



REDMOND CENTRAL CONNECTOR

MASTER PLAN APPENDIX

May 10, 2011



ACKNOWLEDGEMENTS

City of Redmond

Mayor John Marchione

Craig Larsen, Director of Parks and Recreation

Bill Campbell, Director of Public Works

Rob Odle, Director of Planning

Greg Byszeski, Deputy Director of Parks and Recreation

Ron Grant, Deputy Director of Public Works

Lori Peckol, Long Range Planning Manager

Carolyn Hope, Senior Park Planner

Joel Pfundt, Principal Transportation Planner

Mike Haley, Senior Engineer

Gary Lee, Senior Planner

Pete Sullivan, Senior Planner

Tim Cox, Principal Planner

Mike Paul, Manger of Construction Management

Rob Crittenden, Manager Transportation Operations

Collaborating Partners

Leonard McGhee, Sound Transit

Monica Clarke, King County

Kevin Brown, King County

Consultants



Berger Partnership, Landscape
Architecture & Urban Design

KPG, Engineers

Weinstein A|U, Architects & Urban
Designers

Perri Lynch, Artist

Norton-Arnold & Company, Public
Involvement

GeoEngineers, Environmental Assessment

BOLA, Historic Interpretation

PB, Light Rail Consultation

CONTENTS:

- A. Infrastructure Alignment Plan
 - Plan
 - Appendix
 - Goals and Policies
 - MOU –Port, ST, City, County, CWA, PSE
 - Memos – Process Memos 1 & 2
 - Environmental Assessment: Downtown Study Area
 - Critical Area Evaluation: Downtown Study Area
 - Critical Area Evaluation: Sammamish Valley Study Area
 - Sound Transit Letter of Support
- B. Planning Review & Recommendations
- C. Art Review & Recommendations
- D. Public Involvement summary
- E. Trolley Study
- F. History
- G. Master Plan Cost Considerations
- H. SEPA Checklist

Redmond Central Connector Master Plan **Appendix A**

Infrastructure Alignment Plan

October, 2010

Contents:

Plan

Appendix

Goals and Policies

MOU –Port, ST, City, County, CWA, PSE

Memos – Process Memos 1 & 2

Environmental Assessment: Downtown Study Area

Critical Area Evaluation: Downtown Study Area

Critical Area Evaluation: Sammamish Valley Study Area

Sound Transit Letter of Support

Redmond Central Connector

Infrastructure Alignment Plan

October 13, 2010



Table of Contents

1.0	Introduction	1
1.1	Project Overview	1
1.2	Infrastructure Alignment Plan	6
2.0	Design Criteria	8
2.1	Regional Trail	13
2.2	Park Features	13
2.3	Stormwater Trunk Line	15
2.4	Downtown East West Corridor Study (DEWCS) and City Street Right-of-Way	15
2.5	Light Rail Envelope and Facilities	15
2.6	King County Wastewater Utilities Envelope	16
2.7	Other Rail Service	17
3.0	Environmental Analysis	18
3.1	Preliminary Environmental Site Assessment: Downtown Study Area	18
3.2	Critical Area Evaluation Study: Downtown Study Area	18
3.3	Critical Area Evaluation: Sammamish Valley Study Area	19
4.0	Downtown Study Area	21
4.1	Development of Project Envelopes	21
4.1.1	<i>City Envelope (Park Trail/ Stormwater Trunk Line)</i>	21
4.1.2	<i>Light Rail Envelope</i>	21
4.1.3	<i>King County Wastewater Utility Envelope</i>	22
4.1.4	<i>Other Rail Envelope</i>	22
5.0	Sammamish Valley Study Area	36
5.1	Evaluation of Alternatives	36
5.1.1	<i>Trail Corridor without Rail:</i>	36
5.1.2	<i>Trail Corridor with Existing Tracks</i>	37
5.1.3	<i>Trail Corridor with Relocated Tracks</i>	37
6.0	Future Steps	42

Appendix

A	Goals and Policies
B	MOU –Port, ST, City, County, CWA, PSE
C	Memos – Process Memos 1 & 2
D	Environmental Assessment: Downtown Study Area
E	Critical Area Evaluation: Downtown Study Area
F	Critical Area Evaluation: Sammamish Valley Study Area
G	Sound Transit Letter of Support.

Prepared for:

The City of Redmond

Prepared by:

The Berger Partnership, PS

KPG

GeoEngineers

Parsons Brinkerhoff

Weinstein A|U

1.0 Introduction

1.1 Project Overview

The City of Redmond (City) acquired the Redmond section of the former Burlington Northern Santa Fe (BNSF) corridor on June 30, 2010. The corridor extends approximately 3.9 miles from the east end of the Bear Creek Trail, just south of Redmond Way and west of SR-520, to the intersection of Willows Road and NE 124th Street (see **Figure 1.01**).

A master plan is being prepared for the corridor, which will now be referred to as the Redmond Central Connector. The master plan will coordinate City and regional infrastructure projects and design the Redmond Central Connector to achieve the City's policies and goals for the area, which include connecting downtown, creating a destination, enhancing economic vitality, gathering community, integrating iconic and interactive art, developing a regional trail and linear park space, encouraging and enabling light rail transit, and coordinating with local and regional utilities.

The purpose of the forthcoming master plan is to develop a long-range vision for the corridor that can both evolve with and be a catalyst for an evolving downtown Redmond. While realizing the full vision will be decades away, the master plan will make recommendations for the phasing and implementation of elements within the Redmond Central Connector to make sure each improvement works toward, and does not preclude, the realization of the vision. There are three significant milestones identified for the master planning process, this document being the first. The milestones for the master plan include:

- Infrastructure Alignment Plan (IAP) (for approval by City Council)
- Draft Master Plan
- Final Master Plan (for adoption by City Council)

(See **Figure 1.02** for Project Schedule)

The Redmond Central Connector is broken into two distinct geographic study areas. The Downtown Study Area (see **Figure 1.03**) is approximately 1.1 miles long and runs east to west along the former BNSF railroad tracks from the east end of the Bear Creek Trail to the Sammamish River Trail. The Sammamish Valley Study Area (see **Figure 1.04**) runs from the Sammamish River Trail north to the intersection of Willows Road and NE 124th Street.

