DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, PORTLAND DISTRICT
P.O. BOX 2946
PORTLAND, OR 97208-2946

August 23, 2019

Regulatory Branch
Corps No.: NWP-2019-309

Mr. Charles Knoll
Linn County Road Department
3010 Ferry Street SW
Albany, OR. 97322
cknoll@co.linn.or.us

Dear Mr. Charles Knoll:

The U.S. Army Corps of Engineers (Corps) received your request for Department of the Army authorization to remove fourteen pilings located below the ordinary high water mark (OWHM) with a vibratory hammer. To facilitate the removal, temporary sandbags would be placed in the water adjacent to the piling along with a debris containment boom. The sandbags would cover up to 60 square feet with 5 cubic yards of temporary fill. The removal of the pilings would remove 9.6 cubic yards of material with an area of 18.6 square feet. The project is in Hamilton Creek (river mile 2.1) located in Lebanon, Linn County, Oregon at Latitude/Longitude: 44.511°, -122.813°.

This letter verifies your project as depicted on the enclosed drawings (Enclosure 1) is authorized by Nationwide Permit (NWP) No.: 14, Linear Transportation Projects (*Federal Register, January 6, 2017, Vol. 82, No.: 4*) provided you obtain a 401 Water Quality Certification (WQC) decision from the Oregon Department of Environmental Quality (DEQ). You are not authorized to begin work in waters of the U.S. until you obtain and submit to our office a 401 WQC decision or waiver.

In order for this authorization to be valid, you must ensure the work is performed in accordance with the enclosed Nationwide Permit 14 Terms and Conditions (Enclosure 2); any 401 Water Quality Certification conditions, as applicable (see below); and the following special conditions:

a. This Corps permit does not authorize you to take an endangered species in particular those species identified in Enclosure 3. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit, or a biological opinion under ESA Section 7, with “incidental take” provisions with which you must comply). The National Marine Fisheries Service (NMFS) Stormwater, Transportation and Utilities programmatic biological opinion dated March 14, 2014 (NMFS Reference Number NWR-2013-10411), contains the mandatory terms and conditions to implement the reasonable and prudent

measures that are provided in the “incidental take” statement associated with the opinion. Your authorization under this Corps permit is conditional upon your compliance with all of the applicable mandatory terms and conditions associated with the incidental take statement. Failure to comply with the applicable terms and conditions associated with incidental take of this opinion, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute noncompliance with your Corps permit. The NMFS is the appropriate authority to determine compliance with the terms and conditions of its opinion and with the ESA.

b. Permittee shall fully implement all applicable Project Design Criteria (PDC) of the SLOPES V Stormwater, Transportation and Utilities programmatic biological opinion. A detailed list of the PDCs are enclosed (Enclosure 3). The applicable PDCs for the project include numbers: 5, 6, 7, 13, 14, 18, 19, 25, 26, 27, 30, 31, 33, 34, 42(a), and 42(e).

c. All in-water work shall be performed during the in-water work period of June 1 to October 15, to minimize impacts to aquatic species. Exceptions to this time period requires specific approval from the Corps and the National Marine Fisheries Service.

d. Permittee shall dispose of excavated materials at a suitable upland location, and materials shall be adequately stabilized to minimize increases in turbidity levels and indirect impacts to wetlands and other aquatic systems. The material shall be placed in a location and manner that prevents its discharge into waterways or wetlands. In the event of spills, affected material shall be taken to an appropriate upland location (and properly disposed of in accordance with any state standards or requirements).

e. Permittee shall isolate and confine the worksite from the active channel to minimize turbidity and prevent pollutants from entering the waterbody. Permittee shall take the necessary precautions to prevent any petroleum products, chemicals, or deleterious or toxic materials from entering waterways during construction to prevent the introduction of contaminants or pollutants into the aquatic ecosystem.

f. If human remains or cultural resources are discovered during the performance of the authorized work the permittee shall implement the Inadvertent Discovery Plan procedures and immediately notify the U.S. Army Corps of Engineers, Portland District, Regulatory Branch (Enclosure 4).

The requirements of the Endangered Species Act were met through a programmatic biological opinion as listed in the special condition above. The complete text of the biological opinion is available for your review at: https://www.nwp.usace.army.mil/environment/. Please note, you must submit an *Action*

Completion Report form which is provided in Enclosure 3. Please submit the report and any other reports associated with this permit to either the letterhead address above or by e-mail to: cenwp.notify@usace.army.mil. For submittals by e-mail, the e-mail subject line shall include the Corps project number listed above and the name of the county where the project is located.

