February 2013)³. Related amendments should be made in code sections about uses and obstructions in the right-of-way in SHMC Title 8 (Health and Safety). A reference to new and amended sections of Title 8 and Title 18 should be included in the street improvement standards section of SHMC Title 17 (Community Development Code).

Title 18

ENGINEERING STANDARDS MANUAL

Chapter 18.04

ABBREVIATIONS AND DEFINITIONS

18.04.010 Abbreviations and definitions.

“Parking lot” means paved surfaces on private property intended for the movement and storage of six or more vehicles.

¹ City of Portland “Street Seats” web page, <http://www.portlandoregon.gov/transportation/59158>

² UCLA Luskin School of Public Affairs’ *Reclaiming the Right-of-Way: A Toolkit for Creating and Implementing Parklets* (September 2012), <http://innovation.luskin.ucla.edu/sites/default/files/parklettoolkit.pdf>

³ City of San Francisco’s *Parklet Manual* (February 2013), http://pavementtoparks.sfplanning.org/docs/SF_P2P_Parklet_Manual_1.0_FULL.pdf

“Temporary Parklet” means the use of a vehicle space (e.g., on-street parking space) or curb extension for public use, social interaction, and passive or active recreation. Temporary parklets in an on-street parking space are typically comprised of a platform, barriers to traffic, and seating, yet creativity in incorporating landscaping, art, and other elements is encouraged, given safety requirements are met. The duration of temporary parklets and the design varies accordingly. See SHMC 18.12.190.

“PRV” means pressure-reducing valve.

Chapter 18.12 STREETS

18.12.170 Utilities...

18.12.180 Planter/landscape strip – Pedestrian amenities.

18.12.190 Temporary Parklets – In on-street parking spaces.

The following are procedures for establishing a temporary parklet in an on-street parking space in the city. Applications are received and processed by City Administration. The City Administrator, or his or her designee, issues a temporary parklet application permit upon review and approval by the City Public Works, Engineering, Planning and Building departments. The City Administrator, or his or her designee, may revoke an approved temporary parklet permit if it is being conducted contrary to this section or any condition of the temporary parklet permit approval, or if the temporary parklet and associated use or activities is otherwise found to be contrary to public health, safety and welfare. The parklet application steps and regulations are as follows:

- (1) The maximum duration for a temporary parklet permit is 6 months; permits can be renewed subject to City approval. The maximum renewal duration is 6 months per renewal. If a parklet permit becomes void due to revocation, expiration or otherwise, the related improvement shall be immediately removed and the location restored to its original condition.

- (2) The applicant selects a location according to location criteria.
- Temporary parklets shall only be allowed along non-residential uses. Temporary parklets along and/or associated with residential uses is prohibited.
 - Temporary parklets are not permitted on streets where parking lanes become tow-away zones during morning or afternoon hours, in front of fire hydrants, in active bus zones, across driveways, or over manholes or public utility valves or covers.
 - The proposed site should be located at least one standard-size parking space in from a corner. Otherwise, a protected bollard, curb extension, or other similar feature as approved by the City must be present if located at the corner.
 - The proposed site should be located on a street with a speed limit of 25 MPH or less. Locations on streets with higher speeds will be considered on a case-by-case basis.
 - The location of the proposed site shall be generally consistent with potential locations and guidance provided in the St. Helens US 30 and Columbia Boulevard/St. Helens Street Corridor Master Plan.
 - The street grade shall be less than 5 percent.
- (3) The applicant develops a preliminary conceptual design, using the general design guidelines, design criteria, and design elements below.

General Design Guidelines:

- Design for easy removal. Because the temporary parklet sits on top of critical infrastructure and utilities, it needs to be designed for easy removal in case of emergency or other needed access to the infrastructure. Some applicants elect to remove the temporary parklet during colder months.
- No advertising. Logos, advertising, or other branding is prohibited.
- Be creative. There are possibilities beyond the standard tables and chairs on a platform.

Design Criteria:

- Design quality. What is the level of quality and creativity of the design?
- Public seating. Does the proposal provide open public use of the space and is not just an extension of a business?
- Streetscape enhancement. How will the proposal enhance the aesthetic quality of the streetscape?
- Quality of materials. What is the quality and durability of proposed materials and furniture?
- Appropriateness of location. Is the proposed parklet likely to be well-used and active?
- Community support. Is there demonstrated neighborhood support for proposal at the proposed location (including neighboring businesses and properties)?

Design Elements:

- Platform should be on the same plane as and flush with the sidewalk height. At least 12 feet of the platform must be flush with the adjacent sidewalk for wheelchair access.
- Platform must be designed to accommodate the crown and cross slope of the street surface. Close attention must be paid to existing curb condition and height to ensure platform is flush with curb.
- The use of high quality, durable materials capable of withstanding the elements of any season and extended use (with proper permit renewals) is required.
- The design should not include any bolts/anchors or other elements that require disturbing the street surface or sidewalk. No temporary parklet component may weigh more than 200 pounds per square foot.

- The platform may not extend beyond six feet from the curb line where there is parallel parking to allow some separation from vehicle travel lanes. Angled or perpendicular parking locations and associated dimensions may be approved on a case-by-case basis, but still must allow some separation from vehicle travel lanes.
- The maximum length of the platform must not be longer than the frontage of the applicant's/permit holder's establishment. A platform may be located along the frontage of multiple properties/businesses provided all applicable parties are applicants/permit holders.
- Design must maintain a minimum six-foot clear pedestrian through zone in the sidewalk corridor.
- Platform must be designed to allow for curblane stormwater drainage.
- Platform design must include a physical barrier along the street while maintaining clear visual sightlines to the street. Vertical elements, such as planters and umbrellas, should be included so that the facility is visible to vehicles.
- A setback on either end of the platform, adjacent to parallel parking, will need to be reserved for wheel stops with embedded reflective candlesticks or other similar features that reflect light and protect the platform from parking maneuvers. These may be installed by the public works department as deemed necessary after facility construction is complete. Additional features may be added to the final design by City staff for safety.
- Temporary parklet furniture shall be subject to City approval. Furniture must be able to accommodate those with disabilities, wheelchairs, or mobility devices.
- Proposed covers or shelters may be subject to additional structural engineering requirements.
- Loose surface materials, such as sand or loose stone, are not permitted in the temporary parklet.

- Public temporary parklets must be clearly posted with signs to differentiate them from private business temporary parklets and restaurant/café seating. Such signage shall not conflict with the City sign regulations, Chapter 17.88 SHMC.
- (4) The applicant begins gathering and documenting community support (meetings, letters, petitions, site posting, etc.) to be submitted as part of the application package.
- (5) The applicant prepares a detailed design document and plan package. It is recommended to contract or consult with professional design assistance.
- Parklet Location and Context Plan
 - Detailed Site Plan
 - Elevations
 - Sections (Profile Drawings)
 - Renderings and Perspectives (optional)
- (6) An application package consists of the following:
- A completed right-of-way encroachment permit application form
 - Design document and plan package
 - Community support documentation. The applicant shall provide written support of the proposed temporary parklet from adjacent businesses and/or property owners.

The applicant completes the application package and submits for review by the City.

- (7) Business and property owners within the immediate vicinity of the proposed temporary parklet will be notified and will have the opportunity to submit comments within 14 days to be included in the evaluation of an application.
- (8) If the application is approved, the applicant will finalize and submit construction drawings.

- (9) The City will schedule a pre-construction site visit.
- (10) The applicant submits payment and provides proof of liability insurance, and the public works department issues a right-of-way encroachment permit, which includes conditions for maintenance.
- Fees: The applicable fees, as set by resolution of the City Council, may include but not be limited to addressing the following components:
 - Application/encroachment permit fee
 - Café seating permit fee, if applicable
 - Additional costs (e.g., changing/removing loading zone sign), if applicable
 - Insurance: Evidence of at least \$1 million in liability insurance naming the City as additional insured must be provided. Most businesses already carry this insurance.
 - Encroachment permit and maintenance terms: The permit requires that the facility is swept daily and debris is removed from under and around the platform a minimum of once a week.
- (11) The applicant must install the temporary parklet within 90 days of permit issuance. Failure to do so voids any temporary parklet permit approval.
- (12) The applicant must notify the City within 48 hours of completing construction to schedule a post-construction site inspection.
- (13) Post-construction, the City will monitor the temporary parklet for compliance with the permit, design guidelines, and maintenance agreement as applicable.

Title 8
HEALTH AND SAFETY

Chapter 8.12
NUISANCES

8.12.010 Definitions.

(1) As used in this chapter, except where the context indicates otherwise, the following shall mean:

[...]

(d) “Nuisance” means any violation of any provision of this chapter.

(e) “Temporary Parklet” means the use of a vehicle space (e.g., on-street parking space) or curb extension for public use, social interaction, and passive or active recreation. Temporary parklets in an on-street parking space are typically comprised of a platform, barriers to traffic, and seating, yet creativity in incorporating landscaping, art, and other elements is encouraged, given safety requirements are met. The duration of temporary parklets and the design varies accordingly. See SHMC 18.12.190.

(ef) “Person” means every natural person, firm, partnership, association or corporation.

(#f) “Premises” means real property located in the city, including submerged lands, regardless of the ownership form, together with any and all buildings and structures located thereon, including floating structures, as well as more transient personal property where nuisance material or conditions may accumulate or occur such as vehicles, barges, or open storage vessels located on the property.

(gh) “Public place” means any building, place or accommodations, whether publicly or privately owned, open and available to the public.

[...]

8.12.080 Obstructions in passageways.

(1) Purpose. The purpose of this section is to identify objects prohibited from being placed in the sidewalks, streets, and other public rights-of-way, and to ensure that any objects not prohibited that are placed on sidewalks, streets, and other public rights-of-way are appropriately located, are compatible with surrounding allowed uses, and are conducive to the public health, safety, and welfare. Another purpose of this section is for enhancement and beautification of the commercial areas.

(2) Definitions and General Notes.

(a) “Sidewalk furniture” includes items placed in the public sidewalk by businesses for incidental use by their customers while patronizing said business, and includes but is not limited to:

- (i) Chairs.
- (ii) Flower boxes.
- (iii) Tables.
- (iv) Umbrellas.
- (v) Lights.
- (vi) Heaters.
- (vii) Street clocks.
- (viii) Trash cans and ashtrays.
- (ix) Shelving for merchandise.
- (x) Devices to hang merchandise.

- (xi) Any other fixture or furnishing deemed to be similar by the council-designated person.
 - (b) Sidewalk furniture does not include signs which are regulated by another ordinance.
 - (c) Objects and furniture used by street vendors are covered by another ordinance.
 - (d) Public utilities, authorized public agencies, and other organizations recognized by the city council are not restricted by this section.
 - (e) No advertising on sidewalk furniture, benches or planters.
 - (f) Sidewalk furniture shall not interfere with parking of vehicles in street rights-of-way unless permitted as part of a “temporary parklet” through permitting procedures referred to subsection (6). Interference shall be determined by the city engineer and city manager/administrator and shall generally mean that vehicles that have painted lines and/or wheel stops shall be allowed to use them.
- (3) Planter Boxes. Planter boxes may be allowed on sidewalks and passageways lying within street rights-of-way in accordance with the following:
- (a) “Planter box” is defined as a container with a display of landscape plant material, excluding city-approved and/or installed street trees.
 - (b) A planter box shall be clean and the plants well-maintained.
 - (c) It is the responsibility of the permittee to position the planter box to provide an unobstructed passageway on the sidewalk in compliance with Americans with Disabilities Act Administrative Guidelines (ADAAG).
 - (d) A planter box shall be located ~~at the curb~~ in the planter/landscape strip, in a curb extension, or against the building within the front yard setback as established by zone in Chapter 17.32 SHMC.
 - (e) A planter box shall be positioned to not obstruct any entrances or exits to buildings or to legally parked vehicles.

(f) A planter box shall not be placed on a corner, except on a corner with a curb extension and located in a manner consistent with the City's visual clearance area requirements in Chapter 17.76 SHMC or SHMC 8.12.212.

(g) There shall be no fee or permit required for a planter box.

(4) Merchandise. Merchandise, owned by the merchant abutting the area where displayed, may be displayed on sidewalks and passageways lying within street rights-of-way in accordance with the following:

(a) Shelves used to display merchandise of any character, including but not limited to groceries, vegetables, and products, must be a stable status, must not block normal flow of users and must at least comply with American with Disabilities Act Administrative Guidelines (ADAAG).

(b) Shelves must be removed no later than sunset each evening and cannot be set up again until at least sunrise the next morning.

(i) Merchandise may be displayed on sidewalks in front of/abutting a properly approved and licensed commercial enterprise or business in commercial zones as long as they meet the following standards:

(A) Location shall not interfere with pedestrian rights to travel on the city sidewalk;
and

(B) Merchandise shall be secured against being blown away; and

(C) Merchandise shall not be more than six feet from the building frontage, except when permitted as part of a "temporary parklet" in a curb extension or in an on-street parking space pursuant to permit procedures referred to in subsection (6); and

(D) Merchandise shall be removed from the sidewalk during hours when business is closed.

(ii) There shall be no fee required for display of merchandise on the sidewalk.

(iii) The provisions of this section do not apply to the delivery of merchandise or equipment. No person may permit such delivered merchandise or equipment to remain on a street or sidewalk beyond a reasonable time.

(5) Tables, Chairs, and Equipment Associated with the Serving of Food and Beverages. Tables, chairs, and equipment associated with the serving of food and beverages are permitted on sidewalks and passageways and in on-street parking spaces lying within street rights-of-way in accordance with the following requirements and permitting procedures referred to in subsection (6):

(a) The tables, chairs, and equipment are for the purpose of serving food and beverages and for the comfort of patrons to a particular business.

(b) The business is required to keep the area occupied by the tables, chairs, and equipment clean and well-maintained.

(c) All tables, chairs, and other equipment associated with the serving of food and beverages must be stored next to the building daily at the close of the business for which they are associated and at least five feet of unobstructed sidewalk must be maintained from sunset to sunrise, or if the area where the furniture is located is well-lit and secure and does not present a danger to the public or block required accessways and pathways, then it can remain in place at all times (not permanently attached to the public sidewalks but can be secured against theft in a temporary manner, such as a lock and/or chain).

(d) It is the responsibility of the permittee to position the table and chairs to provide an unobstructed passageway at all times on the sidewalk in compliance with Americans with Disabilities Act Administrative Guidelines (ADAAG).

(e) Umbrellas, heaters, and such tall equipment shall not interfere with pedestrians below a height of seven feet on a sidewalk.

(f) The smoking rules still apply as to proximity to the entrance of a business.

(g) Short fences, not over three feet in height, may be used to delineate seating areas for restaurants and such users of tables and chairs in the rights-of-way where the furniture is not required to be moved inside each sunset.

(h) These rules shall not override more restrictive rules such as building codes and federal or state laws.

(6) Permit Requirements. Use of sidewalks and passageways lying within street rights-of-way described in this section shall be in accordance with the following:

(a) Before use of a sidewalk area, an Use of Public Passageway Permit application with the required fee, as set by resolution of the city council, must be submitted to the council-designated person. The permit fee shall apply to all furniture for a single business at one location and shall not be charged on each individual component. The permit shall be valid for one year and shall expire on the last day of a year. A permit is not required for a planter box or approved bench.

(b) The permittee is liable in damages to a person injured upon a sidewalk because of the permittee's fault or negligence in the placement or condition of obstructions placed upon such sidewalk by the permittee.

(c) The permittee is responsible for compliance with Americans with Disabilities Act Administrative Guidelines (ADAAG) concerning the placement or condition of obstructions placed upon such sidewalk by the permittee.

