Biological Assessment
Undi Road Bypass Improvements

Jefferson/Clallam Counties, Washington

November 2021

This page is intentionally left blank.

Biological Assessment
Undi Road Bypass Improvements

Jefferson/Clallam Counties, Washington

Prepared for:

Federal Highway Administration
Western Federal Lands Highway Division
610 East Fifth Street
Vancouver, WA

U.S. Department of Transportation
Federal Highway Administration

Prepared by:

Jim Starkes
Senior Biologist

DAVID EVANS AND ASSOCIATES, INC.
14432 SE Eastgate Way, Suite 400
Bellevue, WA 98007

DAVID EVANS
AND ASSOCIATES INC.

DEA project number: FHAX00000280

November 2021

This page is intentionally left blank.

Executive Summary

At the request of the Federal Highway Administration, Western Federal Lands Highway Division, David Evans and Associates, Inc. prepared this biological assessment for improvements at three locations on the Undi Road Bypass (T27N, R13W, S1 and S2; T28N, R13W, S35 and 36). The construction of three additional vehicle pullouts are also proposed. The project sites are located within hydrologic unit code (HUC) 17100101 and Water Resource Inventory Area 20.

The proposed road improvements and pullouts are located in an area that provides nearby designated critical habitat for the Endangered Species Act (ESA)-listed marbled murrelet. Potential impacts to this species would be through terrestrial noise impacts from construction activities and construction disturbance zones that would remove trees and create canopy gaps within the forest. No suitable nesting trees would be removed. Proposed road improvements and pullouts will not impact other ESA-listed birds (northern spotted owl, streaked horned lark, yellow-billed cuckoo) or fish (bull trout) because of a lack of their presence within the action area.

Table S-1 summarizes the status and effects determinations for ESA-listed species that may occur in the project and action areas.

Table S-1: Summary of Effects Determination

Common Name	Scientific Name	ESA-Federal Lead	Effects Determination	Critical Habitat Present?
Marbled Murrelet	*Brachyramphus marmoratus*	USFWS	NLAA	Yes
Streaked Horned Lark	*Eremophila alpestris strigata*	USFWS	NE	No
Northern Spotted Owl	*Strix occidentalis caurina*	USFWS	NE	No
Yellow-billed Cuckoo	*Coccyzus americanus*	USFWS	NE	No
Puget Sound/Coastal Bull Trout	*Salvelinus confluentus*	USFWS	NE	No

NLAA: Not Likely to Adversely Affect
NE: No Effect
USFWS: U.S. Fish and Wildlife Service

This page is intentionally left blank.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF PHOTOS

APPENDICES

Acronyms and Abbreviations

CFR	Code of Federal Regulations
CMP	Corrugated Metal Pipe
ADT	Average Daily Traffic
BA	Biological Assessment
BMP	Best Management Practice
dBA	A-weighted decibels
dbh	diameter at breast height
DEA	David Evans and Associates, Inc.
ESA	Endangered Species Act
FHWA	Federal Highway Administration, Western Federal Lands Highway Division
GIS	Geographic Information System
HUC	hydrologic unit code
LAA	Likely to Adversely Affect
MP	Mile Post
NE	No Effect
NLAA	Not Likely to Adversely Affect
NMFS	National Marine Fisheries Service
NWFP	Northwest Forest Plan
PEM	Palustrine Emergent
PHS	Priority Habitats and Species
PGIS	Pollution Generating Impervious Surface
PSS	Palustrine Scrub Shrub
SPC	Spill Prevention Control
TESC	Temporary Erosion and Sediment Control
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WSDOT	Washington State Department of Transportation

This page is intentionally left blank.

1.0 Introduction

The Federal Highway Administration, Western Federal Lands Highway Division (FHWA) is pursuing a project to improve three sites along Undi Road Bypass, beginning approximately at Milepost (MP) 0.0 and ending approximately at MP 2.2. From approximately MP 0.0 to MP 0.5, three existing widened areas will also be improved as vehicle pullouts. The Undi Road Bypass project is located approximately 6 miles southeast of Forks, in Jefferson and Clallam counties, Washington, at Townships 27N, Range 13W, Sections 1 and 2, and Townships 28N, Range 13W, Sections 35 and 36 (**Figure 1**).

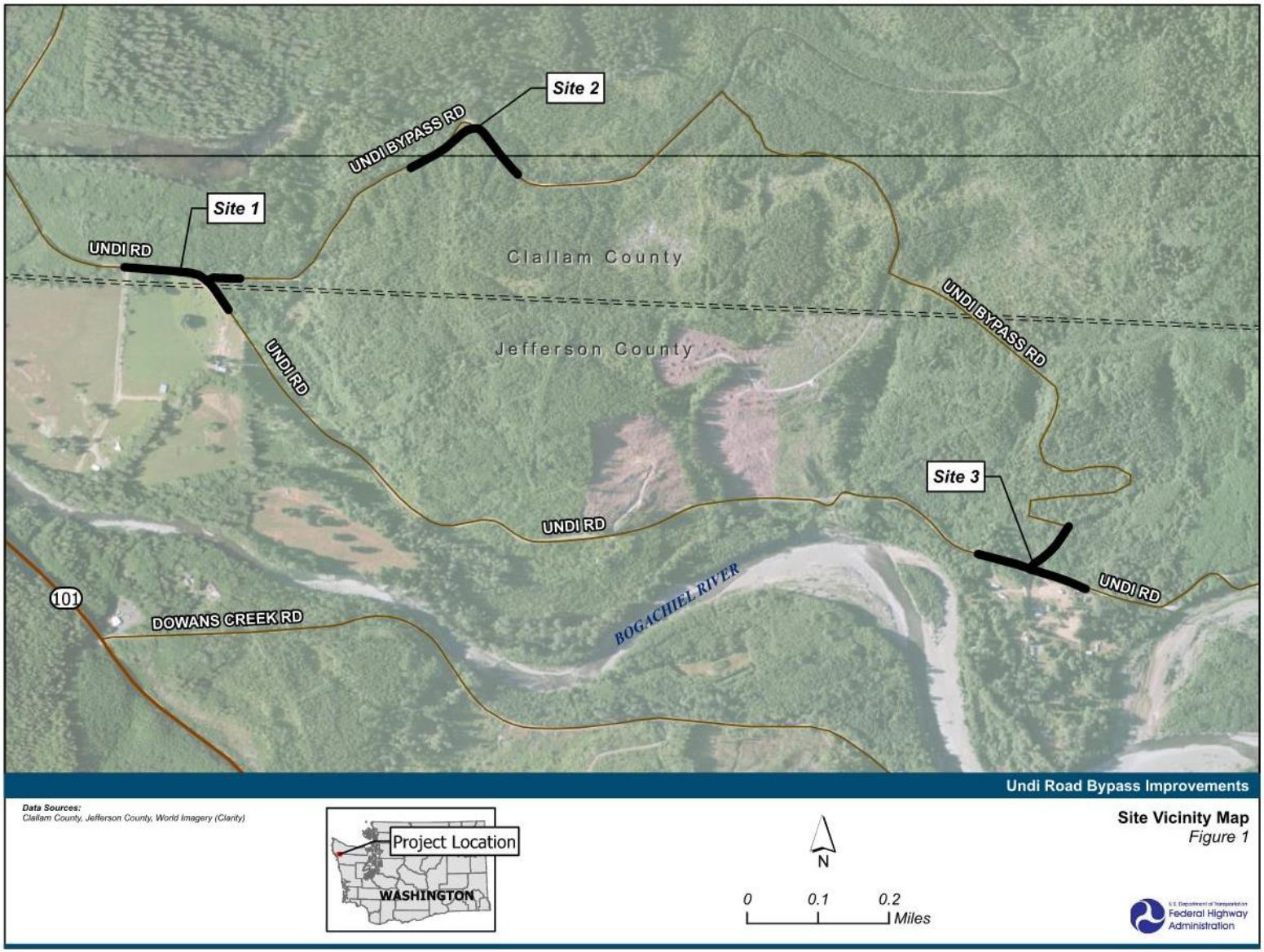
This Biological Assessment (BA) examines potential project impacts on federally threatened and endangered species listed under Section 7 of the Endangered Species Act (ESA). It also evaluates potential impacts based on existing information about current habitat conditions and suitability for providing the life history requirements of these species. Section 7 of the ESA of 1973 (as amended) requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and/or the U.S. Fish and Wildlife Service (USFWS) if they determine that any actions they authorize, fund, and/or conduct may affect any federally proposed or listed species, or result in destruction or adverse modification of their critical habitat. The project is receiving federal funding from FHWA.

This BA identifies the potential project impacts to federally listed species and their critical habitats, lists the conservation measures to mitigate those impacts, and makes a determination of effect for each species. In this document, the term "project area" refers to the actual footprint of the project. Analysis in the BA is based on the "action area," which includes all areas that will be affected directly or indirectly by the proposed action and is not limited to the immediate project footprint. See Section 3.0 for a more detailed description of the action area.

1.1 Background

The original Undi Road was a two-lane, mostly paved road that provided access from U.S. Highway 101 near Bogachiel State Park to the north side of the Bogachiel River and local residences, ending at the Bogachiel River Trailhead in the Olympic National Forest (**Figure 1**). A portion of the former Undi Road was destroyed by a large landslide in the winter of 2015/2016. Soon after, in 2016, Jefferson County constructed the Undi Road Bypass, an emergency bypass road route approximately 2 miles long that utilized existing Washington State Department of Natural Resources forest access roads, as well as a new alignment to connect downhill to the existing Undi Road.

The Average Daily Traffic (ADT) on the Undi Road Bypass was 54 at MP 1.5 (Jefferson County 2017). ADT of Undi Road was 103 at M.P. 0.56 (Clallam County 2009) and 50 at MP 1.34 beyond the Undi Road Bypass intersection (Jefferson County 2020). The vehicles using this road are a mix of passenger cars and trucks, recreational vehicles, and logging trucks.


Site 2
UNDI BYPASS RD
Site 1
UNDI RD
Clallam County
Jefferson County
UNDI BYPASS RD
UNDI RD
Site 3
UNDI RD
UNDI RD
101
DOWANS CREEK RD
BOGACHIEL RIVER
Undi Road Bypass Improvements
Data Sources:
Clallam County, Jefferson County, World Imagery (Clarity)
Project Location
WASHINGTON
N
0
0.1
0.2
Miles
Site Vicinity Map
Figure 1
U.S. Department of Transportation
Federal Highway Administration

1.2 Purpose and Need

The purpose of the proposed project is to improve three sites along the Undi Road Bypass, and provide surface maintenance at three vehicle pullouts beginning approximately at MP 0.0 and ending approximately at MP 2.2. Improvements are necessary to accommodate the variety of vehicles that use the road after a landslide closed the original Undi Road in 2015 and 2016. Passenger vehicles, recreational vehicles, trucks with horse trailers, and commercial logging trucks commonly use the road. The objective of the project is to improve safety and mobility along the bypass, focusing on the three sites, while maintaining access to the Olympic National Park, the Pacific Northwest National Scenic Trail, and the homes of several county residents that live along the road.

The existing roadway alignments at Road Improvement Site 1 (MP 0.0) and Road Improvement Site 2 (MP 0.5) require adjustments to improve conveyance of traffic and safe navigation. Site 1 does not have adequate geometry, signage, and striping to guide drivers on the road. The alignment of Site 2 does not provide the sight distance or width for logging trucks to maneuver the curve in the roadway around the steep slope of a hill. Surface maintenance between MP 0.0 and MP 0.5 is needed to improve navigability, including at three locations where the existing roadway is slightly wider than the typical roadway width. Site 3 requires signing and striping to more effectively direct traffic from the existing Undi Road to the bypass.

2.0 Project Description

2.1 Overview

The following summarizes the necessary improvements at each of the three road improvement sites and the proposed vehicle pullouts on the Undi Road Bypass (DEA 2021a):

- **Site 1 (Jefferson County/Clallam County):** Site 1 is an intersection that connects Undi Road and Undi Road Bypass. Based on existing conditions and observations, drivers continue to take the original Undi Road despite the signs guiding them to take the bypass road. The work is expected to include horizontal realignment of both the existing Undi Road and the Undi Road Bypass approach, signing and striping, and hard surfacing to make Undi Road Bypass the primary route.

- **Site 2 (Clallam County):** This site has a sharp curve near the top of a hill (MP 0.47 in **Figure 1**), which causes sight distance deficiencies and mobility configuration issues when longer vehicles, such as horse trailers and logging trucks, try to navigate the curve simultaneously. The proposed work at this site includes both horizontal alignment and vertical profile adjustments in conjunction with roadway widening, which would increase the turning radius and thus allow for safer movements around the curve. Excavation into the adjacent hillside will facilitate the widening.

- **Site 3 (Jefferson County):** This site is a T-intersection that consists of the gravel approach of the Undi Road Bypass where it intersects the original Undi Road. This segment of the bypass is very steep and there are concerns about guiding drivers onto Undi Road Bypass. Work to improve the road will include signing, hard surfacing, and striping.

- **Road Pullouts (Clallam County):** Between Road Improvement Sites 1 and 2, three existing widened vehicle pullouts are located on the Undi Road Bypass as a safety measure for the passage of large vehicles when traffic is present in both directions. These pullouts will be improved without further widening to minimize impacts to terrestrial areas and to minimize increases in impervious surface.

Design exhibits are presented in **Appendix A**.

2.2 Proposed Road Improvements

2.2.1 Road Improvement Site 1

Road Improvement Site 1 is located at the intersection of Undi Road and the Undi Road Bypass (MP 0.0). Most of the improvements at this site are intended to allow drivers to smoothly transition to the bypass road from the original Undi Road. These improvements include a realignment of the Undi Road approach to a "T" configuration. Hard surfacing using a Type 2 double chip seal over an 18-inch aggregate base is proposed.

The intersection will be widened slightly from an existing 17,440 square feet to a proposed 18,160 square feet, for an increase in impervious surface of 720 square feet. The entire area of disturbance resulting from the removal of the previous alignment and realignment into a "T" approach will occupy a total of 12,220 square feet (0.28 acres). Tree removal may occur in this area, as necessary. Trees to be removed will be in the 6-inch to 24-inch dbh range. No larger trees will be removed and no potentially suitable trees with murrelet nesting platforms are present in this area.

Proposed striping will include stop bars and median striping due to the proposed hard surfacing and the roadway alignment. New signage will be added to guide drivers toward the Bypass in lieu of the original Undi Road (see **Figure 2**).

