Washington State Department of Transportation
Vegetation Discipline Report

SR 3 Freight Corridor New Alignment

Washington State Department of Transportation

Olympic Region

Prepared by:

Parametrix
719 2nd Avenue, Suite 200
Seattle, WA 98104

August 2023

Table of Contents

Executive Summary

This vegetation discipline report is one of the environmental elements the Washington State Department of Transportation (WSDOT) will study to analyze the effects of the SR 3 Freight Corridor project. The report analyzes the potential impacts of one Build Alternative and one No Build (i.e., "no-action") alternative.

Description of the Build Alternative (Proposed Action)

The proposed SR 3 Freight Corridor – New Alignment project would construct a two-lane, 6.5-mile highway with a design and posted speed of 50 miles per hour (mph) on a new alignment approximately 3,000 feet east of existing State Route (SR) 3. The major portion of the highway would run through Mason County while the northern end would be in Kitsap County. The proposed alignment would begin at MP 22.81 on SR 3 and connect back to the existing SR 3 alignment at MP 29.49 (see Figure 1). The north end connection to existing SR 3 is proposed just north of SW Lake Flora Road, and the south connection is just south of the intersection with SR 302.

The new roadway would be a managed access facility from the beginning of the alignment at MP 22.81 to the intersection with SR 302 (MP 23.26); then, the facility would switch to limited access from the intersection with SR 302 to the intersection with Lake Flora Road. The proposed bypass highway would carry regional through traffic from Shelton to Bremerton and would be the mainline for SR 3. The existing SR 3 would become a "Business Loop" serving downtown Belfair with connections to SR 106, SR 300, and the Old Belfair Highway.

The purpose of constructing the SR 3 Freight Corridor – New Alignment is to provide a reliable high-speed regional route between Kitsap and Mason Counties, moving freight and regional traffic between Shelton and Bremerton, thus bypassing the urban center of Belfair. This project would reduce congestion and improve safety through Belfair and would provide an alternate route during recurring highway closures resulting from vehicular crashes and other incidents. Implementation of this project would provide safe and reliable regional access to jobs, goods, and services, improve efficiencies for all public service providers, and reduce the current crash rate on SR 3 through Belfair.

How was Information Collected on Vegetation?

The study area roughly extends approximately 300 feet either side of the proposed new alignment. A base map displaying vegetation types within the study area was assembled using aerial photographs, and Geographic Information Systems (GIS) data from various sources. Information on the map was verified and/or revised through field verification visits to the proposed project corridor. Proposed impacts to the various vegetation types described in this report were calculated using GIS.

What are the Key Findings of this Report?

The following key points related to the existing condition and potential effects for vegetation include:

- The vegetation/land use classifications identified within the study area include Commercial and Developed, Rural & Residential, Coniferous Forest, Mixed Forest, Regeneration, Clear-cut, Wetlands, and Roadways / Right of Way (ROW).
- The dominant vegetation/land-use types within the study area are Coniferous Forest and Regeneration.
- The study area has no known occurrences of plant species listed as threatened or endangered under the Endangered Species Act (ESA) or that are candidates for such a listing. Nor are there any plant species of federal concern or species included in the Washington Natural Heritage Program database.
- The proposed project would permanently convert to a developed land cover type as much as 3.72 acres of Rural & Residential area, 45.82 acres of Coniferous Forest, 8.02 acres of Mixed Forest, 19.18 acres of Regeneration, 5.47 acres of Clear Cut, and 0.10 acres of Wetlands.
- Negative effects on vegetation would be avoided and minimized by implementing a variety of avoidance and minimization measures and best management practices.

What are the Significant Unavoidable Adverse Effects?

No significant adverse effects to vegetation are anticipated as a result of this project.

Acronyms and Abbreviations

BED – Bremerton Economic Development
BMP – Best Management Practice
CAD – Computer Aided Design
CAVFS – Compost Amended Vegetated Filter Strip
CFR – Code of Federal Regulations
DNR – Department of Natural Resources
EA – Environmental Assessment
EIS – Environmental Impact Statement
ESA - Endangered Species Act
FHWA – Federal Highway Administration
GC- General Commercial
GC – General Commercial-Business Industrial
GIS – Geographical Information Systems
MU – Mixed Use
MP – Mile Post
NOAA - National Oceanic and Atmospheric Administration
PSA – Puget Sound Area
PSIC-B - Puget Sound Industrial Center - Bremerton
ROW – Right of way
SEPA – Washington State Environmental Policy Act
SR – State Route
UGA - Urban Growth Area
US 101 – United States 101
WDFW – Washington State Department of Fish and Wildlife
WRIA – Water Resource Inventory Area
WSDOT – Washington State Department of Transportation
WSNWCB – Washington State Noxious Weed Control Board

Glossary of Terms

BMP – BMPs (Best Management Practices) are generally accepted techniques that, when used alone or in combination, prevent or reduce adverse effects of a project. Examples include erosion control measures and construction management to minimize traffic disruption.

Commercial & Developed (Habitat Type) – This habitat type is largely made up of commercial areas composed of buildings and impermeable surfaces that have replaced historic vegetation. Belfair High School property is also included in this habitat type.

Coniferous Forest (Habitat Type) – These forested areas are dominated by conifers which are usually evergreen and bear cones.

Herbaceous – A plant that has leaves and stems that die down at the end of the growing season to the soil level. They have no persistent woody stem above ground.

Mixed Forest (Habitat Type) – Land dominated by a mix of coniferous trees and deciduous broadleaved trees.