(d) Additional guidance for designing and permitting temporary parklets in on-street parking spaces is provided in SHMC 18.12.190. This is separate from the Use of Public Passageway Permit noted previously in this subsection. Generally, the Use of Public Passageway Permit applies to use of sidewalks and passageways and the Temporary Parklet Permit applies to use of on-street parking spaces.

Title 17

COMMUNITY DEVELOPMENT CODE

17.16.010 General and land use definitions.

“Parking space” means a space for the parking of a motor vehicle within a public or private parking area.

“Temporary parklet” means the use of a vehicle space (e.g., on-street parking space) or curb extension for public use, social interaction, and passive or active recreation. Temporary parklets in an on-street parking space are typically comprised of a platform, barriers to traffic, and seating, yet creativity in incorporating landscaping, art, and other elements is encouraged, given safety requirements are met. The duration of temporary parklets and the design varies accordingly. See SHMC 18.12.190.

“Parkway” means that portion of street right-of-way lying between the curb line of the improved roadway and the adjacent private property line.

Chapter 17.152

STREET AND UTILITY IMPROVEMENT STANDARDS

17.152.200 Engineer’s certification required...

17.152.210 Temporary Parklets.

Temporary parklets may be permitted in the right-of-way in on-street parking spaces pursuant to procedures in SHMC 18.12.190 and SHMC 8.12.080.

Housekeeping Amendments

City staff has requested two sets of minor “housekeeping” code amendments to be included with the other code amendments being proposed for adoption in conjunction with the Corridor Master Plan. The first set of amendments acknowledges provisions in the code that may allow for flexibility in crediting on-street parking toward parking requirements. The second set of amendments, which removes drive-to-drive spacing standards on local streets, simplifies code by removing provision that are not needed because other provisions in the section already limit the number and width of access drives per use on local streets.

Chapter 17.80

OFF-STREET PARKING AND LOADING

17.80.020 General provisions.

[...]

(22) On-Street parking. Parking spaces in a public street or alley shall not be eligible as fulfilling any part of the parking requirement except as otherwise provided in this code.

Chapter 17.84

ACCESS, EGRESS, AND CIRCULATION

Table 17.84.040-2: Access Spacing Standards on City Streets

| Functional Classification | Public Street (street-to-street) (feet) | Private Access Drive (street-to-drive or drive-to-drive) (feet) |
|---------------------------|---|---|
| Local Street | 150 | 50 ¹ |
| Collector | 300 | 100 |
| Minor Arterial | 350 or block length | 200 or mid-block |

| Functional Classification | Public Street <u>(street-to-street)</u> (feet) | Private Access Drive <u>(street-to-drive or drive-to-drive)</u> (feet) |
|--|--|--|
| Major Arterial ² | 350 or block length | 350 or block length |
| ¹ For single dwelling units, attached, on local streets only, 25 feet is allowed. This applies to street-to-drive spacing only. <u>There is no minimum spacing standard for access points (drive-to-drive) on local streets.</u> | | |
| ² Access standards identified in the Oregon Highway Plan supersede this table on all state highways. | | |

| Functional Classification | Public Street <u>(street-to-street)</u> (feet) | Private Access Drive <u>(street-to-drive or drive-to-drive)</u> (feet) |
|---|--|--|
| Major Arterial ² | 350 or block length | 350 or block length |
| ¹ For single dwelling units, attached, on local streets only, 25 feet is allowed This applies to street-to-drive spacing only. <u>There is no minimum spacing standard for access points (drive-to-drive) on local streets.</u> | | |
| ² Access standards identified in the Oregon Highway Plan supersede this table on all state highways. | | |

APPENDIX E. ACCESS MANAGEMENT ELEMENT



KITTELSON & ASSOCIATES, INC.

TRANSPORTATION ENGINEERING / PLANNING

610 SW Alder Street, Suite 700, Portland, OR 97205 ☎ 503.228.5230 ✉ 503.273.8169

MEMORANDUM

Date: August 27, 2014

Project #: 13172.7

To: Jacob Graichen, City of St Helens and Naomi Zwerdling, Oregon Department of Transportation

From: Matthew Bell and Chris Brehmer, P.E.

Project: US 30 & Columbia Boulevard/St Helens Street Corridor Master Plan

Subject: Draft Access Management Element

This memorandum summarizes City of St. Helens (City) and Oregon Department of Transportation (ODOT) access management policies and standards related to the US 30 & Columbia Boulevard/St Helens Street Corridor Master Plan. The standards presented in this memorandum were obtained from the City's 2011 Transportation System Plan (TSP), prepared by Kittelson & Associates, Inc. (KAI) in conjunction with the City, Columbia County, and ODOT as well as other adopted City Ordinances.

The access spacing standards adopted by ODOT and the City were considered during development of the project alternatives shown in the *Corridor Design Options and Evaluation Report*. In particular, conceptual median treatments along US 30 were developed in a manner that preserves existing access locations while accommodating future projected queuing needs along US 30.

ODOT Access Management Standards

Oregon Administrative Rule 734, Division 51 establishes procedures, standards, and approval criteria used by ODOT to govern highway approach permitting and access management consistent with Oregon Revised Statutes (ORS), Oregon Administrative Rules (OAR), statewide planning goals, acknowledged comprehensive plans, and the Oregon Highway Plan (OHP). The OHP serves as the policy basis for implementing Division 51 and guides the administration of access management rules, including mitigation and public investment, when required, to ensure highway safety and operations pursuant to this division.

Access management standards for approaches to state highways are based on the classification of the highway and highway designation, type of area, and posted speed. The OHP classifies US 30 as a Statewide Highway and a designated Freight Route. Future developments along US 30 (new development, redevelopment, zone changes, and/or comprehensive plan amendments) will be required to meet the OHP access management policies and standards. Table 1 summarizes ODOT's current access management standards for US 30 per the OHP. It is important to note that the information presented in Table 1 reflects recent updates in ODOT's access management policies and

standards that occurred following the adoption of the TSP. These updates allow for closer spacing along US 30 in areas where posted speeds at less than 50 mph.

Table 1: US 30 Access Spacing Standards

| Posted Speed (MPH) | Spacing Standards (Feet) ¹ |
|--------------------|---------------------------------------|
| ≤ 25 | 350 |
| 30 and 35 | 500 |
| 40 and 45 | 800 |
| 50 | 1,100 |
| ≥ 55 | 1,320 |

¹ These access management spacing standards do not apply to approaches in existence prior to April 1, 2000 except as provided in OAR 734-051-5120(9).

City Roadway Access Standards

Table 2 summarizes the access spacing standards for the City’s roadway network as they relate to new development and redevelopment. It should be noted that the access spacing standards for local streets have been modified from those presented in the City’s Transportation System Plan (City Code Table 17.84.040-2), primarily to provide more flexibility for access along local streets. Minimum and maximum standard widths for private driveways are summarized in Table 3.

Table 2: City Street Access Spacing Standards

| Functional Classification | Public Street (feet) | Private Access Drive (feet) |
|---------------------------|----------------------|----------------------------------|
| Local Street | 150 | 50 ¹ |
| Collector | 300 | 100 |
| Minor Arterial | 350 or block length | 200 or mid-block |
| Major Arterial | 350 or block length | 350 or block length ² |

¹ This standard applies to street-to-drive spacing only. There is no minimum spacing standard for access points (drive-to-drive) on local streets.
² Access standards identified in the *Oregon Highway Plan* supersede this table on all state highways.

Table 3: Private Driveway Width Standards

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

Application of Access Spacing Standards to Project Alternatives

The segment of US 30 located within the project area currently has multiple access points that do not meet ODOT’s access spacing standards. The *Corridor Design Options and Evaluation Report* preserves

existing access locations to US 30 and does not identify the closure, consolidation, or relocation of any existing private access points.

The potential raised median islands identified along US 30 were conceptually developed and located to ensure continued access to the current public and private access points located along US30 as well as to accommodate projected future queues at key intersections. Further refinement of the specific median design and extent will need to be prepared if and when a detailed median design effort is pursued.

Similar to US 30, the segments of Columbia Boulevard and St Helens Street located within the project area currently have multiple access points that do not meet the City's access spacing standards. As with US 30, the draft corridor plan does not call for the closure, consolidation, or relocation of any existing access points. The *Corridor Design Options and Evaluation Report* was developed in a manner that preserves existing access rights along Columbia Boulevard and St Helens Street. The new sidewalks, curb extensions, street patios, and other amenities were developed to ensure continued access to the properties located along Columbia Boulevard and St Helens Streets.

As private properties redevelop in the future, ODOT and the City development review processes will require review of access spacing with respect to access spacing requirements. The development review process will determine if the potential changes in land use require the consolidation or reconfiguration of existing accesses. ODOT and the City retain the legal authority to close or restrict driveways on an as-needed basis if safety or other conditions warrant. In the interim, many of the existing driveways that do not conform with the access spacing standards may continue to operate acceptably due to: 1) relatively low traffic volumes and travel speeds in many areas, 2) separation of left and right-turn movements at many of city's the major intersections, and 3) the presence of a two-way left-turn lane along US 30 and Columbia Boulevard east of St Helens Street.

NEXT STEPS

The City's access spacing standards should be amended (specifically Table 17.84.040-2) to reflect the revised local street access spacing standards identified by City staff. These changes can be incorporated into the text amendments proposed in conjunction with the overall project.

Future planning and detailed design efforts associated with implementation of the *Corridor Design Options and Evaluation Report* should seek to facilitate access management goals and develop refined plans that support City and ODOT access goals. Potential future modifications to existing access points should move in the direction of meeting, or ideally satisfying, adopted City and ODOT access management standards.

APPENDIX F. STREET TREES MEMORANDUM

MEMORANDUM

DATE: October 29, 2014
TO: Jacob Graichen, Matt Hastie
FROM: Robin Craig
PROJECT: US 30 St Helens Corridor Master Plan
RE: Street Tree Appendix

This memo responds to questions in regards to the Street Tree component of the St Helens US 30 Corridor Master Plan. The main areas of concern include the following topics:

- I. THE IMPORTANCE OF STREET TREES
- II. CONTEXT OF TREE GROWTH
- III. STREET TREE MAINTENANCE
- IV. STREET TREE DESIGN ALTERNATES

I. THE IMPORTANCE OF STREET TREES

Urban trees and landscapes are assets that require the expenditure of resources – labor, energy, and even water - on their proper management. The question that might be asked: “What is the value of the benefits that are provided by trees? Or perhaps what does society get in return?” The U.S Forest Service facts, figures and new traffic safety studies detail many urban street tree benefits. Once seen as highly problematic for many reasons, street trees are proving to be a great value to people living, working, shopping, socializing, walking and motoring in, around and through urban places. For a planting cost of \$250-600 or even \$1500.00 (includes first 3 years of maintenance) a single street tree returns over \$90,000 of direct benefits (not including aesthetic, social and natural) in the lifetime of the tree. Street trees (generally planted from 4 feet to 8 feet from curbs) provide many benefits to those streets they occupy. These trees provide so many benefits that they should always be considered as an urban area default street making feature. With new attentions being paid to global warming, the need for energy independence, and more urban living more is becoming known about the many negative environmental impacts of treeless urban streets. We are well on the way to recognizing the need for urban street trees to be the default mandatory design requirement for livable communities, rather than a luxury item.

A. ENVIRONMENTAL VALUE

- Climate Control

People value both the aesthetic and physical quality of our environment. Trees contribute to this quality by modifying local climates, reducing noise and air pollution, and by protecting soil and water.

Climate control is one important service that trees provide naturally in the landscape, but the urban landscape is far from natural. Streets, parking lots and buildings have changed the climate of urban areas by absorbing solar radiation. Water that once percolated into the soil and later evapotranspired from soil and plants now drains away or dries on the hard surfaces. These changes have increased the temperatures of cities. Compared to the surrounding rural areas, the urban "heat islands" are five to nine degrees Fahrenheit warmer (three to five degrees Celsius). Trees help moderate the "heat island" effect. They also greatly increase human comfort: indoors or outdoors. On hot days, trees pump hundreds of gallons of water through their foliage. This water evaporates, keeping the tree and its immediate surroundings cool.

While groves of trees reduce local air temperatures, individual trees increase human comfort primarily by controlling solar radiation, not air temperature. Trees and other vegetation shield people from direct sunlight. Trees also shade soil, pavement, buildings, and other surfaces that would absorb solar energy and then radiate that heat back to the surroundings. Without the protection of trees, city dwellers are literally surrounded by radiant heat. At night, radiation moves heat in the opposite direction: from the relatively warm earth to the relatively cool sky. Again, tree cover steps in by blocking radiant heat loss from homes and people. Icy mornings provide evidence of this process, lawns otherwise white with frost often have green circles under the trees.

Indoor air temperatures are also affected by trees growing around buildings. During hot weather, trees reduce cooling costs by buffering high air temperatures and blocking unwanted solar energy. But during winter months, solar gain is desirable, because it cuts heating costs. To get the best balance, on the south and west sides of buildings plant deciduous trees that have thin, open branches to allow winter sun penetrate into the building. In addition, the schedule of leaf growth and leaf drop should coincide with the need for heating and cooling. Few, if any, species will meet these requirements perfectly, but it's wise to select species that give the best possible match.

- Air Pollution

Air pollution control is another way that trees improve the urban environment. The reductions in air pollution are modest, and air pollution poses some risk to the trees themselves.

Trees are fairly effective at removing both solid and gaseous particulates from the air. In one study, stands of trees reduced particulates by 9 to 13 percent, and the amount of dust reaching the ground was 27 to 42 percent less under a stand of trees than in an open area. Among gaseous pollutants, ozone, chlorine, fluorine, sulphur dioxide

and PAN (peroxyacetylnitrate, a photochemical component of smog) are all absorbed by trees. In most cases, these gases also damage the trees. Unfortunately, trees remove little, if any, carbon monoxide which amounts to roughly one-half the total weight of air pollutants in this country.

Increasingly, carbon dioxide is being recognized as a “greenhouse gas” pollutant with potentially devastating consequences, such as global warming, dramatic changes in rainfall patterns, and rising sea levels that threaten flooding in coastal cities. Since photosynthesis in green plants consumes carbon dioxide, plants could help to counteract the increase of this gas in the atmosphere. Rosenfeld, Martin, and Rainer report that planting urban trees could reduce heating and cooling demands enough to significantly cut fossil fuel consumption. They suggest that urban trees could be about 10 times as effective as forest trees for lowering carbon dioxide in cities.

Noise pollution from highways and other sources can be reduced with trees. Used alone, trees must be planted in belts 35 to 100 feet wide to create noticeable reductions. However, earth berms can cut traffic noise by up to half, if they are tall enough to hide the source of noise and are planted with trees, shrubs, and grasses. Where this kind of adjustment to the topography is not possible, a row of trees and a solid wall reaching up to the base of the crowns will provide a similar reduction.

- Soil and Water Quality

Soil and water quality are protected by trees. In urban settings, large areas are covered by buildings, pavement, and other impervious surfaces. Instead of percolating into the soil, rainwater and snowmelt are concentrated and accelerated, increasing soil erosion and silt accumulation in streams. Trees and other vegetation protect the soil from erosion. Along watercourses, roots and fallen leaves help hold the soil together and shield it against the cutting forces of surface water. Vegetation also absorbs some of the force of falling rain, so soil particles are not dislodged. And, the leaf litter that accumulates under trees creates an environment for earthworms and other organisms that help maintain soil porosity.