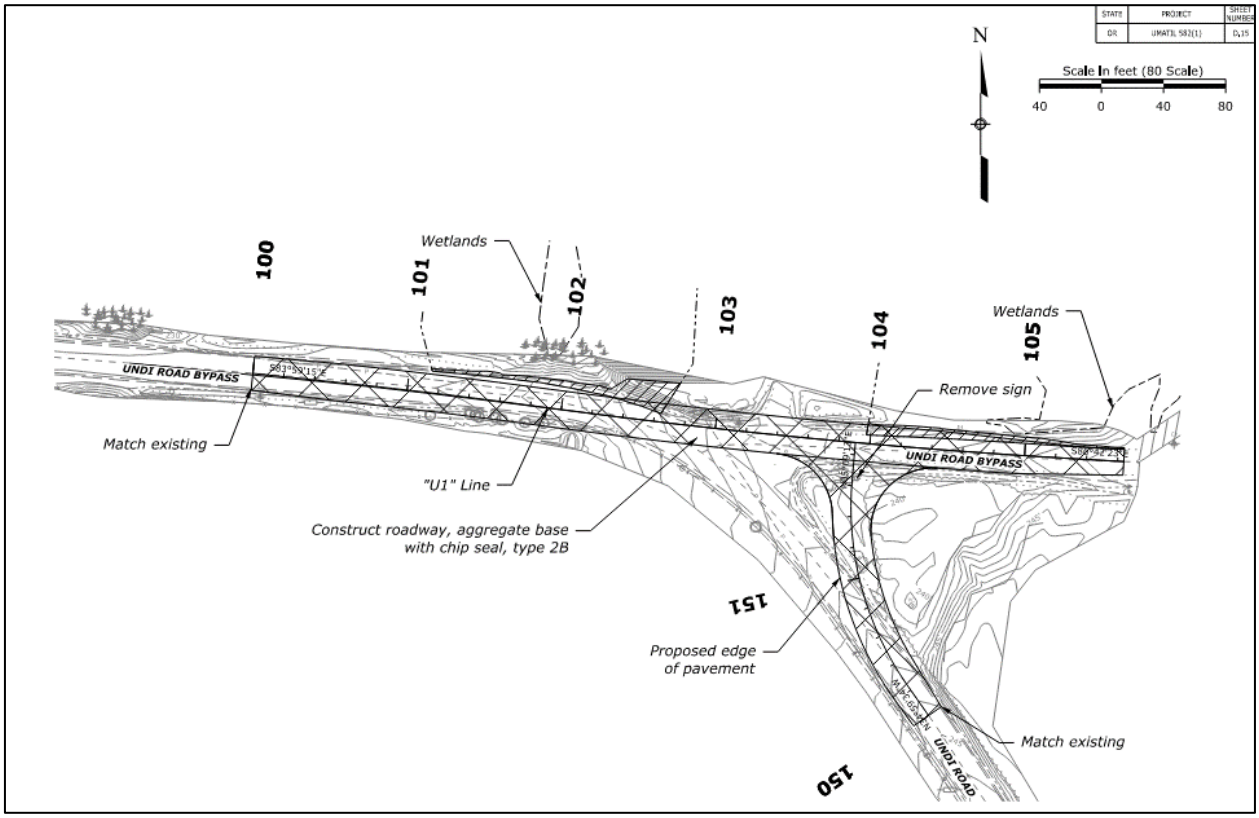


Figure 2. Proposed Plan at Road Improvement Site 1

2.2.2 Road Improvement Site 2

Road Improvement Site 2 is located at MP 0.47. Proposed improvements at this site will allow drivers to better navigate the 90-degree turn near the top of a hill and help with sight distance deficiencies. Vehicle turning tests performed along the site's curved roadway using logging trucks indicate that several improvements are needed. The alignment will be adjusted to have a larger radius for logging trucks to maneuver around the curve. Lanes will also be widened to 16.5 feet to provide adequate width to support the dynamic envelope of the logging trucks. This roadway widening and adjustment can be achieved by cutting the hillside slope at 1H:1V to 2H:1V inclination in order to widen the existing 23 feet of roadway by 17 feet along the inside of the curve. The road will be hardened using a Type 2B double chip seal over an 18-inch aggregate

base. Safety features such as delineators and a guardrail will be installed where needed. The roadway profile will also be graded as required.

The roadway will be widened from an existing 11,100 square feet to a proposed 14,840 square feet, for an increase in impervious surface of 3,740 square feet. The entire area of disturbance resulting from the required cut into the existing hillside will occupy a total of 19,780 square feet (0.45 acres). Tree removal will occur in this area over the entire cut. The hillside cut will occur on the uphill side of the Bypass (south side of the road) where trees are relatively small. Trees to be removed will be in the 6-inch to 24-inch dbh range (**Figure 3**). No larger trees will be removed and no potentially suitable trees with murrelet nesting platforms are present on the uphill side of the road within the proposed cut area. Approximately 100 feet north of Site 2 within a steep downhill ravine, several large trees are present, some of which provide suitable nesting platforms for murrelet. None of these trees will be removed or disturbed.

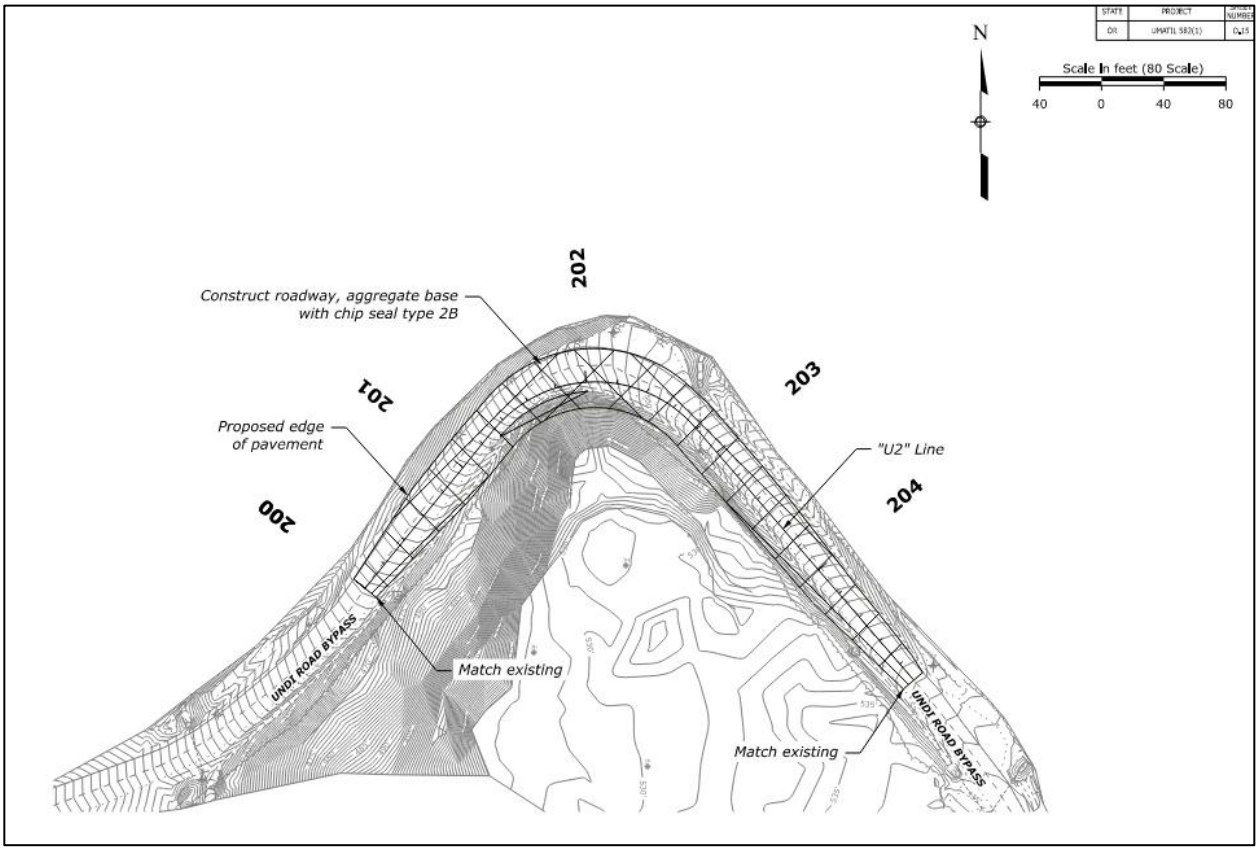


Figure 3. Proposed Plan at Road Improvement Site 2

2.2.3 Road Improvement Site 3

Road Improvement Site 3 is located at MP 2.18. Improvements at this site will focus on signing and striping to guide traffic more effectively onto Undi Road Bypass. Because existing wetland areas are present, no road widening or increase in impervious surface is proposed at this site. The road will be hardened using a Type 2B double chip seal over an 18-inch aggregate base (**Figure 4**). No trees will be removed as part of road improvements at Site 3.

2.2.4 Vehicle Pullouts

Three vehicle pullouts will be improved, located at existing widened areas of the Undi Road Bypass between Road Improvement Sites 1 and 2 (**Figure 5**). Compacted gravel material is currently present at these areas, though not as thick as the existing road surfaces, suggesting that the areas have been used in the past as rough pullouts. Though not as developed as the existing gravel road surfaces, the areas are likely considered impervious because of existing compacted soils.

The three pullouts will each occupy between 780 square feet and 840 square feet (total of 2,440 square feet) and are not considered to add to existing impervious surface (**Figure 6**). The surface of the pullouts will be hardened using a Type 2B double chip seal over a 14-inch aggregate base. Areas will not be widened beyond the existing rough pullouts. No trees are present at any of the proposed vehicle pullouts, so none will be removed.