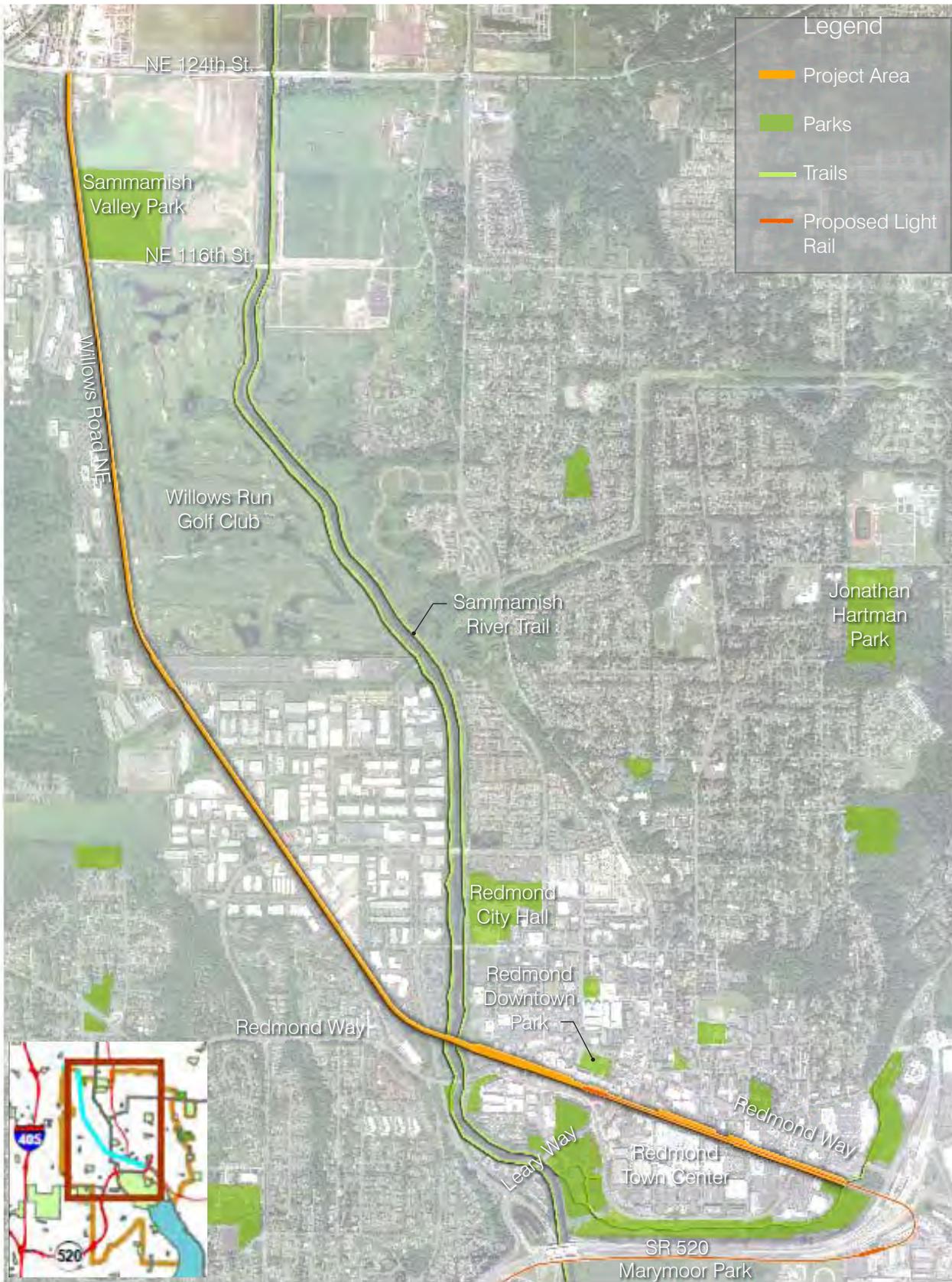


Figure 1.01
Vicinity Map & Project Area



Figure 1.02
Project Schedule



Figure 1.03
Downtown Study Area



Figure 1.04
Sammamish Valley Study Area

1.2 Infrastructure Alignment Plan

As the first milestone in the master planning process, the focus of this document is to present the recommended plan for locating significant infrastructure projects through the project area. These projects include surface and subsurface improvements. All of the projects will impact how the Redmond Central Connector is developed and how the City's vision can be realized.

The IAP evaluates the alignment of projects outlined in the November 2009 Memorandum of Understanding (**Appendix B**) between the Eastside BNSF Corridor partners, the City's Comprehensive Plan policies, and other ongoing City projects. The purpose of this plan is to ensure that future conflicts are minimized as multiple elements are constructed over time. This plan achieves this by identifying a set of envelopes for the planned improvements. These envelopes are:

- Park Trail Envelope(s)
- Stormwater Trunk Line Envelope
- NE 76th Street, Light Rail, & King County (County) Wastewater Utilities Envelope
- Possible Other Rail Envelope

The various projects listed above all place demands on the Redmond Central Connector, with a particular emphasis on the Downtown Study Area. Each project will impact how the corridor will be used now and in the future. Primary drivers for completing the Infrastructure Alignment Plan by September 2010 are:

- To be able to move forward with the design of the stormwater trunk line project, which reached 60% design before all work was postponed for a year in order to coordinate design with Sound Transit and King County projects.
- To have sufficient data for the City to provide technical comments on the Supplemental Draft Environmental Impact Statement (SDEIS) for East Link.
- To have enough detail to complete easement agreements with Sound Transit and King County prior to their real estate closing with the Port of Seattle.

The IAP defines how and where multiple envelopes are to be located, both in narrative and graphic form. The majority of this document emphasizes the Downtown Study Area, which is most affected by the proposed projects. Section 5 focuses on the Sammamish Valley Study Area.

Based on the project overview and goals presented above, a preferred Infrastructure Alignment Plan (see **Figure 1.05**) has been identified and will inform the next phase of developing the Redmond Central Connector Master Plan. The following sections present this plan, as well as the process of decision making through which it was developed.