Noxious Weed – Non-native, invasive species that contribute to the loss of agricultural production or ecological diversity.

Overstory – The upper layer of vegetation in a forest canopy.

Riparian (Habitat Type) – Riparian vegetation refers specifically to plant communities that are adapted to wet conditions, are distinct from upland communities, and occur immediately adjacent to aquatic systems.

Rural and Residential (Habitat Type) – This habitat type is characterized by sparsely placed houses, garages, outbuildings, and other human-made structures and their surroundings outside of urbanized areas. It includes a combination of natural and human-constructed surfaces.

Snag – The remains of a dead but still standing tree; provides nesting and perching habitat for many wildlife species.

Special-Status Plant Species – Special-status plants species are: listed as threatened or endangered under the Endangered Species Act; either proposed for or are candidates for such listing; federal species of concern; or included in the Washington Natural Heritage Program database.

Stormwater Detention Ponds – Ponds constructed to hold stormwater runoff.

Understory – The plants of forest undergrowth; an underlying layer of vegetation.

Upland Vegetation – Vegetation associated with dry areas away from water or wetlands; vegetation that is not located within the area influenced by a body of water.

Vegetation Discipline Report

1 Introduction

Description of the Build Alternative (Proposed Action)

The proposed SR 3 Freight Corridor – New Alignment project would construct a two-lane, 6.5-mile limited access highway with a design and posted speed of 50 miles per hour (mph) on a new alignment approximately 3,000 feet east of existing State Route (SR) 3. The major portion of the highway would run through Mason County while the northern end would be in Kitsap County. The proposed alignment would begin at MP 22.81 on SR 3 and connect back to the existing SR 3 alignment at MP 29.49 (see Figure 1). The south end connection to existing SR 3 is proposed just south of the intersection with SR 302 , and the north connection is just north of SW Lake Flora Road.

Figure 1. SR 3 Freight Corridor Project Vicinity

The new roadway would be a managed access facility from the beginning of the alignment at MP 22.81 to the intersection with SR 302 (MP 23.26); then, the facility would switch to limited access from the intersection with SR 302 to the intersection with Lake Flora Road. The proposed bypass highway would carry regional through traffic from Shelton to Bremerton and would be the mainline for SR 3. The existing SR 3 would

become a “Business Loop” serving downtown Belfair with connections to SR 106, SR 300, and the Old Belfair Highway.

The typical cross-section of the proposed improvement is shown in Figure 2. Construction elements would include the following:

- Two 12-foot travel lanes with 8-foot shoulders.
- Stormwater treatment facilities – natural dispersion and infiltration, compost-amended vegetated filter strips, and treatment wetlands.
- Two roundabouts to connect the south end of the new corridor to the existing SR 3 corridor at SR 302
    - The western roundabout would provide access to the existing SR 3 corridor
    - The eastern roundabout would provide access to SR 302 and the proposed SR 3 Freight Corridor
- A roundabout at the north end of the alignment to connect the existing SR 3 corridor to the new corridor at Lake Flora Road.
- Right-in-right-out access to provide access to North Mason High School and Belwood Lane.

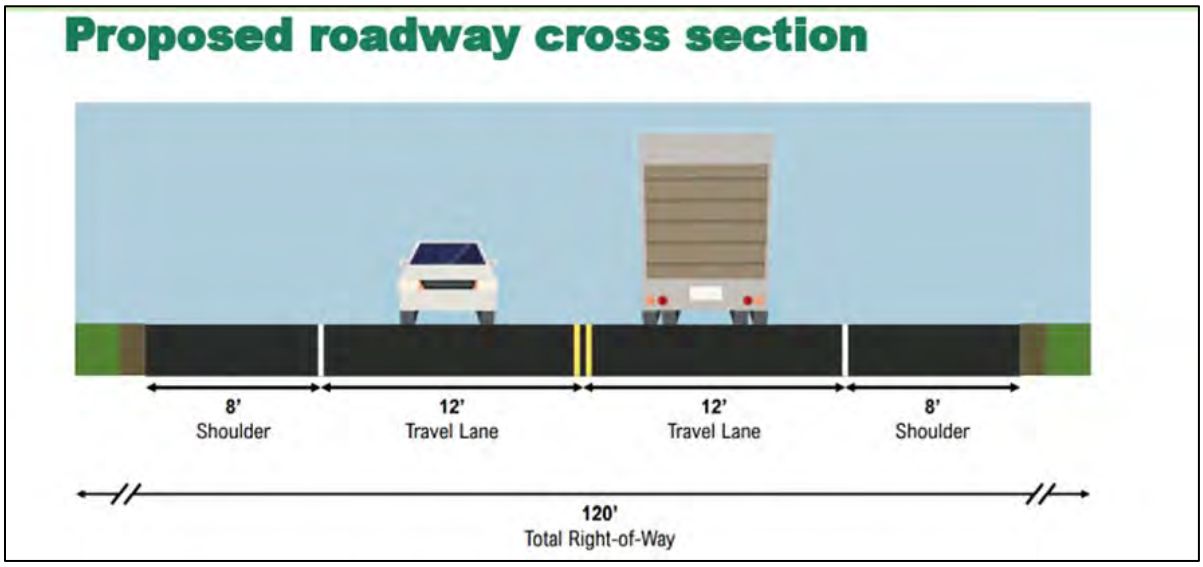

Figure 1. SR 3 Proposed Highway Cross-section

What is the Purpose of This Project?