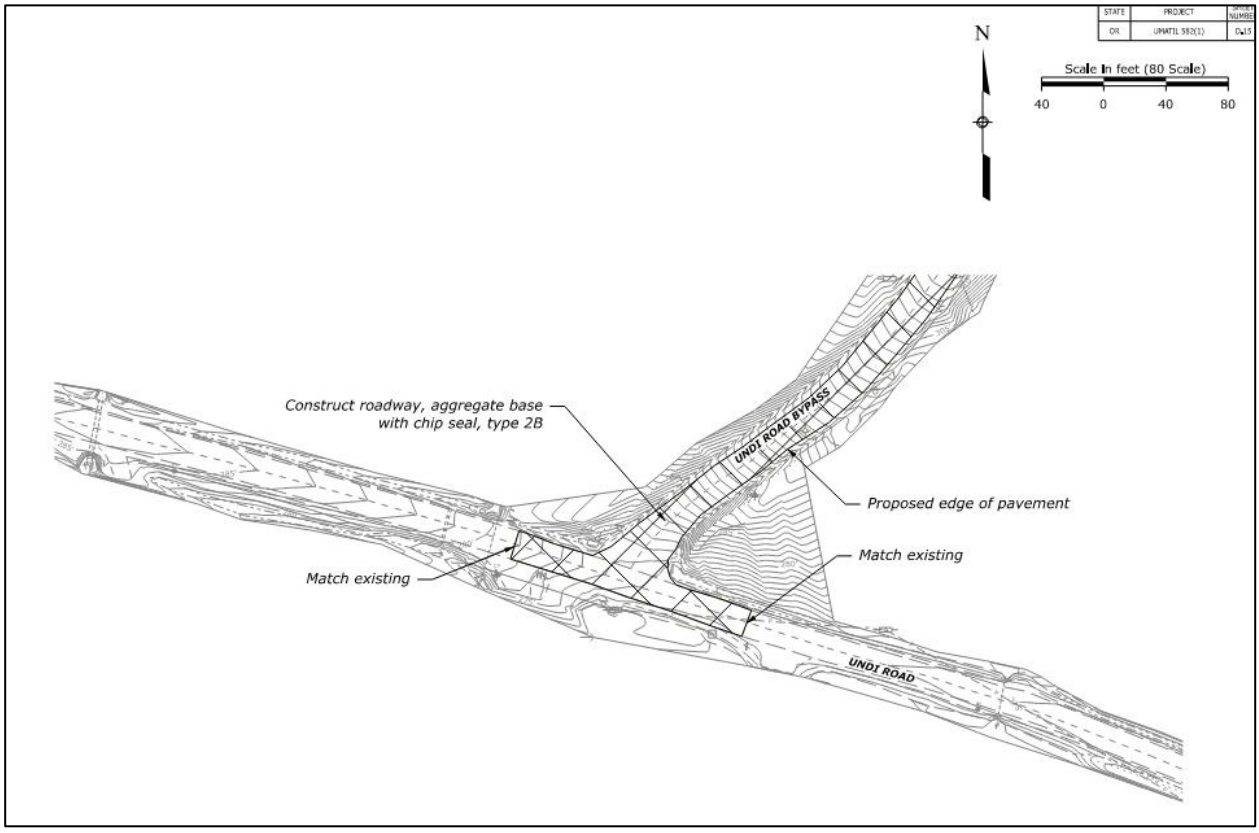


Figure 4. Proposed Plan at Road Improvement Site 3

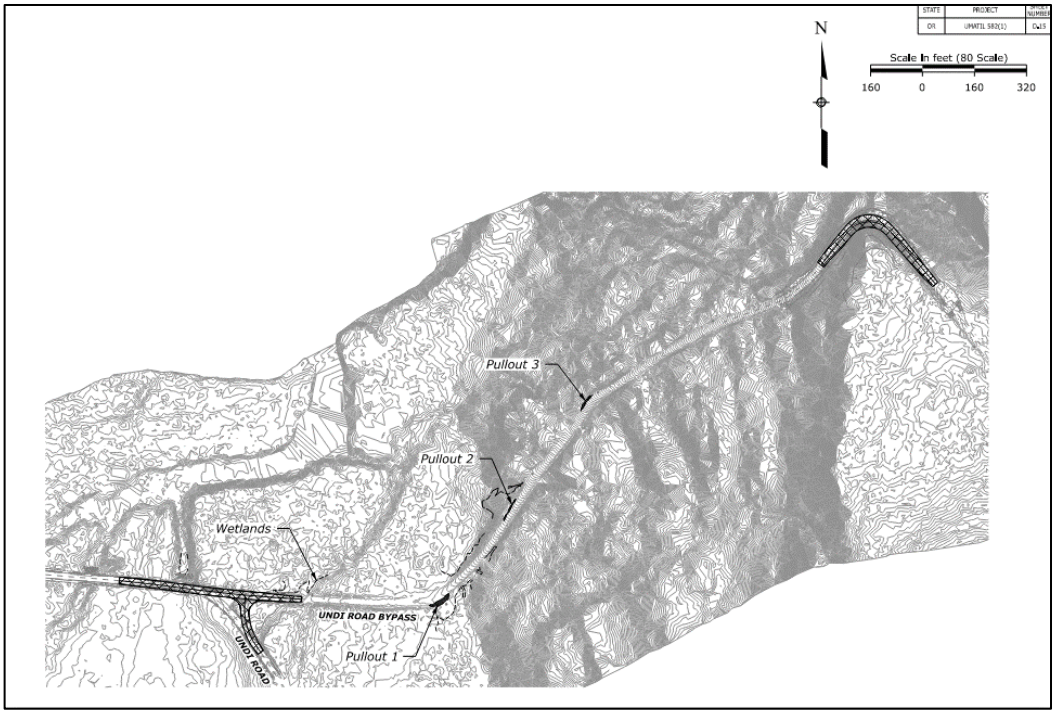


Figure 5. Proposed Plan for Three Vehicle Pullouts

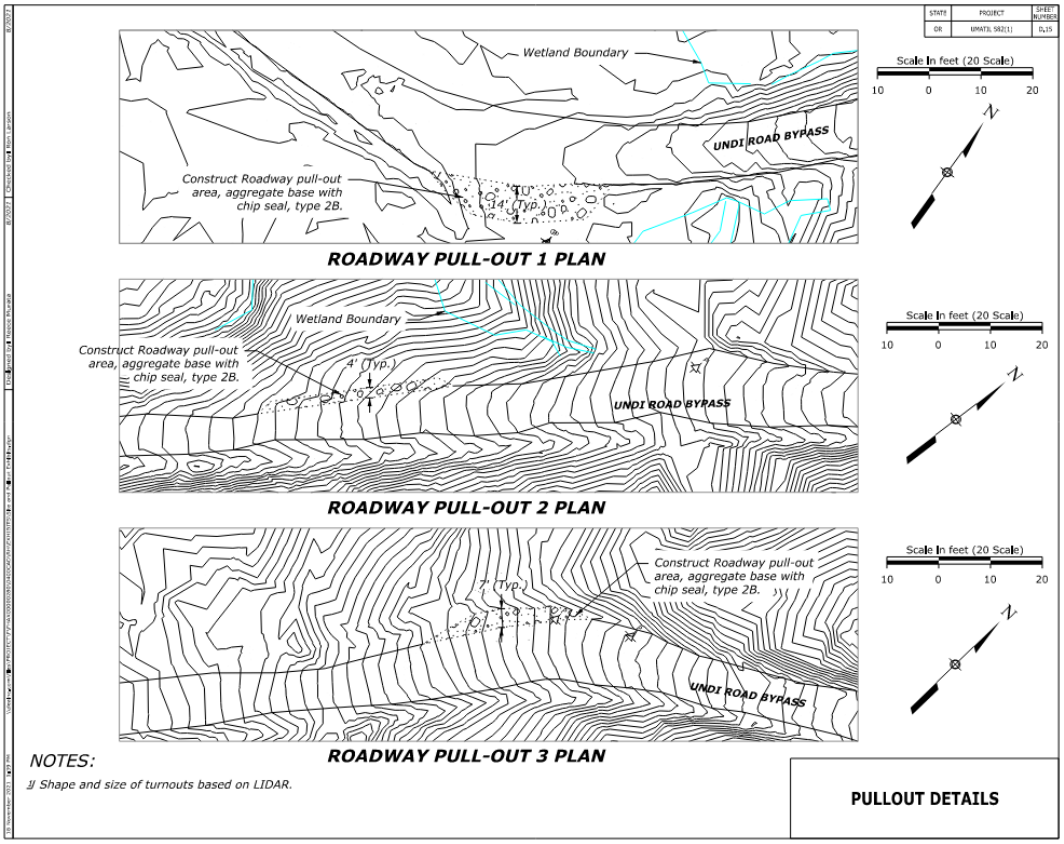


Figure 6. Roadway Plans for Vehicle Pullouts 1, 2, and 3

In total, the improvements at the three road improvement sites will increase pollution generating impervious surface (PGIS) by 4,460 square feet, as summarized in **Table 1**. The vehicle pullouts are not anticipated to increase PGIS. Because the expected increase in PGIS is less than 5,000 square feet, additional stormwater treatment will not be required, in accordance with the Washington Department of Ecology Stormwater Manual for Western Washington (Ecology 2019). A stormwater site plan, Stormwater Pollution Prevention Plan, source control Best Management Practices (BMPs), preservation of natural drainage systems, and on-site stormwater management will be implemented in accordance with Washington Department of Ecology guidance (Ecology 2019).

Table 1. Impervious Surface at the Road Improvement Sites and Pullout Sites

Proposed Construction Areas	Site 1	Site 2	Site 3	Pullouts (3)	
Existing Impervious Surface (square feet)	17,440	11,100	17,070	822 840 780	
Proposed Impervious Surface (square feet)	18,160	14,840	17,070	820 840 780	
Difference (square feet)	+720	+3,740	0	0 0 0	
Total Increase in Impervious Surface (square feet)					**+4,460**

2.3 Equipment

The construction of the project will use common equipment typically used for construction of buildings and paving. **Table 2** shows a list and typical usage of the construction equipment likely to be used on a project of this nature. The table also provides the typical noise levels, measured in A-weighted decibels (dBA), generated by the equipment (WSDOT 2020).

Table 2. Construction Equipment Likely to Be Used on the Project

Equipment	Typical Uses	Noise levels (dBA)
Air Compressor	Providing air power for pneumatic tools such as rock drills, jackhammers, rotary hammers, etc.	68
Asphalt Emulsion Distributor	Paving	82
Backhoe	Minor excavating, digging, and backfilling	84
Bulldozer	Earthmoving	86
Chainsaw	Tree removal/clearing and grubbing	83
Crane	Lifting, moving various heavy objects within a relatively small radius, drilling large holes (with drilling apparatus attached)	79
Dump Truck	Transferring fill and excavated material	73
Front-end Loader	Loading trucks, filling trenches, excavating in limited areas, and conducting miscellaneous earthwork operations	81
Generator	Running electric-powered tools	73
Steel Drum Roller	Compacting surfaces	
Sweeper	Providing dust control and construction cleanup	82
Track-hoe/Excavator	Excavating, digging trenches	87
Trucks and Trailers	Hauling equipment and materials, transporting excavated or embankment (fill) material	75
Water Truck	Compacting earth, dust control	72

2.4 In-Water Work

No in-water work is proposed for the construction of this project.

2.5 Avoidance and Minimization

2.5.1 Best Management Practices/Temporary Erosion Sediment Control

Project-related BMPs and temporary erosion control measures to prevent or minimize potential discharges into the adjacent forested area and wetlands are shown in **Tables 3 and 4**.

Table 3. Project-related BMPs Applicable to All Project Actions

1	A temporary Erosion and Sediment Control (TESC) Plan will be developed and implemented for all project actions requiring clearing, vegetation removal, grading, ditching, filling, embankment compaction, or excavation. The BMPs in the plans will be used to control sediments from all vegetation removal or ground-disturbing activities. BMPs will also include use of silt fences or wattles to prevent sediment and construction debris from entering streams and wetlands.
2	Only vegetation that is a necessity for the project to be constructed will be removed. Delineate clearing limits with orange barrier fencing wherever clearing is proposed in or adjacent to a stream/wetland or its buffer.
3	Erosion control blankets may be installed on steep slopes that are susceptible to erosion and where ground-disturbing activities have occurred. Use of erosion control blankets will prevent erosion and assist with establishment of native vegetation.
4	Ground disturbance will not occur during wet conditions (during or immediately following rain events).
5	All temporary and permanent erosion and sedimentation control measures will be inspected on a regular basis, and will be maintained and repaired to ensure continued performance of their intended function.
6	Sediment control BMPs will be maintained throughout construction, and the contractor will remove captured sediment before removing the BMPs in order to avoid the potential release of sediments to the creek.
7	Where practicable for soil stability, native vegetation and/or a native seed mixture will be planted in areas disturbed by construction activities.
8	The contractor will prepare a Spill Prevention Control (SPC) Plan before beginning construction. The SPC Plan will identify the appropriate spill containment materials, which will be available at the project site at all times.
9	All equipment to be used for construction activities will be cleaned and inspected before arriving at the project site to ensure that no potentially hazardous materials are exposed, no leaks are present, and the equipment is functioning properly.
10	Construction equipment will be inspected daily to ensure there are no leaks of hydraulic fluids, fuel, lubricants, or other petroleum products. If a leak is detected on heavy equipment used for the project, the equipment will be immediately removed from the area and not used again until adequately repaired.
11	No paving, chip sealing, or stripe painting will occur during periods of significant rain or wet weather

Table 4. Erosion Control Measures in the TESC Plans

1.	TESC measures are the minimum requirements for anticipated site conditions. During the construction period, TESC measures must be upgraded as needed for unexpected storm events and modified to account for changing site conditions.
2.	The TESC measures and facilities must be satisfactorily maintained until the construction is completed and the potential for on-site erosion has passed. The TESC plans are to be considered a dynamic minimum guideline and as such will most likely need to be continually evaluated and/or modified, depending upon site conditions.
3.	The implementation of these TESC plans and the construction, maintenance, replacement, and upgrading of these TESC facilities is the responsibility of the construction contractor until all construction is approved.
4.	The boundaries of the clearing limits shown on the plans must be clearly flagged in the field prior to construction. During the construction period, no disturbance beyond the flagged clearing limits will be permitted. The developer and the contractor must maintain the flagging for the duration of construction.
5.	Trackout from construction activities and machinery will be minimized by sweeping on daily basis for the duration of the project.
6.	The TESC facilities shown on plans must be constructed before or in conjunction with all clearing and grading, so as to ensure that the transport of sediment to surface waters, drainage systems, and adjacent properties is minimized.
7.	Soils must not remain exposed and unworked for more than 14 days, unless permitted otherwise. Exposed and unworked soils must be covered by mulch, sodding, plastic covering, jute-matting, or as otherwise approved or required by the construction inspector.
8.	Dust generated during construction activities must be controlled by wetting dust sources such as areas of exposed soils, washing truck wheels before they leave the site, and installing and maintaining rock construction entrances, if required by the construction inspector.

2.5.2 Conservation Measures

Additional activities, most within the proposed design of the project, will be undertaken to further protect sensitive and valuable habitats adjacent to the site. These measures include:

- The project will not remove any mature trees with a trunk diameter (dbh) of 24 inches or greater in order to preserve possible nesting habitats for marbled murrelet.
- All construction activities, including clearing, grubbing, and staging, will be limited to the project footprint or other previously disturbed areas in order to prevent/minimize disturbances to any marbled murrelet within the area.
- Because work will occur in areas of designated critical habitat for marbled murrelet, construction activities will not begin until two hours after sunrise and will cease two hours before sunset during the marbled murrelet nesting season (April 1 to September 23).

3.0 Project Area and Action Area

The project area is limited to the immediate footprint of each of the three road improvement sites and the proposed vehicle pullouts. The project area includes the roadway improvements as well as the immediate area where construction effects will occur, including tree removal and clearing/grubbing activities to access each site, staging areas, and other nearby areas potentially modified by construction.

The action area includes all areas that will be affected directly or indirectly by the proposed action and is not limited to the immediate project footprint. The action area will include potential effects of construction disturbances, construction noise, terrestrial habitat impacts, and impacts to aquatic environments.

3.1 Terrestrial Effects

For this project, the terrestrial action area is defined by the extent of construction noise emanating from each road improvement site and vehicle pullout. Based on the types of construction equipment proposed for the project (see **Table 2**), noise levels are expected to reach 93 dBA (at 50 feet baseline distance), which is the noise level associated with various construction equipment that will be used to construct the road improvements project. Pile driving will not be conducted. Assuming typical levels of noise attenuation in a "soft" environment (such as the largely forested habitats in the vicinity of the project), noise disturbance is expected to attenuate to ambient noise levels typical of the project vicinity (59 dBA; assuming ambient traffic levels on Undi Road, Undi Road Bypass, and U.S. Highway 101 [see Section 4.2 below]) within 953 feet (0.18 mile) of construction (**Figure 7**).

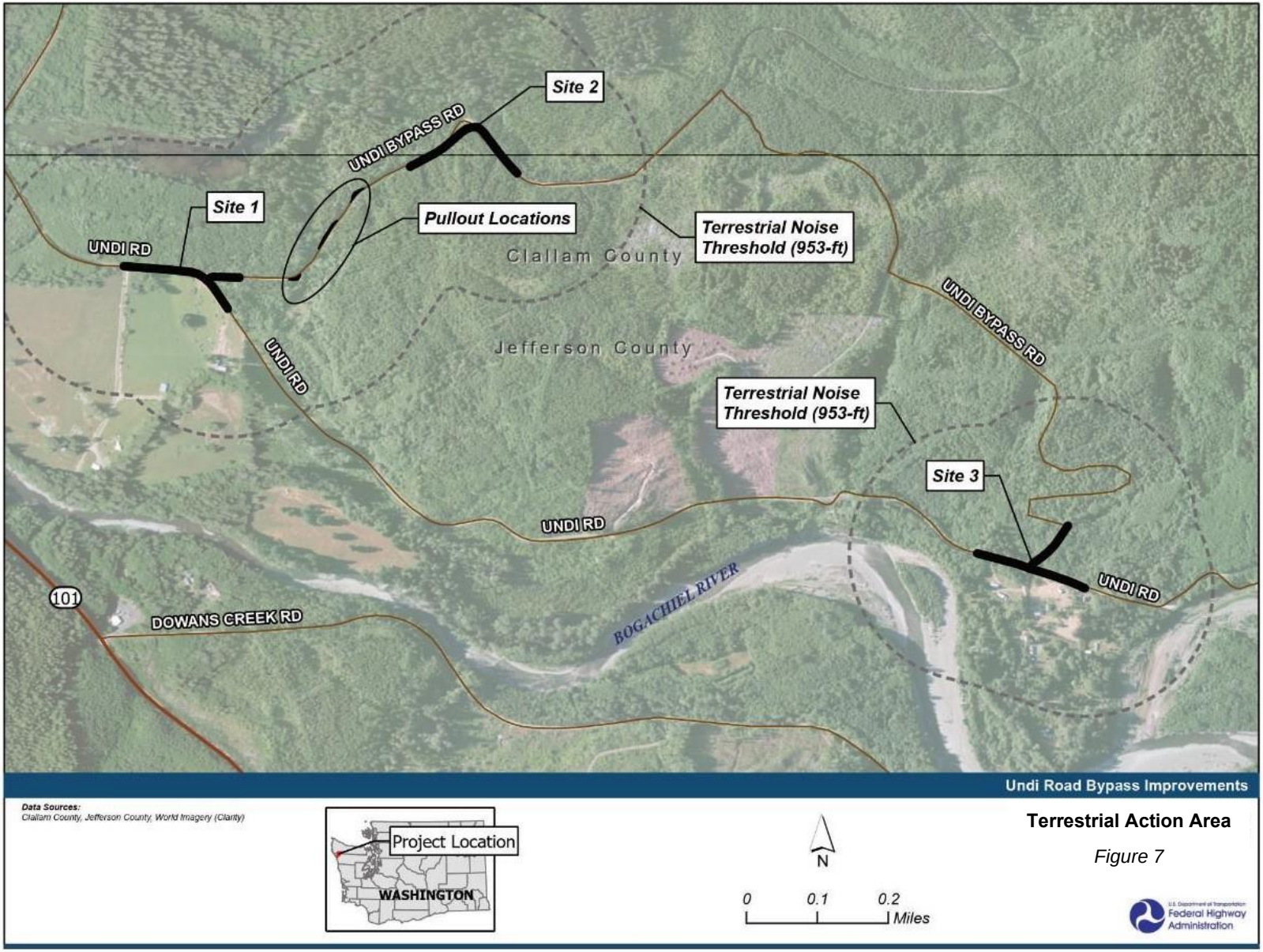
The following equation shows the noise attenuation calculation (WSDOT 2020):

$$50 \text{ feet} * 10^{((91-59)/25)} = 953 \text{ feet}$$

3.2 Aquatic Effects

Aquatic effects are not anticipated from construction activities associated with the three road improvement sites and the vehicle pullouts. Recent wetland delineation surveys (DEA 2021b; see Section 4.2.2) found that two small streams are present near one of the vehicle pullouts. This pullout location will be field evaluated in order to assist the project to avoid the streams, and BMPs will prevent or minimize runoff from construction activities.