In studies at Pennsylvania State University, tracts of trees in municipal watersheds were used to purify partly treated sewage and protect surface waters. By adjusting sewage water application rates researchers prevented the ground water from becoming contaminated with nitrates. Ninety percent of the water applied went into recharging the underlying aquifer. Heavy metals, a worrisome component of municipal sewage, did not become a problem.

B. SOCIAL VALUE

Scientific studies confirm our intuition that trees in cities provide social and psychological benefits. Humans derive substantial pleasure from trees, whether it is inspiration from their beauty, a spiritual connection, or a sense of meaning (Dwyer et al. 1992; Lewis 1996). Following natural disasters people often report a sense of loss if the urban forest in their community has been damaged. Views of trees and nature from homes and offices provide restorative experiences that ease mental fatigue and help people to concentrate. Desk-workers with a view of nature report lower rates of

sickness and greater satisfaction with their jobs compared to those having no visual connection to nature. Trees provide important settings for recreation and relaxation in and near cities. The act of planting trees can have social value, for community bonds between people and local groups often result.

The presence of trees in cities provides public health benefits and improves well-being of those who live, work and recreate in cities. Physical and emotional stress has both short term and long-term effects. Prolonged stress can compromise the human immune system. A series of studies on human stress caused by general urban conditions and city driving show that views of nature reduce stress response of both body and mind. City nature also appears to have an “immunization effect,” in that people show less stress response if they’ve had a recent view of trees and vegetation. Hospitalized patients with views of nature and time spent outdoors need less medication, sleep better, and have a better outlook than patients without connections to nature. Trees reduce exposure to ultraviolet light, thereby lowering the risk of harmful effects from skin cancer and cataracts.

C. ECONOMIC VALUE

The following study was provided by the USDA Forest Service and the University of Washington: College of the Environment in order to review the relationship between street trees and urban environment and the value street trees offered on the market economy.

Central business districts are the retail and civic centers of many urban neighborhoods and smaller cities. Main Street merchants now face competitive challenges from big-box retailers, regional malls, and online purchasing. As business associations implement district improvements and strategies to attract and retain shoppers, some retailers overlook the importance of a quality streetscape on visitors’ encounters with a business district. The direct costs of an urban forest improvement program can be readily tallied; assessing the consumer response benefits is more difficult. Negative perceptions about trees based on costs can have broad implications, because business constituents often are politically influential and may voice opinions that impact public policy and decision making throughout a city. City planners can now point to extensive studies that document the environmental services that urban forests provide. However, business people do not consider such evidence to be salient to the bottom line of stores and shops. What can justify investment in tree planting and management in the retail streetscape? Merchants must be able to see some potential of return on green investment. A series of studies has explored the psychosocial response of shoppers to outdoor consumer environments, revealing consistently positive associations between streetscapes having trees and consumer preferences, perceptions, and behavior. The survey research has targeted the Main Street business districts of large, midsize, and small cities. The research program helps to better understand and reconcile the tensions that often are associated with trees in consumer environments.

Economists and other social scientists have devised reliable nonmarket valuation methods to represent natural assets in cities and towns. There are several valuation methods that are used to convert intangible benefits to dollar sums.^{1,2} on order to assist in quantifying the market value of street trees in urban environments. Overall findings have shown:

- A study found 7% higher rental rates for commercial offices having high quality landscapes.³

- Shoppers claim that they will spend 9% to 12% more for goods and services in central business districts having high quality tree canopy.⁴
- Shoppers indicate that they will travel greater distance and a longer time to visit a district having high quality trees, and spend more time there once they arrive.⁵

- Visual Quality

Visual quality describes settings that people find pleasing and desirable. Through a series of surveys, people have been asked to rate how much they like each scene in of a collection of images. Ratings were summarized and compared. Across all studies, consumer ratings increased steadily in proportion to the presence of trees. Visual preference scores were lower for scenes without trees and much higher for places with trees. Business districts with tidy sidewalks and well-designed buildings, but no trees were rated at the low end of the scores. Images containing well-tended, large trees received the highest ratings, particularly when large trees formed an orderly canopy over the sidewalk and street

- Place Perceptions

People form mental impressions of and associations with places, new or familiar. In one set of studies, people were asked to rate their level of agreement with a series of statements about a variety of retail places. Again, trees were associated with higher ratings of amenity and visual quality across the studies. Moving beyond the obvious visual content, the respondents made inferences about the settings. Positive scores for maintenance were given to districts with trees, despite cues indicating the same level of building care and street tidiness in areas without trees. Judgments of products and merchants were more positive in forested places, as were inferences regarding product value, product quality, and merchant responsiveness.

A consumer's expectations regarding shopping experiences begin at the curb, long before entering a store. Features such as storefronts and sidewalk character can create favorable or negative impressions that subconsciously affect shopper behaviors. It appears that a quality urban forest in a district can affect such impressions.

- Patronage Behavior

Shopper patronage measures are commonly used in retail and marketing studies. Study participants projected their probable patronage behavior while viewing street and sidewalk scenarios. More positive responses were found for places having trees, compared to no-tree settings, across cities of different sizes. Potential shoppers claim they are willing to travel more often, for longer amounts of time, and over greater distances to shop in a retail district containing trees, and once arriving will spend more time there.

Why is such patronage behavior important? Shoppers traveling farther to visit a business district having trees could

translate to an expanded trade area radius, adding thousands of people within urban population centers. Once there, shoppers report that they would stay longer, which could mean greater sales revenue.⁶

Shoppers do not purchase goods and services just to meet needs; many shoppers pursue a positive shopping experience in addition to making purchases. The streetscape is an important part of creating a welcoming, interesting shopping place. Trees can be part of a street improvements program that provides business benefits. Earlier research found that pedestrianized retail areas show an increase in foot traffic by 20% to 40%, and an increase in retail rents by 22%. An additional study found that promoting pedestrian activity will have small but significant positive effects on workers and businesses, and a small but positive impact on retail activity and rents.⁷

- Valuation and Community Decisions

Land ownership and improvements can be expensive in urban areas. If the values of intangibles are not represented, hard costs become powerful disincentives to invest in natural capital. Without some indicator of economic value, there may be little financial incentive to consider urban nature in land-use decisions, market transactions, and capital investment budgets.

In the public sector, local leaders often make decisions about natural resources based on cost–benefit analysis. Any public investment or policy proposal that incurs public costs or affects private development brings forward advocates with evidence on how much market value will be gained or lost. Those who favor conserving or creating “nonproductive” nature are often at a disadvantage, as they cannot readily express the monetary gains or losses arising from environmental changes.

The challenge for monetary valuation is that city trees and open space are public goods.^{8,9} Consumption of a public good by one individual does not reduce the amount of the good available for consumption by others. Another key property of public goods is that they are nonexcludable; any number of people who walk under a splendid street tree can enjoy its shade and beauty immediately or over the course of several decades, irrespective of who pays for the planting and maintenance of the tree. It is nearly impossible to exclude any nonpaying individuals from consuming the good.

Government authorities have often invested in public goods that members of society accept as providing value, such as education or emergency response systems. Having some way to estimate the value of nature’s services helps local governments to weigh costs against returns from development or prioritize payments for green versus gray infrastructure.

Nonmarket valuation is helpful in the private sector as well. The pursuit of profit is based on estimates of costs and revenues. Nonmarket valuations offer the developer and land manager information to estimate return on investment for land development projects. For instance, there may be extra costs associated with taking greater care to protect trees during site preparation, but those costs may be offset by higher purchase prices for the building lots.

- Closer to Home: A Study by the USDA Forest Service PNW on the Value of Trees in Portland, Oregon

In a recent study in the City of Portland, The USDA Forest Service PNW Research Station provided a research study to specifically study the value of street trees in the City of Portland in March 2008. The intent of the study was to determine the economic value of urban trees in light of their long history of being taken for granted. By examining how trees affect house prices, the USDA Forest Service demonstrated that the benefits of street trees in Portland far outweigh their costs.

Few previous studies have looked at the impact of street trees on the housing market, and those that did only examined the effect of the number of trees. In this study, Forest Service tested whether a wide range of tree attributes such as species, basal area, and height influenced sales price. The USDA found that only crown area within 100 feet of the house, and number of trees fronting the house was significant. When combined, these two variables add an average of \$7,020 to the price of a house, which is equivalent to adding 106 finished square feet to a house. Extrapolating our results to the entire city, the total value of Portland's street trees is \$1.1 billion, which compounded into the future is equivalent to a perpetual benefit of \$45 million annually. Assuming street trees also increase the assessed value of houses, they increase annual property tax revenues for the City of Portland by \$13 million.¹⁰

The study even relates the value and benefits that trees provided to neighboring houses. For example, a tree with a canopy cover of 312 square feet (the average for the study) adds \$7,593 to the house it fronts. However, it also positively influences the prices of houses within 100 feet. On average, there are 7.6 houses within 100 feet of a street tree. Therefore, a tree with 312 square feet of canopy cover adds, on average, \$9,241 to the value of neighboring houses.¹¹

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II. CONTEXT OF TREE GROWTH

A. Understanding Soil and Valley Anatomy

The Columbia Basin of eastern Washington is plastered with deep layers of a fine grained black rock known as basalt. The basalt is lava that cooled and hardened after it flooded over the landscape. These astounding lava floods occurred on a scale unequalled anywhere else on the entire planet. Lava began flowing in the Columbia Basin about 17 million years ago and continued until about 6 million years ago. In all, there may have been 300 individual outbreaks. Streams of basalt lava carved a wide path through the Columbia Gorge region and then on to the Pacific Coast. The coverage area for Columbia River flood basalts exceeds 60,000 square miles. At least 50,000 cubic miles of basalt can be found within that area, and some estimates go as high as 90,000 cubic miles.

Structurally, the network of vertical fractures makes columnar basalt especially vulnerable to weathering, as evidence by the piles of broken rock at the bases of basalt outcroppings. Plants that have survived over the millennia have done so by adapting, pushing roots into cracks in solid rock, pulling nutrients out of clay or sand or whatever was available to them. The temperate climate and the richness of the Columbia River basin contributes to the diverse native plant communities, agricultural communities and forest communities that has made this region of the most productive landscapes in the country. The overall aerial view of St. Helens presents a view of a city within a forest. Trees and plants survive and thrive in the city's current geologic condition which includes a base layer of basalt.

B. Understanding Tree Anatomy

Tree root systems consist of large perennial roots and smaller, short-lived feeder roots. The large, woody tree roots and their primary branches increase in size and grow horizontally. They are predominantly located in the top 6 to 24 inches of the soil and occasionally can grow deeper 3 to 7 feet if soil conditions allow. Root functions include water and mineral conduction, food and water storage, and anchorage. Roots grow where water, minerals and oxygen are found in the soil and allow root growth. Roots need some water and oxygen but if soils are saturated with water, most roots will die. Because oxygen is usually located in the upper surface layer of soil, the largest concentration of feeder roots exists in this zone. Feeder roots, although averaging only 1/16 inch in diameter, constitute the major portion of the root system's surface area. These smaller roots grow outward and predominantly upward from the large roots near the soil surface, where minerals, water and oxygen are relatively abundant. The major function of feeder roots is the absorption of water and minerals. Under normal conditions, feeder roots die and are replaced on a regular basis throughout the life of the tree.



Other factors that determine root growth include soil compaction (reduction in air pockets resulting from soil particles being packed together) and soil temperature. In general, as the depth increases, soil compaction increases, while the availability of minerals, oxygen and soil temperature all decrease. In some instances, hard, compacted soil (hardpans) can occur near the surface, which restricts root growth. In areas of shallow soils, trees can and will survive in the unlikeliest of locations. For example, the old basalt quarry in Ridgefield, WA currently has trees growing on top of the abandoned quarry. Another example of the perseverance of trees can be observed at the significant basalt outcropping on Columbia Boulevard between South 9th Street and South 8th Street. The significant basalt formation causes the alignment of Columbia Boulevard to curve to the north and then descend to the Columbia River following the natural topography. As a landmark, a tree grows directly on top of this nob of basalt.



Moving forward with street trees for the US 30 St Helens Corridor Master Plan, planting street trees in shallow soils is a viable alternative for the proposed streetscape. Jack-hammering of the basalt to create a soil pocket for the tree planting will be necessary in areas of basalt that prevent initial planting. Tree longevity and survival in this landscape is not a factor in the proposition of the street trees for this corridor. Discussion and concerns appear to be entirely based on the difficulty of installation.

III. STREET TREE MAINTENANCE

More and more communities are beginning to recognize the tangible benefits that trees provide in the urban environment. Healthy trees increase property values, reduce air and noise pollution, provide energy-saving shade and cooling, furnish habitat for wildlife, enhance aesthetics, and are an important contributor to community image, pride, and quality of life. Because street trees are one of the most important organizing elements of the streetscape environment, appropriate tree species selection, location and design of the planting site is essential. Proper tree selection and planting will ensure the healthy growth and longevity of trees, enhance the streetscape character, reduce maintenance issues and maximize the City of St Helen's investment.

Growing trees in an urban environment and within the street median is a challenge and takes careful planning. The primary consideration is one of space. It is critical that the tree selected is appropriate for the amount of space available both above

ground

and below ground. Above ground, the tree must not interfere with overhead utility lines, must be of suitable structure to be pruned with adequate clearance beneath its canopy and cannot interfere with critical site distances. Below ground the tree needs significant soil volume to grow. It is easy to overlook planting space, but the long term health of the tree is directly related to the amount and quality of the soil space that is available. As with most tree "problems," smart landscape design and tree selection is the key to preventing problems. Pavement damage can be greatly minimized or avoided by proper planning. The following narrative describes the typical areas of maintenance for street trees in the urban environment:

1. Pruning
2. Soils
3. Tree Roots
4. Approaches and Responsibilities

The American National Standards Institute (ANSI) ANSI 300 standards are the generally accepted industry standards for tree care practices. They are voluntary industry consensus standards developed by Tree Care Industry Association (TCIA) and written by a committee called the Accredited Standards Committee (ASC) A300, whose mission is to develop consensus performance standards based on current research and sound practice for writing specifications to manage trees, shrubs, and other woody plants. (more information can be found on the following website along with the individual ANSI A 300 chapters which are available for download with a fee: <http://tcia.org/business/ansi-a300-standards>)

1. PRUNING

A300 Pruning standards recognize four basic methods for pruning:

- Clean: Selective pruning to remove one or more of the following parts: dead, diseased, and/or broken branches.
- Thin: Selective pruning to reduce density of live branches
- Raise: Selective pruning to provide vertical clearance.
- Reduce: Selective pruning to decrease height and/or spread (consideration must be given to the ability of a species to tolerate reduction pruning).

Certain pruning practices are not acceptable and can injure trees:

- Topping: The reduction of a tree's size using heading cuts that shorten limbs or branches back to a predetermined crown limit
- Lion's Tailing: The removal of an excessive number of inner, lateral branches from parent branches

The United States Department of Agriculture provides a fantastic resource with guidelines on how to prune trees for

specific pruning approaches, pruning cuts and pruning practices that harm trees and when to prune:

http://na.fs.fed.us/spfo/pubs/howtos/ht_prune/htprune-rev-2012-screen.pdf

A. Pruning and maintenance guidelines on Public Sidewalks and Medians:

B.

- On the vehicular traffic side of the sidewalk, the lowest branch should provide clearance of at least 7.5 feet over sidewalks, 11 feet over residential streets, and 14 feet over main arterial streets.
- Tree or landscape material should not obscure traffic or parking signs/signals or vehicular sightlines.
- Tree foliage should be maintained to provide a minimum 6' clearance from any public streetlight.

