



I-5 MERCER ST TO SR 520 PORTAGE BAY I-5 INTERCHANGE IMPROVEMENTS

*Tree and Vegetation Management & Protection Plan
(TVMPP)*

**Specification Section
1-07.5**

Walsh Construction Company

Monday, September 13, 2021

1.0 Introduction

Walsh Construction Company (Walsh) is providing this Tree and Vegetation Management and Protection Plan (TVMPP) to outline practices to be used to preserve and protect trees and vegetation that are not to be removed during the I-5 Mercer Street to SR 520 Portage Bay I-5 Interchange Improvements Project. Protection measures under this plan will be performed in accordance with contract documents, furthermore several rules and protocols from the project specifications have been extracted and included in the TVMPP. In addition to the methods outlined in this narrative and plans, Walsh will adhere to the included Tree and Vegetation Management and Protection Plan of WSDOT Community Construction Management Plan (Appendix A).

2.0 Tree Protection

During the project Walsh will care to not damage the roots, trunk, or crown of trees adjacent to construction activities. When applicable, WSDOT and the contractor will review the tree and vegetation if needed to be removed in certain locations. The only trees and vegetation areas excluded from protection measures are those which are to be cleared and removed under the work of this project's contract.

Areas beyond the slope stakes shall be disturbed as little as possible in the above operations and under no circumstances shall Topsoil Type B be stockpiled within 10 feet of any existing tree or vegetation area designated to be saved and protected. Vegetation and soil protection zones for trees shall extend out from the trunk to a distance of 1 foot radius for each inch of trunk diameter at breast height. Vegetation and soil protection zones for shrubs shall extend out from the stems at ground level to twice the radius of the shrub.

Vegetation and soil protection zones for herbaceous vegetation shall extend to encompass the diameter of the plant as measured from the outer edge of the plant

Walsh and subcontractors will exercise care when excavating pipe trenches near existing trees to minimize damage to tree roots. Where roots are 1½ inches or greater in diameter, the trench shall be hand excavated and tunneled under the roots. When large roots are exposed, they shall be wrapped with heavy, moist material, such as burlap or canvas, for protection and to prevent

excessive drying. The material must be kept moist until the trench is backfilled. Trenches dug by machines adjacent to trees with roots less than 1½ inches in diameter shall have severed roots cleanly cut. Trenches with exposed tree roots shall be backfilled within 24 hours unless adequately protected by moist material as approved by the Engineer. All material and fastenings used to cover the roots shall be removed before backfilling.

When large roots of trees designated to be saved are exposed by the Contractor's operation, they shall be wrapped with heavy, moist material, such as burlap or canvas, for protection and to prevent excessive drying. The material shall be kept moist and securely fastened until the roots are covered to finish grade. All material and fastening material shall be removed from the roots before covering. All roots 1 inch or larger in diameter, that are damaged, shall be pruned with a sharp saw or pruning shear. Damaged, torn, or ripped bark shall be removed as ordered by the Engineer at no additional cost to the Contracting Agency. Any pruning activity required to complete the Work as specified shall be performed by a Certified Arborist at the direction of the Engineer.

Protective fencing will be High Visibility Fence (HVF) and will be installed when deemed necessary to identify and protect trees and vegetation that is to remain undamaged by construction activities. If roots of trees that are to be protected are encountered/exposed and with diameters of 2 inches or greater, Walsh will have an inspection performed by a certified arborist to identify protective measures or means of pruning/removal (i.e., cover exposed root systems with damp burlap blankets, layers of mulch or woodchips, etc.).

3.0 Clearing and Grubbing Construction Requirements

All clearing and grubbing shall be performed in accordance with project Standard Specifications 2-01.

Clearing Requirements:

- Trees will only be felled within areas to be cleared within contract documents.
- Close-cut parallel to the slope of the ground all stumps to be left in the cleared area outside the slope stakes.

- For all stumps that will be buried deeper than 5 feet from the top, side, or end surface of the embankment or any structure, stumps under 18 inches in diameter will be close-cut and stumps that exceed 18 inches in diameter will be trimmed to no more than 12 inches above original ground level.
- All trees or native growth indicated by the Engineer will be left standing.
- All trees to be left standing to the height specified by the Engineer will be trimmed by neatly cutting all limbs close to the tree trunk.
- As directed by the Engineer, clumps of native growth will be thinned.
- All trees or native growth will be protected from damage caused by construction operations with fencing if necessary

Grubbing Requirements:

- Grubbing will be deep enough to remove all stumps, large roots, buried logs, and other vegetative material.
- Grub all areas:
 - Indicated by the Engineer or by the Special Provisions.
 - To be excavated, including area staked for slope treatment.
 - Where subdrainage trenches will be dug, unsuitable material removed, or Structures built.
 - In which hillsides or existing embankments will be terraced as described in Section 2-03.3(14).
 - Upon which embankments will be placed, except stumps may be close-cut or trimmed as allowed in Section 2-01.3(1) item 3.