We have reviewed your project pursuant to the requirements of the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act and the National Historic Preservation Act. We have determined the project complies with the requirements of these laws provided you comply with all of the permit general and special conditions.

At this time, the DEQ has not completed a 401 WQC decision for this project. Before proceeding with the work authorized by this NWP, you must obtain a 401 WQC or certification waiver from the DEQ. Please contact the DEQ regarding this requirement at: 401 Water Quality Permit Coordinator, Oregon Department of Environmental Quality, 700 NE Multnomah Street, Suite 600, Portland, Oregon, 97232, by telephone at (503) 229-5623, or visit https://www.oregon.gov/deq/wq/wqpermits/Pages/Section-401-Nationwide.aspx. After obtaining a 401 WQC or a waiver for certification, you must submit a copy of the 401 WQC or waiver to our office. The conditions of the 401 WQC will become conditions of this NWP verification. This NWP verification will become effective upon our receipt of the 401 WQC. You may then proceed with construction.

The proposed work is not authorized by this NWP if the DEQ denies the 401 WQC. Please contact us if the 401 WQC is denied.

If the DEQ has not provided you with a 401 WQC decision within twelve (12) months of the date of this letter, your requirement to obtain a 401 WQC becomes waived. You may then proceed with construction.

Please note, Portland District NWP Regional General Condition 3, Cultural Resources and Human Burials Inadvertent Discovery Plan, details procedures should an inadvertent discovery occur. You must ensure that you comply with this condition during the construction of your project.

The Corps did not prepare a jurisdictional determination (JD) for this project. The Corps has treated the aquatic resource(s) to be affected by this project as jurisdictional waters of the U.S. If you believe the Corps does not have jurisdiction over some or all of the aquatic resources at the project site, you may request a JD. If one is requested, please be aware that we may require the submittal of additional information to complete

the JD and work authorized in this letter may not occur until the Corps completes the JD.

The verification of this NWP is valid until March 18, 2022, unless the NWP is modified, reissued, or revoked prior to that date. If the authorized work has not been completed by that date and you have commenced or are under contract to commence this activity before March 18, 2022, you will have until March 18, 2023, to complete the activity under the enclosed terms and conditions of this NWP. If the work cannot be completed by March 18, 2023, you will need to obtain a new NWP verification or authorization by another type of Department of the Army permit.

Our verification of this NWP is based on the project description and construction methods provided in your permit application. If you propose changes to the project, you must submit revised plans to this office and receive our approval of the revisions prior to performing the work. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation of Section 404 of the Clean Water Act. You must also obtain all local, state, and other federal permits that apply to this project.

Upon completing the authorized work, you must fill out and return the enclosed *Compliance Certification* form (Enclosure 5). We would like to hear about your experience working with the Portland District, Regulatory Branch. Please complete a customer service survey form at the following address: http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

If you have any questions regarding this NWP verification, please contact Ms. Caila Heintz at the letterhead address, by telephone at (508) 808-5113, or e-mail: Caila.M.Heintz@usace.army.mil.

FOR THE COMMANDER, AARON L. DORF, COLONEL, CORPS OF ENGINEERS, DISTRICT COMMANDER:

Melody White

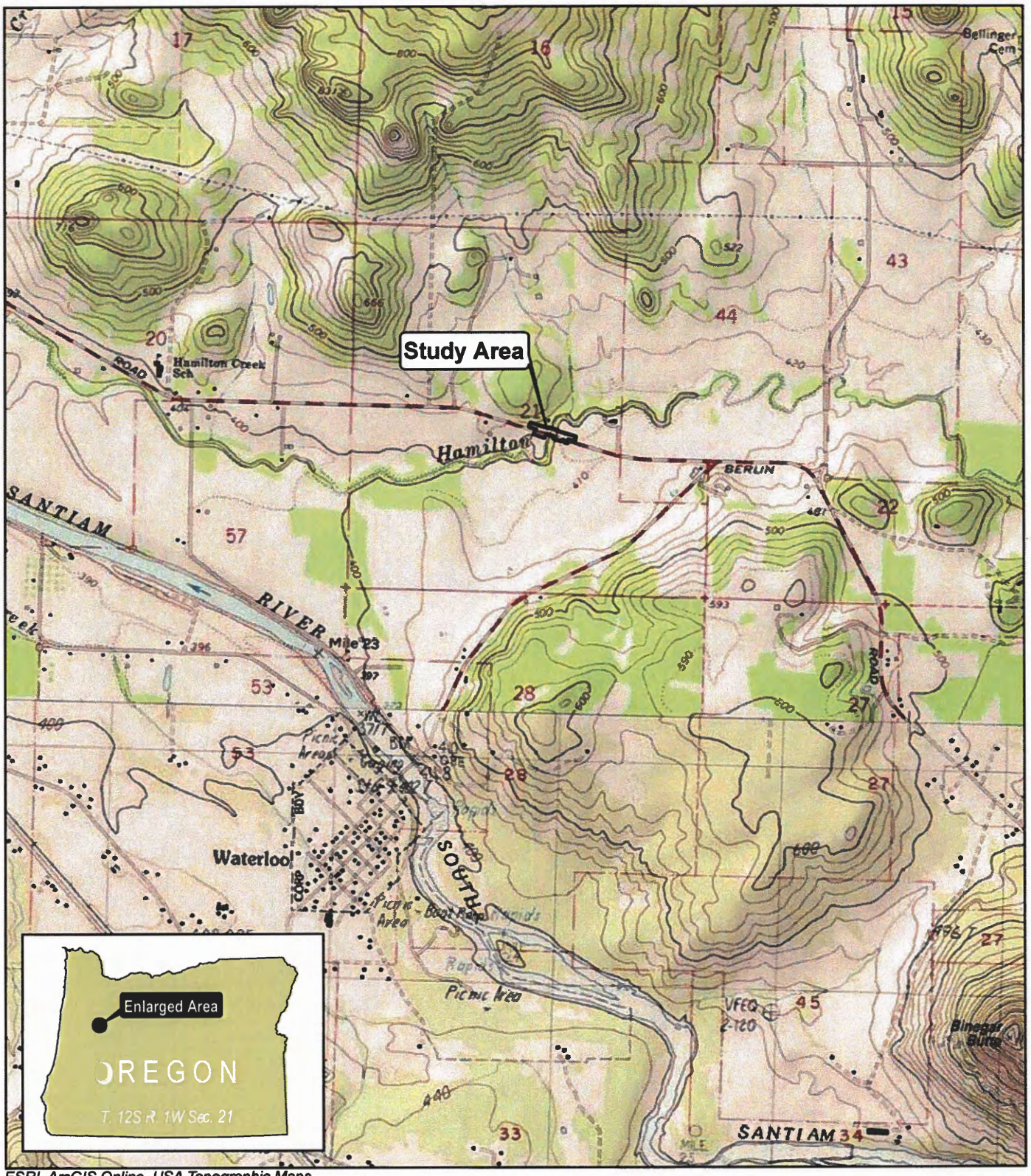
Date: 2019.08.23 11:17:24 -07'00'

For: William D. Abadie
Chief, Regulatory Branch

Enclosures

cc:

Oregon Department of State Lands (Carrie Landrum, Carrie.Landrum@state.or.us)
Oregon Department of Environmental Quality (401applications@deq.state.or.us)



ESRI, ArcGIS Online, USA Topographic Maps.
1957. Onehorse Slough, Oregon.
1988. Waterloo, Oregon.

Berlin Road (Hamilton Creek) Bridge Replacement Project

Figure 1
Vicinity

N 0 2,000 4,000 Feet

Default Folder: P:\L\LINN00000032\0600INFO\GIS\Maps\Wetland Determination

BERLIN
Hamilton Creek Berlin Road
Bridge Replacement Project
2017 Aerial Image
T12S, R01W Sec 21
N
0
125
250
500 Feet
Produced by Linn County