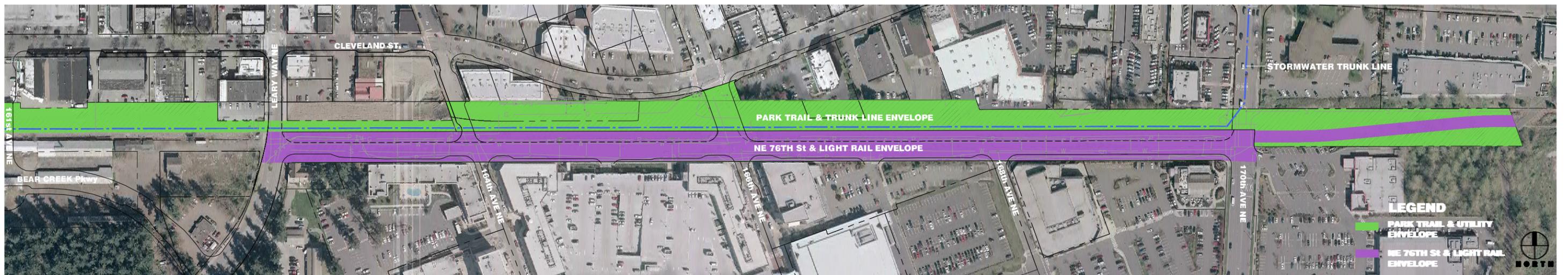


Figure 1.05
Infrastructure Alignment Plan

2.0 Design Criteria

In November 2009, a Memorandum of Understanding (MOU) was signed by the Port of Seattle, Sound Transit (ST), the City of Redmond, King County, Cascade Water Alliance (CWA), and Puget Sound Energy (PSE) to share in the cost of acquiring the BNSF right-of-way for public ownership and projects. That memorandum (included as **Appendix B** of this document) identifies a number of easements that the City must provide to the project partners. In addition, there are a number of ongoing and proposed projects that the City and its partners are planning. It is imperative to coordinate the planning of all these projects as part of the master planning process; this document is the first effort to do so. Easements and projects placing demands on the Redmond Central Connector include:

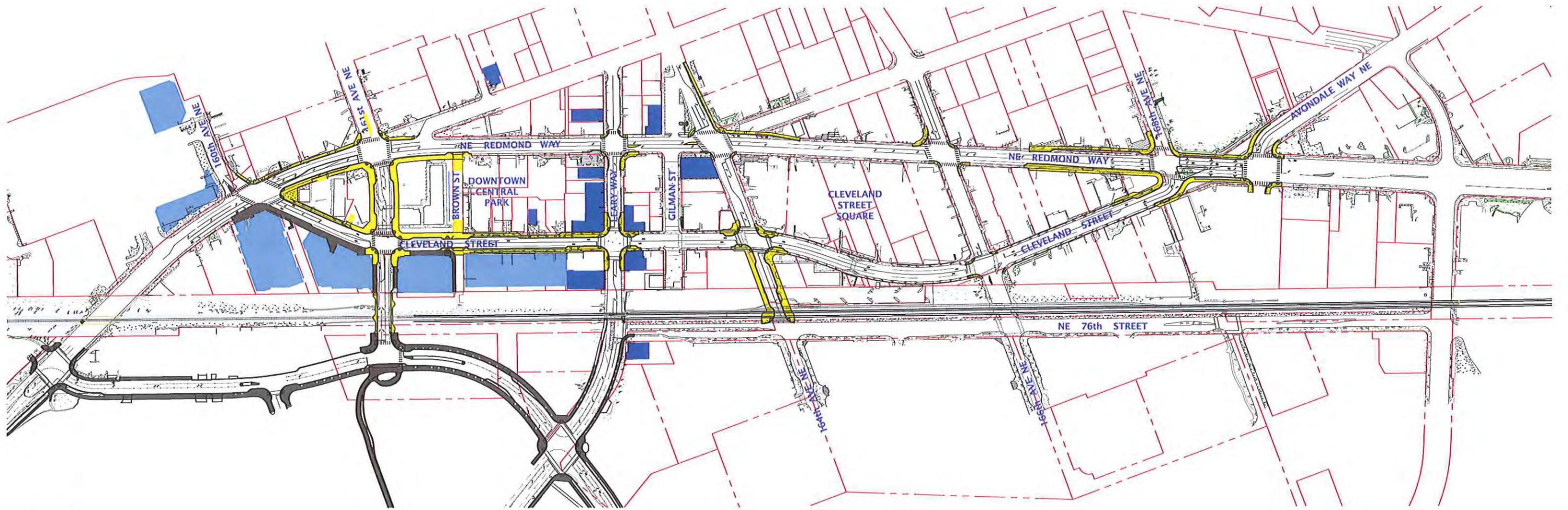
- The City will construct a regional trail to fulfill King County's regional trail easement in Redmond. Construction of the regional trail and associated park spaces will have opportunities for art and community gathering, per the goals and policies of the City's Comprehensive Plan and Park, Arts, Recreation, Culture & Conservation Plan.
- The City will construct a new stormwater trunk line to meet Washington Department of Ecology regulatory requirements for water treatment. (See **Figure 2.01**)
- The City will implement the Downtown East West Corridor study projects, which include four new north-south street extensions and four new pedestrian connections to the Redmond Central Connector. (See **Figure 2.02**)
- ST is seeking a transit easement throughout the nearly 4-mile Redmond Central Connector and plans to construct the East Link light rail transit line through Downtown Redmond, with a terminus station located just west of Leary Way. (See **Figure 2.03**)
- The City will provide easements to accommodate existing and potential new utilities for PSE, CWA, and King County, as well as City utilities.
- The City will abide by the terms of rail banking within the Redmond Central Connector for potential reactivation of freight rail.
- Although not a commitment, the City evaluated the potential for passenger rail uses within the Redmond Central Connector, separate from Sound Transit's East Link project.

Through the Downtown Study Area adjacent to NE 76th Street, the former BNSF right-of-way varies in width at multiple locations, ranging from 50 feet to 100 feet wide. Upon review of each of the proposed projects and goals, several conflicts were identified in the locations where the right-of-way narrowed to 50 feet. The City studied alternative alignments for the projects within the Redmond Central Connector right-of-way, as listed above.

Analysis of these alternatives revealed that the available right-of-way within the Redmond Central Connector could not accommodate the requirements of key projects. As a result, the City widened the available right-of-way to include the NE 76th Street right-of-way and the former BNSF rail right-of-way as a single corridor within the Downtown Study Area, providing between 110 feet and 160 feet of right-of-way for infrastructure projects and NE 76th Street operations. Utilizing the available right-of-way, the City then analyzed 14 alternative alignments focused on the critical pinch point of Leary Way and NE 76th Street, as shown in **Figure 2.04**.