4.0 Acceptance of Plant Material

Quality and acceptance of plants and trees will be in accordance with section 9-14.7(2) of the standard specifications.

5.0 Restoration

1) Soil stabilization and seeding:

Seeding of the following composition, proportion and quality shall be applied at a rate of 25 pounds per acre on areas requiring seeding, fertilizing, and mulching:

Kind and Variety of <u>Seed in Mixture</u>	Pounds of Pure Live Seed <u>Per Acre</u>
Rough Bentgrass (<i>Agrostis scabra</i>)	1.3
Creeping Red Fescue (<i>Festuca rubra</i> ssp. <i>rubra</i>)	16.0
Crimson Clover (<i>Trifolium incarnatum</i>)	1.5
California Poppy (<i>Eschscholtzia californica</i>)	2.5
Common Yarrow (<i>Achillea millefolium</i>)	0.1
Red Columbine (<i>Aquilegia formosa</i>)	1.8
Pacific Lupine (<i>Lupinus lepidus</i>)	<u>1.8</u>
TOTAL	25.00

Damp Area Seeding of the following composition, proportion and quality shall be applied at a rate of 40 pounds per acre on areas requiring damp area seeding:



<u>Kind and Variety of Seed in Mixture</u>	<u>Pounds of Pure Live Seed Per Acre</u>
Red fescue (Festuca rubra ssp. rubra)	20.0
Meadow Foxtail (Alopecurus pratensis)	12.0
White Dutch Clover (Trifolium repens, pre-inoculated)	<u>8.0</u>
TOTAL	40.0

6.0 Attachments

- Tree protection Survey
- Community Construction Management Plan Appendix A:
 - Tree and Vegetation Management and Protection Plan

Community Construction Management Plan

SR 520/I-5 Express Lanes Connection Project

(Contract name: SR520: I-5/Mercer St to SR520/Portage Bay – I-5 Interchange Improvements)

Updated January 2020

Appendix A

Tree and Vegetation Management and Protection Plan

Table of Contents

Acronyms and Abbreviations	3
I. Executive Summary	5
II. Tree and Vegetation Management and Protection Plan Overview	6
Purpose.....	6
Timeline and Process	6
Implementation	6
III. SR 520/I-5 Express Lanes Connection Project Overview	7
Background.....	7
SR 520/I-5 Express Lanes Connection Project Description	7
Construction Schedule	8
IV. Environmental Compliance	9
City of Seattle Regulations	9
SMC 25.09 - Environmental Critical Areas Ordinance	9
SMC Title 15 - Street Use Ordinance	10
V. TVMPP Development and Coordination Process.....	11
Tree Inventory.....	11
Stakeholder Commitments.....	11
Cultural and Historic Mitigation.....	11
SR 520/I-5 Express Lanes Connection Project.....	12
VI. SR 520/I-5 Express Lanes Connection Project Tree and Vegetation Protection Implementation	13
SR 520/I-5 Express Lanes Connection Project – Technical Requirements by Vegetation Management Area.....	13
Mercer Street Connection	13
I-5 & SR 520 Interchange	13
North Capitol Hill Buffer.....	14
East Roanoke Street.....	15
VII. References.....	15
VIII. Exhibit Maps	16
Exhibit A-1: SR 520/I-5 Interchange Project Area Map and Management Area	16

Exhibit A-2: SR 520/I-5 Interchange Project Environmental Critical Areas.....	17
Exhibit A-3: SR 520/I-5 Interchange Project Environmental Critical Areas – Roanoke Area.....	18

Exhibit Maps

Purpose	6
Timeline and Process	6
Implementation	6
Background	7
SR 520/I-5 Express Lanes Connection Project Description	7
Construction Schedule.....	8
City of Seattle Regulations	9
Tree Inventory.....	11
Stakeholder Commitments.....	11
SR 520/I-5 Express Lanes Connection Project.....	12
SR 520/I-5 Express Lanes Connection Project – Technical Requirements by Vegetation Management Area.....	13
Exhibit A-1: SR 520/I-5 Interchange Project Area Map and Management Area.....	16
Exhibit A-2: SR 520/I-5 Interchange Project Environmental Critical Areas.....	17
Exhibit A-3: SR 520/I-5 Interchange Project Environmental Critical Areas – Roanoke Area	18