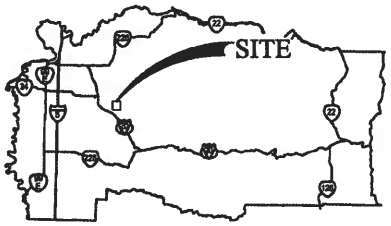
LINN COUNTY ROAD DEPARTMENT

OVERALL PROJECT LENGTH: 0.13 MILES

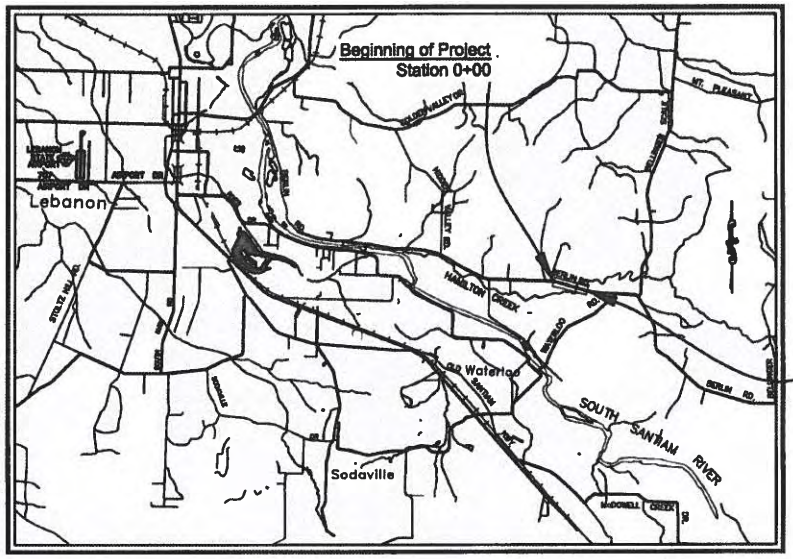
BRIDGES AND ROADWAY
HAMILTON CREEK, BERLIN ROAD BRIDGE REPLACEMENT

LINN COUNTY BRIDGE NO. BR0020B-0490
ODOT BRIDGE NO. 23838

JANUARY 2019



PROJECT LOCATION



Think SAFETY!
Don't be a Weak Link

English Units

ATTENTION:
Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain a copies of the rules by calling the center. (Note: the telephone number for the Oregon Utility Notification Center is (503) 232-1987.)

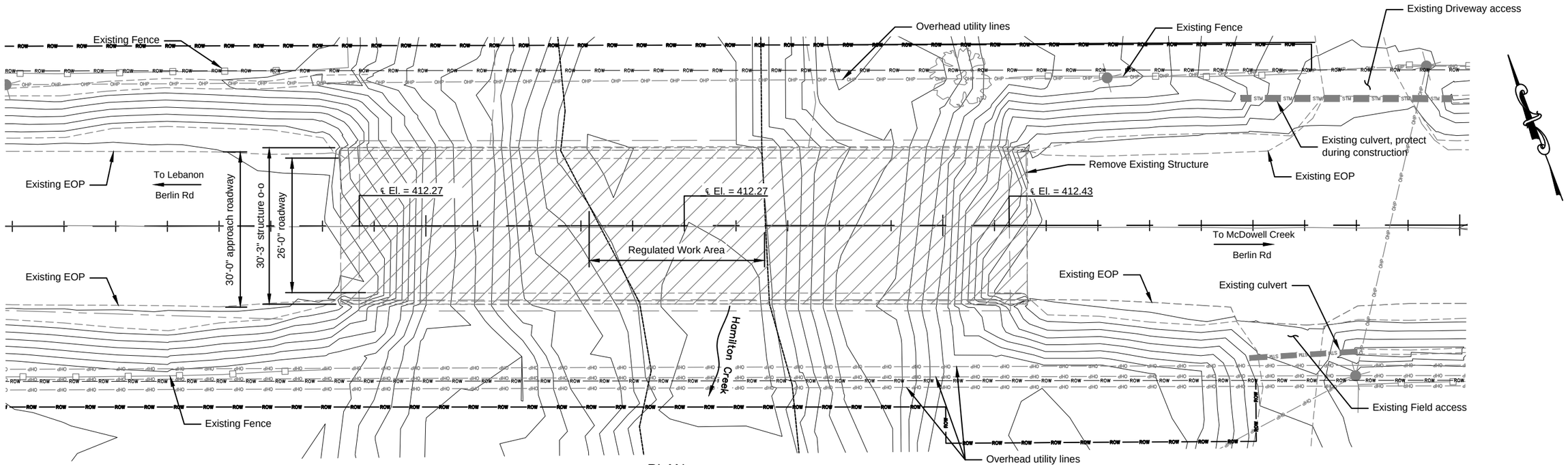
WARNING
If this bar does not measure 1" then drawing is not to scale

SEE SHEET 2 FOR SHEET INDEX

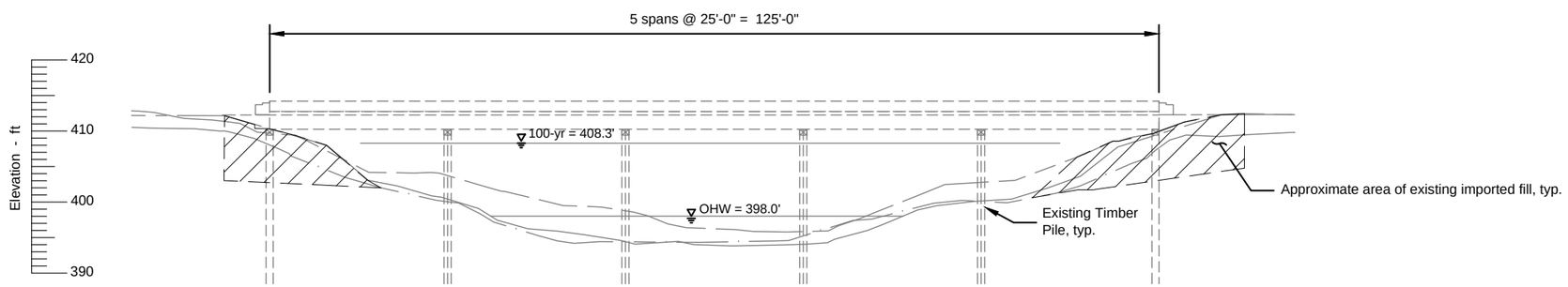
REGISTERED PROFESSIONAL ENGINEER 9174 OREGON JULY 22, 1977 CHARLES RYAN KNOLL
Expires: 6/30/21