The purpose of constructing the SR 3 Freight Corridor – New Alignment (Freight Corridor) is to provide a reliable high-speed regional route between Kitsap and Mason Counties, moving freight and regional traffic between Shelton and Bremerton, bypassing the urban center of Belfair. This project would reduce congestion and improve safety through Belfair and would provide an

alternate route during recurring highway closures resulting from vehicular crashes and other incidents. Implementation of this project would provide safe and reliable regional access to jobs, goods, and services, improve efficiencies for all public service providers, and reduce the current crash rate on SR 3 through Belfair.

Why is the SR 3 Freight Corridor – New Alignment Project Needed?

A Freight Corridor around Belfair is needed to improve regional mobility for freight, passenger vehicles, and transit. The improvements would increase mobility, reduce congestion through Belfair, and improve safety.

Increase Mobility

SR 3 in the Belfair urban area experiences chronic traffic congestion and declining operational Levels of Service (LOS) for traffic. Because SR 3 is the major north- south link between Mason and Kitsap counties, Belfair is a choke point on this regional highway and serves as the only freight route through southwest Kitsap and northeast Mason Counties. SR 3 is designated as a critical rural freight corridor and is part of the National Highway Freight Network (NHFN). SR 3 is also identified as a National Highway System (NHS) route and as a Highway of Statewide Significance (HSS). The National Highway System route designation extends from the Hood Canal Bridge in the north to Shelton in the south, passing through the Belfair urban area, the City of Bremerton, the Puget Sound Industrial Center - Bremerton (PSIC - B), and connecting with SR 16.

SR 3 carries most of the daily commute trips from SR 106, SR 300 and populated coastal areas in Mason County north to Bremerton and via SR 16 to points in Pierce and King Counties. Regional traffic using SR 3 must pass through the commercial area of Belfair having numerous access points with high turning volumes. Southbound traffic destined for Shelton, Grays Harbor, and Olympia also must pass through Belfair.

Reduce Congestion

A combination of freight, commute, and recreational traffic volumes cause severe congestion through the Belfair urban area. Congestion is occurring during peak commute hours (7:00-9:00 AM and 4:00-6:00 PM), weekends, holidays, and during the tourist season (May-September).

SR 3 had an average of 19,000 vehicles per day in 2018 south of Lake Flora Road. Highway LOS analysis shows the one-mile segment of SR 3 north of Lake Flora Road, the signalized intersection at NE Clifton Lane, and the unsignalized intersection at Old Belfair Highway, are all failing LOS standards (see also the *SR 3 Freight Corridor Transportation Discipline Report*).

Several studies conducted over the last decade have shown that traffic congestion and safety concerns will overwhelm SR 3 in the near future. The operational analysis of the project area indicates that the roadway currently operates below minimum acceptable service standards on this portion of the highway. Without the Freight Corridor, operational performance for freight and regional through traffic on the portion of existing SR 3 through Belfair will continue to decline to the point of chronic failure by 2045. If no action is taken, travel times in the project area are expected to get worse as future traffic volumes increase.

The current highway does not support regional transportation needs. This route experiences seasonal fluctuations from tourist traffic and recreational users and is the most direct and expedient alternate land route for traffic from Bremerton to Interstate 5 if SR 16 or the Tacoma Narrows Bridge becomes blocked. Southbound traffic destined for Shelton, Grays Harbor, and Olympia must pass through Belfair. As land located in the corridor continues to be developed, and regional trips continue to increase, traffic congestion through Belfair will be exacerbated. The Bremerton Economic Development (BED) Study for US 101, SR 3 and SR 16 in Mason and Kitsap Counties (WSDOT 2012a) showed the Freight Corridor project was the top priority project for the local communities and stake holders.

If the Freight Corridor project is not built, the SR 3 would be an important regional facility that will fail to provide efficient regional and local traffic mobility. A bypass would improve the roadway system around Belfair and would reduce travel time.

Improve Safety

Crash records in the study area indicate that the type and severity of crashes appears to be consistent with congested urban conditions. Rear-end and property damage only (PDO) or non-injury crashes account for the greatest number of crashes. The number of crashes tends to increase under congested conditions, but the severity of those crashes is generally lower, due to lower speeds. In the study area, between January 2018 and December 2022, 402 crashes were reported. Two were fatal crashes and eight were serious injury crashes. One serious injury crash was at the intersection of at the Lake Flora Rd intersection (MP 28.78). The remaining two fatal crashes and seven serious injury crashes. During this time, 330 crashes occurred between the study intersections with the majority occurring between Lake Flora Road to NE Clifton Lane (42%) and between NE Clifton Lane to SR 106 (40%).

Support of Local Plans

The area is developing based on local agency comprehensive plans and zoning. However, the area lacks a completed transportation network appropriate for the community. The Bremerton Economic Development (BED) Study showed the SR 3 Freight Corridor is the top priority project for the local communities and stakeholders. The Freight Corridor has been included in the transportation elements of the Mason County and the City of Bremerton comprehensive plans.

2 Description of Alternatives

Alternative 1: No Build

Under the “No Build” alternative, the proposed project would not be constructed. This alternative may have some minor improvements during normal maintenance activities and/or small cost operational enhancements.

Alternative 2: Proposed Action

The proposed SR 3 Freight Corridor – New Alignment project Build Alternative would construct a two-lane, 6.5-mile limited access highway, as described in Section 1, above.

3 Methodology

Vegetation Study Area

The study area for vegetation was determined to be the area approximately 300 feet on either side of the current proposed ROW (Appendix A).