Acronyms and Abbreviations

CCMP	Community Construction Management Plan
DBH	Diameter (of tree trunk) at breast height
DPD	City of Seattle Department of Planning and Development
ECA	Environmental Critical Areas
HVF	High Visibility Fencing
I-5	Interstate 5
MOU	Memorandum of Understanding
PA	Section 106 Programmatic Agreement
PBB	Portage Bay Bridge

ROTW	Rest of the West
SDCI	City of Seattle Department of Construction and Inspection
SDOT	Seattle Department of Transportation
SMC	Seattle Municipal Code
SR 520	State Route 520
SR 520/I-5 Project	SR 520/I-5 Express Lanes Connection Project
TVMPP	Tree and Vegetation Management and Protection Plan
WSDOT	Washington State Department of Transportation

I. Executive Summary

WSDOT has developed this Tree and Vegetation Management and Protection Plan (TVMPP) as part of the SR 520/I-5 Express Lanes Connection Project Community Construction Management Plan (CCMP). Per the [Section 106 Programmatic Agreement](#) (PA), Community Construction Management Plan (CCMP) was developed as a mitigation commitment for adverse effects from the [I-5 to Medina: Bridge Replacement and HOV Project](#) (I-5 to Medina Project), including vibration, noise, change of use or physical features of a property's setting, visual, atmospheric or audible intrusions (as defined in [36 CFR 800.5\(a\)\(2\)](#)). The [SR 520/I-5 Express Lanes Connection Project](#) (SR 520/I-5 Project) is the third construction phase of the [SR 520 Bridge Replacement and HOV Program](#), following the completion of the [West Approach Bridge North Project](#) and running concurrent with the [Montlake Project](#).

The purpose of the TVMPP, as an appendix to the CCMP, is to describe the standards and project-specific best management practices that will be used as guidance to preserve and protect trees and vegetation within the limits of project construction. The TVMPP presents a variety of methods for minimizing effects on trees and vegetation during construction and establishes an implementation and tracking plan to ensure that the best practices are followed. To accomplish this, the plan identifies areas of mature tree removal, protection, and restoration, including areas temporarily dedicated to construction.

Input from the City of Seattle and key stakeholders was considered in developing the TVMPP. WSDOT will submit the TVMPP to these stakeholders prior to construction. During construction, WSDOT will adhere to the TVMPP and notify neighborhoods prior to construction activities per the SR 520/I-5 Project Community Construction Management Plan (CCMP).

The remaining work for the [SR 520 Bridge Replacement and HOV Program](#), collectively known as [Rest of the West](#), which includes the [Montlake Project](#), [SR 520/I-5 Project](#), [Portage Bay Bridge and Roanoke Lid Project](#), and Montlake Cut Bascule Bridge Project, received full funding through the Connection Washington funding package in 2015. Following the SR 520/I-5 Project, the remaining work including the Portage Bay Bridge and Roanoke Lid Project, and the Montlake Cut Bascule Bridge Project will be delivered in two construction phases. Additional volumes and/or updates to existing CCMPs and TVMPPs will be developed in conjunction with each future construction phase of the I-5 to Medina Project.

II. Tree and Vegetation Management and Protection Plan Overview

Purpose

This TVMPP has been prepared to meet commitments made in the [Section 106 PA](#). The purpose of the TVMPP is to describe the standard and project-specific best management practices that will be used as guidance to preserve and protect trees and vegetation to the extent feasible within the limits of construction of the SR 520/I-5 Project (further described in Section III). This plan presents a variety of tools for protecting trees and vegetation during construction. To accomplish this, the TVMPP identifies subareas within the project where mature trees will either be removed or require protection and restoration.

The TVMPP reflects input WSDOT received through previous discussions with the City of Seattle and interested stakeholders, as described further in Section V: Environmental Compliance.

Timeline and Process

This is the second TVMPP of the Rest of the West project. The SR 520 permitting and design teams developed a draft outline which was reviewed by the City of Seattle and subsequently utilized as a basis to develop this TVMPP.

This TVMPP focuses on the SR 520/I-5 Project, the second of four funded phases to complete the Rest of the West project of the SR 520 corridor. It is anticipated that this TVMPP will be updated by addendum around 2021 in preparation for [Portage Bay Bridge and Roanoke Lid Project](#) which overlaps in impacts to many of the SR 520/I-5 Project areas.