LINN COUNTY ROAD DEPARTMENT 3010 FERRY STREET SW ALBANY, OREGON 97322 PHONE: (541) 967-3918 FAX: (541) 924-0322 E-MAIL: Roads@co.linn.or.us	COUNTY COMMISSION ROGER NYQUIST CHAIRMAN JOHN LINDSEY WILLIAM TUCKER	ROADMASTER DARRIN L. LANE, P.E. COUNTY ENGINEER CHARLES R. KNOLL, P.E.	DATE:	REVISION:	BY:	BRIDGE NO: 0020B-0490	DATE: 10/18/2018	HAMILTON CREEK, BERLIN ROAD BRIDGE REPLACEMENT 90% PRELIMINARY DRAWINGS	TITLE SHEET		
						PROJECT NO: CB1303					
						TRS: T. 12 S., R. 01 W., SEC. 21					
						DESIGNED BY: A. Potts	CHECKED BY: K. Groom	LINN COUNTY JANUARY 2019	SCALE: no scale	SHEET 1	
						DRAFTED BY: A. Potts	REVIEWED BY: C. Knoll				

6/17/2019 11:10 AM



PLAN
1" = 20'-0"



Note:
Elevations are based on NGVD29/47 (M.S.L. = 0.00)

ELEVATION
1" = 20'-0"

REGISTERED PROFESSIONAL ENGINEER 86074PE OREGON DECEMBER 31, 2016 ANDREW T. POTTS
PRELIMINARY
Expires: 12/31/20

LINN COUNTY ROAD DEPARTMENT 3010 FERRY STREET SW ALBANY, OREGON 97322 PHONE: (541) 967-3919 FAX: (541) 924-0202 E-MAIL: Roads@co.linn.or.us	COUNTY COMMISSION ROGER NYQUIST CHAIRMAN JOHN LINDSEY WILLIAM TUCKER	ROADMASTER DARRIN L. LANE, P.E. COUNTY ENGINEER CHARLES R. KNOLL, P.E.	DATE:	REVISION:	BY:	BRIDGE NO: 0020B-0490	DATE: 10/16/2018	HAMILTON CREEK, BERLIN ROAD BRIDGE REPLACEMENT 90% PRELIMINARY DRAWINGS	EXISTING STRUCTURE	
						PROJECT NO: CB1303				
						TRS: T. 12 S., R. 01 W., SEC. 21				
						DESIGNED BY: A. Potts	CHECKED BY: K. Groom			
						DRAFTED BY: A. Potts	REVIEWED BY: C. Knoll	LINN COUNTY JANUARY 2019	SCALE: 1" = 20'	SHEET 4

K:\Projects - Current\BR 0020B-0490 Hamilton Creek - Berlin Road\Drawings\Base Map.dwg