2. SOILS

A growing tree will send roots far into the surrounding soil. In uncompacted soil, the roots of a mature tree can spread to more than twice the width of the tree's canopy. Trees get nutrients from soil, but roots also need the air and water that occupy voids between soil particles. In uncompacted soil, these voids are abundant. In dense urban areas where soils are often compacted and covered by pavement, the soil has few voids. Tree roots cannot penetrate highly compacted soil and will not grow in soil that lacks air and water. Roots of street trees frequently grow in the space between the compacted soil and overlying pavement, where air and water are present. As these roots grow, they lift the pavement and cause sidewalk heaving.

Trees growing in typical urban "tree boxes" are usually surrounded by compacted soil. If the tree roots cannot expand into the surrounding soil, they will continue to grow in the tree box until they have filled up the available space. When the needs of the tree exceed the capacity of the soil, the health of the tree will begin to decline and it will eventually die. Trees in typical urban tree boxes rarely reach their full growth potential and cannot provide the wide range of benefits that mature, healthy trees offer.

Published research suggests that trees need 1 to 2 cubic feet of soil volume for every square foot of crown area spread. For example, the recommended amount of soil volume to ensure a beautiful, healthy and vibrant tree (30 feet in canopy diameter) is 400 cubic feet. With a typical 36" planting depth, this requires 470 square feet of root space available and generally, a square or circular root space is more desirable than a long and narrow rectangular space. However, trees are adaptable and if we give them a space to fill with their roots, they typically will do so. Several techniques may be used to expand the available root zone for a street tree, including: providing

structural soil under pavements, providing adjacent green space areas for root development, and providing paths for roots under pavements in order to encourage trees to reach available root space on the opposite side of a walk or drive.

Several design methods can be used to achieve adequate soil volumes. Soil areas can be open or covered, and root paths can be used to connect soil spaces where needed.

- Open Soil Area

Open soil area is an unpaved area of soil surrounding a tree, which contains existing, new or amended soil. An open soil area may be planted or covered with mulch. Open soil areas reduce impervious surface and stormwater runoff.

- Root Paths

Root paths use aeration or drainage strips to give roots a way to grow out of the tree space and under pavement in order to access better planting soils. Root paths can connect tree spaces and adjacent green spaces. Root paths are constructed by trenching a 4" wide by 14" deep trench to fully connect two soil areas. A 1" thick x 12" tall plastic aeration sheet is inserted along the length of the root path. Top soil or amended soil is lightly compacted around the aeration sheet, filling the trench completely. Root paths may be used to connect trees planted in paved parkways to adjacent greenspace. Root paths should be placed no more than 4 feet on center in a radial pattern from each tree to the adjacent greenspace.

- Covered Soil Area

A covered soil area is an area of soil that is under pavement and specially designed to accommodate tree root growth. Design methods include structural soil, sidewalk support including pervious pavement and soil cells.

- Structural soil

Structural soil (or engineered soil) is a medium that has been used to grow trees in areas where soil must be compacted to support pavement. The first widely used structural soil was developed by Nina Bassuk and her colleagues at Cornell University. The soil consists of a particular mix of crushed gravel (uniformly about 1 inch diameter) and soil (clay loam). When properly constituted and installed, the gravel in the mix provides a locked weight-bearing matrix that can support pavement. The voids between the gravel pieces are mostly filled with the clay loam, which holds moisture and nutrients needed for tree growth. A hydrogel is added when the components are mixed to prevent separation of soil and gravel components.

Structural soil's main advantage is its ability to be compacted to load-bearing specifications. In street tree plantings, structural soil is primarily used under pavement. New trees are planted directly into a suitable topsoil rather than the structural soil.

Due to its limited water holding capacity, trees planted in structural soil need to be irrigated. However, the high

permeability of structural soil allows it to function as a reservoir for absorbing storm runoff. Pollutants present in the runoff can then be degraded in the structural soil matrix, rather than flowing into streams or lakes. Researchers are also investigating the use of structural soils to better manage urban runoff.

- Pervious Pavement

Pervious pavement provides another way to manage urban runoff. It allows contaminated water to infiltrate into the soil where soil microorganisms can degrade contaminants. This prevents oils and other toxic materials from flowing directly into surface waters. In a well-designed system, pervious pavement can help reduce stormwater runoff, help meet U.S. Environmental Protection Agency stormwater regulations, and recharge groundwater that can be used by urban trees.

Several types of pervious pavement are now available. Pavers of various types and materials allow infiltration to occur through openings between or within pavers. In addition, porous versions of concrete are available that allow water to percolate directly through a continuous paved surface to provide tree roots with adequate water.

A variety of pavements, both solid and permeable, can be used to create a covered tree space. Pavers, such as granite cobbles and permeable paver blocks placed with gaps between the stones allow water to flow to the soil below.

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Several types of pervious pavement are now available. Pavers of various types and materials allow infiltration to occur through openings between or within pavers. In addition, porous versions of concrete are available that allow water to percolate directly through a continuous paved surface to provide tree roots with adequate water.

- Soil Cells

Soil cells are plastic structures designed to be filled with soil and covered with pavement. Tree roots grow in the uncompacted soil between the structural supports. The soil cell is a modular suspended pavement system that holds unlimited amounts of lightly compacted soil while supporting traffic loads beneath paving. The healthy soil housed within the soil cell serves two important functions: growing large trees and treating stormwater onsite.

Technical guidelines that provide specifications for soils can be found in the ANSI A300 Part 2 which addresses the following items.

Soil Management

a. Modification section

- Evaluating site soil condition practices
- Managing soil organic matter content practices
- Incorporation of soil amendments
- Compaction – prevention and mitigation practices
- Mechanical soil loosening
- Surface application of organic mulch
- Soil Management

b. Fertilization section

- Soil reaction (pH) adjustment
- Fertilization practices
- Calculations for fertilization area
- Fertilization applications
- Structural soil

3. TREE ROOTS

Many researchers and urban foresters have tested a variety of techniques for dealing with conflicts between tree roots and nearby sidewalks and curbs. These include reconfiguration of sidewalks around trees, use of different sidewalk construction techniques and materials, and the use of root barriers.

The two main causes of conflicts between trees and sidewalks include:

- Trunk flare damage where the actual trunk of the tree lifts the sidewalk
- Root damage where a root originating from the tree has caused damage to the sidewalk

Trunk flare

The cause of trunk flare damage is a lack of space. The sidewalk is actually in contact with and lifted or offset by the enlarging tree trunk. Increasing the distance between the tree and sidewalk is the optimum way to perform the trunk flare damage sidewalk repair while retaining the tree. Again, proper selection of the right tree in the right place is an integral component of streetscape design in order to avoid heaving of the sidewalk by a tree that is too large for its location.

Root Damage

The causes of root damage vary from shallow and surface roots in contact with the sidewalk to the radial growth increase of deeper roots causing sidewalk displacement. Sometimes the offending shallow or surface roots may be pruned. Pruning roots is only a temporary solution. The interval between root pruning and renewed sidewalk lifting is about five years. This relatively short repair interval can create an escalating and compounding effect of needed repairs as the trees continue to grow. An additional problem with root

pruning is the loss of tree stability. Trees have stability against the wind because of their lateral roots. Tap roots are rare and quite small in most broadleaf trees and provide virtually no support. When the important lateral roots are pruned, tree stability can be reduced. Again, proper selection of the right tree in the right place is an integral component of streetscape design.

Root Control

Root barriers are often specified by landscape architects and sometimes recommended in conjunction with root pruning. Physical barriers, usually panels made of heavy plastic, are used to either circle the tree's rootball or as liners for the planting pit. Another often-seen alternative is landscape fabric with nodules containing trifluralin, an herbicide, or coated with Spin Out, a root growth regulator. The use of root barriers has been a point of contention. Root barriers reduce the amount of roots in a given space. Care must be taken if the top of the barrier is above grade. Mulch or topsoil often allows roots to grow over the barrier. Because of increased incidence of root defects associated with some root barriers, they are not as commonly used or recommended as in the past. Rather than install barriers, plant trees appropriate to the site.

The ANSI A300 (Part 8) - 2013 Root Management Standard seeks to improve the quality, life expectancy, and safety of trees by promoting and facilitating the care of roots. Part 8 Root Management Standard is a guide and addresses the following:

- Trenching near a tree
- Root pruning to mitigate tripping hazards and infrastructure damage
- Managing stem-girdling and stem-circling roots

STREET TREE MAINTENANCE APPROACHES AND RESPONSIBILITIES

Maintenance Approaches

Maintenance of street trees and other pedestrian amenities is key to maintaining the appearance and function of the sidewalk and associated pedestrian areas. This typically involves pruning trees, removing leaves and otherwise keeping these areas free of debris. It also may involve maintaining or repairing benches, lighting or other features. Similar to many other communities in Oregon, the City of St. Helens municipal code requires adjacent property owners to maintain trees and other plants located in the public right-of-way next to their properties. However, in practice, City public works staff frequently maintain street trees located in the right-of-way.

In the future, a variety of approaches could be considered and implemented to ensure adequate, regular maintenance of street trees and furnishings. For example, to reduce the requirements for property owner maintenance, the City could share maintenance responsibilities, possibly requiring property owners to perform basic day-to-day maintenance such as removing leaves or debris from the sidewalk while the city prunes trees and bushes and maintains all other street plantings and furnishings (benches, lighting, etc.). Another option would be for local businesses and/or property owners to form a local association or district, collect fees from participants, and use these fees to pay a private entity to regularly maintain street trees, other plantings and pedestrian features. This is a common approach in a number of

downtown and Main Street areas in other communities in Oregon and elsewhere. Whatever approach is selected, it should be fair and equitable to local property and business owners, be cost-effective and be consistent with available public and private resources.

IV. STREET TREE DESIGN ALTERNATES

The following vision statements were developed in the early stages of the project and used to develop and evaluate corridor design options and recommended actions throughout the US 30 St Helens Corridor Master Plan process:

US 30 CORRIDOR SEGMENT

Highway 30 will provide safe, convenient access to local businesses along the highway, while balancing that with state goals for traffic mobility. The appearance of the highway will be improved over time to enhance landscaping and other elements that will make it a more attractive place for people to travel by car, bicycle, walking or transit. Key intersections such as at Gable Road, Columbia Blvd. and St. Helens Street will be improved to enhance safety for all types of travel and to create attractive, clearly recognizable gateways to other parts of St. Helens, helping meet the community's goals for economic revitalization in those areas.

COLUMBIA BLVD./ST. HELENS STREET SEGMENT

Columbia Blvd. and St. Helens Street will provide safe, convenient travel to access the Houlton business area, the Riverfront District and adjacent neighborhoods by drivers, bicyclists and pedestrians. These streets will provide good access to local businesses and be attractively designed to help draw people to the area and enhance their shopping and travel experiences. Street designs will incorporate opportunities for landscaping, public art and signage that directs people to the Houlton area and Riverfront District. Designs will recognize physical conditions and constraints, be cost-effective and build on natural and cultural features and other opportunities in the area.

Through the master planning of the streetscape sections for the different areas of the corridor, street trees and planter medians were developed as an important component of the streetscape design. The City of St. Helens has an adopted street tree list that was developed several years ago. The existing street tree list was used as a basis for the selection of street tree alternatives suggested in the master plan. Based on the age of the current City of St. Helens street tree list, the design team was encouraged to provide additional suggestions to augment the list. The design team consulted the City of Portland street tree list based on the significant amount of peer review provided to create their street tree list by certified arborists, landscape architects, urban designers, city planners, and city engineers and the resources expended by the City of Portland to develop their street tree list. The City of Portland street tree list offers specific tree lists based on the size of the planter median available for planting. The Portland Street Tree list was cross referenced to the City of St. Helens list to determine additional trees that would meet the design needs of the new proposed corridors.

The design team considered the following design parameters in the selection of the street tree alternatives

- Harsh urban conditions
- Urban pollution
- Heat Island effect

- Extensive soil compaction
- Large areas of pavement
- Lack of nutrients and water
- Underground utilities
- Lack of long term managed care

Overall, street tree alternatives were suggested based on the possession of the following traits:

- Non-aggressive growth or root conditions
- Attractive seasonal display (minimum three season performer), Seasonal color and variety desired
- Tree Form: Uniform upright variety and trees with availability in uniform caliper, width, and canopy structure
- Canopy Character: Open, airy and transparent, non-opaque, good form
- Fruit: No messy fruit set or seed pod drop (minimal maintenance)
- Leaf: Ease of maintenance for overall clean-up and removal. Small, narrow blade leaves should be avoided.
- Proven performer in urban street conditions

A. US 30 Corridor Segment Tree Planting Option – 1

Single Species along corridor with median and intersection accents

East Side (Planter Width 7' +/-)

**Styrax japonicus* 'JFS-D' – Snowcone Japanese Snowbell

East Side (Planter Width 7' +/-) - between Columbia Blvd. and St. Helens St.

Quercus shumardii – Shumard Oak

West Side (Planter Width 3')

**Styrax japonicus* 'JFS-D' – Snowcone Japanese Snowbell

Medians – (Planter Width 14')

Quercus robur x *Q. alba* 'Crimschmidt' – Crimson Spire Oak

Intersections (West side of US 30) – First two trees North and South of each intersection

**Acer grandidentatum* 'Schmidt' – Rocky Mountain Glow Maple

Note: Trees included in both St. Helens & City of Portland recommended street trees are marked with an asterisk (*)

B. US 30 Corridor Segment Tree Planting Option – 2

Mixed tree variety by block/planter width with median accents

East Side (Planter Width 7' +/-)

Between Gable Rd. and S. Vernonia Rd.

**Tilia cordata* 'Glenleven' – Glenleven Linden

Between S. Vernonia Rd. and Columbia Blvd.

Ulmus carpinifolia x U. parvifolia 'Frontier' – Frontier Elm
Between Columbia Blvd. and St. Helens St.

Ulmus japonica x U. wilsoniana 'Morton' – Accolade Elm
Between St. Helens St. and Howard St.

Ulmus carpinifolia x U. parvifolia 'Frontier' – Frontier Elm
Between Howard St. and Pittsburgh Rd.

*Tilia cordata 'Glenleven' – Glenleven Linden

West Side (Planter Width 3')

Between Gable Rd. and S. Vernonia Rd.

*Acer grandidentatum 'Schmidt' – Rocky Mountain Glow Maple

Between S. Vernonia Rd. and Howard St.

Amelanchier grandiflora 'Princess Diana' – Princess Diana Serviceberry

Between Howard St. and Pittsburgh Rd.

*Acer grandidentatum 'Schmidt' – Rocky Mountain Glow Maple

Medians – Columnar (Planter Width 14')

Amelanchier grandiflora 'Princess Diana' – Princess Diana Serviceberry

C. Houlton / Riverfront District – Option 1

North and South sides of Columbia Blvd between Milton Way and 8th St. (Planter Width 4'-6')

*Ginkgo biloba 'Saratoga' – Saratoga Ginkgo (Note: desirable males do not produce fruit)

North and South sides of St. Helens St. between Milton Way and 8th St. (Planter Width 4'-6')

*Ginkgo biloba 'Saratoga' – Saratoga Ginkgo (Note: desirable males do not produce fruit)

North and South sides of Columbia Blvd between 8th St. and 1st St.

Cornus kousa x nuttallii 'Starlight' – Starlight Dogwood

St Helens St.