Figure 2.01
City Stormwater Trunk Line



Legend

- Future Improvements
- Completed Improvements
- Historic Buildings
- New Developments
- Right - Of - Way



Redmond DEWCS Downtown Project

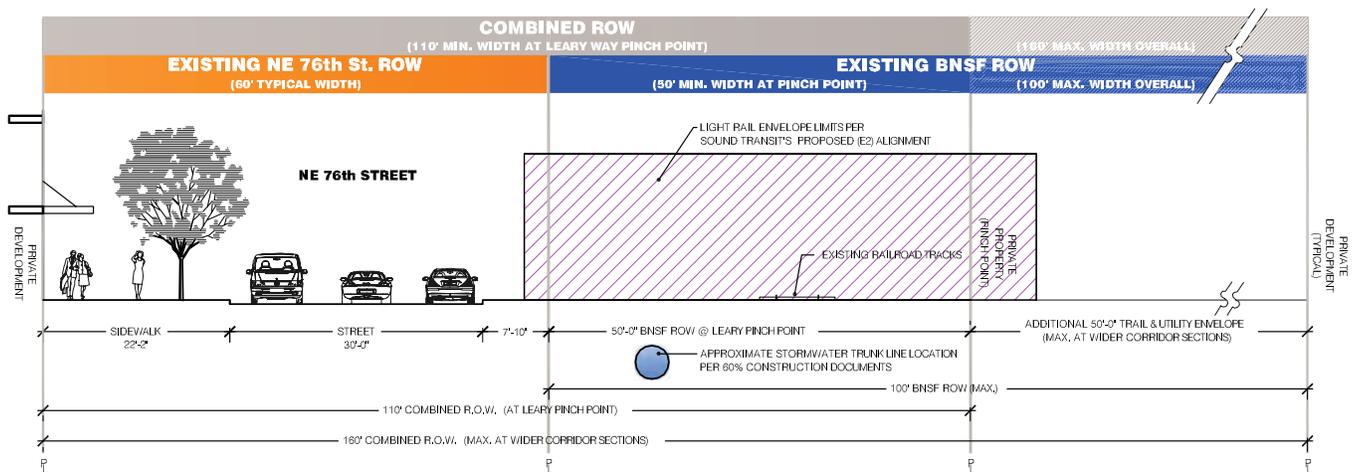


September 2010
KPG

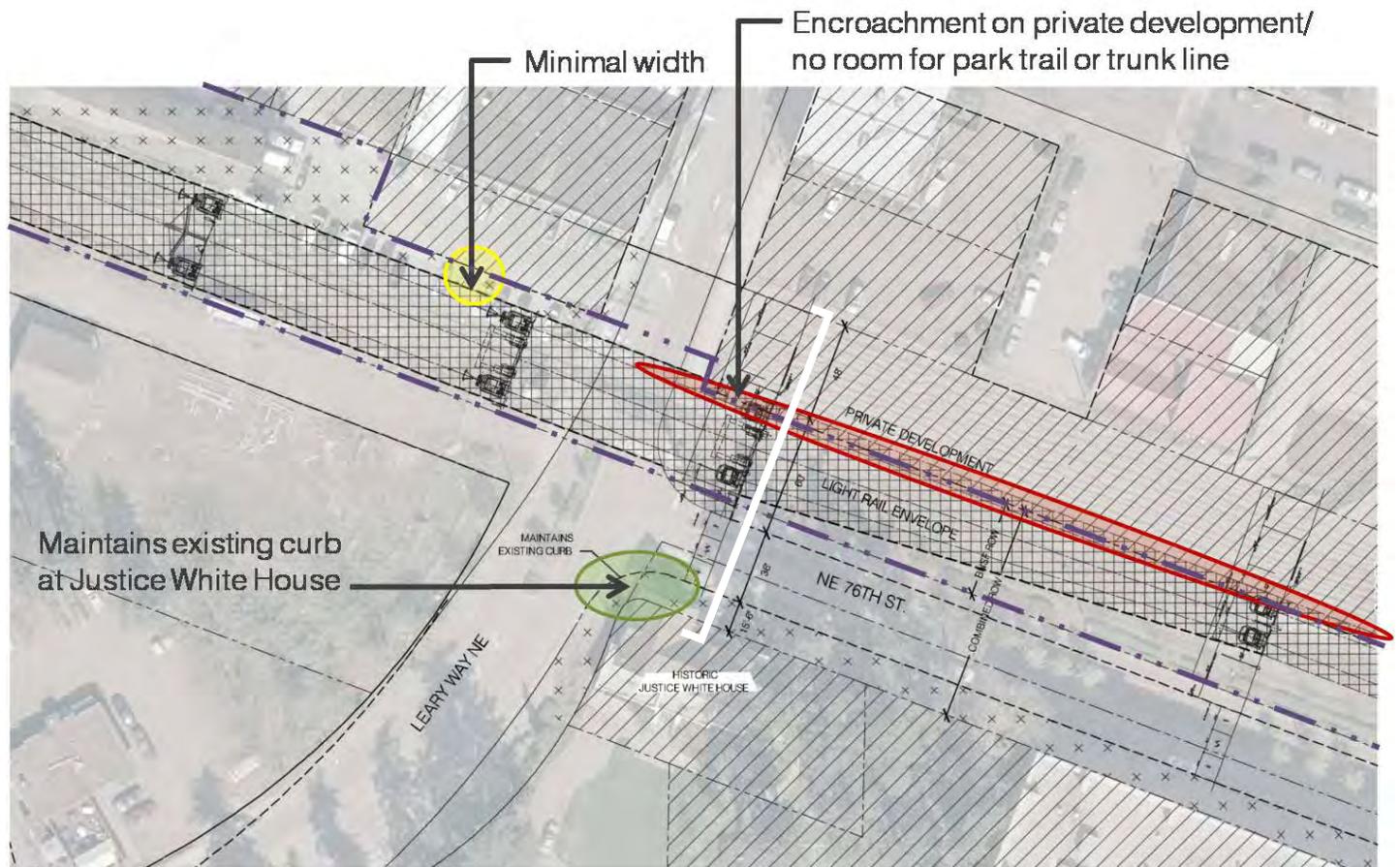
Figure 2.02
DEWCS Plan



Figure 2.03
Sound Transit DSEIS East Link E2 Alignment



Section



Plan

Figure 2.04

Leary Way & NE 76th St. critical pinch point showing conflicts between Sound Transit's E2 alignment, the City's proposed stormwater trunk line location at 60% construction documents, and needed space for required regional trail

From June through August 2010 an extensive coordination effort took place amongst the various project partners to develop this IAP. As part of this process, ST and King County were engaged to assess alternate alignments and the impacts on their proposed projects. With the objective of maximizing efficiency to ensure that all other project goals may be met with limited conflict, an emphasis was placed on identifying a specific preferred light rail alignment within the Downtown Study Area. Through this effort, design criteria for each of the projects were identified and used to develop alternative alignments. The process by which the alternatives were developed and evaluated for the Downtown Study Area is outlined in **Appendix C** and summarized below.

The following projects and design criteria have been identified within the Downtown Study Area. The criteria that have served as the basis for developing this plan are as follows:

2.1 Regional Trail

The City has agreed to lead trail development for the King County regional trail easement through the Redmond Central Connector. The trail is to meet King County and American Association of State Highway Transportation Officials (AASHTO) Standards (as the trail is a candidate to receive federal funding for construction). The trail will eventually connect the East Lake Sammamish Trail to the Sammamish River Regional Trail, and north to NE 124th Street. The trail is expected to have more than 2,000 users per day, based on trail count data from nearby regional trails, thereby triggering use of King County's Regional Trail Standard 2A, which will serve as a basis for this trail design. (See **Figure 2.05**) These standards offer typical trail profiles and typical details for all other trail elements, as well as recognize unique locations/situations where standards depart from the typical. Some of these unique situations exist within portions of the Redmond Central Connector.