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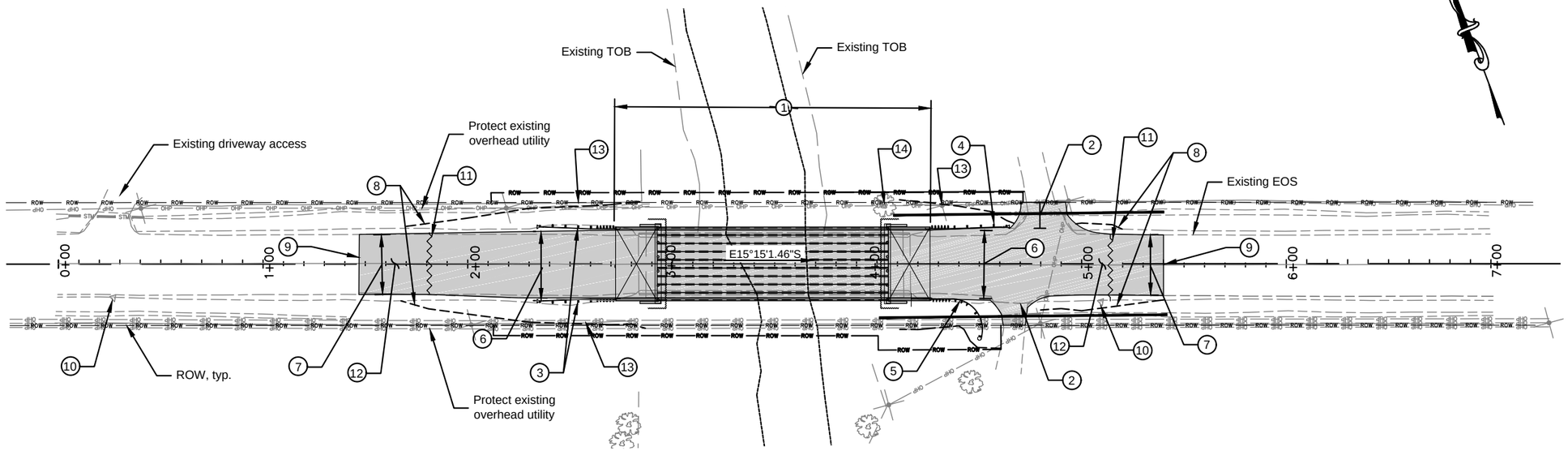
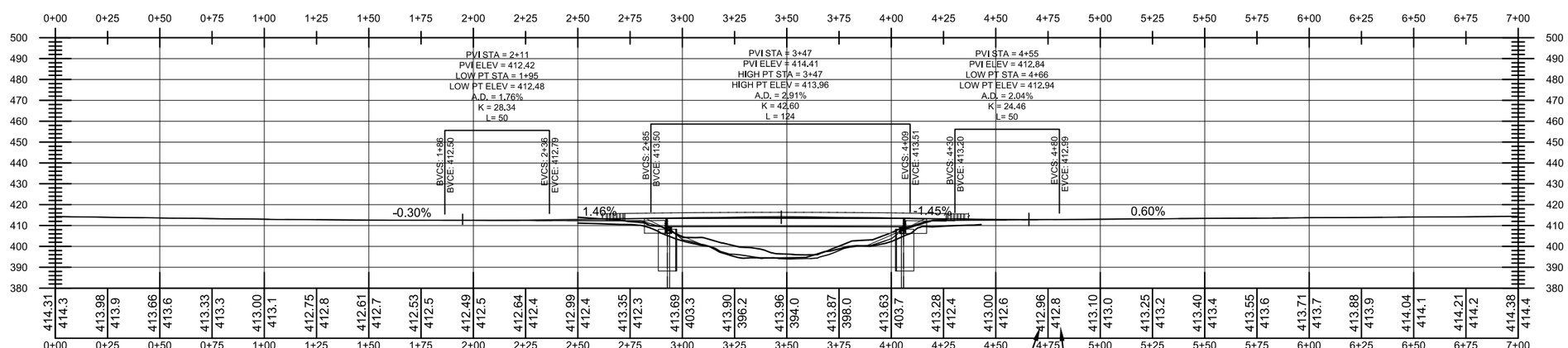


PLAN
1" = 60'-0"

STA: 0+00 to STA: 7+00



PROFILE
1" = 60'-0"

Note:
Elevations are based on
NGVD29/47 (M.S.L. = 0.00)