Methods and Coordination

To conduct a preliminary analysis of the vegetation and land-uses in the study area, the following resources were used:

- ESRI World Imagery (2018);
- Kitsap County Weed List (Kitsap County 2013);
- Mason County Weed List (Mason County 2019);
- Geographical Information System (GIS) data available from WSDOT;
- Washington Department of Natural Resources (DNR) Washington Natural Heritage Program database (DNR 2021a)
- Washington Department of Natural Resources (DNR) Washington Wetlands of High Conservation Value (DNR 2021b)Washington Gap Project – Land Cover for Washington State (Washington Cooperative Fish and Wildlife Research Unit, University of Washington 1991);
- Washington State Noxious Weed Control Board (2021)
- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species data (WDFW 2021)

Field verification visits were originally conducted by WSDOT biologists on October 5th and December 8th, 2011. Parametrix biologists conducted a follow-up field visit on January 14th, 2021. Vegetation units were confirmed and/or revised on the base map as a result of this visit. Noxious weeds, as listed by the Washington State Noxious Weed Control Board (WSNWCB 2021), were documented during these visits. The vegetation classification base-map is shown in Appendix A.

Studies and Coordination

The United States Fish and Wildlife Service, the WDFW Priority Habitats and Species Program, and the Washington Natural Heritage Program maintain records of sensitive, threatened, and endangered species occurring in the state. No sensitive, threatened, or endangered animal species are indicated as occurring on GIS and none were observed on site during field investigations.

4 Affected Environment

Existing Land Use

The study area for the SR 3 Freight Corridor project is primarily located in the northeast corner of Mason County with the northern terminus of the project located in the southwest corner of Kitsap County within the city limits of Bremerton. Land use types in the study area vary and include residential, commercial, vacant or undeveloped, and resource lands.

Despite increasing populations in urban growth areas (UGAs), Mason County remains a predominantly rural county (Mason County 2016). State law (RCW 43.160.020) defines a rural county as having fewer than 100 people per square mile. The county includes extensive forested areas, major water bodies, and rolling to mountainous terrain. Forest lands, managed by federal, state, or private entities, account for 50 percent of the land area making up Mason County. The UGAs of Shelton, Belfair, and Allyn will serve as the primary core areas for future residential and commercial growth. Additionally, two native tribes, the Skokomish, and Squaxin Island Tribes, have reservations within the boundaries of Mason County. The SR 3 Freight Corridor project passes through a variety of land use zones and types within the 6.5-mile project study area. The study area lies primarily within a rural environment while passing through the unincorporated Belfair UGA and terminating within the Puget Sound Industrial Center - Bremerton (PSIC - B), formerly named the South Kitsap Industrial Area . Much of the area in both Mason and Kitsap County is undeveloped forested land.

The southern terminus of the proposed project begins in Mason County in the vicinity of the intersection of SR 3 and SR 302. South of the Belfair UGA southern boundary, the bulk of the land within one-half mile of the proposed alignment is designated as Rural Residential 5 Acres (RR-5AC), allowing residential development of one residence per five acres. There is also land designated as Rural Residential 10 Acres (RR-10 AC), allowing one residence per ten acres, within the area to a lesser extent. Most of R-10 AC land designation is located within the vicinity of the southern terminus (vicinity of SR 3/SR 302). Immediately west of the SR 3/SR 302 intersection the land is designated as Rural Tourist, which corresponds with the land around Lake Devereaux and Girl Scout Camp St. Albans.

Located within the area of the southern terminus where the proposed alignment connects with the current SR 3 is a residential development (Belwood Estates) on 1/3-acre to 1/4-acre lots, the North Mason School District campus (121.5 acres), and a church. The Allyn UGA lies approximately 1/3 mile to the south of the project limit (Mason County 2021).

As the proposed alignment proceeds north it crosses into the Belfair UGA and into Kitsap County. The project alignment within Kitsap County passes through land zoned for residential usage (RR-5) and incorporated City. Other land use designations within one-half mile of the proposed alignment includes land zoned as Rural Protection (RP- 1 dwelling per 10 acres), Industrial (IND), and Business Park (BP) (Kitsap County 2018).

Vegetation Classifications in Study Area

Vegetation and land use within the study area were classified to assess wildlife associations and evaluate vegetation impacts.[1] The classifications generally follow those used in *Wildlife-Habitat Relationships in Oregon and Washington* (Johnson and O'Neil 2001). The eight cover types identified in the project area include: Commercial and Developed, Rural Residential, Coniferous Forest, Mixed Forest, Regeneration, Clear-cut, Wetlands, and Roadway/ROW. Appendix A shows the vegetation classifications, including total habitat in the study area and total area affected. Appendix B provides a plant species list, noxious weed information, and vegetation class associations. Appendix C provides representative photos of each classification.

Commercial and Developed

Land use within this classification is largely composed of commercial areas and the public high school. Temperatures are generally elevated, background lighting is increased, and wind velocity can be somewhat higher. Physical structure is characterized by buildings and impermeable surfaces that have largely replaced the historical vegetation. Some human made structures provide habitats similar to those of cavities, caves, fissures, cliffs, and ledges. Structural features typical of the historic vegetation such as snags, dead and downed wood, and brush piles are nearly completely removed from the landscape. Understory vegetation is minimal or sometimes completely absent. Native and non-native vegetation including ornamental and invasive species are minor components of this largely built environment as are various natural ground surfaces. Noise can be significant and often without a vegetative buffer.