Implementation

The TVMPP documents WSDOT's plans to protect and restore trees and vegetation during construction of the SR 520/I-5 Project.

III. SR 520/I-5 Express Lanes Connection Project Overview

Background

In 2015, WSDOT received full funding through the Connecting Washington package for the I-5 to Lake Washington Project. The SR 520 Bridge Replacement and HOV: I-5 to Medina Program's 12.8-mile-long corridor area begins at SR 202 in Redmond and extends west to I-5 in Seattle. The Program has included the [Pontoon Construction Project](#), the [Medina to SR 202: Eastside Transit and HOV Project](#), the [Floating Bridge and Landings Project](#), and the [West Approach Bridge North Project](#), which have since been completed. The remaining work will be delivered in four project phases, collectively called [The Rest of the West](#), and will complete WSDOT's enhancement of the SR 520 corridor. The SR 520/I-5 Project is the second of these four phases.

The Community Construction Management Plan (CCMP) was developed as a mitigation commitment for adverse effects from the [I-5 to Medina: Bridge Replacement and HOV Project](#) (I-5 to Medina project) to historic properties during the National Historic Preservation Act Section 106 Consultation process. Because Section 106 consulting parties had significant concerns related to construction effects (both indirect and direct) to historic properties, development of the CCMP was included in the earliest iterations of the [Section 106 Programmatic Agreement](#) (PA). Construction effects (as defined in [36 CFR 800.5\(a\)\(2\)](#)) may include vibration, noise, change of use or physical features of a property's setting, visual, atmospheric or audible intrusions. During the consultation process, the CCMP then became a project-wide commitment, not exclusive to Section 106 PA concurring parties. The PA language references the concurring parties "and others potentially affected by Project construction."

The purpose of this TVMPP, as an appendix to the CCMP, is to describe the standards and project-specific best management practices that will be used as guidance to preserve and protect trees and vegetation within the limits of project construction.

SR 520/I-5 Express Lanes Connection Project Description

The SR 520/I-5 Project includes the construction of a new reversible transit/HOV ramp between the SR 520 and I-5 express lanes, a modified reversible ramp between the I-5 express lanes and Mercer Street, and restriping of the I-5 express lanes to retain the four existing lanes while adding a reversible transit/HOV lane between the I-5/SR 520 interchange and Mercer Street.

These features will ultimately result in stronger connectivity between the growing cities of the Eastside, Seattle's booming South Lake Union neighborhood, and downtown Seattle. Travel between these points will become safer and more reliable via the dedicated, flexible transit/HOV lane. The lane is currently slated to open to transit only in 2023, a full six years in advance of its initially anticipated opening date. Finally, by phasing the SR 520/I-5 Project second in the overall Rest of the West project work, contractor overlap in the Montlake area can be minimized while regional and local traffic movement impacts can be reduced during construction.

The project design team has undertaken a process by which all of the various commitments made by the SR 520 Program through the environmental process will be implemented throughout the various phases of design and construction. A multi-disciplinary team has inventoried all commitments and identified the process, tool, or product that is appropriate for the implementation of the commitment.

Construction Schedule

SR 520/I-5 Project construction is ad to begin in 2020, with completion anticipated in 2023. Compliance with environmental permits will restrict the construction schedule to when some activities, primarily related to the major public project construction noise variance, such as night-time work activities, can occur. Unlike other phases of the I-5 to Medina Project, this phase does not anticipate any environmentally limiting schedule drivers, such as in-water work schedule restrictions.

IV. Environmental Compliance

WSDOT has applied for, and received, various environmental permits and authorizations from federal, state, and local regulatory authorities for the I-5 to Medina Project. Vegetation management is related to compliance with permit regulations as they pertain to natural resource and water quality protection. At the federal and state levels, the I-5 to Medina Project must comply with the vegetation management provisions of the following authorizations:

- National Environmental Policy Act compliance with the Federal Highway Administration and cooperating agencies
- National Historic Preservation Act Section 106 Consultation with the Department of Archaeology and Historic Preservation
- Endangered Species Act Section 7 Consultation with the US Fish and Wildlife Service and NOAA's National Marine Fisheries Service
- Department of the Army Permit issued by the Corps of Engineers
- Water Quality Certification Order issued by the Washington State Department of Ecology
- Hydraulic Project Approval issued by the Washington Department of Fish and Wildlife

As part of the Section 106 PA, the project must also comply with the local City of Seattle tree protection policies and regulations as described below. However, it should be noted that work in this phase of the I-5 to Medina Project is outside of the City, State, and Federal shoreline jurisdictions.