Road improvements are not expected to increase road usage over current levels. The increase in PGIS will be minor and less than the regulatory threshold of 5,000 square feet.


Site 2
UNDI BYPASS RD
Site 1
Pullout Locations
Terrestrial Noise Threshold (953-ft)
UNDI RD
Clallam County
Jefferson County
UNDI BYPASS RD
UNDI RD
Terrestrial Noise Threshold (953-ft)
Site 3
UNDI RD
UNDI RD
101
DOWANS CREEK RD
BOGACHIEL RIVER
Undi Road Bypass Improvements
Data Sources:
Clallam County, Jefferson County, World Imagery (Clarity)
Project Location
WASHINGTON
N
0 0.1 0.2
Miles
Federal Highway Administration
Terrestrial Action Area
Figure 7

4.0 Environmental Baseline

4.1 Study Methods

DEA conducted a field review to determine the presence of environmental resources in anticipation of environmental impacts and to verify environmental documentation needs (DEA 2021b). This field review included a review of fish species, vegetation, potential wildlife habitat, stream boundaries, potential wetlands, hazardous materials, and other issues. Geographic Information System (GIS) databases, topographic and aerial maps, soil surveys, and other databases and information were referenced before the field review was conducted.

DEA reviewed the NMFS Protected Resources website and the USFWS endangered species listings for the project area to determine the potential presence of ESA-listed species and critical habitat within the project vicinity. **Appendix B** includes the species lists and designated critical habitat in the project vicinity. A Priority Habitats and Species (PHS) Report was requested and obtained from Washington Department of Fish and Wildlife (WDFW) on September 17, 2021.

A DEA biologist conducted a field reconnaissance site visit to the project area on August 6, 2021, to document critical areas, species presence, and potential fish and wildlife habitat in the action area, and to examine existing forest habitats, particularly with respect to suitability for nesting by the ESA-listed marbled murrelet. DEA investigated habitat composition, condition of upland habitats, and wetlands. The field reconnaissance included driving the Undi Road Bypass alignment and stopping at each of the three road improvement sites to examine site specifics and evaluate forest habitats for potential marbled murrelet use (DEA 2021b). **Appendix C** provides photographs from the site visit.

4.2 Environmental Setting

4.2.1 Terrestrial Habitats

Undi Road Bypass is a nonstandard two-lane gravel road with an existing width of less than 18 feet at most locations. It provides users access to Olympic National Forest and the Bogachiel River Trail, which is an entrance point for Olympic National Park. All three road improvement sites carry low traffic volumes. Jefferson County recorded an ADT of 54 vehicles at MP 1.5 in 2017 and 50 vehicles at MP 1.34, beyond the Undi Road Bypass intersection, in 2020. Clallam County recorded an ADT of 103 vehicles at MP 0.56 in 2009. These traffic counts were not performed during peak seasons, so it is expected that these numbers would be higher in summer, when hiking trails are more active. The 2016 Annual Traffic Report by Washington State Department of Transportation (WSDOT) reports 1,700 vehicles at the nearest traffic count location on U.S. Highway 101 at the Undi Road intersection. There are no data for the projected traffic volumes at the three sites along Undi Road Bypass. Before the landslide occurred, Undi Road Bypass at Road Improvement Site 1 was primarily used by logging trucks, but it now serves as the main road used by all traffic in place of the original Undi Road.

Sites 1 and 2 lie within Washington State Department of Natural Resources property, and Site 3 lies within private property. Vegetation is relatively similar at each site, with minor variation in tree size and timber age classes. Vegetation at the three road improvement sites primarily consists of second growth forest dominated by western hemlock (*Tsuga heterophylla*) and Sitka

spruce (*Picea sitchensis*), along with smaller amounts of Douglas fir (*Pseudotsuga mensiezii*), and red alder (*Alnus rubra*) (DEA 2021b). Tree sizes within and adjacent to the three sites primarily range between approximately 8 inches dbh to 24 inches dbh, but the forest also has some old growth characteristics, including large conifers of more than 60 inches dbh. **Figure 8** presents the "Davis Layer" (Davis et al. 2011) of potential suitable habitat for marbled murrelet within the project area, based on the availability of potential nesting habitat. This dataset was created for analysis of potential impacts on marbled murrelet habitat from WSDOT transportation projects. It is a polygon dataset of marbled murrelet habitat selected from the marbled murrelet types Northwest Forest Plan (NWFP) raster dataset. The NWFP represents marbled murrelet nesting habitat as of 2012 in Washington as described in Davis et al. (2011).

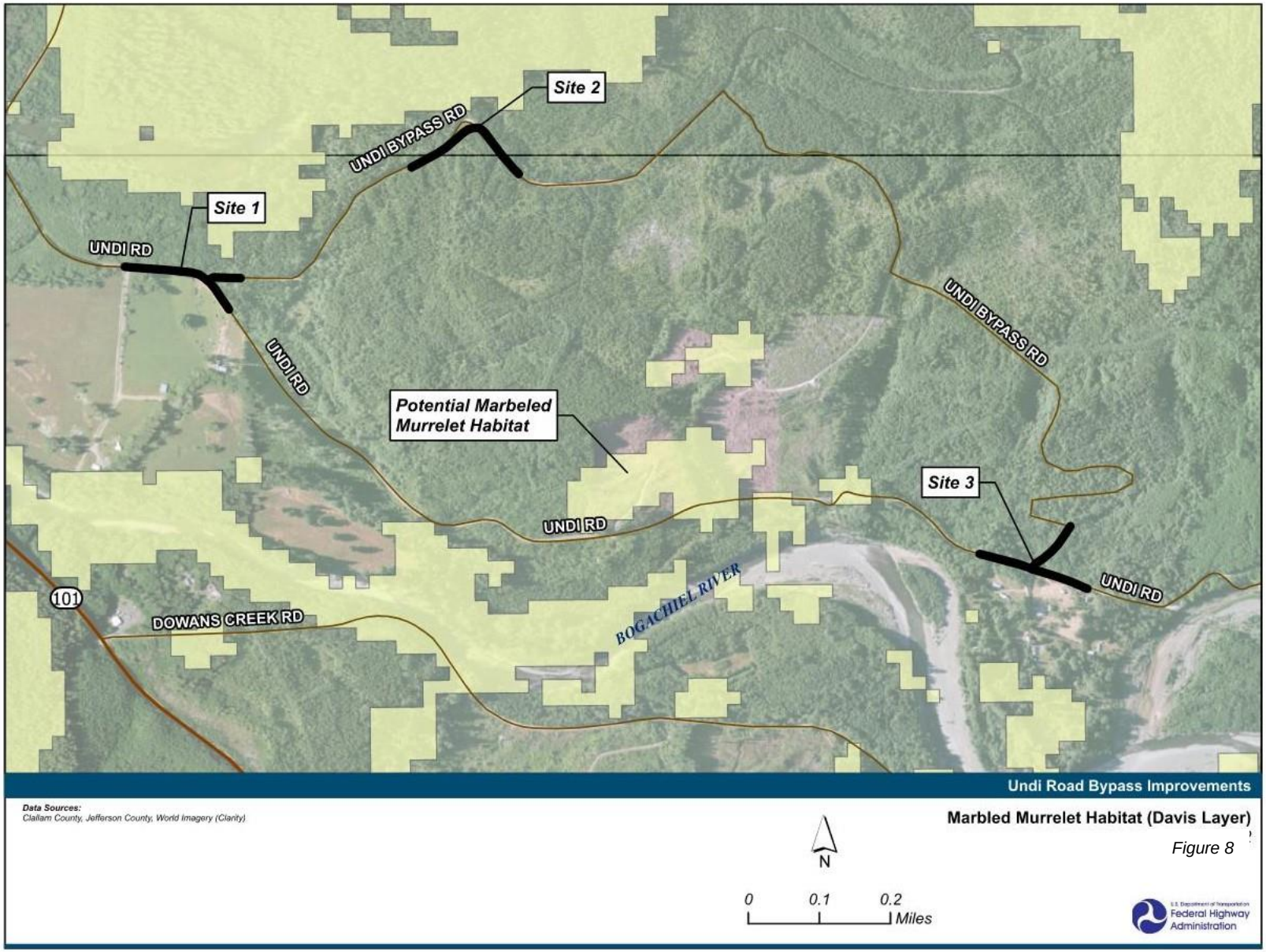

Site 2
UNDI BYPASS RD
Site 1
UNDI RD
UNDI RD
UNDI BYPASS RD
Potential Marbeled Murrelet Habitat
Site 3
UNDI RD
UNDI RD
101
DOWANS CREEK RD
BOGACHIEL RIVER
Undi Road Bypass Improvements
Data Sources:
Clallam County, Jefferson County, World Imagery (Clarity)
Marbled Murrelet Habitat (Davis Layer)
N
0 0.1 0.2
Miles
U.S. Department of Transportation
Federal Highway Administration

Figure 8

Potential marbled murrelet nesting habitat in the Davis Layer does not overlap the proposed three road improvement sites, but such habitat is present immediately north of the Undi Road Bypass between Sites 1 and 2 and east and south of Site 3 (see **Figure 8**). This presence and location of habitat are consistent with the trees with potentially suitable murrelet nest platform branches that were observed during the site visit. Many such trees were observed within the forest canopy north of Site 1 (see **Photos 1** and **2**) and Site 2 (see **Photos 3** and **4**), and west of Site 3 (see **Photos 5** and **6**).

The site visit included observations of the understory vegetation, which was mostly composed of sword fern (*Polystichum munitum*). Slough sedge (*Carex obnupta*) was observed at Sites 1 and 3, where there are potential wetlands (see Section 4.2.2 below for further discussion of wetlands). Tree heights are estimated to be between 40 and 80 feet; Site 1 has the tallest trees. Larger trees were observed beyond the likely project disturbance limits at Sites 1 and 3 (DEA 2021b).

Photos 1 and 2. Conifer trees with suitable marbled murrelet nest platforms near Site 1

Photos 3 and 4. Conifer trees with suitable marbled murrelet nest platforms near Site 2

Photos 5 and 6. Conifer trees with suitable marbled murrelet nest platforms near Site 3

4.2.2 Aquatic Habitats (Wetlands and Streams)

Several small wetland areas and tributary streams were identified during wetland delineation studies conducted in the vicinity of the road improvement sites and vehicle pullouts (DEA 2021b). Most were found near Road Improvement Site 1 and near the southernmost vehicle pullout location. Preliminary results of these studies are summarized below.

Road Improvement Site 1

Several wetlands were identified in depressions on the north side of Road Improvement Site 1 east and west of the intersection. Vegetation in this area is dominated by mixed conifer and deciduous forest that has been actively logged in the past. Several culverts cross the road in this area (DEA 2021b).

Three wetlands, identified as Wetlands W1 through W3, were identified on the north side of both Undi Road and Undi Road Bypass at Road Improvement Site 1. Wetland W1 was delineated just east of the intersection and is the beginning of a shallow depressional wetland dominated by palustrine forested vegetation. A small culvert crosses under Undi Road Bypass to Wetland W1, but there were no stream or wetland characteristics south of the road. Vegetation is dominated by black cottonwood (*Populus trichocarpa*), red alder (*Alnus rubra*), slough sedge (*Carex obnupta*), and salmonberry (*Rubus spectabilis*). Wetland W2 is a palustrine emergent/palustrine scrub-shrub wetland (PEM/PSS) located west of the intersection and is dominated by salmonberry, vine maple (*Acer circinatum*), and slough sedge. Wetland W3 is very similar to Wetland W2 but is located farther west. Culverts connect Wetlands W2 and W3 to areas south of Undi Road. It is possible that all three of these wetlands intersect farther to the north and drain to Undi Lake (DEA 2021b).

Vehicle Pullouts

Four additional wetlands, identified as Wetlands W4 through W7, were delineated in the proximity of the southernmost vehicle pullout located between Road Improvement Sites 1 and 2 (DEA 2021b).

Wetlands W4 and W7 are located on opposite sides of Undi Road Bypass at Pullout 1, where the road turns sharply northeast. These two wetlands are connected by an approximately 54-inch-diameter corrugated metal pipe (CMP) squash culvert. Wetland W4 appears to be a headwater wetland that originates as a PEM meadow to the south, with a surrounding fringe of wetland forest. A small, isolated segment of stream is present near the culvert in Wetland W4, where water flow has produced signs of scour. Vegetation in Wetland W4 is dominated by slough sedge, skunk cabbage (*Lysichiton americanus*), salmonberry, and Sitka spruce. Wetland W7 is a slope/depressional system, with areas of saturated seep zones. Vegetation in Wetland W7 is dominated by slough sedge, skunk cabbage, salmonberry, western red cedar, Sitka spruce, and western hemlock. Wetland W7 supports a large stand of mature conifer forest that begins within the delineated portion of the wetland that extends north toward Undi Lake. According to the Davis Layer (see **Figure 8**), the area is documented habitat for marbled murrelet. The largest trees measured during the site visit were in excess of 50 inches dbh in this area. Wetland W4 is a Category III depressional wetland, and Wetland W7 is a Category I depressional wetland.

Wetlands W5 and W6 are small slope wetlands located on the east side of Undi Road Bypass just north of Wetland W4. They are fed by groundwater that flows into the existing roadside ditch and is routed through culverts under the road and down into Wetland W7. These small wetlands have PSS and PEM vegetation. The PEM vegetation is presumably maintained by occasional county roadside maintenance. Wetland W6 is connected to Stream S1 (see below). Both wetlands are rated as Category IV slope wetlands (DEA 2021b).