*Cercis Canadensis 'Forest Pansy' – Forest Pansy Redbud

D. Houlton / Riverfront District – Option 2

North and South sides of Columbia Blvd between Milton Way and 14th St. (Overhead PowerLines)

*Ginkgo biloba 'Saratoga' – Saratoga Ginkgo (Note: desirable males do not produce fruit)

North and South sides of St. Helens St. between Milton Way and 14th St. (No Overhead PowerLines)

A graphic example of the street trees accompanies this Appendix and provides images of the street tree qualities and the relationships of the proposed design alternates of the different street trees for the corridor. Note: Trees

included in both St. Helens and City of Portland recommended street trees.

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APPENDIX G.

RESOLUTION NO. 1687

A RESOLUTION TO CHANGE PLACE NAME REFERENCES OF "OLD TOWN" OR "OLDE TOWNE" TO "RIVERFRONT DISTRICT"

City of St. Helens
RESOLUTION NO. 1687

A RESOLUTION TO CHANGE PLACE NAME REFERENCES OF "OLD TOWN" OR "OLDE TOWNE" TO "RIVERFRONT DISTRICT"

WHEREAS, "Old Town" or "Olde Towne" has been the traditional reference to the historic downtown area more-or-less along and associated with the Columbia River; and

WHEREAS, "Houlton" is the traditional reference to the uptown area which is generally located closer to the railroad along Columbia River Highway and the highway itself, but lying mostly on the east side of said highway; and

WHEREAS, a commonly known division point between the "Old Town" or "Olde Towne" and "Houlton" areas is the hill along Columbia Boulevard between 7th and 9th Streets more-or-less; and

WHEREAS, the City Council desires to change the "Old Town" or "Olde Towne" reference to "Riverfront District"; and

WHEREAS, a strategic method of implementing this place name change is by changing any existing "Old Town" or "Olde Towne" reference in the St. Helens Municipal Code to "Riverfront District"; and

WHEREAS, a strategic method of implementing this place name change is by using "Riverfront District" instead of "Old Town" or "Olde Towne" in any new official City documentation; and

WHEREAS, a strategic method of implementing this place name change is by using "Riverfront District" instead of "Old Town" or "Olde Towne" for identification and other miscellaneous purposes including but not limited to signage, brochures, and advertisements; and

WHEREAS, it is impractical to change any "Old Town" or "Olde Towne" reference in past official City documents such as previously adopted plans and this resolution acts as a link to said past documentation to help avoid place name confusion in the future.

NOW, THEREFORE, THE CITY OF ST. HELENS RESOLVES AS FOLLOWS:

Section 1. The City Council hereby directs staff to change any "Old Town" or "Olde Towne" reference in the St. Helens Municipal Code to "Riverfront District."

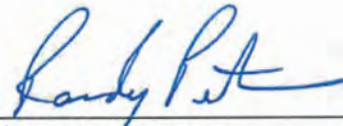
Section 2. Any new official documentation shall use the term "Riverfront District" when referencing the historic downtown area. "Old Town" or "Olde Towne" shall not be used.

Section 3. The City Council, any City Commission or Committee, City staff, any person contracted by the City, or any other person representing the City shall make every effort to use "Riverfront District" when referencing or providing direction to the historic downtown area in writing. "Old Town" or "Olde Towne" shall not be used.

Approved and adopted by the City Council on November 19, 2014, by the following vote:

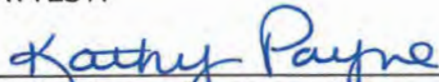
Ayes: Locke, Carlson, Conn, Morten, Peterson

Nays: None



Randy Peterson, Mayor

ATTEST:



Kathy Payne, City Recorder

Ordinance No. 3181

Attachment “B”

The following 6 pages is an update of Section 2 of the St. Helens Transportation Systems Plan as adopted by Ordinance No. 3150. This Section 2 via Ordinance No. 3181 replaces Section 2 as originally adopted via Ordinance No. 3150.

2 Goals and Policies¹

The St. Helens Transportation System Plan (TSP) comprises the transportation element of the City's comprehensive plan. The goals and policies presented in this section are based on the content and format of Title 19 of the Municipal Code (the City's Comprehensive Plan). Upon adoption of the TSP, Title 19 will also be updated (it was last updated in February 2011). Ultimately, policies in both the TSP and the overall comprehensive plan document should be consistent.

The goals and objectives from the 1997 TSP were also considered in developing the update, but were not used as a basis for the updated policy language, primarily because they predate the more current transportation policies in the Comprehensive Plan. The labels used for each type of transportation goal in the 1997 TSP (e.g., transportation, community, economic development, etc.) provide a helpful organizational feature. A similar organization has been used in the TSP Update to help distinguish between different types of policies that support general transportation goals.

In addition to relevant existing City policy language, the goals and policies presented in this section reflect recent policy direction related to Columbia County transit planning, the City's Bicycle Friendly Community designation (Resolution 1446), the City's Safe Passages (Safe Routes to Schools) goals, the Lower Columbia River Rail Corridor Rail Safety Study, and the Waterfront Development Prioritization Plan (Ordinance 3148).²

19.08.040 Transportation Goals and Policies

(1) PREFACE

The transportation goals and policies presented in this section are intended to guide development of the city's transportation system and provide a policy framework that ensures that the transportation system can support planned land uses and meet the needs of those that use the system. Policies for each goal are provided to identify and clarify the course of action necessary to achieve each goal. Detailed information on the goals and policies outlined below, including a brief description of goals and policies that have been revised as a result of this TSP update, is provided in Technical Appendix, Volume 2.

¹ The Transportation Systems Plan (TSP) was originally adopted by Ordinance 3150. Section 2 of the TSP was revised by Ordinance 3181, Attachment "B."

² Only "Top and High Priority Waterfront Improvements" from the Waterfront Development Prioritization Plan were modified and included in the TSP as proposed policies.

(2) TRANSPORTATION GOALS

- ⑥ To develop and maintain transportation facilities for moving people and goods that are:
 - I. Responsive to the needs and preferences of citizens, business and industry;
 - II. Suitably integrated into the fabric of the urban community; and
 - III. Safe, economical and convenient to use.
- ⑥ To reduce existing congestion and prevent future congestion so that both crashes and travel time will be reduced.
- ⑥ To address cut through traffic traveling within residential areas.
- ⑥ To develop, maintain, and support a multi-modal transportation network that supports economic viability.
- ⑥ To ensure that streets can accommodate the future needs of cyclists, pedestrians, transit users, emergency response vehicles, and motorists.
- ⑥ To ensure future arterial rights-of-way are not encroached upon.
- ⑥ To encourage energy-conserving modes of transit.
 - To increase appropriate walking and bicycling opportunities.
 - To ensure adequate maintenance of transportation facilities.
- ⑥ To coordinate transportation and other improvements to roadways such as utilities, water and sewer lines and other infrastructure to minimize impacts on road users.

(3) TRANSPORTATION POLICIES

The transportation policies outlined in this section are divided into six categories based on the nature of the individual policies.

Safety and Efficiency Policies

It is the policy of the City of St. Helens to:

- ⑥ Require that all newly established streets are of proper width, alignment, design and construction to facilitate future multimodal needs and are in conformance with the development standards adopted by the City of St. Helens.
- ⑥ Review diligently all subdivision plats and road dedications to ensure the establishment of a safe and efficient street system that accommodates all modes of transportation appropriate for the surrounding land uses.
- ⑥ Support connectivity in the transportation network by permitting cul-de-sacs only when environmental or topographical constraints or exiting development patterns preclude local

street connectivity. Where cul-de-sacs are proposed and built, there shall be pedestrian and bicyclist connections and pathways provided to the surrounding street system.

- o Support and adopt by reference street projects listed in the Six-Year Statewide Transportation Improvement Program (STIP); specifically, consider new left turn lanes, traffic signals and/or interchanges on US 30, where feasible and consistent with state planning guidelines, standards and policies.
- o Control or eliminate potential traffic hazards along the roadsides through building setbacks, dedications or regulation of access at the time of subdivision, zone change or construction.
- o Regulate signs and sign lighting to avoid distractions for motorists.
- o Work with the railroad owners and operators to improve the safety at railroad crossings.
- o Support the eventual closure of the St. Helens Yard and the interim efforts of the Portland & Western Railroad to place fencing between the rail yard and US 30.
- o Support an eventual extension of Pittsburg Road/West Road between Wyeth Street and Deer Island Road over or under both US 30 and the railroad to improve safety and mobility and reduce conflict between rail and road users.
- o Continue to work with Portland & Western Railroad, ODOT and other interested parties in identifying and preserving possible locations for future grade separated crossings and/or interchanges, consistent with long-term growth projections and associated increased needs for emergency access.
- o Continue to work with Portland & Western Railroad and interested parties in identifying unsignalized active rail crossings where local roadways can be terminated or rerouted to eliminate conflict points.
- o Plan and develop local street routes to alleviate US 30's traffic load.
- o Regulate or prevent development within areas required for future arterials or widening of rights-of-way.
- o Follow good access management techniques on all roadway systems within the city.
- o Continue to coordinate with Columbia County regarding development, land uses, and transportation planning in areas of future urban growth, outside of the current city limits, in order to ensure that transportation policies and practice result in an efficient, sound, and sustainable transportation system.

Non-motorized and Transit Modes Policies

It is the policy of the City of St. Helens to:

- 1. Develop a plan for walking trails.
- 2. Maintain, implement, and update the City's bikeway plan.
- 3. Provide safe and convenient bicycle access to all parts of the community through a signed network of on- and off-street facilities, low-speed streets, and secured bicycle parking.
- 4. Promote safe, convenient, and fun opportunities for children to bicycle and walk to and from schools.
- 5. Improve and expand walkways to existing and planned schools, parks, senior residential areas, and commercial areas. In particular, improve pedestrian and bicycle connectivity (including wayfinding to points of interest) between the US 30 and Columbia Boulevard/St. Helens Street corridors and adjacent open spaces and parks, trail and bicycle networks, transit stops, and neighborhoods; see US 30 & Columbia Boulevard/St. Helens Street Corridor Master Plan (Ordinance No. 3181, Attachment "A").
- 6. Work with Columbia County and other agencies in their efforts to meet the needs of the transportation disadvantaged in the community.
- 7. Encourage increased opportunities for local and regional public transit facilities.
- 8. Support public transit planning in Columbia County. Transit improvements within city limits shall be guided by the findings and recommendations of the County Community-wide Transit Plan, as adopted by Columbia County.
- 9. Work in partnership with the County in planning for public transit facilities located within city limits and, when feasible, facilitate the siting and operation of such facilities.

Economic Development Policies

It is the policy of the City of St. Helens to:

- 1. Improve rail and water connections to enhance and provide economic opportunity.
- 2. Maintain a road and multimodal transportation network that contributes to the viability of existing commercial areas.
- 3. Acknowledge and support future expansion of both freight and potential commuter rail operations along the Lower Columbia River and continue to work with ODOT and Portland & Western Railroad and Columbia County Rider to take advantage of this growth and to mitigate potential conflicts.
- 4. Continue to explore the viability of waterfront shuttle service as an alternative to private vessel/vehicle use along the city's waterfront and to enhance connectivity to waterfront amenities and recreational venues.

Natural Resources and Recreation Policies

It is the policy of the City of St. Helens to:

- cc) Develop a multi-modal transportation system that avoids reliance upon one form of transportation as well as minimizes energy consumption and air quality impacts.
- cc) Encourage development patterns that decrease reliance on single occupancy vehicles.
- cc) Minimize and mitigate the adverse impacts that transportation-related construction has on the natural environment, including impacts to wetlands, estuaries, and other wildlife habitat.
- cc) Identify opportunities for integrating sustainable design strategies into streetscape design and implement them where appropriate.
- cc) Maintain and enhance access to parks and recreational and scenic resources. Look for opportunities to connect these community resources through pedestrian and bicycle trails.
- cc) Create a nature trail around portions of Dalton Lake that provides recreational (e.g., walking, hiking and biking) opportunities for city residents and visitors.
- cc) Create a trail system along the waterfront that will provide access to the river, and connect existing and potential waterfront parks and amenities.

Community Policies

It is the policy of the City of St. Helens to:

- cc) Design, enhance, and maintain safe and secure access between residential neighborhoods and community gathering areas such as, parks, schools, public plazas, and natural areas.
- cc) Provide transportation improvements that protect the area's historical character and neighborhood identity.
 - Require new development to include pedestrian, bicycle, and transit-supportive improvements within the right-of-way in accordance with adopted city policies and standards.
 - Balance the need for local access and traffic calming with through-traffic and emergency vehicle movements (particularly in the US 30 corridor).

Planning and Funding Policies

It is the policy of the City of St. Helens to:

- 3.10) Coordinate and cooperate with neighboring cities, Columbia County, ODOT, and other transportation agencies to develop and fund transportation projects that benefit the city, region, and the State.
- 3.11) Plan for an economically viable and cost-effective transportation system.
- 3.12) Evaluate new innovative funding sources for transportation improvements.
- 3.13) Ensure that the existing transportation network is conserved through maintenance and preservation.
- 3.14) Build a transportation network that can be adequately maintained; ensure continued maintenance consistent with City of St. Helens standards and policies.
- 3.15) Minimize impacts of road improvements on travelers and adjacent residents and business owners by effectively coordinating transportation, utility and other infrastructure improvements.

underline words are added
~~words stricken~~ are deleted

Chapter 8.12 NUISANCES

8.12.010 Definitions.

(1) As used in this chapter, except where the context indicates otherwise, the following shall mean:

[...]

(g) “Public place” means any building, place or accommodations, whether publically or privately owned, open and available to the public.

(h) “Temporary Parklet” means the use of a vehicle space (e.g., on-street parking space) or curb extension for public use, social interaction, and passive or active recreation. Temporary parklets in an on-street parking space are typically comprised of a platform, barriers to traffic, and seating, yet creativity in incorporating landscaping, art, and other elements is encouraged, given safety requirements are met. The duration of temporary parklets and the design varies accordingly. See SHMC 18.12.190.

[...]

8.12.080 Obstructions in passageways.

[...]

(2) Definitions and General Notes.

(a) “Sidewalk furniture” includes items placed in the public sidewalk by businesses for incidental use by their customers while patronizing said business, and includes but is not limited to:

[...]

(f) Sidewalk furniture shall not interfere with parking of vehicles in street rights-of-way unless permitted as part of a “temporary parklet” through permitting procedures referred to subsection (6). Interference shall be determined by the city engineer and city manager/administrator and shall generally mean that vehicles that have painted lines and/or wheel stops shall be allowed to use them.

(3) Planter Boxes. Planter boxes may be allowed on sidewalks and passageways lying within street rights-of-way in accordance with the following:

(a) “Planter box” is defined as a container with a display of landscape plant material, excluding city-approved and/or installed street trees.

[...]

(d) A planter box shall be located ~~at the curb in the planter/landscape strip, in a curb extension,~~ or against the building within the front yard setback as established by zone in Chapter 17.32 SHMC.

(e) A planter box shall be positioned to not obstruct any entrances or exits to buildings or to legally parked vehicles.

(f) A planter box shall not be placed on a corner, except on a corner with a curb extension and located in a manner consistent with the City’s visual clearance area requirements in Chapter 17.76 SHMC or SHMC 8.12.212.

(g) There shall be no fee or permit required for a planter box.

(4) Merchandise. Merchandise, owned by the merchant abutting the area where displayed, may be displayed on sidewalks and passageways lying within street rights-of-way in accordance with the following:

[...]

(b) Shelves must be removed no later than sunset each evening and cannot be set up again until at least sunrise the next morning.