City of Seattle Regulations

As part of the Section 106 PA, the Project must also comply with City of Seattle tree protection regulations contained in Seattle Municipal Code (SMC) Title 25 for all trees within City of Seattle's shoreline and critical area jurisdictions. These regulations include the Environmental Critical Areas (ECA) Ordinance and the Tree Protection Ordinance. This project will not have impacts of vegetated areas within the city's shoreline jurisdiction but will have impacts to steep slope erosion hazard areas shown in [Exhibit A-2](#). This project will remove a limited number of street trees within the City of Seattle right-of-way as defined by the Seattle Department of Transportation's (SDOT) Street Use Ordinance (SMC Title 15), and may implement protection measures as required to protect trees to remain from adjacent project impacts. The SR 520/I-5 construction activities do not trigger Tree Protection Ordinance SMC 25.11 because these activities do not occur on undeveloped lots, which is the jurisdiction of SMC 25.11. [Exhibits A-2](#) and [A-3](#) show where applicable City ordinances have jurisdiction and will be applied within the boundaries of the project limits.

SMC 25.09 - Environmental Critical Areas Ordinance

Project construction activities occur in environmentally critical areas, which triggers SMC 25.09. This ordinance applies to development (defined in Section 25.09.520) that is carried out by any person on publicly or privately-owned parcels containing an environmentally critical area or

buffers. Total area of impacted steep slope critical areas for this project is approximately 1.27 acres. Permanent restoration of steep slope areas, including plant types and plant spacing, is currently being coordinated with Seattle Parks and Recreation as part of the long-term maintenance agreement between WSDOT and the City of Seattle for the Portage Bay Bridge and Roanoke Lid Project.

For trees located within ECAs or ECA buffers the SR 520 Project will:

- Characterize and mitigate impacts to trees, per ECA provisions. The Project will provide mitigation equal in function to those functions that are lost.
- Plant new trees at a density so as to provide ecological and slope stabilization functions to the extent possible. Replacement tree quantity will meet or exceed the ratio given in the WSDOT Roadside Policy Manual per the following table:

Tree replacement size planted (in ANSI z60.1 container class and caliper inches)	Replacement credit DBH inches for trees removed with DBH from 4 inches to 30 inches
#1 container	1
#2 container	2
#5 container or larger deciduous	4
4-foot-height evergreen or larger	4

- Provide a long-term erosion control treatment for slope stabilization functions.
- Provide final restoration of onsite temporary impacts as part of the subsequent phase of the Portage Bay Bridge and Roanoke Lid Project. No offsite mitigation for steep slope impacts are anticipated; however, offsite tree replacement will be considered should there be insufficient area to locate replacement trees onsite given the replacement ratios.

SMC Title 15 - Street Use Ordinance

The SR 520/I-5 Project construction activities near the intersection of East Roanoke Street and 10th Avenue East will trigger SMC Title 15 and thus will require a Street Use Permit from SDOT. The ordinance authorizes and defines City of Seattle’s policy of retaining and preserving trees in public places whenever possible. Accordingly, any work that affects street trees under SDOT’s jurisdiction will require a street use permit. Street tree removal is only permitted by the SDOT Director under certain well-defined conditions, one of which is when a street tree cannot be successfully retained because it conflicts with public construction activities. Removal of any trees within SDOT’s right-of-way will be subject to the requirements and conditions of a City of Seattle Street Use Permit. Three street trees will be removed for the project along the south curb line of E Roanoke Street (see [Exhibit A-3](#) for locations). Restoration for these impacts will occur as part of the subsequent phase Portage Bay Bridge and Roanoke Lid Project.

V. TVMPP Development and Coordination Process

This section describes the process through which the TVMPP was developed, including WSDOT's work to identify and monitor trees in the project area, coordination with stakeholders related to protecting trees and vegetation, and commitments through the SR 520/I-5 Project design process.

Tree Inventory

Trees were identified by a tree survey performed 2009 as part of the project survey and inventory process with select project areas updated during 2019. Survey was completed with survey technicians locating trees with trunk diameter at breast height (DBH) greater than or equal to four inches. Survey data include location, DBH, and species and genus (if possible) for each tree.

Stakeholder Commitments

WSDOT has coordinated with several external stakeholders and stakeholder groups throughout the environmental process for the I-5 to Medina Project. Vegetation management is also addressed through WSDOT's commitments with external stakeholders during that process and documented through various plans and agreements.