Two small tributary streams, Streams S1 and S2, were identified near Wetland W7 in the vicinity of Pullout 1. Neither stream is likely to support fish due to their seasonal nature and steep gradient, and these two small streams are likely to be classified as Type 4 streams under Clallam County Code. Stream S1 is a small seasonal stream that flows down a steep slope east of Undi Road Bypass and into a 42-inch CMP culvert under the road, and joins Wetland W7 on the west side of Undi Road Bypass. The bankfull width of the stream is approximately 6 feet; it has a 15 percent gradient, and a gravel/cobble substrate. Riparian vegetation is dominated by willow *salix* spp.), horsetail (*Equisetum* spp.), creeping buttercup (*Ranunculus repens*), water parsley (*Oenanthe sarmentosa*), and red alder. Stream S1 is connected to seeps coming out of Wetland W6. On the west side of the road, Stream S1 flows down a half-pipe CMP flume to the base of the slope and Wetland W7 (DEA 2021b).
Stream S2 is another steep seasonal stream located farther uphill on Undi Road Bypass. The gradient of Stream S2 varies between 10 and 15 percent; its substrate is cobble and boulders; and its width varies from 1 foot to 5 feet. Stream S2 flows through a 36-inch CMP under Undi Road Bypass and down a steep slope into Wetland W7 (DEA 2021b).

Road Improvement Site 2

During wetland fieldwork, no wetlands or streams were identified in the vicinity of Road Improvement Site 2 (DEA 2021b).

Road Improvement Site 3

During wetland fieldwork, several small wetlands were identified at Road Improvement Site 3; these are classified as PEM/PSS wetlands. Two perennial streams also cross the road west of the intersection that are likely small tributaries of the Bogachiel River, which is approximately 0.15 mile to the south (DEA 2021b).

5.0 Description of Listed Species and Critical Habitat

This section addresses the legal status and distribution of listed species that have potential to occur in the action area. Those species listed by USFWS as threatened and endangered that have the potential to occur in the action area are listed in **Table 5.** No ESA-listed species under the jurisdiction of NMFS are present within the project area and action area.

Table 5. USFWS-Listed Species Potentially Present in the Action Area

Common Name	Scientific Name	Federal Status	Likely Presence in Action Area
Marbled murrelet	*Brachyramphus marmoratus*	Threatened	Yes
Critical habitat		Designated	Yes
Northern spotted owl	*Strix occidentalis caurina*	Threatened	No
Critical habitat		Not Designated	No
Bull trout	*Salvelinus confluentus*	Threatened	No
Critical habitat		Not Designated	No
Yellow-billed cuckoo	*Coccyzus americanus*	Threatened	No
Critical habitat		Not Designated	No
Streaked horned lark	*Erimophila alpestris strigata*	Endangered	No
Critical habitat		Not Designated	No

USFWS has identified a total of five listed species in the vicinity of the project area **(see Table 5).** Only one species, marbled murrelet, has designated critical habitat within the action area. One other species, northern spotted owl, has been documented in the general vicinity, but outside of the action area and the last observation was in 2002. Listed species under NMFS jurisdiction do not occur in the Bogachiel River or tributaries (NMFS 2016).

Three of the species—bull trout, yellow-billed cuckoo, and streaked horned lark—have never been documented in the action area. Because the action area is outside the known range of these species and/or lacks suitable habitat, the proposed project would have "**no effect**" on these three species.

Yellow-billed cuckoo. The yellow-billed cuckoo (*Coccyzus americanus*) is considered extirpated from Washington as a breeding population (Wiles and Kalasz 2017). There have been a handful of scattered observations of transient individuals over the last few decades, none of which were in Jefferson County or Clallam County (Bird Web 2021). The project would have **no effect** on yellow-billed cuckoo.

Streaked horned lark. The streaked horned lark (*Erimophila alpestris strigata)* is closely associated with prairie grasslands or sparsely vegetated coastal areas. It is not known to occur in heavily forested habitats (Stinson 2016). The project would have **no effect** on streaked horned lark.

Bull trout. Bull trout (*Salvelinus confluentus*) are a char native to Washington, Oregon, Idaho, Nevada, Montana, and western Canada (WDFW 2004). Compared to other salmonids, bull trout have more specific habitat requirements that appear to influence their distribution and

abundance. They need cold water to survive, so they are seldom found in waters where temperatures exceed 59 to 64 degrees Fahrenheit. They also require stable stream channels, clean spawning and rearing gravel, complex and diverse cover, and unblocked migratory corridors. Spawning occurs in streams where surface water temperatures do not rise above 46.4 degrees Fahrenheit (8 degrees Celsius) during the spawning period (USFWS 2014) and thus typically requires spawning habitats that are glacial in origin or are drained by higher altitude snow fields.

Bull trout are not found within the Bogachiel River or its tributaries; critical habitat has not been designated except for coastal areas and tidal reaches near the river mouth (WDFW Statewide Washington Integrated Fish Distribution Database; 50 Code of Federal Regulations [CFR] Part 17). At the lowest reaches of the river, anadromous varieties from other coastal watersheds may use the mouth and tidal portions of the river to feed. The proposed road improvements and vehicle pullouts will have no impacts on the Bogachiel River or any of its tributaries; therefore, the project will have **no effect** on bull trout.

Northern Spotted Owl. The northern spotted owl (*Strix occidentalis caurina*) inhabits structurally complex forests from southwest British Columbia through the Cascade Mountains and coastal ranges in Washington, Oregon, and California, as far south as Marin County. The spotted owl was listed under ESA as threatened on June 26, 1990, because of widespread loss of spotted owl habitat across its range and the inadequacy of existing regulatory mechanisms to conserve the species. Many populations of spotted owls continue to decline, especially in the northern parts of the species' range, even with extensive maintenance and restoration of spotted owl habitat in recent years. Research and monitoring indicate that spotted owls generally rely on mature and old-growth forests, because these habitats contain the structures and characteristics required for nesting, roosting, and foraging (USFWS 2011).

Currently, the most important range-wide threats to the spotted owl are competition with barred owls, ongoing loss of spotted owl habitat as a result of timber harvest, habitat loss or degradation from stand replacing, wildfire and other disturbances, and loss of amount and distribution of spotted owl habitat as a result of past activities and disturbances (USFWS 2011).

Designated critical habitat for northern spotted owl is not present within the project area and action area, and no owls have been found within the vicinity of the action area in nearly 20 years. However, according to the WDFW PHS Program, two spotted owl detections were made in 1997 and 2002 within the general vicinity of the site. Both detections were well outside of the terrestrial noise-driven action area; they were located approximately 4,000 feet and 10,300 feet to the northeast of the easternmost Site 3. Given the lack of designated critical habitat, the low number of detections, and observed historical detections having been outside of the terrestrial action area, the project will also have **no effect** on northern spotted owl.

5.1 Marbled Murrelet

Status: The marbled murrelet (*Brachyramphus marmoratus*) is a small seabird of the Alcidae family. Murrelets spend most of their lives in the marine environment, where they forage in near-shore areas and consume a diversity of prey species, including small fish and invertebrates. In their terrestrial environment, the presence of platforms (large branches or deformities) used for

nesting is the most important characteristic of their nesting habitat. Murrelet habitat use during the breeding season is positively associated with the presence and abundance of mature and old-growth forests, large core areas of old growth, low amounts of edge habitat, reduced habitat fragmentation, proximity to the marine environment, and forests that are increasing in stand age and height (USFWS 2012).

Marbled murrelet has experienced significant declines in the last decade over most of its range, including a 6.7 percent decline on the Washington outer coast from 2000 to 2013 (Falxa and Raphael 2015). The species decline has been largely caused by extensive removal of late-successional and old growth coastal forest, which serves as nesting habitat for murrelets. Additional factors in its decline include high nest-site predation rates and human-induced mortality in the marine environment from disturbance, gillnets, and oil spills. In addition, murrelet reproductive success is strongly correlated with the abundance of mid-trophic level prey. Effects to the marine environment that impact the availability of that prey can occur through overfishing or oceanographic variation from weather or climate events. Effects to adults in the marine environment from disturbance events such as underwater detonations or pile driving can also impact their ability to forage and successfully provide for their young.

USFWS listed the marbled murrelet as threatened on October 1, 1992, throughout its range in Washington, Oregon, and California. Critical habitat for the marbled murrelet was designated originally on May 24, 1996. It was subsequently revised on October 5, 2011 (50 CFR Part 17). USFWS has identified the following Primary Constituent Elements for marbled murrelet:

1. Individual trees with potential nesting platforms, and
2. Forested areas within 0.5 mile (0.8 kilometer) of individual trees with potential nesting platforms, and with a canopy height of at least one-half the site-potential tree height. This includes all such forest, regardless of contiguity.

Currently, USFWS has designated critical habitat that encompasses all of the road improvement sites and vehicle pullouts for marbled murrelet in the action area.

Presence in the Action Area: The WDFW PHS Program has documented approximately 15 occupied nest sites of marbled murrelet within the vicinity of the action area (see **Figure 9**). Most of these marbled murrelet nest sites are in the vicinity of Undi Lake and the Bogachiel River, nearest to Road Improvement Sites 1 and 2, and the vehicle pullout locations. The closest detected nest sites to the road improvement sites are approximately 1,478 feet northwest of Site 2 and 1,584 feet southwest of Site 1. These detections are outside of the calculated terrestrial action area of 953 feet from each of the three road improvement sites and pullouts. Suitable habitat for marbled murrelet is present in the terrestrial action area, but not within the project footprint of the Sites 1 and 2. Sections 6 and 7 discuss further the evaluation of effects to marbled murrelet.

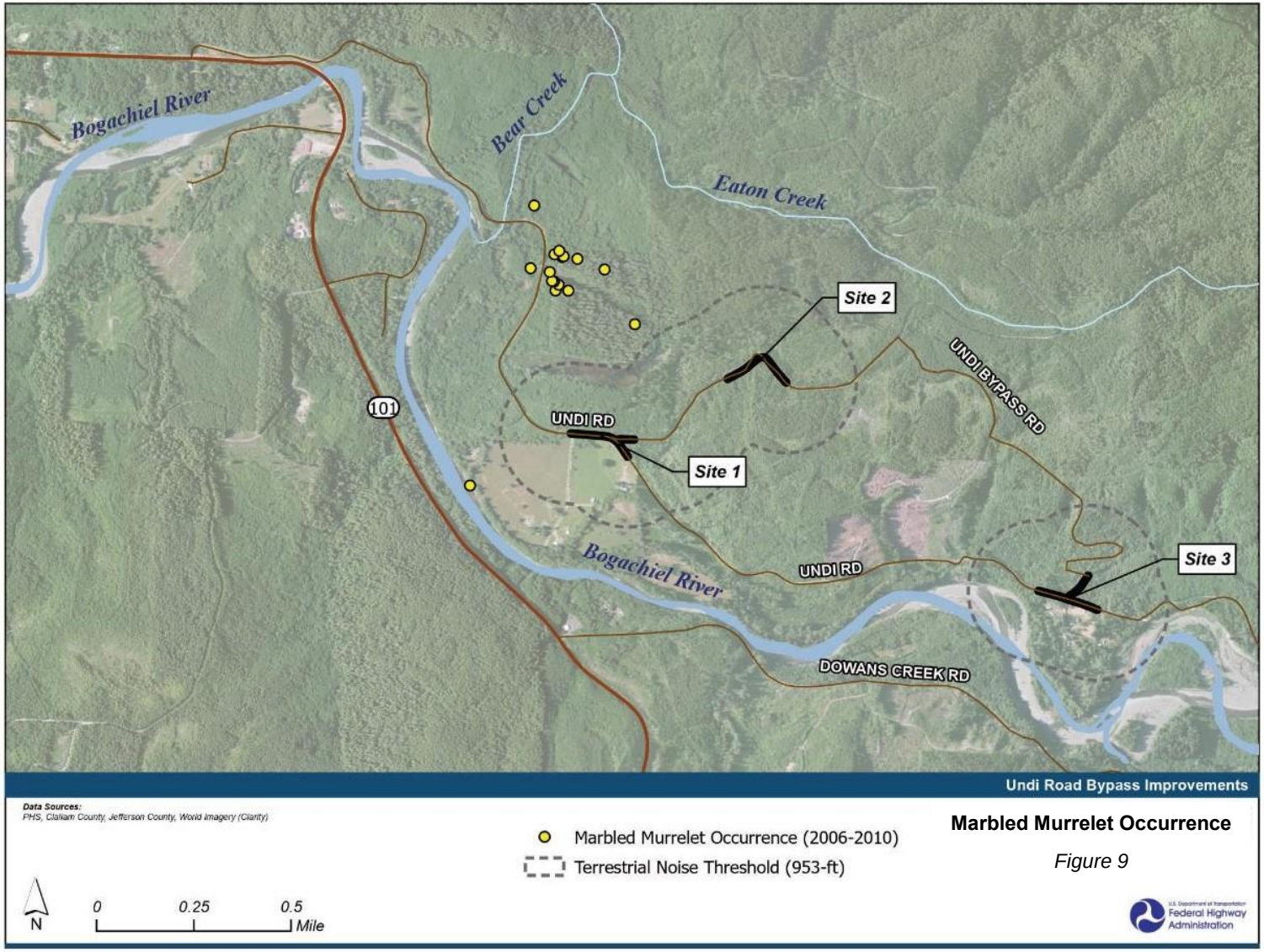

Bogachiel River
Bear Creek
Eaton Creek
Site 2
UNDI BYPASS RD
101
UNDI RD
Site 1
Bogachiel River
UNDI RD
Site 3
DOWANS CREEK RD
Undi Road Bypass Improvements
Data Sources:
PHS, Clallam County, Jefferson County, World Imagery (Clarity)
Marbled Murrelet Occurrence (2006-2010)
Terrestrial Noise Threshold (953-ft)
Marbled Murrelet Occurrence
N
0
0.25
0.5
Mile
U.S. Department of Transportation
Federal Highway Administration

Figure 9

6.0 Analysis of Effects

This section addresses the effects of the project to listed species. Direct effects are those effects caused directly by construction or operation of the proposed action. Indirect effects are those caused by, or resulting from, the proposed action that are later in time but are still reasonably certain to occur. These indirect effects could include effects on future food resources and foraging areas.

Interrelated actions are those that are part of a larger action and depend on the larger action for their justification (NOAA Fisheries 1996). Interdependent actions are those that have no independent utility apart from the action under consideration (Federal Register 1986).

6.1 Effects to Habitats

Effects to terrestrial habitats would be limited to any tree removal activities that would take place within the construction disturbance zones of Road Improvement Sites 1 and 2. The only trees removed will be those between 6-inches and 24-inches dbh to protect potential suitable nesting habitats for marbled murrelet. All trees within the construction disturbance zones of Road Improvement Sites 1 and 2 are not suitable nesting trees for murrelet. Both of these zones are on the south side of the Undi Bypass and are composed of younger secondary forest habitat. Larger trees, some with suitable nesting platforms, are present on the northern side of the Bypass, most of which are associated with forested wetland habitats and Undi Lake. None of these trees will be removed or disturbed. Tree removal will not occur at Road Improvement Site 3 or the three vehicle pullouts.