Rural and Residential

This classification is characterized by human dwellings and land-uses that include a combination of natural and human-constructed surfaces. The physical structure includes sparsely placed houses, garages, outbuildings, and other various human-made structures that can sometimes serve as habitat features. These are intermixed with somewhat larger natural-surfaced areas that include unmanaged vegetation, planted and landscaped areas; mowed and un-mowed lawns and fields; and fencerows. A small component of brush piles, snags, dead and downed wood are present. Native and non-native vegetation including ornamental and invasive species comprise the mixed vegetation. Noise can be significant and often without a vegetative buffer.

Coniferous & Mixed Forest

Areas mapped as Coniferous Forest or Mixed Forest within the study area are generally remnant patches of Westside Lowlands and Coniferous Hardwood Forest as described in *Wildlife-Habitat Relationships in Oregon and Washington* (Johnson and O'Neil 2001). This is the most extensive habitat in the lowlands of Western Washington generally forming the matrix within which other habitats occur. It is generally dominated by evergreen conifers, deciduous broadleaf trees, or both. Composition is diverse with common overstory species including Douglas fir (*Pseudotsuga*

[1] Wildlife associations and potential effects of this project on wildlife are discussed in a separate wildlife discipline report (WSDOT 2021b).

menziesii), western redcedar (*Thuja plicata*), bigleaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), and black cottonwood (*Populus balsamifera*). Common understory species include salal (*Gaultheria shallon*), evergreen huckleberry (*Vaccinium ovatum*), bracken fern (*Pteridium aquilinum*), snowberry (*Symphoricarpos albus*), ocean spray (*Holodiscus discolor*), salmonberry (*Rubus spectabilis*), red elderberry (*Sambucus racemosa*), and trailing blackberry (*Rubus ursinus*). Those areas in excess of 50 percent aerial coverage of coniferous trees were mapped as "Coniferous Forest". Coniferous Forest within the study area is generally managed as timberland.

Regeneration

Areas mapped as Regeneration are those areas where vegetation is dominated by coniferous trees but where the tree ages are estimated to be between 3 and 10 years. These are areas where Coniferous Forest has been recently logged and where young coniferous trees have become re-established. The dominant species is Douglas fir. Shore pine (*Pinus contorta*) is also present as a dominant or sub-dominant species in some areas. Aside from the young trees, the physical structure in these areas includes stumps, brush piles, dead or downed wood, native shrubs, Scot's broom (*Cytisus scoparius*), and a combination of other native and non-native herbaceous vegetation.

Clear-cut

Areas mapped as Clear-cut are those areas where Coniferous Forest has been removed through logging and where either there is no regeneration, or regenerating trees are under three years old.

Physical structure in these areas includes stumps, brush piles, dead or downed wood, a possible understory of native shrubs, and a combination of native and non-native herbaceous vegetation.

Wetlands

Thirty-eight wetlands were identified in the project area. Wetlands are associated with three of the other land-use classifications in this report (Coniferous Forest, Mixed Forest, Regeneration, Clear-cut) and include palustrine forested, scrub-shrub, and emergent wetland vegetations types (Cowardin 1979). Typical dominant plant species include red alder, Douglas' spirea (*Spiraea douglasii*), salmonberry, and slough sedge (*Carex obnupta*).

The wetlands generally provide low to moderate levels of biological, chemical, and physical functions. Generally, most of the wetlands provide some habitat functions. Water quality functions are less commonly provided due to the lack of nutrients and toxicants entering from adjacent forested areas. Many of the wetlands also don't provide water storage in situations where water would otherwise contribute to down gradient flooding. Using Ecology's four tiered rating system, one is considered Category II; twelve are considered Category III, and twenty-five are considered Category IV (Hruby 2014).

See the Wetland and Streams Assessment report for more details about wetlands within the study area (WSDOT 2020).

Roadway and ROW

A minor amount of area is mapped as Roadway/ROW. This area is comprised of existing portions of SR 3, SR 302, and Lake Flora Road within the study area. Some minor portions of the ROW comprised mainly of maintained areas of herbaceous non-native vegetation are also included in this classification.

Noxious Weeds

The Washington State Noxious Weed Control Board maintains a list of plant species considered to be noxious (WSNWCB 2021). Noxious weeds are non-native, invasive species that contribute to the loss of agricultural production or ecological diversity. Weeds are classified as A, B, or C. Class A weeds have limited distribution state-wide and should be eradicated according to state law. Class B weeds are species that are only abundant in some parts of the state. In areas of limited abundance (i.e., B designate), control of seed production is required; otherwise, control is a local option. Class C weeds are species present throughout the state or of agricultural importance and where control is left to the local entities.

Noxious weeds were found at minimal levels scattered throughout the project area. Noxious weeds observed include reed canarygrass *(Phalaris arundinacea)*, oxeye daisy *(Leucanthemum vulgare*), common St. John's wort *(Hypericum perforatum)*, Canada thistle *(Cirsium arvense*), bull thistle *(Cirsium vulgare)*, Scot's broom, field bindweed *(Convolvulus arvensis)*, and hairy cat's ear *(Hypochaeris radicata)*. These noxious weeds are included on the plant list in Appendix B with their associated noxious weed status according to the WSNWCB, Kitsap County, and Mason County [WSNWCB 2021; Kitsap County 2013; Mason County 2019].