Cultural and Historic Mitigation

Section 106 of the National Historic Preservation Act is the primary driver behind cultural and historic mitigation commitments related to vegetation management. A Programmatic Agreement, developed through consultation with affected stakeholders, includes the following key components related to tree and vegetation management:

- WSDOT will revegetate the roadside areas of SR 520 from I-5 to the eastern extent of the Roanoke Lid according to WSDOT standards (see Appendix E, number 9), but will consult with the Portage Bay, Roanoke Park, and North Capitol Hill communities to identify and select plantings compatible with the historic character of the area to the maximum extent practicable.
- To the maximum extent practicable, avoid placement of temporary work bridges and other short-term construction features where they would require permanent removal of or would damage mature trees.
- Conduct vegetation management, including provisions for:
 - Protecting trees and other screening vegetation adjacent to construction work areas from construction impacts
 - Replacing removed trees following City of Seattle street tree standards (see below for the standards).
 - Monitoring of adherence to these commitments
 - Development of the CCMP, to which this document is an appendix, describes anticipated construction effects, applicable commitments, and best practices and tools to minimize the effects of construction on local communities.

SR 520/I-5 Express Lanes Connection Project

This TVMPP focuses on the SR 520/I-5 Project, which is fully funded for construction. This TVMPP may be amended for subsequent phases of the ROTW project, as they approach construction. This TVMPP is intended to satisfy the commitment originating with the CCMP process. As stated in the overview, this TVMPP documents the mechanisms that WSDOT will use in implementing vegetation management during construction of the SR 520/I-5 Project. These mechanisms are further discussed in the subsequent implementation section.

Community coordination and public outreach specific to the SR 520/I-5 Project builds off of efforts previously undertaken prior to starting ROTW project construction. Coordination and outreach specific to the scope of SR 520/I-5 Project was initiated in early 2019 with interested stakeholders including City of Seattle staff, Seattle Design Commission staff, and community members via public meetings and briefings, online material review opportunities, phone calls, email responses, and a variety of other public involvement tools.

This TVMPP will be updated as necessary, and it is anticipated to be updated by addendum around 2021 in preparation for Portage Bay Bridge and Roanoke Lid Project which overlaps in impacts to many of the SR 520/I-5 Project areas near the interchange of Interstate 5 and SR 520.

VI. SR 520/I-5 Express Lanes Connection Project Tree and Vegetation Protection Implementation

This section discusses the means and methods available for ensuring that trees and vegetation will be protected during the SR 520/I-5 Project construction.

SR 520/I-5 Express Lanes Connection Project – Technical Requirements by Vegetation Management Area

These technical requirements were written for the conditions and activities specific to the areas affected by the SR 520/I-5 Project construction. The vegetation management areas described below and shown graphically within [Exhibit A-1](#) are geographically distinct landscapes with unique uses and landscape character. A management area may have more than one vegetation protection zone. Working with individual vegetation management areas enables WSDOT to take a context-sensitive approach to tree and vegetation protection while keeping track of its special details.

Mercer Street Connection

The project area within the Mercer Street vicinity (see [Exhibit A-1](#)) is approximately 10.5 acres, the majority of which is made up of paved roadway facilities (walls, lanes, utilities, bridges, etc.). Trees in this area are primarily limited to landscape areas west of the Eastlake Avenue East bridge crossing the highway ramps. These areas contain a mix of evergreen and deciduous species providing screening of the highway facility from adjacent uses. Tree species include pine, Douglas fir, deodar cedar, maple, aspen, ranging from 20 to 40 years old to trees and vegetation recently planted as part of the City’s Mercer Corridor Project.

For the SR 520/I-5 Project, the existing ramp between the I-5 Express Lanes and Mercer Street will be modified to become reversible. Construction work will occur inward from the ramp’s paved edges. All vegetation affected within this management area is within WSDOT’s right-of-way. Several trees in a subarea immediately north of the westbound off-ramp and west of the Eastlake Avenue bridge will be removed to accommodate the new ramp connection.

Landscaping Goals and Requirements

Revegetation of internal median areas will be comprised of primarily seeding to maintain required sight distances, while impacted vegetation to the north of the ramps will be restored with a mix of evergreen trees and evergreen and deciduous shrubs. Outside of the removal of a limited number of trees in this particular subarea, trees will be protected in place using best management practices including high visibility fence (HVF) and selective pruning.