BMPs as outlined in **Tables 3** and **4** would be undertaken to prevent or minimize the runoff of construction debris or stormwater during the construction period.

The proposed project would not have impacts to aquatic habitats. Near one of the vehicle pullouts between Road Improvement Sites 1 and 2, two small tributary streams interconnect wetlands. These streams are small and intermittent, have steep grades, and are likely not fish bearing. This vehicle pullout will be designed to avoid stream impacts. BMPs will be implemented in order to minimize construction-related discharges. Existing culverts will not be removed or replaced. No increase in PGIS will be associated with the vehicle pullouts. The construction footprint at Road Improvement Site 1 is approximately 0.4 mile from the Bogachiel River and the construction footprints at Road Improvement Site 2 and the vehicle pullouts is approximately 0.4 mile from Eaton Creek, and there are no surface pathways to either stream (see **Figure 1**).

Site 3 is approximately 0.15 mile from the Bogachiel River, and two small streams are routed through culverts under Undi Road near the construction footprint; however, the size of the road improvements footprint at Site 3 will remain the same as the existing road, and BMPs will prevent or minimize the off-site runoff of construction-related materials. In addition, the nearest occupied habitats of ESA-listed fish (bull trout) are approximately 20 miles downstream of the proposed road improvement sites within tidal portions of the Bogachiel River.

The increase in impervious area in the project footprint will be small (less than 5,000 square feet), and therefore will be below the regulatory threshold to require additional stormwater

treatment. Despite the small increase in PGIS with the project, no new stormwater will be discharged directly into aquatic waterbodies.

6.2 Effects to Listed Species

6.2.1 Direct Effects – Marbled Murrelet

Direct effects to marbled murrelet would be considered discountable, because it would be limited to potential terrestrial noise generated by construction activities at the three road improvement sites and the vehicle pullouts. Terrestrial noise associated with construction is calculated to attenuate to background levels within 953 feet around each of the three sites and pullouts (see **Figure 8**). Marbled murrelet survey data (WDFW 2021) (see **Figure 9**) has determined that the closest documented nest site from Site 1 is 1,584 feet away, located within the riparian zone of the Bogachiel River. There is also a documented nest 1,637 feet away from Site 1, near the Undi Lake wetland. The distance of the nearest documented nest to Site 2 is 1,478 feet, near the Undi Lake wetland. The distance of the nearest documented nests to Site 3 are 6,389 feet (Undi Lake nest) and 7,867 feet (Bogachiel River nest) (see **Figure 9**).

USFWS uses standard threshold distances for several noise-generating/disturbance activities to help determine potential effects to murrelets, as shown in **Table 6** (WSDOT 2021).

Table 6. Disturbance, Disruption, and/or Physical Injury Distance Thresholds for Marbled Murrelet During the Nesting Season

Project Activity	**No Effect**	**Not Likely to Adversely Affect**	**Likely to Adversely Affect** (disruption distance)	**Likely to Adversely Affect** (direct injury and/or mortality)
Light maintenance (e.g., road brushing and grading) at administrative facilities, and heavily used roads	> 0.25 mile	≤ 0.25 mile	NA	NA
Chainsaws (includes felling hazard/danger trees)	> 0.25 mile	328 feet (100 meters) to 0.25 mile	<328 feet (100 meters)	Potential for mortality if trees felled contain platforms
* Heavy equipment for road construction, road repairs, bridge construction, culvert replacements, etc.	> 0.25 mile	328 feet (100 meters) to 0.25 mile	<328 feet (100 meters)	NA
Pile-driving (steel H piles, pipe piles), rock-crushing equipment	> 0.25 mile	363 feet (110 meters) to 0.25 mile	<363 feet (110 meters)	≤ 15 feet (5 yards) (injury)
Blasting	> 1 mile	0.25 mile to 1 mile	≤ 0.25 mile	≤ 300 feet (100 yards) (injury)

* Scenario similar to activity at the proposed road improvement sites

Heavy construction activities will not occur in areas where documented murrelet nests have been observed nor within 328 feet of suitable nesting trees. Although construction activities will occur within the broad USFWS definition of "suitable habitat," all construction footprints are outside of the Davis Layer of potential marbled murrelet habitat (see **Figure 8**).

USFWS also provides thresholds for habitat removal for projects that are within designated critical habitat for marbled murrelet, as shown in **Table 7** (WSDOT 2021).

Table 7. Project Effects within Designated Critical Habitat with Habitat Impacts or Vegetation Removal

Project Activity	No Effect	Not Likely to Adversely Affect	Likely to Adversely Affect
Upland Vegetation Removal and Management; Riparian and Wetland Vegetation Removal and Management	Marbled murrelet is not on county list, or project does not occur in critical habitat Note: **Any** type of habitat removal within critical habitat (suitable or non-suitable habitat removal) will have a not likely to adversely affect or an adverse effect determination.	If stand is in critical habitat and is within 0.5 mile of suitable habitat that is also within critical habitat, any vegetation removal creating new canopy gaps less than 0.25 acre and does not remove trees with suitable nest structure; or Removal of suitable habitat adjacent to a permanent opening (e.g., existing roads) if approved by the USFWS	If stand is in critical habitat and is within 0.5 mile of suitable nesting habitat that is also located within critical habitat, and project removes conifer trees that are ½ of the site potential tree height or taller and creates a new canopy gap ≥ 0.25 acre. If trees with suitable nesting structure are removed.

The proposed construction activities would qualify for a determination of "not likely to adversely affect" because vegetation removal will be relatively minor or would occur adjacent to permanent openings, as described below and shown in **Figure 1**:

- At Road Improvement Site 1, the proposed disturbance zone of 0.28 acre where tree removal will occur is adjacent to the permanent clearings of Undi Road, Undi Bypass Road, as well as expansive clearings used for agriculture and residential areas south of Site 1. All trees removed at Site 1 will occur in secondary forest habitats involving trees between 6- and 24-inches dbh and do not have suitable nesting platforms for marbled murrelet.

- At Road Improvement Site 2, the proposed disturbance zone of 0.45 acre is adjacent to the permanent clearing of Undi Bypass Road. In addition, all tree removal will occur in secondary forest of smaller trees (6- to 24-inch dbh) that do not have suitable nesting platforms for marbled murrelet.

- At Road Improvement Site 3, there will be no new disturbance zone or tree removal; all proposed road improvements will occur on the existing road prism. This site is also adjacent to permanent clearings associated with Undi Road, Undi Bypass Road, as well as existing residential properties.

- All three vehicle pullouts are adjacent to the permanent clearing of Undi Bypass Road. None of the vehicle pullouts will involve tree removal; all improvements will occur on existing widened areas of the Bypass.

The project is committed to preserving all trees over the size of 24 inches dbh within the three road improvement sites and the three vehicle pullouts.

6.2.2 Indirect Effects – Marbled Murrelet

Indirect effects to marbled murrelet are not anticipated. The road improvements and vehicle pullouts are proposed in order to increase the safety of Undi Bypass Road as a permanent replacement for Undi Road, which was permanently disabled by a landslide and river erosion in 2015/2016. An increase in traffic and in residential or commercial development is not anticipated once road improvements are completed. The primary purpose of the road will remain as access to Olympic National Park and the Bogachiel River Trail.

6.2.3 Interdependent and Interrelated Actions or Activities

The project does not have any identified interdependent or interrelated actions or activities.

7.0 Determination of Effects

This BA provides an analysis of the project effects on listed species. Information from site visits and species information obtained from available literature, and state and federal agencies, was used to establish the following determination of effects.

7.1 Marbled Murrelet

The proposed project **may affect** marbled murrelet for the following reasons:

- The action areas are within designated critical habitat of marbled murrelet.
- Trees that support potential nest platforms are present within the action area.

However, the proposed project is **not likely to adversely affect** marbled murrelet for the following reasons:

- The most recent nesting surveys have not documented marbled murrelet within the terrestrial action areas of the three road improvement sites or the proposed vehicle pullouts.
- Documented nesting sites are outside of the marbled murrelet disturbance zones of 328 feet and 0.25 mile.
- Although suitable habitat is likely present within the project area, the Davis Layer of potential marbled murrelet habitat is not.
- Construction activities will adhere to all required BMPs in order to prevent or minimize construction-related erosion from the site.
- The project will not remove any tree with a diameter of 24-inches dbh or greater.
- All disturbance zones resulting in tree removal within forest habitats are adjacent to permanent openings (e.g., existing roads or adjacent agricultural/residential areas). No canopy gaps will be created in uninterrupted forest habitat.

7.2 Northern Spotted Owl

The proposed project will have **no effect** on northern spotted owl for the following reasons:

- None of the action areas are within designated critical habitat of northern spotted owl.
- The last documented detection of northern spotted owl was in 2002.
- Detections are well outside of the terrestrial noise-driven action area of all three road improvement sites and the areas of the vehicle pullouts.

7.3 Bull Trout

The proposed project will have **no effect** on bull trout for the following reasons:

- Critical habitat has not been designated in or near the action areas of the road improvement sites or the pullout areas.
- No spawning populations of bull trout are found in the Bogachiel River basin.
- Bull trout are not found in the Bogachiel River basin outside of the lower tidal reaches, where anadromous varieties from other watersheds may feed.

7.4 Yellow-billed Cuckoo

The proposed project will have **no effect** on yellow-billed cuckoo for the following reasons:

- The yellow-billed cuckoo is considered extirpated from Washington as a breeding population.
- Scattered observations of transient individuals over the last few decades have been of non-breeding birds, and none have been detected in in Jefferson County or Clallam County.

7.5 Streaked Horned Lark

The proposed project will have **no effect** on streaked horned lark for the following reasons:

- The streaked horned lark is closely associated with prairie grasslands or sparsely vegetated coastal dune habitats; none of this habitat is present within the densely forested areas within the project area and action area.
- Streaked horned lark do not occur in heavily forested habitats.

8.0 References

Bird Web. 2021. Species Profile: Yellow-billed Cuckoo, *Coccyzus americanus.* Seattle Audubon Society. Available at: http://birdweb.org/birdweb/bird/yellow-billed_cuckoo.

Clallam County. 2009. Clallam County Road Index. Clallam County, WA.

David Evans and Associates, Inc. (DEA). 2021a. Undi Road Bypass Improvements, Final Scoping Report, Olympic National Forest and Olympic National Park, Jefferson and Clallam County, Washington. Prepared by David Evans and Associates, Inc. for the Federal Highway Administration, Western Federal Lands Highway Division. February 22, 2021

David Evans and Associates, Inc. (DEA). 2021b. Undi Road Bypass Improvements Project. Draft Wetland Delineation Report, Prepared by David Evans and Associates, Inc. for the Federal Highway Administration, Western Federal Lands Highway Division. October 2021.

Davis, R.J., Dugger, K.M., Mohoric, S., Evers, L., Aney, W.C. 2011. Northwest Forest Plan—the first 15 years (1994–2008): status and trends of northern spotted owl populations and habitats. Gen. Tech. Rep. PNWGTR-850. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 147 p

Ecology (Washington Department of Ecology). 2019. Stormwater Management Manual for Western Washington. Washington Department of Ecology, Water Quality Program. July 2019.

Falxa, G. A., and M. G. Raphael, technical editors. 2015. Northwest Forest Plan—The first 20 years (1994–2013): status and trend of marbled murrelet populations and nesting habitat. General Technical Report PNW-GTR-XXX. USDA Forest Service, Pacific Northwest Research Station, Portland, OR.

Jefferson County. 2020. County Road Index – West End. Jefferson County Public Works. Jefferson County, WA.

NOAA Fisheries. 1996. Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale. National Marine Fisheries Service, Environmental and Technical Services Division, Habitat Conservation Branch. Lacey, WA.

National Marine Fisheries Service (NMFS). 2016. Map of ESA Listings and Critical Habitat Designation for West Coast Salmon and Steelhead.

National Park Service (NPS). 2019. Olympic Hot Springs Road Reroute and Rehabilitation Biological Assessment and Essential Fish Habitat Analysis, Olympic National Park, Clallam County, WA.

Stinson, D. W. 2016. Periodic status review for the Streaked Horned Lark in Washington. Washington Department of Fish and Wildlife, Olympia, WA. 21 + iii pp.

Statewide Washington Integrated Fish Distribution (SWIFD). 2021. SWIFD online database query, accessed September 2021.

U.S. Fish and Wildlife Service (USFWS). 2011. Species Fact Sheet Northern Spotted Owl, *Strix occidentalis caurina*.

U.S. Fish and Wildlife Service (USFWS). 2012. Species Fact Sheet Marbled Murrelet, *Brachyramphus marmoratus*.

U.S. Fish and Wildlife Service (USFWS). 2014. Species Fact Sheet Bull Trout, *Salvelinus confluentus*.

Washington Department of Transportation (WSDOT). 2020. Washington State Department of Transportation BA preparation manual. August 2020.