(i) Merchandise may be displayed on sidewalks in front of/abutting a properly approved and licensed commercial enterprise or business in commercial zones as long as they meet the following standards:

(A) Location shall not interfere with pedestrian rights to travel on the city sidewalk;

and

(B) Merchandise shall be secured against being blown away; and

(C) Merchandise shall not be more than six feet from the building frontage, except when permitted as part of a “temporary parklet” in a curb extension or in an on-street parking space pursuant to permit procedures referred to in subsection (6); and

[...]

(5) Tables, Chairs, and Equipment Associated with the Serving of Food and Beverages. Tables, chairs, and equipment associated with the serving of food and beverages are permitted on sidewalks and passageways and in on-street parking spaces lying within street rights-of-way in accordance with the following requirements and permitting procedures referred to in subsection (6):

[...]

(6) Permit Requirements. Use of sidewalks and passageways lying within street rights-of-way described in this section shall be in accordance with the following:

(a) Before use of a sidewalk area, a Use of Public Passageway Permit application with the required fee, as set by resolution of the city council, must be submitted to the council-designated person. The permit fee shall apply to all furniture for a single business at one location and shall not be charged on each individual component. The permit shall be valid for one year and shall expire on the last day of a year. A permit is not required for a planter box or approved bench.

[...]

(d) Additional guidance for designing and permitting temporary parklets in on-street parking spaces is provided in SHMC 18.12.190. This is separate from the Use of Public Passageway Permit noted previously in this subsection. Generally, the Use of Public Passageway Permit applies to use of sidewalks and passageways and the Temporary Parklet Permit applies to use of on-street parking spaces.

Chapter 17.16 GENERAL AND LAND USE DEFINITIONS

17.16.010 General and land use definitions.

[...]

Surface Mining. As per ORS 517.755(14)(a):

[...]

“Temporary parklet” means the use of a vehicle space (e.g., on-street parking space) or curb extension for public use, social interaction, and passive or active recreation. Temporary parklets in an on-street parking space are typically comprised of a platform, barriers to traffic, and seating, yet creativity in incorporating landscaping, art, and other elements is encouraged, given safety requirements are met. The duration of temporary parklets and the design varies accordingly. See SHMC 18.12.190.

“Temporary structures” means structures not allowed on a permanent basis.

Chapter 17.32 ZONES AND USES

17.32.100 Highway commercial – HC.

[...]

(4) Standards. In the HC zone the following standards shall apply:

(a) The maximum building height shall be 40 feet.

(b) The minimum yard (as defined by Chapter 17.16 SHMC) adjacent to US 30 shall be 10 feet. The setback shall be occupied by landscaping or pedestrian-oriented amenities (such as a walkway, seating, or a plaza, including such amenities as part of a transit stop) in addition to landscaping. Landscaping in the setback may be credited toward the minimum landscape requirement for the site established in subsection (f).

~~(b)~~ (c) Outdoor storage abutting or facing a lot in a residential zone shall comply with Chapter 17.72 SHMC.

~~(e)~~ (d) Parking shall comply with Chapter 17.80 SHMC.

~~(d)~~ (c) Maximum lot coverage including all impervious surfaces shall be 90 percent.

~~(e)~~ (f) Minimum landscaping shall be 10 percent of gross land area associated with the use.

Chapter 17.72 LANDSCAPING AND SCREENING

17.72.030 Street Trees.

[...]

(2) Certain trees can severely damage utilities, streets, and sidewalks or can cause personal injury. Approval of any planting list shall be subject to review by the director. ~~(List A list of suggested appropriate tree species is located at the end of this chapter.)~~ Additional or alternative tree species also may be recommended by the applicant or determined by the Director based on information provided in adopted city plans, policies, ordinances, studies or resolutions. Proposals by the applicant shall require approval by the Director.

[...]

17.72.060 Exemptions.

[...]

(4) If one or more conditions described in subsection (2) of this section are shown to exist on the site, the director may require the following to fulfill the street tree requirements of this chapter.

[...]

(b) An applicant may, with the consent of the director, elect to compensate the city for costs commensurate with the number of street trees that would have otherwise been required for the site. The fee, established by resolution of the city council, will be generally based on the city's ~~approved~~ street tree list in Chapter 17.72 SHMC and market value of the tree(s).

[...]

17.72.110 Screening – Special provisions.

(1) Screening of Parking and Loading Areas.

[...]

(b) Screening of parking (larger than three spaces) and loading areas (larger than 400 square feet) is required. The specifications for this screening are as follows:

(i) Landscaped parking areas shall include special design features which effectively screen the parking lot areas from view. These design features may include the use of landscaped berms,

decorative walls, and raised planters. Berms, planters, and other forms of vegetative landscaping are permitted for screening that fronts US 30. Walls are prohibited for screening that fronts US 30;

(ii) Landscape planters may be used to define or screen the appearance of off-street parking areas from the public right-of-way; and

(iii) Materials to be installed should achieve a balance between low-lying and vertical shrubbery and trees;

~~(iv) Trees shall be planted in landscaped islands in all parking areas, and shall be equally distributed and on the basis of one tree for each seven parking spaces in order to provide a canopy effect; and~~

~~(v) The minimum dimension of the landscape islands shall be three feet and the landscaping shall be protected from vehicular damage by some form of wheel guard or curb.~~

(2) Screening of Service Facilities. Except for single-dwelling units and duplexes, service facilities such as gas meters and air conditioners which would otherwise be visible from a public street, customer or resident parking area, any public facility or any residential area shall be screened from view by placement of a solid wood fence or masonry wall between five and eight feet in height or evergreens already to correct height minimums. All refuse materials shall be contained within the screened area. Rooftop service facilities and equipment shall be screened from view from adjacent streets and adjacent properties in one of the following ways:

(a) A parapet wall of adequate height;

(b) A screen around the equipment that is made of a primary exterior finish material used on other portions of the building; or

(c) Setback such that it is not visible from the public street(s) and adjacent properties.

[...]

17.72.130 Buffer matrix.

(1) The buffer matrix (Figure 13) shall be used in calculating widths of buffering and screening to be installed between proposed uses and abutting zoning districts or specified types of streets.

(2) An application for a variance to the standards required in Figure 13 shall be processed in accordance with Chapter 17.108 SHMC.

BUFFERS
Figure 13

| Existing Abutting Use of Zoning District | Any Parking Lot | |
|--|-----------------------|-----------------------|
| | 4-50 spaces | 51 or more spaces |
| Detached Single-Family (R-10, R-7, R-5) | 10' S | 20' S |
| Attached Dwelling Units (1 story) | 10' S | 20' S |
| Attached Dwelling Units (2 or more stories) | 10' S | 20' S |
| Mobile Home Parks | 10' S | 20' S |
| Any Arterial Street (except US 30) | 0' | 0' |
| <u>US 30</u> | <u>5'</u> <u>S</u> | <u>5'</u> <u>S</u> |
| Commercial Uses | 0' | 0' |
| Industrial Park | 0' | 0' |

| Existing Abutting Use of Zoning District | Any Parking Lot 4-50 spaces | Any Parking Lot 51 or more spaces |
|--|--------------------------------|--------------------------------------|
| Heavy Industrial | 0' | 0' |
| Any Parking Lot with 4-50 spaces | 0' | 0' |
| Any Parking Lot with 51 or more spaces | 0' | 0' |

“S” indicates screening required

17.72.140 Interior parking lot landscaping.

(1) All parking areas with more than 20 spaces shall provide landscape islands with trees that provide a canopy effect and break up the parking area into rows of not more than 7 contiguous parking spaces.

(2) Landscape islands and planters shall have dimensions of not less than 48 square feet of area and no dimension of less than 6 feet, to ensure adequate soil, water, and space for healthy plant growth.

(3) All required parking lot landscape areas not otherwise planted with trees must contain a combination of shrubs and groundcover plants so that, within two years of planting, not less than 50 percent of that area is covered with living plants.

(4) The landscaping shall be protected from vehicular damage by some form of wheel guard or curb permanently fixed to the ground.

**Chapter 17.80
OFF-STREET PARKING AND LOADING**

17.80.020 General provisions.

[...]

(22) On-Street parking. Parking spaces in a public street or alley shall not be eligible as fulfilling Ordinance No. 3181 – Attachment C

any part of the parking requirement except as otherwise provided in this code.

[...]

Chapter 17.84
ACCESS, EGRESS, AND CIRCULATION

17.84.040 Public Street Access.

[...]

(5) Spacing Standards for Access to City Streets. The following are the minimum spacing requirements for access points and intersections for streets under the jurisdiction of the city of St. Helens.

Table 17.84.040-2: Access Spacing Standards on City Streets

| Functional Classification | Public Street (street-to-street) (feet) | Private Access Drive (street-to-drive or drive-to-drive) (feet) |
|---|--|--|
| Local Street | 150 | 50 ¹ |
| Collector | 300 | 100 |
| Minor Arterial | 350 or block length | 200 or mid-block |
| Major Arterial ² | 350 or block length | 350 or block length |
| ¹ For single dwelling units, attached, on local streets only, 25 feet is allowed. This applies to street-to-drive spacing only. <u>There is no minimum spacing standard for access points (drive-to-drive) on local streets.</u> | | |
| ² Access standards identified in the Oregon Highway Plan supersede this table on all state highways. | | |

[...]

17.84.050 Required walkway location.

[...]

(3) Where a site for proposed commercial, institutional, or multifamily development is located within at least one-quarter mile of an existing or planned transit stop, the proposed pedestrian circulation system must ~~include demonstrate~~ a safe and direct pedestrian ~~route~~ walkway from building entrances to the transit stop or to a public right-of-way that provides access to the transit stop.

~~(4)~~ In parking lots one acre or larger, pedestrian walkways shall connect from buildings to sidewalks in the adjacent rights-of-way, and shall be provided at least every 150 feet between rows of parking.

~~(4)~~ (5) Wherever required walkways cross vehicle access driveways or parking lots, such crossings shall be designed and located for pedestrian safety. Required walkways shall be physically separated from motor vehicle traffic and parking by either a minimum six-inch vertical separation (curbed) or a minimum three-foot horizontal separation, except that pedestrian crossings of traffic aisles are permitted for distances no greater than 36 feet if appropriate landscaping, pavement markings, or contrasting pavement materials are used. Walkways shall be a minimum of four feet in width, exclusive of vehicle overhangs and obstructions such as mailboxes, benches, bicycle racks, and sign posts, and shall be in compliance with ADA standards.

~~(5)~~ (6) Required walkways shall be paved with hard-surfaced materials such as concrete, asphalt, stone, brick, etc. Walkways ~~may~~ shall be required to be lighted and/or signed as needed for safety purposes. Soft-surfaced public use pathways may be provided only if such pathways are provided in addition to required pathways.

Chapter 17.152 STREET AND UTILITY IMPROVEMENT STANDARDS

17.152.030 Streets.

[...]

(24) Street Light Standards. Street lights shall be installed in accordance with regulations adopted by the city's direction. At the very least, there shall be a street light at each street intersection. In addition, lighting within the Columbia Boulevard/St. Helens Street Corridor Master Plan area shall be installed in accordance with the US30 and Columbia Boulevard/St. Helens Street Corridor Master Plan (Ordinance No. 3181, Attachment A) and shall be:

(a) Pedestrian-scale lighting between 12 to 18 feet in height;

(b) Uniform in design;

(c) Placed in the planter/landscape strip or curb extension (e.g., at street corners) when possible; and

(d) Spaced no more than 100 feet apart along the block face.

[...]

17.152.200 Engineer’s certification required.

[...]

17.152.210 Temporary Parklets.

Temporary parklets may be permitted in the right-of-way in on-street parking spaces pursuant to procedures in SHMC 18.12.190 and SHMC 8.12.080.

**Chapter 18.04
ABBREVIATIONS AND DEFINITIONS**

18.04.010 Abbreviations and definitions.

[...]

“TCDH” means Traffic Control Device Handbook.

“Temporary Parklet” means the use of a vehicle space (e.g., on-street parking space) or curb extension for public use, social interaction, and passive or active recreation. Temporary parklets in an on-street parking space are typically comprised of a platform, barriers to traffic, and seating, yet creativity in incorporating landscaping, art, and other elements is encouraged, given safety requirements are met. The duration of temporary parklets and the design varies accordingly. See SHMC 18.12.190.

“Traffic coefficient” means a number used in determining the structural section of a street.

[...]

Chapter 18.12 STREETS

18.12.170 Utilities.

[...]

18.12.190 Temporary Parklets – In on-street parking spaces.

The following are procedures for establishing a temporary parklet in an on-street parking space in the city. Applications are received and processed by City Administration. The City Administrator, or his or her designee, issues a temporary parklet application permit upon review and approval by the City Public Works, Engineering, Planning and Building departments. The City Administrator, or his or her designee, may revoke an approved temporary parklet permit if it is being conducted contrary to this section or any condition of the temporary parklet permit approval, or if the temporary parklet and associated use or activities is otherwise found to be contrary to public health, safety and welfare. The temporary parklet application steps and regulations are as follows:

(1) The maximum duration for a temporary parklet permit is 6 months; permits can be renewed subject to City approval. The maximum renewal duration is 6 months per renewal. If a temporary parklet permit becomes void due to revocation, expiration or otherwise, the related improvement shall be immediately removed and the location restored to its original condition.

(2) The applicant selects a location according to location criteria.

(a) Temporary parklets shall only be allowed along non-residential uses. Temporary parklets along and/or associated with residential uses is prohibited.

(b) Temporary parklets are not permitted on streets where parking lanes become tow-away zones during morning or afternoon hours, in front of fire hydrants, in active bus zones, across driveways, or over manholes or public utility valves or covers.

(c) The proposed site should be located at least one standard-size parking space in from a corner. Otherwise, a protected bollard, curb extension, or other similar feature as approved by the City must be present if located at the corner.

(d) The proposed site should be located on a street with a speed limit of 25 MPH or less. Locations on streets with higher speeds will be considered on a case-by-case basis.

(e) The location of the proposed site shall be generally consistent with potential locations and guidance provided in the St. Helens US 30 and Columbia Boulevard/St. Helens Street Corridor Master Plan.

(f) The street grade shall be less than 5 percent.

(3) The applicant develops a preliminary conceptual design, using the general design guidelines, design criteria, and design elements below.

(a) General Design Guidelines:

(i) Design for easy removal. Because the temporary parklet sits on top of critical infrastructure and utilities, it needs to be designed for easy removal in case of emergency or other needed access to the infrastructure. Some applicants elect to remove the temporary parklet during colder months.

(ii) No advertising. Logos, advertising, or other branding is prohibited.

(iii) Be creative. There are possibilities beyond the standard tables and chairs on a platform.

(b) Design Criteria:

(i) Design quality. What is the level of quality and creativity of the design?

(ii) Public seating. Does the proposal provide open public use of the space and is not just an extension of a business?

(iii) Streetscape enhancement. How will the proposal enhance the aesthetic quality of the streetscape?

(iv) Quality of materials. What is the quality and durability of proposed materials and furniture?

(v) Appropriateness of location. Is the proposed temporary parklet likely to be well-used and active?

(vi) Community support. Is there demonstrated neighborhood support for proposal at the proposed location (including neighboring businesses and properties)?

(c) Design Elements:

(i) Platform should be on the same plane as and flush with the sidewalk height. At least 12 feet of the platform must be flush with the adjacent sidewalk for wheelchair access.

(ii) Platform must be designed to accommodate the crown and cross slope of the street surface. Close attention must be paid to existing curb condition and height to ensure platform is flush with curb.

(iii) The use of high quality, durable materials capable of withstanding the elements of any season and extended use (with proper permit renewals) is required.