Special-Status Plant Species

Special-status plants species are plant species that are: listed as threatened or endangered under the Endangered Species Act; either proposed for or are candidates for such listing; federal species of concern; species of local importance, or species included in the Washington Natural Heritage Program database. There is no documented evidence of special-status plant species in the study area (DNR 2021). There were also no special-status plant species identified during on site field investigations.

5 Environmental Consequences

Build Alternative

Effects During Construction

Direct Effects

Construction activities associated with the Build Alternative would result in the permanent conversion of Coniferous Forest, Regeneration, Rural and Residential, Mixed Forest, Clear-cut, and Wetlands to a developed condition within the area of the project footprint. The permanent impact acreage of each of these affected habitat types is shown in Table 1. See Figures 5-1 to 5-4 in Appendix A for the mapped vegetation classifications within the study area.

Table 1. Permanent Impacts by Classification

	Area Affected (square feet)	Area Affected (acres)
Coniferous Forest	1,995,767	45.82
Regeneration	835,616	19.18
Mixed Forest	349,211	8.02
Clear-cut	238,258	5.47
Roadway/ROW	175,039	4.02
Rural/Residential	162,198	3.72
Commercial / Developed	14,414	0.33
Wetlands	4,533	0.10
Total	**3,775,037**	**86.66**

Temporary effects to vegetation would also occur outside of the project footprint and within the SR 3 Freight Corridor ROW. Areas that would have temporary impacts include areas designated to be temporarily affected by construction equipment, and areas within 10-feet of cut and fill lines that are designated for clearing and grubbing.[2] Temporarily disturbed areas would be replanted with native vegetation and managed to minimize reestablishment of noxious weeds.[3] Temporary impacts by vegetation type are shown in Table 2.

[2] The temporary impact values presented in Table 2 reflect the 10-foot clearing and grubbing area outside the cut and fill lines. Additional areas for temporary impact (e.g., staging areas) have yet to be designated. An addendum to this report may be warranted at a later date if there is change in proposed impacts.

[3] Some areas may also be seeded with a standard erosion control mix which includes appropriate non-invasive, non-native species.

Table 2. Temporary Impacts by Classification

Vegetation Type	Area Affected (square feet)	Area Affected (acres))
Coniferous forest	435,977	10.01
Regeneration	158,100	3.63
Mixed forest	66,490	1.53
Clear-cut	54,970	1.26
Roadway/ROW	35,570	0.82
Rural/residential	39,321	0.90
Commercial/developed	8,045	0.18
Wetland	2,025	0.05
Total	**800,499**	**18.38**

As shown in the above tables, most project effects would occur in the Coniferous Forest and Regeneration vegetation types. These land use types are common in the region. Less impact is proposed to Mixed Forest, Clear-cut, Roadways and ROW, Rural and Residential, commercial/developed, and Wetlands. Among these habitat types, unique vegetation types are not expected to be lost as a result of this project. Proposed unavoidable impacts to jurisdictional wetlands and their buffers are addressed in the Wetland Discipline Report for this project (Beall & Dreisbach 2012; WSDOT 2021a).

Special-Status Plants:

There is no documentary evidence of special-status plant species in the study area (DNR 2021).

Noxious Weeds:

The project would eradicate some of the noxious weeds through vegetative and seed bank removal. Conversely, there is a potential to introduce additional noxious and invasive species with the proposed improvements. This could occur through movement of seeds on construction equipment or vehicles. Measures proposed in the Avoidance and Minimization section below would aid to minimize this possibility. Routine maintenance of the WSDOT ROW within the biological study area would include mowing grass in medians and along the shoulders. Maintenance may also include removal of trees and branches that are a hazard to the highway. WSDOT, Kitsap County, or Mason County may apply herbicides to manage invasive non-native species such as blackberry, Scot’s broom, etc.

Impact Minimization Measures and Mitigation:

Wetlands are among the six other vegetation classifications described in this report. Wetlands and special aquatic sites are protected under Presidential Executive Order 11990, "Protection of Wetlands," Governor's Executive Orders EO 89-10 and EO 90-04, "Protection of Wetlands (Governor of the State of Washington 1989)," and WSDOT Directives 22-27 (WSDOT 1979) and Policy Statement P2038.00 (WSDOT 2011). These orders and directives require the use of all practicable measures to avoid impact and provide mitigation for any unavoidable impacts.

Wetland avoidance and minimization measures implemented during the design of this project were substantive. Avoidance and minimization measures are discussed in greater detail in the Wetland Discipline Report for this project (Beall & Dreisbach 2012; WSDOT 2021a). Compensatory wetland mitigation would be in accordance with a separate approved wetland mitigation plan and be constructed per the contract plans.

Impact minimization measures and Best Management Practices (BMPs) are also implemented to reduce or eliminate the effects of the project to listed species or habitat. These are included in the WSDOT Standard Specifications, Special Provisions, and the contract plans. Some examples of these follow.

WSDOT Standard Specifications (WSDOT 2021c):

- Existing vegetation, where shown in the plans or designated by the Engineer, shall be saved and protected through the life of the contract. The Engineer shall designate the vegetation to be saved and protected by a site preservation line, high visibility fencing, or individual flagging [1-07.16(2)].
- Roadside cleanup, as directed by the Engineer, may include smoothing and contouring the ground, and reshaping disturbed areas to blend naturally with surroundings. Methods and equipment used in roadside cleanup shall be approved by the Engineer. [WSDOT Standard Spec. 2-01.3(4) Roadside Cleanup.]
- The Contractor shall acquire all permits and approvals required for the use of the disposal site. The Contractor shall provide the Engineer the location of all disposal sites to be used and also provide copies of the permits and approvals for such disposal sites before any waste is hauled off the project. Disposal of excess material within a wetland area shall not be allowed without a Section 404 permit issued by the U.S. Corps of Engineers and approval by the local agency with jurisdiction [2-03.3(7)C].