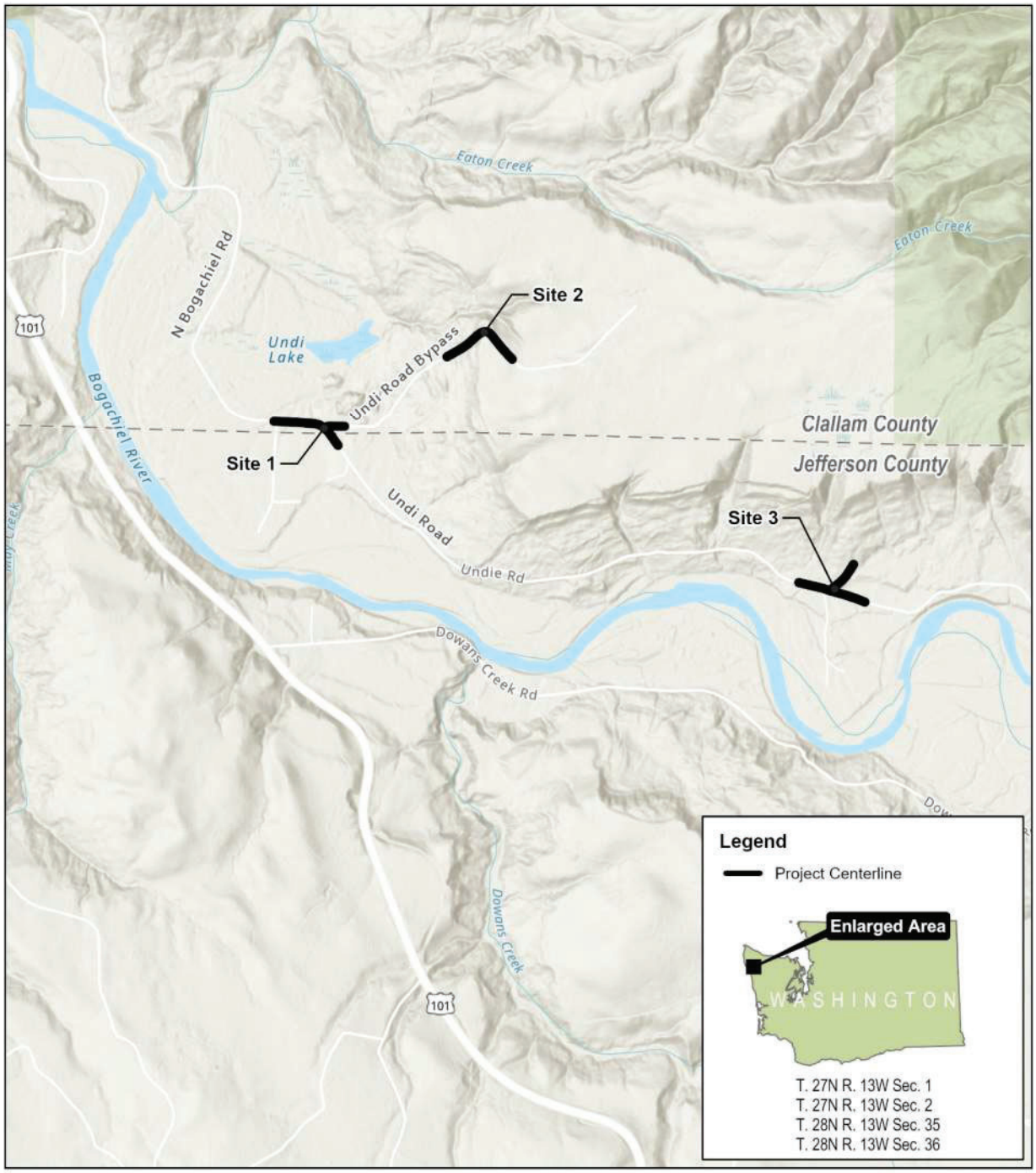
Washington Department of Fish and Wildlife (WDFW). 2021. Washington Department of Fish and Wildlife Priority Habitats and Species Cross Reference Report in the Vicinity of T27R13W Section 2, Report Date: Thursday, September 16, 2021.

Washington Department of Fish and Wildlife (WDFW). 2004. Washington State Salmonid Stock Inventory, Bull Trout/Dolly Varden. Washington Department of Fish and Wildlife. October 2004.

Wiles, G. J., and K. S. Kalasz. 2017. Status report for the Yellow-billed Cuckoo in Washington. Washington Department of Fish and Wildlife, Olympia, WA. 32+ iv pp.

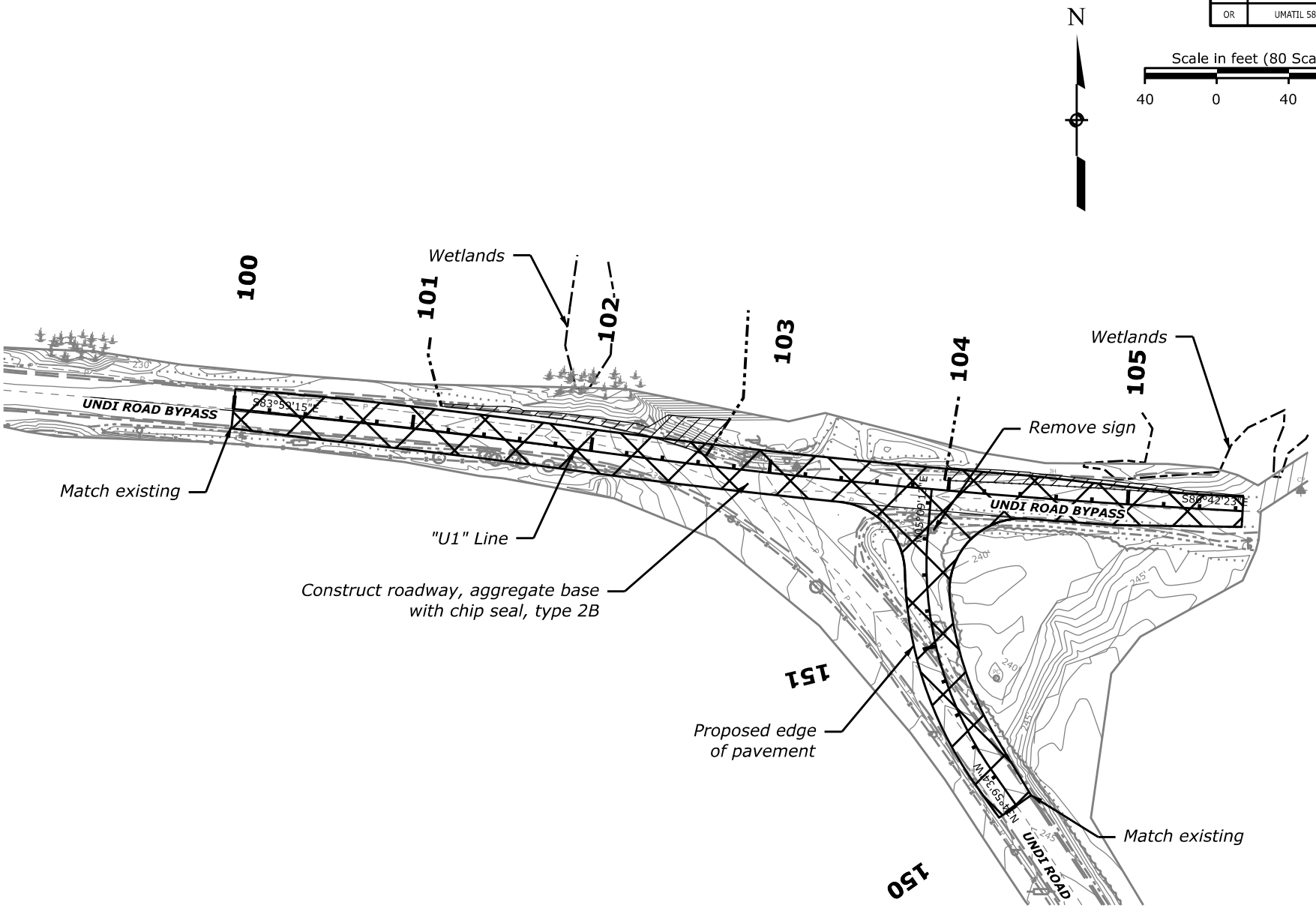
APPENDIX A

Design Exhibits



Vicinity Map

STATE	PROJECT	SHEET NUMBER
OR	UMATIL 582(1)	D.15



Site 1 PLAN

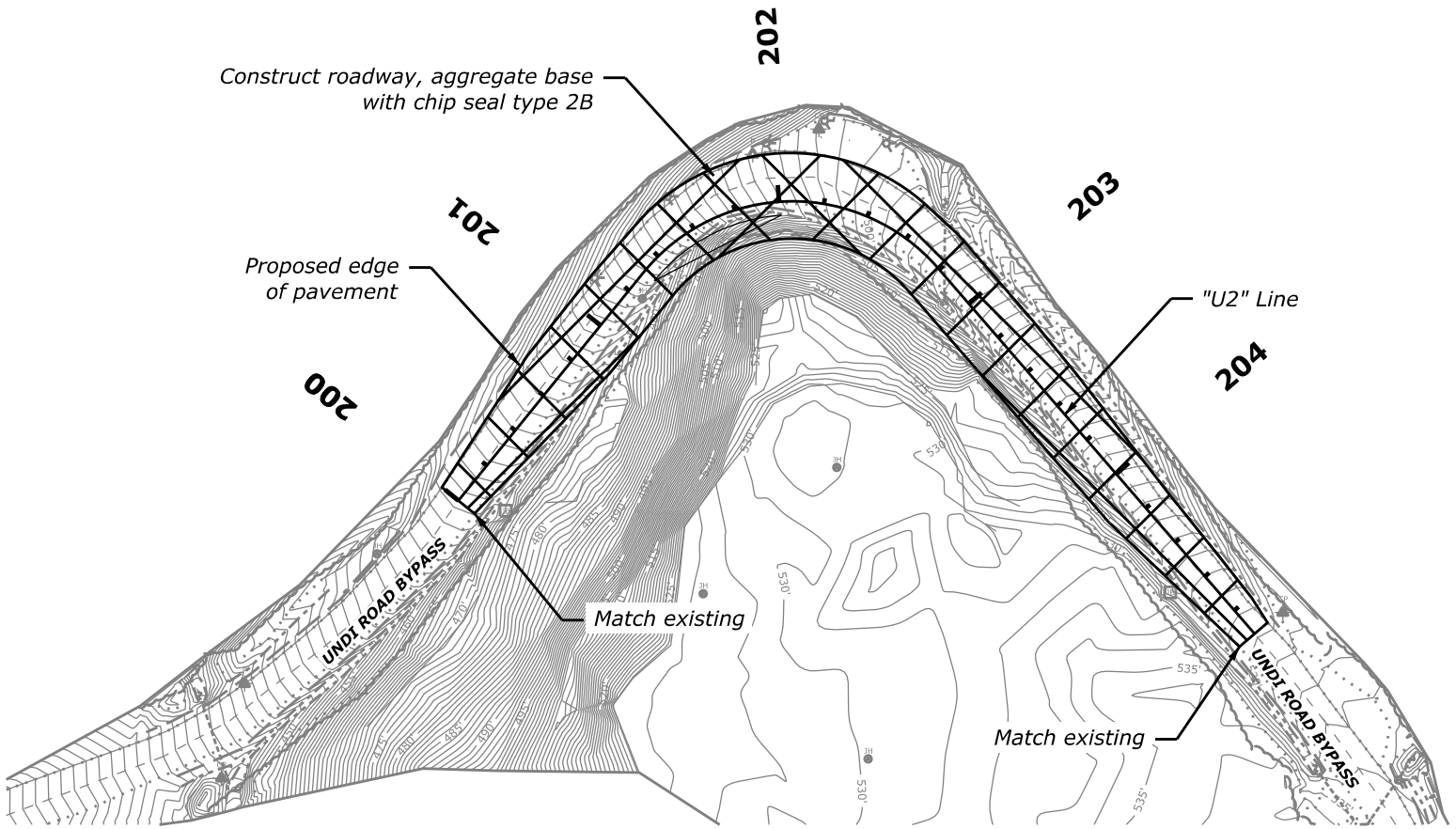
ROADWAY PLAN

STATE	PROJECT	SHEET NUMBER
OR	UMATIL 582(1)	D.15

N

Scale in feet (80 Scale)

40 0 40 80



Site 2 PLAN

ROADWAY PLAN

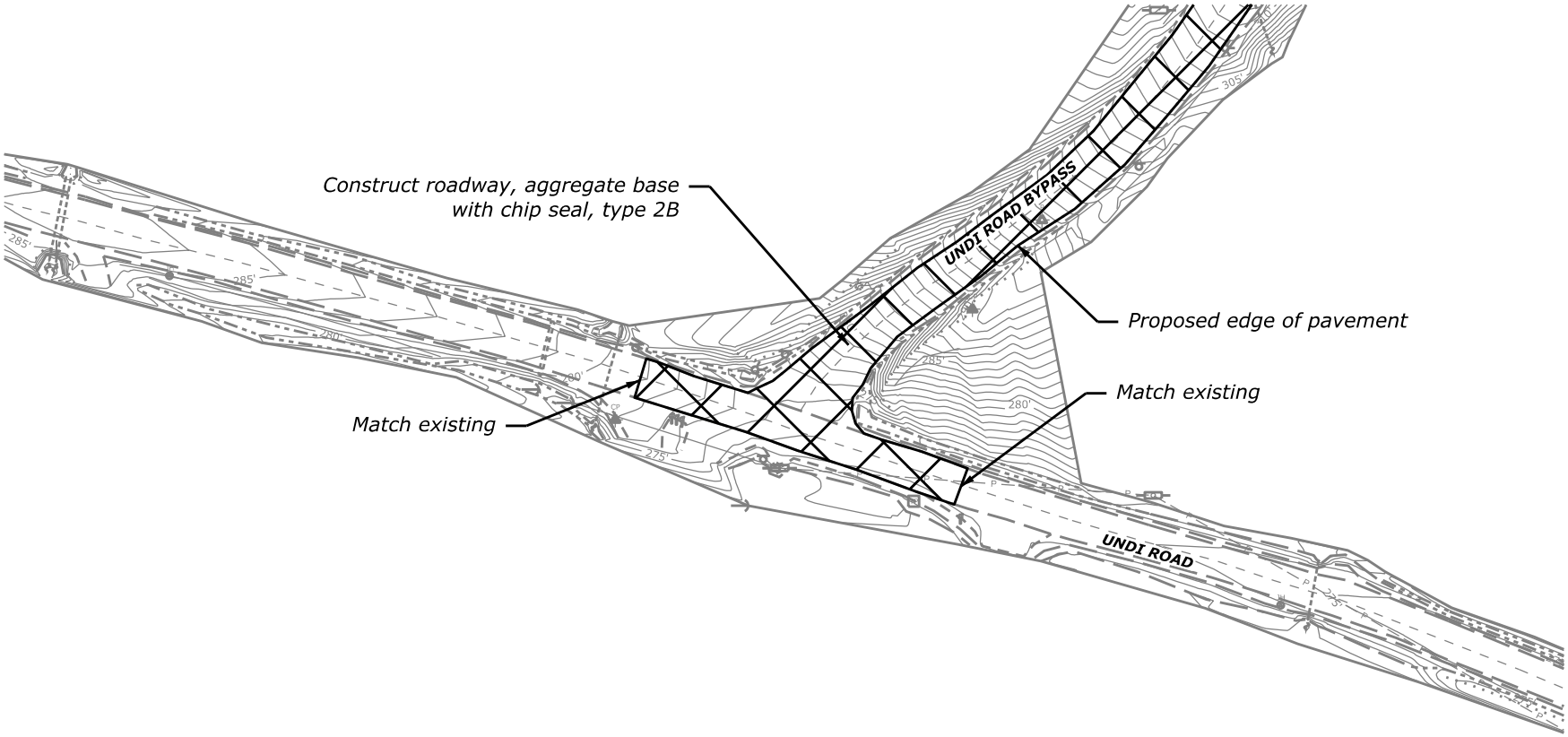
Checked by:
Designed by: Reece Murata
\\ideainc.com\files\PROJECT\FVFHAX0000002801\0400CADD\RH\EXHIBITS\Site and Pullout Exhibits.dgn
18 November 2021 2:15 PM

STATE	PROJECT	SHEET NUMBER
OR	UMATIL 582(1)	D.15

N

Scale in feet (80 Scale)