The key criteria guiding trail development in the Downtown Study Area are:

- Minimum trail width of 25 feet to 29 feet per King County Trail Standard RTS Section 2A (King County Regional Trails System Development Guidelines, Draft Feb 2009)
- Minimum near-term trail width of 16 feet (12' asphalt, 2' shoulders) proposed for construction in 2011/2012.
- City of Redmond Bicycle Facilities Design Manual
<http://www.redmond.gov/connectingredmond/resources/bikemanual.asp>
- City of Redmond Trail Design Standards
<http://www.redmond.gov/insidacityhall/parksrec/parksplanning/PARCCPlan/PDFs/CH%208%20Trails%20Draft.pdf>

2.2 Park Features

The City intends for the trail corridor to become a linear City park with opportunities for cultural programming, public art, and historic interpretation. Unlike many of the utility and transportation focused uses for the Redmond Central Connector, which lend themselves to specific numeric standards, the requirements of a park envelope are more subjective, and more related to performance criteria. The standards for the Downtown Study Area as a linear park are defined in:

- Redmond Downtown Parks and Recreation Facilities Master Plan Principles and Opportunities, May 2008 <http://www.redmond.gov/insidacityhall/parksrec/parksplanning/DTParksFac/DTParksFac.asp>
- The 2010 Parks, Arts, Recreation, Culture and Conservation Plan (PARCC Plan)
<http://www.redmond.gov/insidacityhall/parksrec/parksplanning/PARCCPlan/ProPlanDocs.asp>

Figure 2-3

RTS Section 2a

Type	Users per Peak Day	Paved Width	Soft-Surface Width 3 ft - Soft-Surface incorporated into shoulder	Include Soft-Surface Trail?	Soft-Surface Shoulder Side	Shy Distance Side	Sign Distance Trail	Paved-Soft Separation	Shoulder Veg Clear Distance	Vert Clear Distance	Trail Developed Section	Maintained Section	Grade
Alternative Comprehensive Shared-Use Trail (Restricted)	>2000	12 ft		Yes - Uses shoulder	3 ft/2 ft	1ft/1ft	3-6 ft from trail	0 ft	5 ft/5 ft	12 ft	19 ft	25-29 ft	≤ 3%*

- Potential "Comprehensive" buildout section for extensively-used trails where ROW is more constrained but some wider shoulder is possible – actual should width can vary.
- Soft-surface section is 3 feet-wide and adjacent to paved trail. Close proximity of paved and soft-surface trail sections may require a higher level of maintenance effort.

Trail type with an expanded soft-surface shoulder limited to 3 feet on one side of the trail. May provide alternative where a wider 5 foot soft-surface shoulder is not practical. Type would fit circumstances similar to those of the RTS Section 2.

Contact King County Parks for more information.

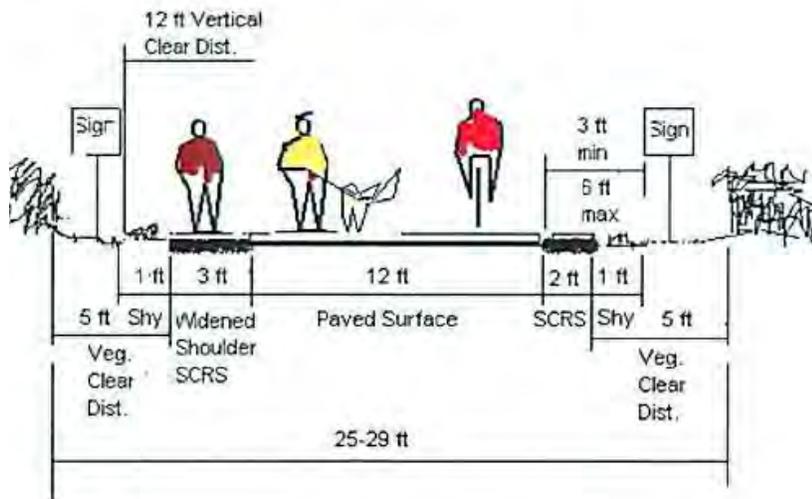


Figure 2.05
 King County Regional Strail Standard 2A

2.3 Stormwater Trunk Line

Development of a proposed stormwater trunk line that will run from just east of NE 170th Street to just east of Redmond Way along the Redmond Central Connector to serve downtown is currently in the planning process at approximately 60% construction documents. The trunk line (4-foot diameter) generally runs east/west through the Redmond Central Connector. The design and eventual construction of this trunk line is the most time sensitive of all the projects. Sufficient room must be maintained for future maintenance activities when multistory buildings will front the corridor to the north in the future. Any reduction in the minimum distances would require structural protection, but in no event be located under the light rail track way.

The key criteria guiding the stormwater trunk line development in the Downtown Study Area are:

- 4-foot diameter stormwater pipe of varying depth ranging from 8 to 20 feet
- Pipe to connect to inlet and outlet locations as proposed in the current 60% construction documents
- 10-foot separation from the edge of utility structures (manholes and underlying pipe) to the edge of the nearest future Sound Transit track
- Trunk line cannot be under light rail tracks and should allow enough room for shoring if future maintenance is needed
- A “no tree” zone above the stormwater trunk line running 8 feet on either side of the pipe centerline (16 feet total) is the Public Works standard requirement. (Public Works has acknowledged departures or modifications from this standard may be allowed based on further review of the tree species and depth of pipe.)

2.4 Downtown East West Corridor Study (DEWCS) and City Street Right-of-Way

The City's DEWCS project includes a series of projects that will connect the Downtown street grid system. This includes four new streets that will be extended across the Redmond Central Connector and four other pedestrian connections. The master plan will show how these projects will be implemented and will coordinate intersection improvements that include the trail and transit crossings. The DEWCS plan is shown in **Figure 2.02** and the following is a link to the study:

<http://www.redmond.gov/connectingredmond/studies/DEWCS.asp>.

2.5 Light Rail Envelope and Facilities

Per the November 2009 MOU, Sound Transit will receive an easement from the City for light rail transit. In May of 2009, the Sound Transit Board identified its preferred alternative for the segment of the East Link Project in downtown Redmond. This alternative, referred to as E2, was recommended by the City. The E2 alternative runs along the south and east side of SR 520 as it makes its way from NE 40th Street to approximately NE 70th Street then turns west and enters the former BNSF right-of-way terminating at a station between Leary Way and 161st Ave NE. The East Link is designed with a double track that is approximately 28 feet to 30 feet wide outside of the station area. Sound Transit has a policy requiring terminal stations to have a center platform. In Redmond, Sound Transit proposes a 24-foot-wide center platform, plus one track on either side comprising approximately 30 feet, and a sidewalk on the south side of the station of 14 feet (RMC Appendix 20D-3) for a total of 68 feet.