Indirect Effects

Impacts to vegetation in the study area may cause the displacement of wildlife into neighboring habitats. Depending on the ability of the neighboring habitat to support additional wildlife, this displacement may lead to crowding wildlife and a decrease in habitat quality. The addition of a new highway to the east of Belfair may make wildlife movement more difficult. This may lead to a long-term increase in wildlife mortality from vehicle collisions in the study area (WSDOT 2021b). There may also be a loss of wetland functions at specific individual locations within the project. Wetland mitigation for unavoidable wetland impacts would likely be consolidated at one or more large sites within the drainage basin. The specifics of wetland mitigation are discussed in a separate wetland mitigation report.

Effects during Operation

Direct Effects

Under the Build Alternative, vegetation would be managed within the SR 3 Freight Corridor ROW. Management activities include periodic mowing and selective herbicide application, removal of dead or dying trees and tree limbs that could fall on the roadway, and clearing brush that encroaches on the roadway. These activities affect vegetation by preventing trees from establishing too close to the road and preventing forested areas from developing natural features such as snags and downed wood where there is potential to impact traffic safety. Weed control would also occur as needed for noxious weed species as designated by state and county law.

Impact Minimization Measures:

Areas temporarily disturbed by construction would be restored following construction using a combination of native and naturalized species appropriate to the highway roadside. Weed control activities would be carried out using Integrated Vegetation Management prescriptions for most effective control and/or eradication of these legally designated noxious weeds, while protecting and preserving desirable species.

Cumulative Effects

Cumulative effects are impacts on the environment that result "…*from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time*." (40CFR 1508.7).

Cumulative impacts associated with the Proposed Action Alternative relate to the combination of factors that could create development pressure to convert forested and undeveloped land lying outside of the study area. The proposed project would contribute to cumulative impacts on adjacent land uses that may result from other projects that may occur along, or near, the proposed project route. (WSDOT 2021a)

A land use cumulative effects analysis is provided in the Land Use and Relocation Discipline Report for the project (WSDOT 2021a). Therein, the geographic scope for examining the cumulative effects of the proposed project has been defined as the boundary of parcels within or partially within the study area. The temporal boundaries (timeframe) for examining the cumulative effects of the project have been defined as 2020 through 2040. For more comprehensive coverage of past actions in the area, as well as current and reasonably foreseeable future actions, see the Land Use and Relocation Discipline Report (2021d). A summary of that analysis with a focus on vegetation follows.

Approximately 115[4] acres would be directly converted to transportation-related use under the Proposed Action Alternative. Of this total, 84 acres are vegetated land types including Coniferous Forest, Mixed Forest, Regeneration areas, and Wetlands. Other land types with proposed impacts such as Rural and Residential areas and Clear-cut areas also typically have a vegetation component. This incremental effect along with other land use effects and transportation improvement projects in the region could contribute to and hasten the development of similar vegetated lands within the area. These types of effects would likely be most noticeable at near the north and south access points of the project. In these areas it seems likely that some Coniferous Forest land may become converted to Rural and Residential and Commercial. Some Rural and Residential area may become converted to Commercial (Appendix A). Lands near the interior of the project are less likely to see accelerated changes due to limited access (WSDOT 2021a).

In Mason County the Proposed Build Alternative may serve to accelerate planned development along the proposed corridor by substantially improving travel and accessibility, especially in the vicinity of the new access points. It is clear that a new highway alignment has the potential to make the eastern undeveloped portion of the Belfair UGA attractive, by providing access to an area that has been isolated, requiring access primarily via logging roads. Accessibility combined with improved travel time would attract new interest to the area (WSDOT 2021a).

Several development projects have been implemented and are planned for construction in the reasonably foreseeable future in Mason County to accommodate population growth in UGAs. These projects involve transportation and utilities improvements and residential development. The proposed Build Alternative along with other planned transportation improvements are consistent with plans and policies established by Mason County, which encourage investment in infrastructure within the urban growth area, mobility, economic development and urban development. A conversion to higher-intensity land uses including the conversion of land areas that are predominantly vegetated is expected. It will, however, occur according to land use plans, zoning designations and regulations adopted pursuant to the Growth Management Act by Mason County (WSDOT 2021d).

On the northern end of the project in Kitsap County, a subarea planning process was completed for the PSIC-B (first adopted as the South Kitsap Industrial Area) to plan for economic growth and job development while also protecting natural environments. This major planning effort by the City of Bremerton examined future growth scenarios under different zoning and provides detailed regulatory and zoning designations (Bremerton 2012).The Proposed Action Alternative is compatible with existing land use plans and growth management efforts (WSDOT 2021d). In combination with planned and completed PSIC-B transportation improvements, the Proposed Build Alternative could alter the rate, timing, and location of development especially in the vicinity of the northern terminus of the new alignment with Lake Flora Road. The proposed

[4] This is the total of each of the classifications in Table 1 minus the 4.02 acres of "Roadways / ROW". The 4.02 acres of "Roadway / ROW" is, by definition, already in a transportation related land use.