(iv) The design should not include any bolts/anchors or other elements that require disturbing the street surface or sidewalk. No temporary parklet component may weigh more than 200 pounds per square foot.

(v) The platform may not extend beyond six feet from the curb line where there is parallel parking to allow some separation from vehicle travel lanes. Angled or perpendicular parking locations and associated dimensions may be approved on a case-by-case basis, but still must allow some separation from vehicle travel lanes.

(vi) The maximum length of the platform must not be longer than the frontage of the applicant's/permit holder's establishment. A platform may be located along the frontage of multiple properties/businesses provided all applicable parties are applicants/permit holders.

(vii) Design must maintain a minimum six-foot clear pedestrian through zone in the sidewalk corridor.

(viii) Platform must be designed to allow for curblane stormwater drainage.

(ix) Platform design must include a physical barrier along the street while maintaining clear visual sightlines to the street. Vertical elements, such as planters and umbrellas, should be included so that the facility is visible to vehicles.

(x) A setback on either end of the platform, adjacent to parallel parking, will need to be reserved for wheel stops with embedded reflective candlesticks or other similar features that reflect light and protect the platform from parking maneuvers. These may be installed by the public works department as deemed necessary after facility construction is complete. Additional features may be added to the final design by City staff for safety.

(xi) Temporary parklet furniture shall be subject to City approval. Furniture must be able to accommodate those with disabilities, wheelchairs, or mobility devices.

(xii) Proposed covers or shelters may be subject to additional structural engineering requirements.

(xiii) Loose surface materials, such as sand or loose stone, are not permitted in the temporary parklet.

(xiv) Public temporary parklets must be clearly posted with signs to differentiate them from private business temporary parklets and restaurant/café seating. Such signage shall not conflict with the City sign regulations.

(4) The applicant begins gathering and documenting community support (meetings, letters, petitions, site posting, etc.) to be submitted as part of the application package.

(5) The applicant prepares a detailed design document and plan package. It is recommended to contract or consult with professional design assistance.

(a) Parklet Location and Context Plan

(b) Detailed Site Plan

(c) Elevations

(d) Sections (Profile Drawings)

(e) Renderings and Perspectives (optional)

(6) An application package consists of the following:

(a) A completed right-of-way encroachment permit application form

(b) Design document and plan package

(c) Community support documentation. The applicant shall provide written support of the proposed temporary parklet from adjacent businesses and/or property owners.

(7) The applicant completes the application package and submits for review by the City.

(8) Business and property owners within the immediate vicinity of the proposed temporary parklet will be notified and will have the opportunity to submit comments within 14 days to be included in the evaluation of an application.

(9) If the application is approved, the applicant will finalize and submit construction drawings.

(10) The City will schedule a pre-construction site visit.

(11) The applicant submits payment and provides proof of liability insurance, and the public works department issues a right-of-way encroachment permit, which includes conditions for maintenance.

(a) Fees: The applicable fees, as set by resolution of the City Council, may include but not be limited to addressing the following components:

(i) Application/encroachment permit fee.

(ii) Café seating permit fee, if applicable.

(iii) Additional costs (e.g., changing/removing loading zone sign), if applicable.

(b) Insurance: Evidence of at least \$1 million in liability insurance naming the City as additional insured must be provided. Most businesses already carry this insurance.

(c) Encroachment permit and maintenance terms: The permit requires that the facility is swept daily and debris is removed from under and around the platform a minimum of once a week.

(12) The applicant must install the temporary parklet within 90 days of permit issuance. Failure to do so voids any temporary parklet permit approval.

(13) The applicant must notify the City within 48 hours of completing construction to schedule a post-construction site inspection.

(14) Post-construction, the City will monitor the temporary parklet for compliance with the permit, design guidelines, and maintenance agreement as applicable.

Chapter 18.20 TRAFFIC DEVICES AND STREET ILLUMINATION

18.20.050 Street Illumination.

Street lighting shall be designed by Columbia River ~~People's~~ Public Utility District (CRPUD),
except within the Columbia Boulevard/St. Helens Street Corridor Master Plan area; see SHMC
17.152.030(24). This shall be done at the applicant's initiative and expense. The lighting plan shall
be included with the submittals to the city. Lamp type used should be uniform.

Chapter 19.08 GENERAL GOALS AND POLICIES

19.08.020 Economic goals and policies.

[...]

(3) Policies. It is the policy of the city of St. Helens to:

[...]

(b) Assist in programs to attract diverse businesses and industries ~~in terms of diversification~~
~~and nonpollution rather than accept any business or industry which may wish to locate here;~~
~~additionally, to prohibit industries with levels of pollution or other effects which would outweigh~~
~~economic benefits or threaten the existing quality of living.~~

[...]

(e) Make waterfront development a high priority.

(f) Develop and implement public facility designs and development standards to revitalize businesses and business districts in the US 30 and Columbia Boulevard/St. Helens Street Corridor Master Plan area.

(g) Create gateways and improve access and wayfinding signage to Houlton Business District and Historic Downtown.

(h) Improve the appearance, attractiveness, and safety of the Houlton Business District and Historic Downtown, through an enhanced street design that includes street trees, landscaping and more public spaces and pedestrian amenities.

~~(f)~~ (i) Develop the local tourist and recreation sectors of the economy.

~~(g)~~ (j) Allocate adequate amounts of land for economic growth and support the creation of commercial and industrial focal points.

~~(h)~~ (k) Identify special locations for industrial activities that will assist in energy conservation.

~~(i)~~ (l) Discourage the leapfrog development of industrial lands, unless there is a program to provide sewer and water to intervening properties.

~~(j)~~ (m) Make commercial designation large enough to accommodate a large variety of commercial development with sufficient buffers.

~~(k)~~ (n) Encourage land uses that are compatible with the transportation facilities.

Chapter 19.12 SPECIFIC LAND USE GOALS AND POLICIES

19.12.080 Highway commercial category goals and policies.

[...]

(2) Policies. It is the policy of the city of St. Helens to:

[...]

(e) Preserve areas for business use by limiting incompatible uses within them.

(f) Improve the appearance and safety of US 30 and sites along US 30, through means such as landscaped medians, banner poles, landscaping along the highway right-of-way, and landscaping in parking lots.

(g) Encourage undergrounding of overhead utilities.

Chapter 19.30 **TRANSPORTATION SYSTEMS PLAN**

Sections:

19.30.010 Transportation systems plan adoption by reference.

19.30.020 Transportation systems plan revision adoption by reference.

19.30.010 Transportation systems plan adoption by reference.

The city hereby adopts the transportation systems plan, attached to the ordinance codified in this chapter as Attachment “A” and made part of this reference, as an addendum to the St. Helens Comprehensive Plan (this title). (Ord. 3150 § 2, 2011)

19.30.020 Transportation systems plan revision adoption by reference.

The city hereby adopts a revision to Section 2 of the transportation systems plan, attached to the ordinance codified in this chapter as Attachment “B” and made part of this reference, as an addendum to the St. Helens Comprehensive Plan (this title). (Ord. 3181 § 3, 2015)

Chapter 19.32 **US 30 & COLUMBIA BOULEVARD/ST. HELENS STREET CORRIDOR MASTER PLAN**

Sections:

19.30.020 US 30 & Columbia Boulevard/St. Helens Street Corridor Master Plan adoption by reference.

19.32.010 US 30 & Columbia Boulevard/St. Helens Street Corridor Master Plan adoption by reference.

The city hereby adopts the US 30 & Columbia Boulevard/St. Helens Street corridor master plan, attached to the ordinance codified in this chapter as Attachment “A” and made part of this reference, as an addendum to the St. Helens Comprehensive Plan (this title). (Ord. 3181 § 2, 2015)

**CITY OF ST. HELENS PLANNING DEPARTMENT
FINDINGS OF FACT AND CONCLUSIONS OF LAW
Development Code & Comprehensive Plan Amendments CPZA.1.14**

APPLICANT: City of St. Helens

PROPOSAL: Adopt a US 30 (Columbia River Highway) and Columbia Boulevard/St. Helens Street Corridor Master Plan as an addendum to the Comprehensive Plan, amend Section 2 of the 2011 Transportation Systems Plan (an addendum to the Comprehensive Plan via Ord. No. 3150), and adopt related text amendments to the Community Development Code (Title 17 SHMC), Comprehensive Plan (Title 19 SHMC) and other parts of the St. Helens Municipal Code (SHMC).

The 120-day rule (ORS 227.178) for final action for this land use decision is not applicable.

BACKGROUND

Via a Transportation and Growth Management (TGM) grant, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development [as financed with federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (“SAFETEA-LU”) funds], the City of St. Helens developed and adopted an updated Transportation Systems Plan in 2011 (Ord. No. 3150). This updated the original TSP from 1997.

A corridor master plan for the US30 commercial area and Columbia Boulevard/St. Helens Street commercial area was identified as a near term priority in the 2011 TSP to examine in greater detail lane widths, sidewalks, landscaping, lighting, pedestrian and bicycle amenities, street furniture, guide/way finding signs, etc. Such corridor master plan would also specify improvements to streets that serve these key commercial areas and identify improvements and the implementation thereof that will help economic development as a catalyst to private investment. The corridor master plans will also help promote multi-modal transportation options and overall transportation function.

In addition to the 2011 TSP, a corridor master plan for the noted commercial areas would advance aspects of other past documents adopted by the council. The 2020 Vision (adopted in 1997 via Resolution 1238) mentions “people are guided to both the Olde Towne and Uptown area by gateway parks, created on Highway 30 and the Columbia River, as well as tree-lined boulevards and other urban design amenities.” The Strategic Plan (adopted in 2005 via Resolution 1417) includes creating gateways to the community along US30 as a high priority strategy as well as comprehensive development plans for the US30 corridor and Houlton. The Economic Development Plan (adopted in 2007 via Resolution 1452) noted a need to revitalize existing commercial districts as well as noting the Olde Towne as an untapped major economic resource. A corridor master plan could address these issues by determining how to improve the major streets that serve them from an aesthetic and functional standpoint as well as gateways and wayfinding to help draw attention to the city’s off-highway commercial areas (Houlton and Olde Towne) for example.

As supported by the Council via Resolution 1594, staff submitted an application for a TGM grant for a corridor master plan for Columbia River Highway (US 30) and Columbia Boulevard/St. Helens Street in June 2012. The city successfully obtained the grant and began the process to develop a corridor master plan in July 2013. Since then, concepts have been developed and refined with multiple stakeholders and

now it's time to adopt the plan, amend the 2011 TSP and adopt certain amendments to the St. Helens Municipal Code, to memorialize the effort for the city's (government and citizen) use.

Note: This report references "Olde Towne" throughout as this is a place name used in prior adopted plans/documents noted herein. Per Resolution No. 1687, "Riverfront District" is supposed to be used instead of "Old Town" or "Olde Towne." Because this report references plans and efforts prior to Resolution No. 1687 (approved and adopted November 19, 2014), "Olde Towne" is used herein. The Corridor Plan, however, will honor Resolution No. 1687.

Moreover, Ordinance No. 3180 (approved and adopted on January 7, 2015), changed any "Old Town" or "Olde Towne" reference in the Development Code to "Riverfront District."

PUBLIC HEARING & NOTICE

Hearing dates are **November 4, 2014** before the Planning Commission and **December 17, 2014** before the City Council.

Notice was published in The Chronicle on **October 15, 2014**. Notice was sent to the Oregon Department of Land Conservation and Development on **October 1, 2014**.

APPLICABLE CRITERIA, ANALYSIS & FINDINGS

SHMC 17.20.120(1) – Standards for Legislative Decision

The recommendation by the commission and the decision by the council shall be based on consideration of the following factors:

- (a) The statewide planning goals and guidelines adopted under ORS Chapter 197;
- (b) Any federal or state statutes or guidelines found applicable;
- (c) The applicable comprehensive plan policies, procedures, appendices and maps; and
- (d) The applicable provisions of the implementing ordinances.

(a) Discussion: This criterion requires analysis of the applicable statewide planning goals. The potentially applicable goals in this case are: Goal 1, Goal 2, Goal 9, Goal 11 and Goal 12.

Finding: Statewide Planning 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

Generally, Goal 1 is satisfied when a local government follows the public involvement procedures set out in the statutes and in its acknowledged comprehensive plan and land use regulations.

The City's Development Code is consistent with State law with regards to notification requirements. Pursuant to SHMC 17.20.080 at least one public hearing before the Planning Commission and City Council is required. Legal notice in a newspaper of general circulation is required too. The City has met these requirements and notified DLCD of the proposal.

The plan has been publicly vetted, having been developed with the help of an ad hoc Citizen Advisory Committee (CAC) and Technical Advisory Committee (TAC) who met multiple times. The Planning Commission and City Council had multiple work sessions all that were open to and attended by the public. The City Council and Planning Commission had a joint work session/public forum as well. An interactive website (www.sthelenscorridorplans.com) was also available to solicit public comment in addition to providing an easy method of obtaining information about the corridor plan throughout its entire process.

In addition, several project exhibits including local contact info and the project website were displayed in the building at 1904 Columbia Boulevard from around April 2014 to the adoption hearings to allow observation by those passing by. This building is the former location JC Penny with large continuous display windows.

Given the public vetting for the plan, scheduled public hearings, and notice provided, Goal 1 is satisfied.

Finding: Statewide Planning Goal 2: Land Use Planning.

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

This proposal involves an addendum and amendments to the Comprehensive Plan. It will expand the information and guidance of the Comprehensive Plan, which can be used as a basis for future land use decisions, plans, and other actions (e.g., development and budgeting).

It is also consistent with federal, state and regional documents, as they, along with City level documents provide the framework for transportation planning in the City. The applicable documents are many and derived from all aforementioned layers of government.

In addition, the TSP update process included representation from several agencies (e.g., those on the Technical Advisory Committee) as well as opportunities for multiple agency input.

Comprehensive Plan consistency is addressed further below.

Given the inclusion of local, state, regional and federal documents, laws, participation and opportunity for feedback as applicable, Goal 2 is satisfied.

Finding: Statewide Planning 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.

Economic well-being is dependent on mobility. The transportation systems in the City must function for freight, commuting, emergency response, livability, efficiency, etc.

The 2011 TSP and implementation laws are intended to maintain and enhance multi-modal transportation in the City's urban growth boundary. A disorganized and poorly managed and coordinated transportation system would be an obstacle to economic development as well as quality of life.

This corridor master plan takes that a step further by examining St. Helens' key commercial corridors and looking at how they can be enhanced to further the potential of economic development. This is a refinement plan of these specific areas compared to the urban grow area-wide approach of the 2011 TSP.

As corridor master plan and the related implementation laws are intended to manage the transportation system and provide opportunities/guidance to enhance the city's commercial corridors potentials, Goal 9 is satisfied.

Finding: Statewide Planning 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."

Transportation facilities are considered a primary type of public facility. The 2011 TSP documents existing conditions and future needs for the transportation system of key commercial corridors in the City of St. Helens. Proposed improvements and implementation measures in the corridor master plan and related proposed amendments/law are tailored to meet those future needs.

Goal 11 is satisfied.

Finding: Statewide Planning 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. A major purpose of the Transportation Planning Rule (TPR) is to promote more careful coordination of land use and transportation planning, to ensure that planned land uses are supported by and consistent with planned transportation facilities and improvements.

Goal 12 is satisfied as the City is updating its Transportation Systems Plan and creating a refinement plan thereof, which amongst other things, implements the TPR as applicable.