ST plans to publish the East Link SDEIS in October 2010 for public comment and will follow with its Final Environmental Impact Statement (FEIS) in spring of 2011. The current ST alignment generally runs along the middle of the BNSF corridor. For more information about Sound Transit's East Link project, please see: <http://www.soundtransit.org/x3245.xml>.

The key criteria guiding light rail development in the Downtown Study Area are:

- A minimum 28'-2" wide right-of-way for the transit way outside of station areas
- Approximately 68 feet of right-of-way for the downtown Redmond station
 - 24-foot-wide center platform
 - (2) 15-foot transit ways, one track on either side of platform
 - 14-foot sidewalk on south side of station

- Tracks with slopes no greater than 5%

The NE 76th Street right-of-way will be part of the Sound Transit envelope and will need to be reconstructed when East Link is developed. Currently NE 76th Street includes two vehicular travel lanes (one in each direction) with a center turn lane, parking, and a sidewalk on the south side of the right-of-way. The following design criteria, or updated versions of these code references, shall be followed during reconstruction:

- At least two lanes of traffic that meet emergency access requirements of 10-foot-wide lanes for a two-lane road without a median and 14-foot-wide lanes for a two-lane road with a median (RMC Appendix 20D-3)
- On-street parking on the south side of the street (RMC Appendix 20D-3)
- A 13-foot sidewalk on the south side of the street (RMC 20C.40.105)

Currently, Sound Transit is proposing three tail tracks extending west of 161st Ave NE, which include a maintenance and operations support building, surface parking lot for staff (20 stalls), and a power transformer. The proposal also includes approximately 660 feet of tail tracks that extend beyond the station platform.

The utilitarian nature of these operations and maintenance facilities do not contribute to the vision of urban revitalization that Redmond has envisioned for Downtown. Therefore, the City is interested in evaluating alternatives to the ST proposal, since the station location is in the center of Downtown, where the City would like to maximize the development potential, improve connectivity, and enhance the pedestrian experience within Downtown. Therefore, it is preferred, from an urban design standpoint, that tail tracks and all operations and maintenance facilities are located outside of the core Downtown area. ST has a proposal to create a SE Redmond Station Maintenance Facility (MF5). If this is approved, the proposed end-of-the-line facilities in Downtown may not be necessary.

As a result, the master plan may show alternatives for the end-of-the-line facilities such as:

- Moving most of the facilities to SE Redmond Station
- Co-locating the facilities with a future City facility adjacent to the station
- Rearranging some of the facilities to have less impact on the property surrounding the station

Final decisions on these maintenance and operations facilities are not a critical path issue for the IAP as they do not impact the immediate plans of project partners and the ultimate development of their projects. Therefore, these issues will be evaluated further during the master planning process.

2.6 King County Wastewater Utilities Envelope

King County is seeking the right to preserve existing wastewater utility infrastructure easements and a subsurface easement for long-term wastewater utility needs. The key criteria guiding light rail development in the Downtown Study Area are:

- 24-inch diameter wastewater pipe
- The depth of the pipe can be as shallow as 8 feet below ground surface

2.7 Other Rail Service

This document evaluates alternatives for another rail use within the corridor, in addition to East Link. The other rail uses could include reinstatement of freight service, passenger service that supplements East Link, or excursion service. The analysis includes ensuring that the City's policy, goals, and regional commitments can be fulfilled along with the potential for another type of rail use.

The design criteria for other rail uses include:

- A single track 17-feet-wide (8'-6" either side of center line of tracks). This track exists separate from Sound Transit tracks, per Sound Transit's policy, which precludes sharing tracks with other rail uses
- 2% maximum slope
- The study recognizes the need for sidings for potential future rail operations, but locations of such existing sidings are assumed to be outside of the Downtown Study Area. This study does recognize that any such sidings would further reduce corridor width for park and trail use in the Downtown Study Area.

While the City of Redmond supports the establishment and preservation of a rail banked corridor through the city, the City also believes that Redmond's adopted land use plans, zoning code and development patterns in the downtown limit rail use of the corridor south of NE 90th Street to commuter and excursion trips.

3.0 Environmental Analysis

Beyond design criteria, infrastructure projects must consider impacts of previous environmental contamination to the projects (health impacts and cost of cleanup) and impacts of the projects to critical areas (avoidance or mitigation requirements). Identification of areas of concern could affect the alignment of projects within the Redmond Central Connector. An environmental assessment was conducted for the Downtown Study Area, since the first projects for implementation are located in this area. A critical areas study was conducted in the Downtown Study Area for the same reason and a more general critical areas evaluation was conducted in the Sammamish Valley Study Area to understand whether there are any major concerns.

3.1 Preliminary Environmental Site Assessment: Downtown Study Area

A Preliminary Environmental Site Assessment was conducted for the length of the Downtown Study Area to identify known or potential sources of soil or groundwater contamination. Several issues of potential environmental concern for soil and groundwater along the corridor were identified, including issues common to the length of the corridor, as well as related to specific sites along the corridor.

Petroleum hydrocarbon soil contamination exists within the railroad corridor between Leary Way and 164th Ave NE, at the former T & D Feeds facility, which is listed by the Washington State Department of Ecology as a site requiring further action during site development (a permit is pending on this site). There is widespread, but intermittent, chlorinated solvent contamination in groundwater in the Downtown area from drycleaner operations. The primary issues of potential environmental concern for soil and groundwater that are common to the length of the corridor through the Downtown area are as follows:

- Treated railroad ties (creosote or other chemical preservatives) of various ages are present throughout most of the alignment.
- Fill of unknown origin is present throughout most of the corridor.
- Historic vegetation management practices are likely to have included application of potentially persistent herbicides, pesticides or other chemicals including metals and/or petroleum-related constituents.
- The many years of railroad operations on the corridor pose a risk for prior leaks, spills or releases of chemicals used in railroad equipment.
- Detections of tetrachloroethylene and related chlorinated solvents in groundwater at concentrations near to and greater than the Model Toxics Cleanup Act (MTCA) Method A cleanup levels beneath portions of downtown Redmond.

The complete Draft Preliminary Environmental Assessment report can be found in **Appendix D**. The first project to be implemented will be the stormwater trunk line installation. This project is expected to excavate most of the surface soil and much subsurface soil throughout the downtown section of the Redmond Central Connector.