Build Alternative would provide improved travel and accessibility within this area. (WSDOT 2021d)

The proposed alternative represents one of a number of planned improvements occurring within the study area. Many other factors will influence land use decisions, including economic conditions, zoning, and land supply. Overall, it is anticipated that the Proposed Action Alternative would support economic development in the area with the likely effect of supporting the conversion of some vegetated land use types to a more developed condition. The proposed alternative contributions to the cumulative effects on the conversion of land would not, however, be adverse in combination with other past, present, and reasonably foreseeable future actions.

No-Build Alternative

Under the No-Build Alternative there would be no construction- or operation-related impacts.

6 Significant Unavoidable Adverse Effects

Significant Effects of Build Alternative(s)

No significant adverse effects to vegetation are anticipated as a result of this transportation project.

7. References

Beall, Jodie and P. Dreisbach 2012. SR 3 Belfair Bypass Project Wetland Discipline Report. Washington State Department of Transportation, Olympic Region Environmental and Hydraulic Services, Tumwater, WA.

Bremerton, City of. 2012. Puget Sound Industrial Center- Bremerton Subarea Plan (First adopted as the South Kitsap Industrial Area Subarea Plan). Published August 2012 with Minor Amendments May 2016. Bremerton, WA.

Cowardin, L.M., V Carter, F.C. Golet, E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Government Printing Office, Washington D.C.

Dreisbach, P. 2012. SR 3 Belfair Bypass Project Vegetation Discipline Report. Washington State Department of Transportation, Olympic Region Environmental and Hydraulic Services, Tumwater, WA.

Governor of the State of Washington. 1989. Executive Order EO 89-10 and 90-04, "Protection of Wetlands". December 11, 1989, Olympia, WA.

Hruby, T. 2014. Washington State Wetland Rating System for Western Washington: 2014 Update. Washington Department of Ecology, Publication No. 04-06-025. Olympia, WA.

Johnson, D.H. & O'Neil, T.A. 2001. Wildlife-Habitat Relationships in Oregon and Washington. Oregon State University Press. Corvallis, Oregon.

Kitsap County, WA

2013 Kitsap County Weed Control Board https://www.nwcb.wa.gov/kitsap-county-noxious-weed-control-board

2020 Kitsap County Critical Areas Ordinance https://www.codepublishing.com/WA/KitsapCounty/html/Kitsap19/Kitsap19.html

2018 Kitsap County Zoning Map https://www.kitsapgov.com/dcd/DCD%20GIS%20Maps/Zoning_Map_2018.pdf

Mason County, WA

2016 Mason County Comprehensive Plan 2036. https://www.co.mason.wa.us/community-services/planning/2036-comp-plan-update/full-plan.pdf

2019 Mason County Weed Control Board. https://www.nwcb.wa.gov/mason-county-noxious-weed-control-board

2020 Mason County Critical Areas Ordinancehttps://library.municode.com/wa/mason_county/codes/code_of_ordinances?nodeId=TIT8ENPO_CH8.40AGCO_8.40.020CRAR

2021 Mason County GIS Mapper https://gis.co.mason.wa.us/mason/

Washington Cooperative Fish and Wildlife Research Unit, University of Washington. 1991. Washington Gap Project – Land Cover for Washington State University of Washington 1991. *http://depts.washington.edu/natmap/projects/wagap/*

Washington Department of Fish and Wildlife (WDFW). 2021. Washington Department of Fish and Wildlife Priority Habitat and Species data mapper. Available at: https://geodataservices.wdfw.wa.gov/hp/phs/

Washington State Department of Natural Resources (DNR). Olympia, WA
2021a Natural Heritage Program website and database. https://www.dnr.wa.gov/NHPdata
2021b Washington Wetlands of High Conservation Value Map Viewer. https://www.dnr.wa.gov/NHPwetlandviewer

Washington State Department of Transportation (WSDOT). 2011b. Policy Statement P2038.00, "Wetlands Protection and Preservation". Olympia, WA.

Washington State Department of Transportation (WSDOT). 2020 (June). WSDOT Design Manual #M 22-01.19. Chapter 320.06 (1). Engineering and Regional Operations – Development Division, Design Office. Olympia, Washington. https://www.wsdot.wa.gov/publications/manuals/fulltext/M22-01/design.pdf
Washington State Department of Transportation (WSDOT). 2007. *2007-2026 Highway System Plan, High Benefit Low Cost.* Olympia, Washington.

Washington State Department of Transportation. 1979. Directive P 2038 (HR), "Protection of Wetlands". Olympia, WA.

Washington State Department of Transportation (WSDOT). 2020. Wetlands and Streams Assessment Report SR 3 Freight Corridor. Washington State Department of Transportation, Olympic Region Environmental and Hydraulic Services, Tumwater, WA. Prepared by Parametrix, Seattle WA.

Washington State Department of Transportation (WSDOT). 2021a. Wetland Discipline Report SR 3 Freight Corridor. Washington State Department of Transportation, Olympic Region Environmental and Hydraulic Services, Tumwater, WA. Prepared by Parametrix, Seattle WA.

Washington State Department of Transportation (WSDOT). 2021b. Fish and Wildlife Discipline Report SR 3 Freight Corridor. Washington State Department of Transportation, Olympic Region Environmental and Hydraulic Services, Tumwater, WA. Prepared by Parametrix, Seattle WA.

Washington State Department of Transportation (WSDOT). 2021c. Standard Specifications.

Washington State Department of Transportation (WSDOT). 2021d. Land Use and Relocation Discipline Report – SR 3 Belfair Bypass Project. Olympic Region Planning Office. Olympia, WA.

Washington State Noxious Weed List. http://www.nwcb.wa.gov/