I-5 & SR 520 Interchange

The I-5 & SR 520 interchange area (see [Exhibit A-1](#)) is approximately 4 acres, with vegetation primarily located between ramps connecting the two highways. Vegetation within this area is primarily grass, with thickets of shrubs and primarily volunteer trees on embankments adjacent ramps transitioning up and down to grade of each highway. Few of the trees that were planted

intentionally in this management area persist, with those that do focused in a landscape area north of the south bound I-5 onramp located between the southbound I-5 lanes and the I-5 express lanes. Tree species include pine, maple, cedar, madrone, and others, with the oldest trees being approximately 50 years old. Most trees within internal areas of the interchange are in poor to fair health.

Trees along the north side of the westbound off-ramp to Roanoke Street to realign the ramp north and construction of a new retaining wall. Trees currently buffer a State Patrol facility and Seattle Fire station from the highway facility.

For the SR 520/I-5 Project, a new ramp between SR 520 and the I-5 express lanes will be constructed. Construction of the new ramp structure, reconstruction of numerous walls supporting existing ramps, and an associated stormwater treatment swale will result in the removal of most trees in this area, with the potential exception of a number of trees north of the westbound SR 520 to southbound I-5 ramp.

Landscaping Goals and Requirements

The goal of the landscape within embankment areas and median is to soften the visual scale of the merging highway facilities, aid driver guidance and to provide long term slope stability of embankment areas. Permanent revegetation of portions of this management area, notably areas east of I-5, will be permanently restored to meet the goals as part of subsequent phases of the ROTW as this future phase will require use of some or all of these areas for construction of permanent I-5 to Medina Project improvements. For steeper slopes which may be impacted by subsequent phases of the ROTW project, long-term erosion control measures will be implemented to bridge the gap between construction phases. Permanent revegetation for the SR 520/I-5 Project will be focused on the median between southbound I-5 and the I-5 express lanes. Planting of the median will entail planting of new trees, shrubs, groundcover and seeding of the stormwater swale.

North Capitol Hill Buffer

The North Capitol Hill Buffer area is composed of two 1.5-acre swaths of forested land on the south side of SR 520, bisected by the 10th Ave East overpass. The character of this area is a native mixed canopy layer of both coniferous and deciduous trees, including Douglas fir, big leaf maple, vine maple, and red alder, and a predominantly invasive understory of such as English ivy and bindweed. The areas currently provides visual screening for adjacent residences. No construction impacts are anticipated for the SR 520/I-5 Project.

Landscaping Goals and Requirements

Landscape goals and requirements for this area should aim to protect vegetation to maintain the desired buffering qualities for adjacent residences. Revegetation of portions of this management area may be phased as an element of subsequent phases of the ROTW project, which will require use of some of these areas for construction of permanent I-5 to Medina Project improvements. For steeper slopes, which may be impacted by subsequent phases of the ROTW project, long-term erosion control measures will be implemented to bridge the gap between construction phases.

East Roanoke Street

The East Roanoke Street area runs from the east edge of I-5 to the point where East Roanoke Street intersects with Delmar Drive East just before the crossing over SR 520. Vegetation in this area is primarily composed of street trees, lawn and planter strip shrub plantings, about two-thirds of the trees within this area are within WSDOT right-of-way with the remaining balance within City right-of-ways. Primary species observed include big leaf and Norway maples, horse chestnut, katsura, Douglas fir, pine and hawthorns.

No impacts are anticipated to existing street trees along Roanoke Street between I-5 and the eastern limits of the fire station for the SR 520/I-5 Project. The SR 520/I-5 Project, including wall and slope construction and roadway realignment will remove most trees east of the fire station extending to Delmar Drive East between the back of sidewalk and the highway edge. Future phases of the ROTW project will require full use of the area east of the fire station and south of the East Roanoke Street curb line for the construction of the future lid between 10th Avenue East and Delmar Drive East. Revegetation will be completed as part of the subsequent Portage Bay Bridge and Roanoke Lid project to integrate this area into the north limits of the future lid.

Landscaping Goals and Requirements

SR 520/I-5 Project goals for this area focus on maintaining the stability of steep slopes prior to implementation of the subsequent Portage Bridge and Roanoke Lid project which will construct a landscaped lid between 10th Avenue East and Delmar Drive East. Long-term slope stabilization may include engineered slopes partnered with seeding and the construction of walls where slopes cannot be accommodated due to existing built features. Trees within planter strips will be protected to the extent practical using City of Seattle best management practices including high visibility fence (HVF) and selective pruning. Any trees removed as part of the SR 520/I-5 Project will be cataloged and replaced at the required 2:1 replacement ratio with a subsequent phase of the ROTW project in coordination with the Seattle Department of Transportation Urban Forester.