3.2 Critical Area Evaluation Study: Downtown Study Area

A critical area evaluation was conducted for the Redmond Central Connector Downtown Study Area (see **Figure 3.01**). The following critical areas were identified:

- Three Fish and Wildlife Habitat Conservation Areas were identified near this segment of the study area.
- Bear Creek and the Sammamish River, identified as Class I stream and Waters of the State, are respectively located at the east and west ends of the study area and their 150-foot buffers extend into the study area.
- Two seasonally flooded palustrine wetlands were identified in the low-lying areas adjacent and parallel to the BNSF rail prism located at the eastern end of the Downtown Study Area (just north of Bartells). City of Redmond Code requires an 80-foot protective buffer for these Category III wetlands. One additional wetland is located west of the corridor, and one other potential wetland was observed adjacent to the western end of the corridor. This potential wetland is located at the toe of a Landslide Hazard Area associated with the BNSF fill prism near the Sammamish River. For the purpose of redeveloping the BNSF right-of-way, the City of Redmond may allow wetland buffers to be reduced on a case-by-case basis in accordance with RMC 20D.140.30-020(5). Where a legally established, non-conforming use of the buffer exists, proposed

actions in the buffers may be permitted so long as the proposed action does not increase impacts to the wetland.

- Frequently Flooded Areas, Critical Aquifer Recharge Areas and Seismic Hazard Areas are mapped within the Downtown Study Area (City of Redmond, 2010). It is likely that the City of Redmond will evaluate potential impacts to these areas on a case-by-case basis. The City of Redmond may condition the approval of redevelopment of the Downtown Study Area of the corridor within these areas based upon the findings of additional engineering evaluations and analysis.

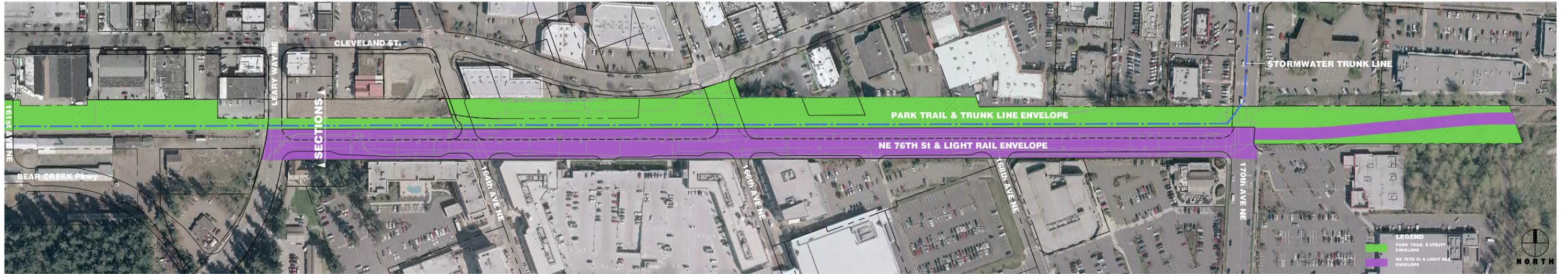
The complete Draft Critical Area Evaluation report for the Downtown Study Area can be found in **Appendix E**.

3.3 Critical Area Evaluation: Sammamish Valley Study Area

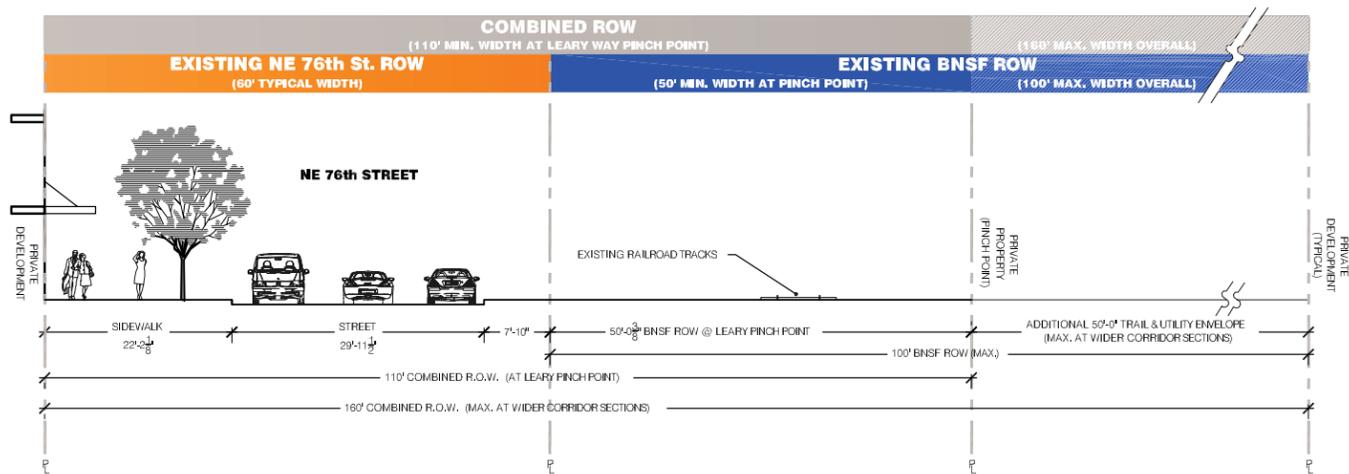
A field reconnaissance of regulated critical areas was conducted for the Redmond Central Connector Sammamish Valley Study Area. The following critical areas are projected to exist in this area, but would require further analysis in the future when projects are ready for implementation:

- Ten streams were observed within the railroad right-of-way, and several wetlands were observed in the vicinity of the right-of-way, primarily outside of the study area to the west of Willows Road.
- Two potential wetlands were observed within the study area in the northern portion of this study area, and two wetlands were observed south of the study area near the Sammamish River. It is not known if the regulated buffers of these wetlands project into the study area. Wetlands were not delineated during the reconnaissance. Trail design will need to consider these features and minimize functional impacts and buffer disturbance. Mitigation for impacts will likely be required.
- According to the City of Redmond (2010), the FEMA 100-year floodplain abuts the eastern side of the rail prism in the northern portion of the corridor for approximately 1.5 miles.
- The portion of the Sammamish Valley Study Area between the Sammamish River and NE 91st Street is designated as a Wellhead Protection Zone 2 and the remainder of the Sammamish Valley Study Area is designated as a Wellhead Protection Zone 4. Development restrictions associated with Wellhead Protection Zones 1 and 2 are not likely to impact trail development.
- The majority of the Sammamish Valley Study Area is mapped as a Seismic Hazard Area and may be subject to the regulations of RMC 20D.140.60-040(4).
- Landslide Hazard Areas were observed along the rail fill prism in the southern portion of the right-of-way, and may require a 50-foot buffer, which shall be measured from the top, toe and sides of the Landslide Hazard Area. Per RMC 20D.140.60-040(2), development applicants are required to evaluate alternative locations that avoid impacts to Landslide Hazard Areas. If impacts cannot be avoided, then the applicant must demonstrate there is no reasonable alternative to developing in Landslide Hazard Areas.