40 0 40 80



Site 3 PLAN

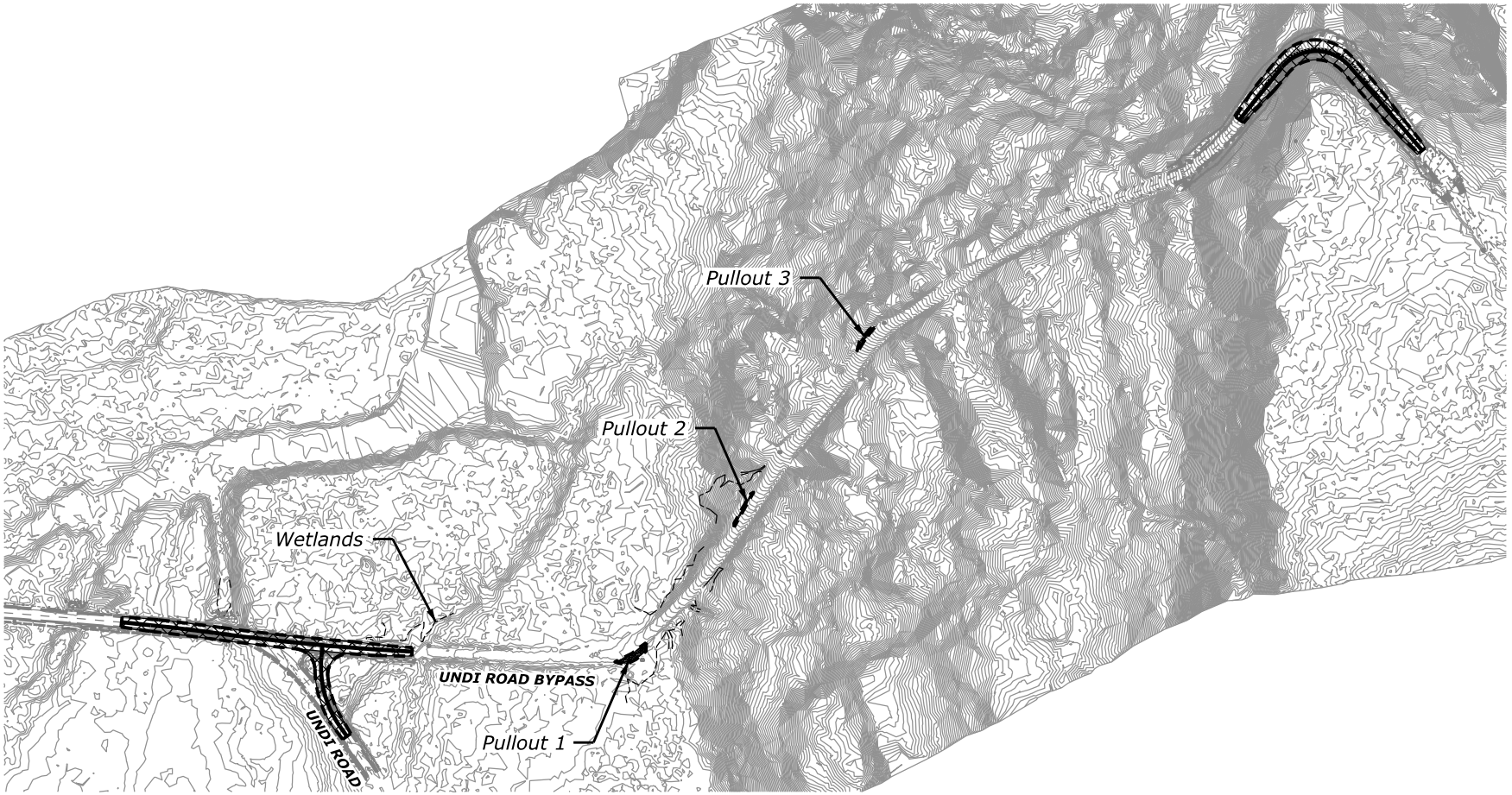
ROADWAY PLAN

STATE	PROJECT	SHEET NUMBER
OR	UMATIL 582(1)	D.15

N

Scale in feet (80 Scale)

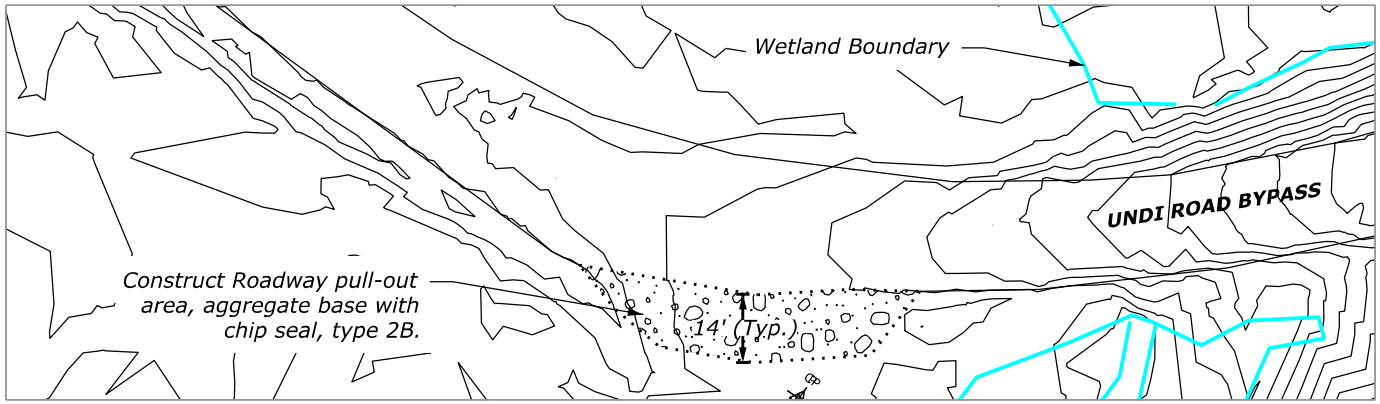
160 0 160 320



Pullout Plan

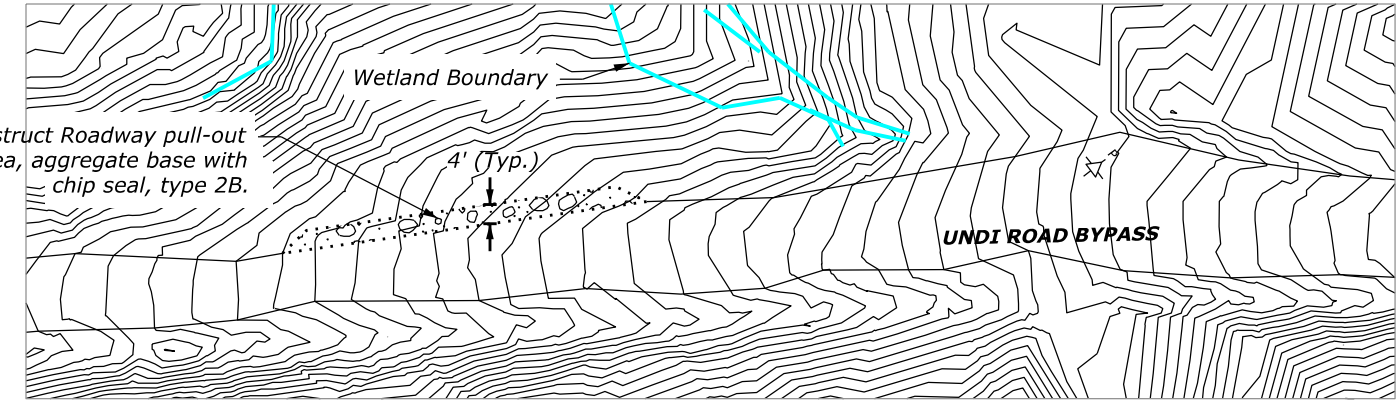
PULLOUT LOCATIONS

STATE	PROJECT	SHEET NUMBER
OR	UMATIL 582(1)	D.15



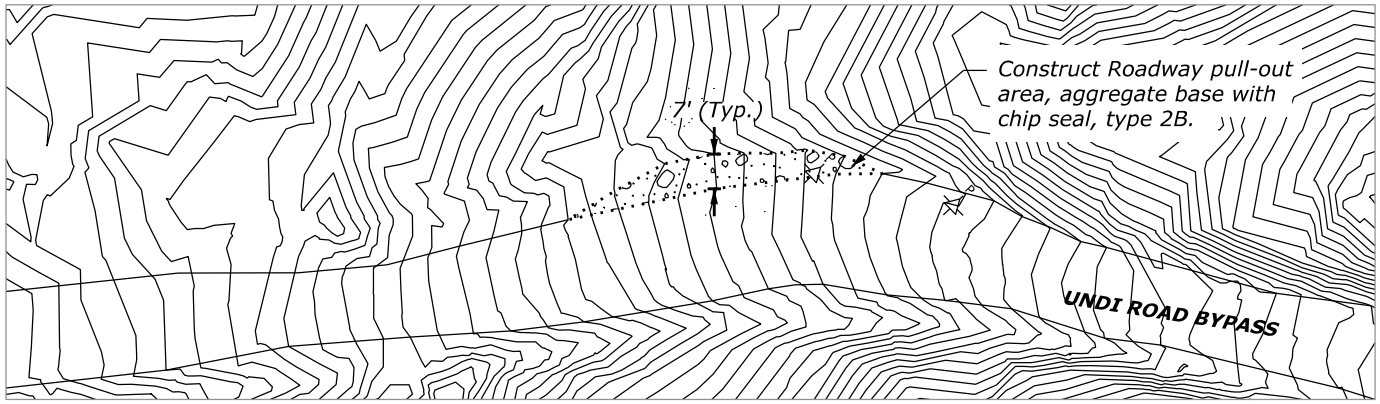
Scale in feet (20 Scale)
10 0 10 20

ROADWAY PULL-OUT 1 PLAN



Scale in feet (20 Scale)
10 0 10 20

ROADWAY PULL-OUT 2 PLAN



Scale in feet (20 Scale)
10 0 10 20

ROADWAY PULL-OUT 3 PLAN

NOTES:

1 Shape and size of turnouts based on LIDAR.

PULLOUT DETAILS

APPENDIX B

US Fish and Wildlife Service IPAC Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
Phone: (360) 753-9440 Fax: (360) 753-9405
http://www.fws.gov/wafwo/

In Reply Refer To: December 01, 2020
Consultation Code: 01EWFW00-2021-SLI-0272
Event Code: 01EWFW00-2021-E-00513
Project Name: Undi Road Improvements

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated and proposed critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. The species list is currently compiled at the county level. Additional information is available from the Washington Department of Fish and Wildlife, Priority Habitats and Species website: http://wdfw.wa.gov/mapping/phs/ or at our office website: http://www.fws.gov/wafwo/species_new.html. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether or not the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:
http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). You may visit our website at http://www.fws.gov/pacific/eagle/for information on disturbance or take of the species and information on how to get a permit and what current guidelines and regulations are. Some projects affecting these species may require development of an eagle conservation plan: (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Also be aware that all marine mammals are protected under the Marine Mammal Protection Act (MMPA). The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas. The importation of marine mammals and marine mammal products into the U.S. is also prohibited. More information can be found on the MMPA website: http://www.nmfs.noaa.gov/pr/laws/mmpa/.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Related website:
National Marine Fisheries Service: http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
(360) 753-9440

Project Summary

Consultation Code: 01EWFW00-2021-SLI-0272

Event Code: 01EWFW00-2021-E-00513

Project Name: Undi Road Improvements

Project Type: TRANSPORTATION

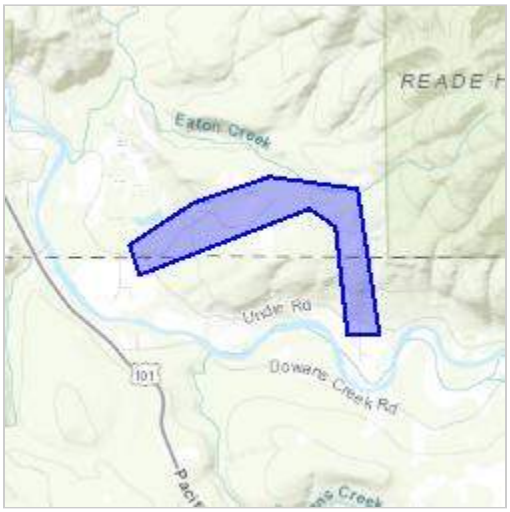
Project Description: Project is at three isolated locations along Undi Road, within overall defined boundary. The project is in the preliminary scoping phase.
• Site 1 (west end): Improve intersection. The project will reconfigure the intersection to make the primary route, Undi Road Bypass. This work includes signing, minor re-alignment, paving of the primary route, etc. Potential tree removal.

• Site 2 (central): Realignment. Improve the steep curve at the top of the first hill. This corner has sight distance deficiencies and is very difficult for horse trailers to navigate. The project will improve the alignment which may include vertical and horizontal modifications. A hill cut and tree removal are likely.

• Site 3 (east end): Improve intersection. The existing T-intersection has steep gravel road approaches. The project will improve this intersection with signing, paving, striping or other solution to get a better intersection.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/47.881268302826854N124.33765559347118W



Counties: Clallam, WA | Jefferson, WA

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Streaked Horned Lark *Eremophila alpestris strigata* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7268	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Bull Trout *Salvelinus confluentus* Population: U.S.A., conterminous, lower 48 states There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8212	Threatened
Dolly Varden *Salvelinus malma* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1008	Proposed Similarity of Appearance (Threatened)

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* https://ecos.fws.gov/ecp/species/4467#crithab	Final

APPENDIX C

Photo Log

PHOTO 1

PHOTO 2

1.	**Conifer trees with suitable nest platforms near Site 1**	***Site Photographs***
2.	**Conifer trees with suitable nest platforms near Site 1**	

PHOTO 3

PHOTO 4

3.	**Conifer trees with suitable nest platforms near Site 2**	***Site Photographs***
4.	**Conifer trees with suitable nest platforms near Site 2**	

PHOTO 5

PHOTO 6

5.	**Conifer trees with suitable nest platforms near Site 3**	***Site Photographs***
6.	**Conifer trees with suitable nest platforms near Site 3**	

PHOTO 7

PHOTO 8

7.	**Undi Lake and surrounding wetlands**	***Site Photographs***
8.	**Large platform trees in the Undi Lake area**	

PHOTO 9

PHOTO 10

9.	**Intersection of Undi Road and Undi Bypass Road (Road Improvement Site 1)**	***Site Photographs***
10.	**Tight turn around Road Improvement Site 2**	

PHOTO 11

PHOTO 12

11.	**Intersection of Undi Road and Undi Bypass Road (Road Improvement Site 3)**	***Site Photographs***
12.	**Culvert passing underneath Undi Bypass Road, connecting small wetland areas.**	

PHOTO 13

13. **Typical existing vehicle pullout area.**	***Site Photographs***

\