VII. References

WSDOT. Westside Final Tree Inventory Technical Memorandum. June 23, 2009.

VIII. Exhibit Maps

Exhibit A-1: SR 520/I-5 Interchange Project Area Map and Management Area

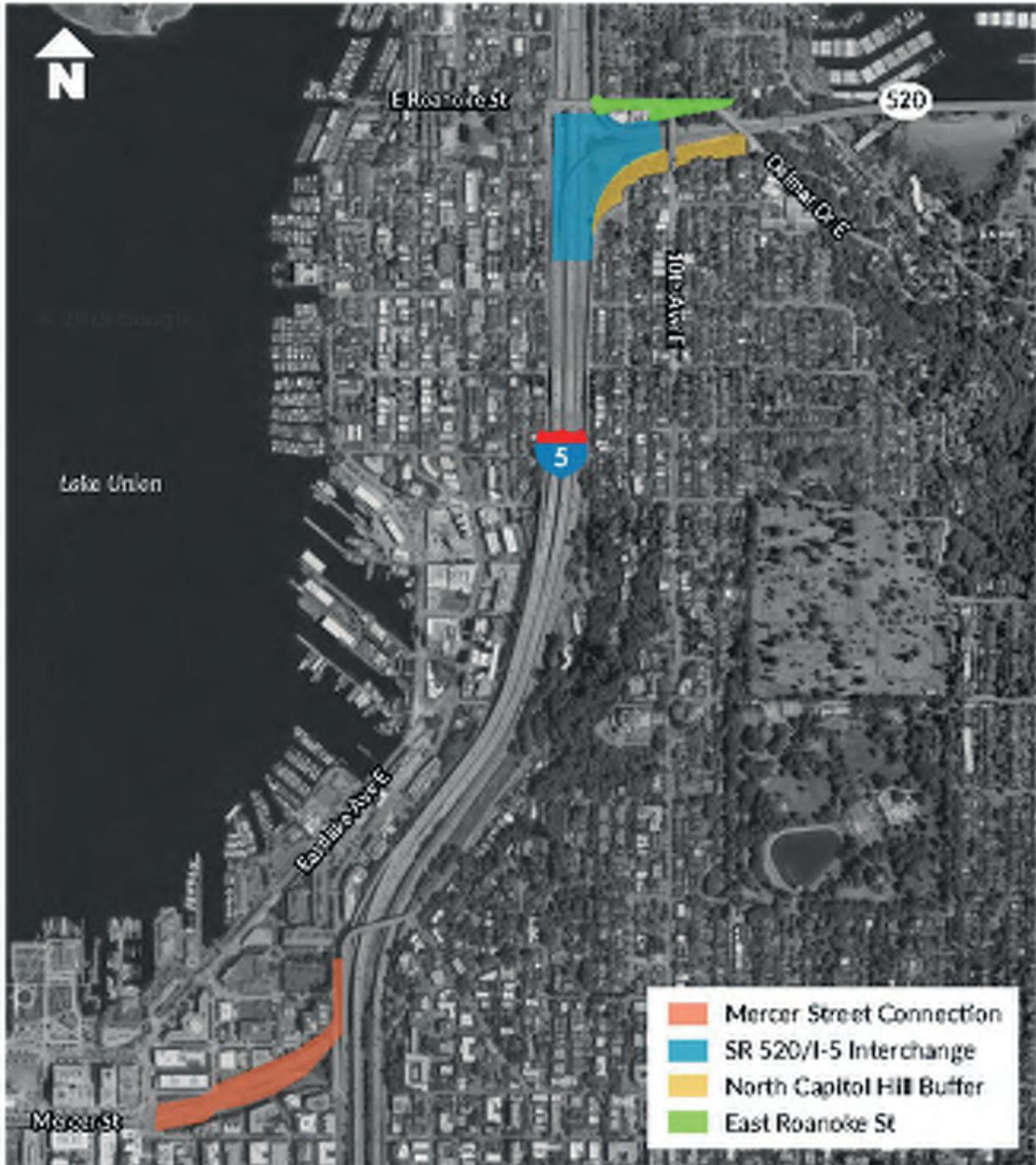


Exhibit A-2: SR 520/I-5 Interchange Project Environmental Critical Areas



Exhibit A-3: SR 520/I-5 Interchange Project Environmental Critical Areas – Roanoke Area