(b) Discussion: This criterion requires analysis of any applicable federal or state statutes or guidelines. There are no federal level statutes or guidelines that were specifically analyzed, except where already incorporated in state level statutes or guidelines. Applicable state level statutes/guidelines include: ORS 227.186(2), the Oregon Transportation Plan (2006), Oregon Highway Plan (1999), Oregon Bicycle and Pedestrian Plan (2011), and the Highway Design Manual (2012).

Finding: ORS 227.186(2)

All legislative acts relating to comprehensive plans, land use planning or zoning adopted by a city shall be by ordinance.

The corridor plan and all related amendments and implementation law will be adopted by ordinance in compliance with this statute.

Finding: Oregon Transportation Plan (2006)

The Oregon Transportation Plan (OTP) is the state's long-range (2030) multimodal transportation plan. The OTP is the overarching policy document among a series of plans that together form the state transportation system plan (TSP). The primary function of the OTP is to establish goals, policies, strategies and initiatives that are translated into a series of modal plans, such as the Oregon Highway Plan (OHP) and the Oregon Bike and Pedestrian Plan (OBPP).

The OTP emphasizes:

- Maintaining and maximizing the assets in place,
- Optimizing the performance of the existing system through technology,
- Integrating transportation, land use, economic development and the environment,
- Integrating the transportation system across jurisdictions, ownerships and modes,
- Creating sustainable funding, and
- Investing in strategic capacity enhancements.

A Transportation Systems Plan must be consistent with applicable OTP goals and policies. The St. Helens 2011 TSP adoption includes analysis of these. As the corridor plan is a refinement of the TSP, OTP goals and policies remain relevant.

The 2011 City of St. Helens Transportation System Plan Update was consistent with the applicable OTP goals and policies. The current US 30 & Columbia Boulevard/St. Helens Street Corridor Master Plan refines the TSP recommendations in regards to streetscape with particular emphasis on developing a detailed vision for the corridors. As with the 2011 TSP, the corridor plan is mindful of the OTP planning principles.

Finding: Oregon Highway Plan (1999 and amendments)

The Oregon Highway Plan (OHP) is a modal plan of the OTP that guides ODOT's Highway Division in planning, operations, and financing. Policies in the OHP emphasize the efficient management of the highway system to increase safety and to better utilize roadway capacity as well as establishing partnerships with other agencies and local governments. 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 following policies, in particular, are relevant to the plan:

Policy 1A: State Highway Classification System

The OHP classifies the state highway system into four levels of importance: Interstate, Statewide, Regional, and District. ODOT uses this classification system to guide management and investment decisions regarding State highway facilities. The system guides the development of facility plans as well as ODOT's review of local plan and zoning amendments, highway project selection, design and development, and facility management decisions including road approach permits. **US 30 is classified as a Statewide Highway in the State classification system.** The purpose and management objectives of this highway designation are provided in Policy 1A, as summarized below.

- **Statewide highways** typically provide inter-urban and inter-regional mobility and provide connections to larger urban areas, ports, and major recreation areas that are not directly

served by Interstate Highways. A secondary function is to provide connections for intra-urban and intraregional trips. The management objective is to provide safe and efficient, high-speed, continuous-flow operation. In constrained and urban areas, interruptions to flow should be minimal. Inside Special Transportation Areas (STAs), local access may also be a priority.

In addition to the State highway classification system, US 30 has been given other highway designations that are addressed by other policies.

- **US 30 is part of the National Highway System (NHS) and is a State Freight Route;** these designations in part emphasize the need to maintain regional and freight mobility and have access and signal spacing implications. Access spacing requirements for US 30 and anticipated future traffic signal locations are documented in the City of St. Helens Transportation System Plan (2011) and are not proposed to be changed by the corridor plan.

The US30 part of the corridor plan was carefully developed with the US30 designation as described. Many ODOT staff members were involved in this process of developing the plan to ensure the function of US30 will not be threatened by any aspect of the corridor plan.

Policy 1B: Land Use and Transportation

Policy 1B applies to all State highways. It is designed to clarify how ODOT will work with local governments and others to link land use and transportation in transportation plans, facility and corridor plans, plan amendments, access permitting and project development. Policy 1B recognizes that State highways serve as the main streets of many communities – as US 30 does in St. Helens – and strives to maintain a balance between serving local communities (accessibility) and the through traveler (mobility). This policy recognizes the role of both the state and local governments related to the State highway system and calls for a coordinated approach to land use and transportation planning.

Policy 1C: State Highway Freight System

The primary purpose of the State Highway Freight System is to facilitate efficient and reliable interstate, intrastate, and regional truck movement through a designated freight system. This freight system, made up of the Interstate Highways and select Statewide, Regional, and District Highways, includes routes that carry significant tonnage of freight by truck and serve as the primary interstate and intrastate highway freight connection to ports, intermodal terminals, and urban areas. Highways included in this designation have higher highway mobility standards than other statewide highways.

Policy 1F: Highway Mobility Standards Access Management Policy

Policy 1F sets mobility standards for ensuring a reliable and acceptable level of mobility on the State highway system. The standards are used to assess system needs as part of long range, comprehensive planning, and transportation planning projects during development review, and to demonstrate compliance with the Transportation Planning Rule (TPR).

Significant amendments to Policy 1F were adopted at the end of 2011. The recent revisions were made to address concerns that State transportation policy and requirements have led to unintended consequences and inhibited economic development. Policy 1F now provides a clearer policy framework for considering measures other than volume-to-capacity (v/c) ratios for evaluating mobility performance. Also as part of these amendments, v/c ratios established in Policy 1F were changed from being standards to “targets.” These targets are to be used to determine significant effect pursuant to TPR Section -0060.

The following mobility targets apply to US 30, which reflect its classification as a Statewide Highway and a designated freight route.

- US 30 (<=35 mph): 0.85 v/c
- US 30 (>35 mph): 0.80 v/c

Per Policy 1F.3, where it is infeasible or impractical to meet the mobility targets ODOT and local jurisdictions may explore different target levels, methodologies and measures for assessing mobility and consider adopting alternative mobility targets for the facility. While v/c remains the initial methodology to measure system performance, measures other than those based on v/c may be developed through a multi-modal transportation system planning process that seeks to balance overall transportation system efficiency with multiple objectives of the area being addressed.

The City of St. Helens 2011 TSP did not recommend alternative mobility standards and the corridor plan doesn't change this.

Policy 1G: Major Improvements

This policy requires maintaining performance and improving safety on the highway system by improving efficiency and management on the existing roadway network before adding capacity. The State's highest priority is to preserve the functionality of the existing highway system. Tools that could be employed to improve the function of the existing roadway include access management, transportation demand management, traffic operations modifications, and changes to local land use designations or development regulations.

After existing system preservation, the second priority is to make minor improvements to existing highway facilities, such as adding traffic signals, or making improvements to the local street network to minimize local trips on the State facility.

The third priority is to make major roadway improvements which could include adding lanes or reconfiguring intersections.

This corridor plan effort includes safety improvements for non-motorized methods of travel while respecting the necessary vehicle modes of US30. It also includes changes to the local codes to help implement some of the functional and aesthetic goals. The Columbia Boulevard/St. Helens Street aspect of the corridor plan is intended to help increase the desirability of these non-US30 commercial areas, thereby increasing their economic potential, which will help draw business and trips off US30. To explain, if Houlton (uptown) and Olde Towne (downtown) are improved by the streets that serve these areas, their competitive attributes compared to the highway corridor will be improved, potentially increasing their share of local vehicular trips, reducing local trips along the highway, and helping to preserve or enhance the "through movement" function of a state highway.

Policy 2B: Off-System Improvements

This policy recognizes that the State may provide financial assistance to local jurisdictions to make improvements to local transportation systems if the improvements would provide a cost-effective means of improving the operations of the State highway system. This corridor plan helps formally identify such improvements.

Policy 2F: Traffic Safety

This policy emphasizes the State's efforts to improve safety of all users of the highway system. Action 2F.4 addresses the development and implementation of the Safety Management System to target resources to sites with the most significant safety issues.

While the corridor plan does not rank safety issues in St. Helens with other places in the state, it does identify improvements that can enhance safety along US30.

Policy 3A: Classification and Spacing Standards

It is the policy of the State of Oregon to manage the location, spacing, and type of road intersections on State highways to ensure the safe and efficient operation of State highways consistent with the classification of the highways.

Action 3A.2 calls for spacing standards to be established for State highways based on highway classification, type of area, and posted speed. Tables in OHP Appendix C present access spacing standards which consider urban and rural highway classification, traffic volumes, speed, safety, and operational needs. The access management spacing standards established in the OHP are implemented by access management rules in OAR 734, Division 51. The corridor plan does not propose any access management strategy beyond that of the 2011 TSP.

Policy 4A: Efficiency of Freight Movement

This policy emphasizes the need to maintain and improve the efficiency of freight movement on the State highway system. As a designated freight route, any proposed changes to US 30 in the corridor plan considered and were mindful of the potential impacts to freight mobility.

Policy 4B: Alternative Passenger Modes

This policy encourages the development of alternative passenger services and systems as part of broader corridor strategies and promotes the development of alternative passenger transportation services located off the highway system to help preserve the performance and function of the State highway system. Note: No rail passenger or air passenger service is provided within the study area. Public transit service is provided by Columbia County Rider.

The US 30 & Columbia Boulevard/St. Helens Street Corridor Master Plan was developed in coordination with ODOT so that projects, policies, and regulations will comply with or move in the direction of meeting the standards and targets related to safety, access, and mobility that are established in the OHP.

Finding: Oregon Bicycle and Pedestrian Plan (Updated 2011)

The intent of the Oregon Bicycle and Pedestrian Plan (OBPP) is to provide safe and accessible bicycling and walking facilities in an effort to encourage increased levels of bicycling and walking. The plan is comprised of two parts: the Policy and Action Plan and the Oregon Bicycle and Pedestrian Design Guide.

The plan was adopted in 1995 and reaffirmed as an element of the OTP in 2006. The second part of the plan – the Design Guide – was updated in 2011. ODOT is currently contracting with a consultant to update the policy section of the OBPP. According to the ODOT scope of work, because it has not been updated since 1995, the updated plan needs to include a broader policy framework and be reviewed for consistency with OTP modal plan requirements, federal requirements, and the statewide planning program. The plan is scoped to be developed in collaboration with stakeholders representing a wide variety of transportation interests. The update is due to be completed before the end of 2015.

The existing Policy and Action Plan provides background information, including relevant state and federal laws, and includes goals, actions, and implementation strategies proposed by ODOT to improve bicycle and pedestrian transportation. The plan states that bikeway and walkway systems will be established on State highways as follows:

- *As part of modernization projects (bike lanes and sidewalks will be included);*
- *As part of preservation projects, where minor upgrades can be made;*
- *By restriping roads with bike lanes;*
- *With improvement projects, such as completing short missing segments of sidewalks;*
- *As bikeway or walkway modernization projects;*
- *By developers as part of permit conditions, where warranted.*

The Design Guide is the technical element of the plan that guides design and management of bicycle and pedestrian facilities on State-owned facilities. It has been designated as a companion piece to the Highway Design Manual and includes updated and innovative pedestrian and bicycle treatments.

The signalized intersections located along US 30 have striped crosswalks that facilitate pedestrian movements across US 30; however, they are relatively few and far between due to ODOT spacing requirements. The railroad track along the east side of US 30 also limits pedestrian and bicycle connectivity options. A pedestrian system plan and bicycle system plan is included in the 2011 St. Helens Transportation System Plan. The standards and guidelines for pedestrian and bicycle improvements in the OBPP, such as the location and orientation of pedestrian crossings, helped shape the recommended bicycle and pedestrian improvements to US 30. The recommendations in the Design Guide may be considered as “best practices” for potential applications on City facilities in the study area as well.

Finding: Highway Design Manual (2012)

The Highway Design Manual establishes ODOT standards and procedures for the location and design of new construction, major reconstruction, and resurfacing/restoration/rehabilitation projects. The manual is used for all projects that are located on State highways such as US 30. Design standards for State highways depend on the highway’s functional classification and the project type.

Chapter 6 of the Highway Design Manual (HDM) addresses urban highway design standards (non-freeway), **applicable to the segment of US 30 included in the study**. These standards apply to any new construction projects located along US 30, but not to retrofits. Recommendations in the US30/St. Helens Street/Columbia Boulevard Corridor Plans that result in new construction were developed to be consistent with the applicable HDM standards for State highways.

Chapter 13 provides guidance for bicycle and pedestrian facilities on State highways, which were considered in the corridor plan. This chapter summarizes the information presented in the Oregon Bicycle and Pedestrian Design Guide that apply to ODOT highways. Section 13.5 indicates that developed, urban State highways such as US 30 should provide a safe and convenient pedestrian crossing no less frequent than every quarter-mile, which is difficult to achieve along US 30 given existing traffic volumes, speeds and the presence of the railroad. Crossing improvements should be no closer than 300 feet from the nearest signalized crosswalk. Note that crossing locations must take into account property access and circulation along with a variety of other issues, such as land use, transit stops, signal spacing, access management, and others. Additional information related to the design of pedestrian crossings along State highways is also provided in Chapter 13.

(c) **Discussion:** This criterion requires analysis of applicable comprehensive plan policies, procedures, appendices and maps.

Finding: Transportation Systems Plan (2011)

The City adopted an updated TSP in 2011 via Ordinance 3150. This updated the original TSP from 1997 (Resolution 1247). The TSP is an addendum to and comprises the transportation element of the City's Comprehensive Plan. At a minimum, this proposal is consistent with the TSP since a corridor master plan for the US30 commercial area and Columbia Boulevard/St. Helens Street commercial area was identified as a near term priority in the 2011 TSP.

Finding: Comprehensive Plan (generally)

Existing economic development policies in the Comprehensive Plan and transportation policies in the 2011 Transportation System Plan (TSP) address many of the guiding principles developed for this project (*Vision, Goals and Guiding Principles*, Final Draft February 3, 2014). However, a few new policies are proposed to be added to address project principles primarily related to improving the aesthetics and increasing multimodal access in the US 30, Columbia Boulevard, and St. Helens Street corridors.

(d) **Discussion:** This criterion requires analysis of the applicable provisions of the implementing ordinances.

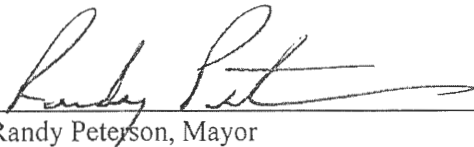
Finding: Development Code (SHMC Title 17)

Ordinances to implement the St. Helens Corridor Master Plan consist primarily of amendments to the City of St. Helens Community Development Code, which is Title 17 in the St. Helens Municipal Code (SHMC). However, changes to other parts of the SHMC are proposed where appropriate. Amendments to the SHMC are proposed to advance the Corridor Master Plan; the proposed code changes and strategies focus on the following concepts:

- Pedestrian connections through parking lots to US 30.
- Landscaping standards for parking lots and yards fronting US 30, Columbia Boulevard, and St. Helens Street.
- Street trees in planter/landscape strips along Columbia Boulevard and St. Helens Street.
- Pedestrian amenities (e.g., pedestrian-scale lighting, street furniture, etc.) along Columbia Boulevard and St. Helens Street.
- Parklets in on-street parking spaces.

CONCLUSION & DECISION

Based upon the facts and findings herein, the City Council approves this Comprehensive Plan Addendum (Corridor Master Plan), and related text amendments to the St. Helens Municipal Code, Comprehensive Plan and the 2011 Transportation Systems Plan.



Randy Peterson, Mayor

2/18/15

Date



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St. Helens, OR 97051

Attention: Plan Amendment Specialist
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DEPT OF

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LAND CONSERVATION
AND DEVELOPMENT