1. Berlin Road: Hamilton Creek Bridge. County Br. No. 0020B-0490. Construct proposed bridge as shown in Sheets 10 to 18. Remove existing bridge.
2. Install 15' from EOP, asphalt pavement overlay at existing driveways. Raise grade of driveway accesses to match into new roadway elevations. Widen driveway at STA: 4+73 to STA: 4+87 LT to 22' wide from STA 4+70 to STA 4+92 LT. Overlay only driveway at STA: 4+59 to STA: 4+74 RT.
3. Install Guardrail Connector, Guardrail transition, 12.5' of Type 3 Guardrail, and Non-Flared Guardrail Terminal (Test Level 3), W = 1' From end of bridge rail to STA: 2+34 RT and LT, per Std. Dwg. RD400, RD405, RD410, RD415, RD420, RD440, and BR203.
4. Install Guardrail Connector, Guardrail transition, 12.5' of Type 3 Guardrail, and Non-Flared Guardrail Terminal (Test Level 3), W = 2' From end of bridge rail to STA: 4+62 LT, per Std. Dwg. RD400, RD405, RD410, RD415, RD420, RD440, and BR203.
5. Install Guardrail Connector, Guardrail transition, 18.75' of Type 4 Guardrail, and Thrie beam end piece (Type B) with Type 1 modified anchor, R = 15' Tang. sec. = 12'-6". From end of bridge rail to STA: 4+51 RT, per Std. Dwg. RD400, RD405, RD410, RD415, RD420, RD440, DET1455, BR203 and BR233.
6. Rebuild roadway approach with 6" ACWS and 15" of compacted base aggregate to finished ground elevations shown in Profile from STA: 1+81 to STA: 2+34 and STA: 4+26 to STA: 5+15. Taper roadway width from existing to match new bridge roadway width.
7. Match existing roadway width and install a minimum 2" asphalt pavement overlay matching elevations shown in profile from STA: 1+45 to STA: 1+81 and STA: 5+15 to STA: 5+40.
8. Install 3/4" - 0 Aggregate shoulder rock LT and RT from STA: 1+45 to STA: 2+80 and STA: 4+22 to STA: 5+40. Match existing shoulder widths.
9. Sawcut existing pavement from EOP to EOP at STA: 1+45 and STA: 5+40. 2" deep w/vertical face.
10. Retain and protect existing mailboxes. STA: 0+28 RT and STA: 5+10 RT
11. Sawcut existing pavement perpendicular to traffic across roadway at STA: 1+81 and STA: 5+15 and beyond existing bridge ends prior to bridge removal.
12. Grind down 2" - 0" from STA: 1+45 to STA: 1+70 and STA: 5+15 to STA: 5+40.
13. Remove and rebuild property fence along existing Right of Way lines from STA: 2+11 to STA: 2+83 LT., STA: 4+24 to STA: 4+72 LT., and STA: 2+11 to STA: 2+83 RT. Connect back to existing fence. Coordinate schedule and and specifics of work with affected property owner before beginning any fence removal work.
14. Clear and grub existing tree. Leave tree on property 31831 Berlin Rd.

LINN COUNTY ROAD DEPARTMENT
3010 FERRY STREET SW
ALBANY, OREGON 97322
PHONE: (541) 967-3919
FAX: (541) 924-0202
E-MAIL: Roads@co.linn.or.us

COUNTY COMMISSION
ROGER NYQUIST
CHAIRMAN
JOHN LINDSEY
WILLIAM TUCKER

ROADMASTER
DARRIN L. LANE, P.E.
COUNTY ENGINEER
CHARLES R. KNOLL, P.E.

DATE:	REVISION:	BY:

BRIDGE NO: 0020B-0490	DATE: 10/16/2018
PROJECT NO: CB1303	
TRS: T. 12 S., R. 01 W., SEC. 21	
DESIGNED BY: A. Potts	CHECKED BY: K. Groom
DRAFTED BY: A. Potts	REVIEWED BY: C. Knoll