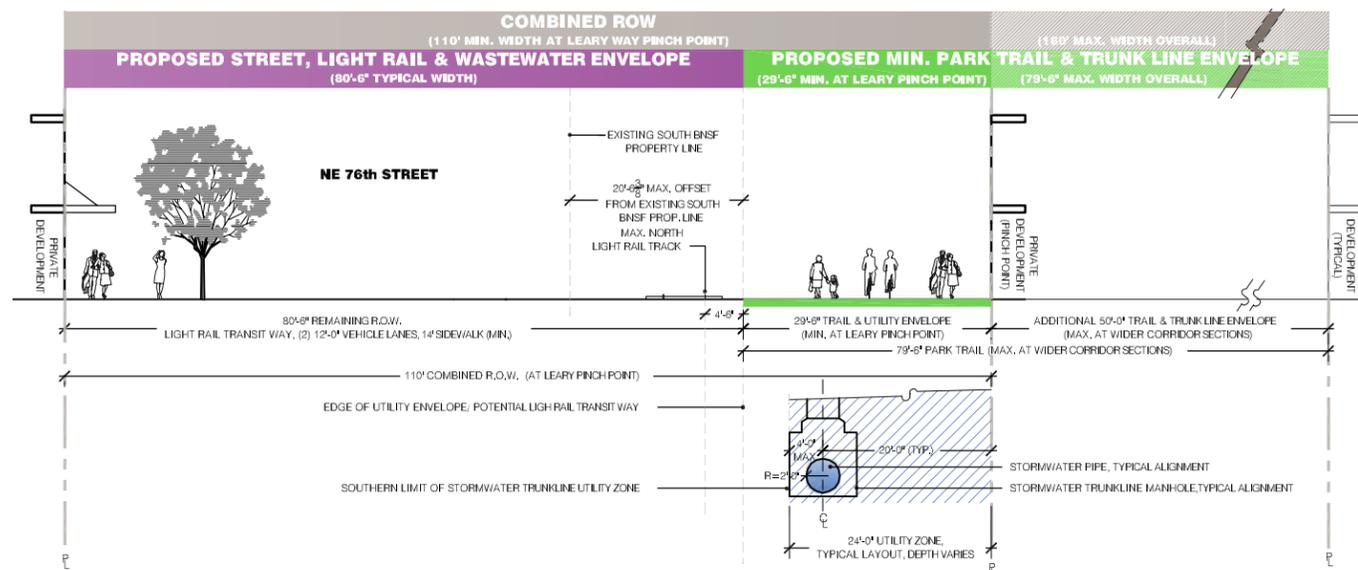
The complete Draft Critical Area Evaluation report for the Sammamish Valley Study Area can be found in **Appendix F**.



a- Downtown Infrastructure Alignment Plan Envelopes (Plan)



b- Existing Downtown Envelopes (Typical Section)



c- Downtown Infrastructure Alignment Plan Envelopes (Typical Section)



Figure 4.01
Infrastructure Alignment Plan

4.0 Downtown Study Area

The Downtown Study Area is approximately 1.1 miles long and runs east to west along the former BNSF railroad tracks from the east end of the Bear Creek Trail, just south of Redmond Way and west of SR-520, to the Sammamish River Trail. The final location of the projects proposed in the Downtown Study Area will be based on the envelopes identified in this plan (see **Figures 4.01 and 4.02** at the end of this section). At this time, the Downtown Study Area alignment alternatives have been completed to a level adequate to develop infrastructure envelopes that were designed with the intention of avoiding future infrastructure conflicts. The City is not stating a preference for a specific rail alignment in this IAP, as the City plans further analysis in conjunction with the regional partners.

4.1 Development of Project Envelopes

Based on the project goals, inventory and analysis, and design criteria identified in the previous sections, the City worked with ST, King County, and staff to develop 14 alternatives, as described in **Appendix C**. The partners require more time to finalize the light rail alignment. However, there was sufficient consensus to develop envelopes for the City and for Sound Transit and King County projects. The City will proceed with its more immediate projects within the City Envelope. In the meantime, the partners will continue to develop a preferred alignment for the remaining projects. The following infrastructure alignment envelopes and planning criteria have been established for the Downtown Study Area.

4.1.1 City Envelope (*Park Trail/Stormwater Trunk Line*)

The City Envelope is located on the north side of the corridor and assumes a minimum width of 29.5 feet, leaving 20.5 feet to the south edge of the former BNSF right-of-way through the length of the Downtown Study Area. The City Envelope alignment criteria are as follows:

- A minimum width of 29.5 feet, increasing in places to as wide as 78 feet where the right-of-way limits expand to the north (possibly wider dependent upon future light rail/NE 76th alignment). These criteria are based on meeting King County regional trail standards and having sufficient room to construct the stormwater trunk line.
- Locate stormwater pipe 20 feet south of north property line at NE 76th & Leary Way pinch point
- 10-foot separation from the edge of utility structures (manholes and underlying pipe) to the edge of nearest future Sound Transit track
- Trunk line cannot be under light rail tracks and should allow enough room for shoring if future maintenance is needed
- 4-foot diameter stormwater pipe of varying depth ranging from 8 to 20 feet
- Pipe to connect to inlet and outlet locations as proposed in the current 60% construction documents
- A “no tree” zone above the stormwater trunk line running 8 feet on either side of the pipe centerline (16 feet total) is the Public Works standard requirement. (Public Works has acknowledged departures or modifications from this standard may be allowed based on further review of the tree species and depth of pipe.)

4.1.2 Light Rail Envelope

The Light Rail Envelope is located on the south of the City Envelope to the south edge of NE 76th Street providing 80.5 feet of right-of-way for future development. Construction within this envelope will likely require some reconstruction of NE 76th Street per the City standards outlined in the previous sections. A Letter of Support to the City of Redmond from Sound Transit is included as **Appendix G**.

The NE 76th Street & Light Rail Envelope alignment criteria are as follows:

- Use a combination of BNSF right-of-way and NE 76th Street right-of-way
- Approximately 28-foot minimum ST transit double track width, plus track flare as needed to approach station
- Provide 12-foot minimum width vehicle lanes at the intersection of Leary Way and NE 76th Street, then can narrow lanes to 10-