HAMILTON CREEK,
BERLIN ROAD
BRIDGE REPLACEMENT
90% PRELIMINARY DRAWINGS

LINN COUNTY
JANUARY 2019

PLAN & PROFILE

SCALE: As Shown | SHEET 6

REGISTERED PROFESSIONAL ENGINEER
86074PE
OREGON
DECEMBER 31, 2016
ANDREW T. POTTS
PRELIMINARY
Expires: 12/31/20

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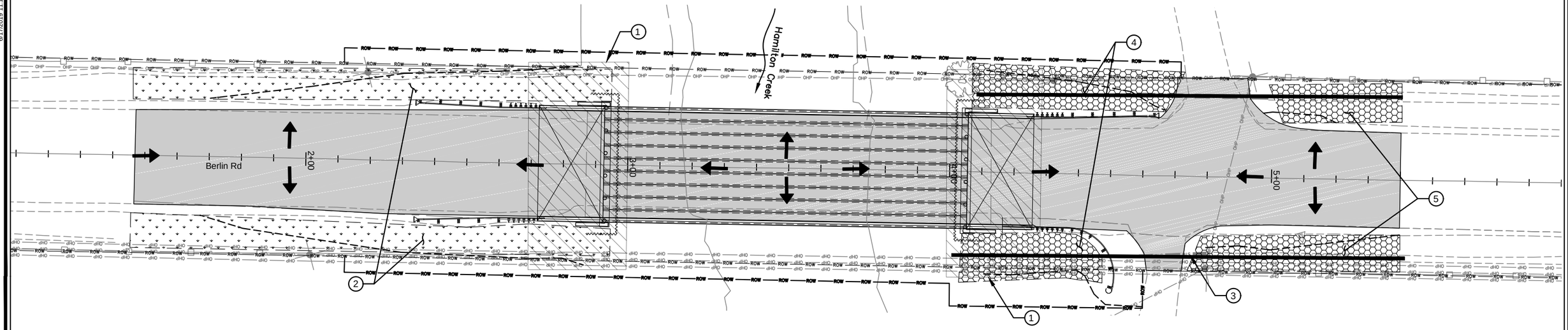
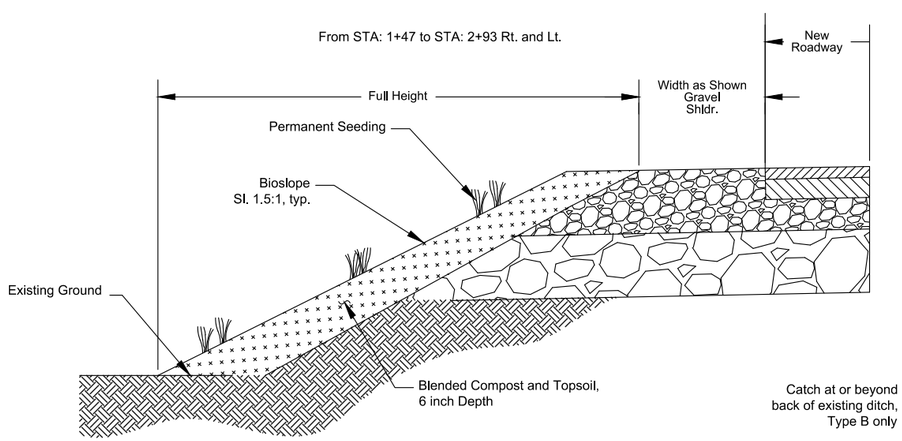
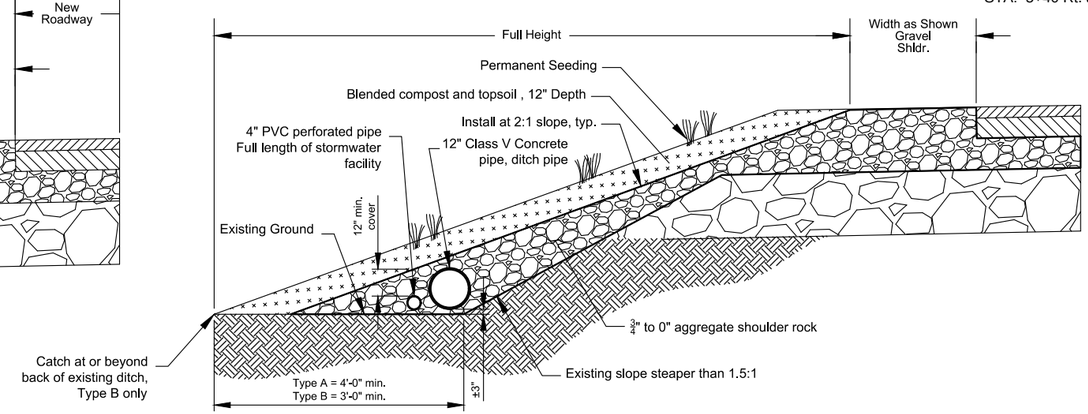


1. Footprint of existing fill. Depth to approximately El. = 403.0
2. Construct Bioslope per detail this Sheet and Specifications. Blended compost and topsoil mixture per Section 1013. Install permanent seeding on Bioslopes per Section 1030. STA: 1+47 to STA: 2+93 Rt. and Lt.
3. Install ditch culvert pipe, 12" Class V Concrete Pipe connecting existing ditch and daylighting a min. 12" on both ends. Rt. Pipe Beginning IE = 404.5', End IE = 408.9', min. length = 140.0'. STA: 4+01 Rt. to STA: 5+42 Rt. Lt. Pipe Beginning IE = 404.5', End IE = 408.8', min. length = 132.0'. STA: 4+08 Lt. to STA: 5+40 Lt. Install Class 100 Riprap at outlets approximately 36"W x 36"L x 18"D = 0.5 cu. yd. ea. outlet.
4. Install stormwater facility type A per detail this Sheet and per Section 1092. STA: 4+05 to STA: 4+48 Rt. and STA: 4+08 to STA: 4+70 Lt.
5. Install stormwater facility type B per detail this Sheet and per Section 1092. STA: 4+75 to STA: 5+40 Rt. and STA: 4+92 to STA: 5+40 Lt.



BIOSLOPE DETAIL

Scale: NTS



STORMWATER FACILITY DETAIL

Scale: NTS

LEGEND

- BIOSLOPE
- STORMWATER FACILITY A/B
- EXISTING FILL FOOTPRINT
- FLOW DIRECTION

WARNING

If this bar does not measure 1" then drawing is not to scale

REGISTERED PROFESSIONAL ENGINEER 86074PE OREGON DECEMBER 31, 2016 ANDREW T. POTTS PRELIMINARY Expires: 12/31/20

LINN COUNTY ROAD DEPARTMENT
3010 FERRY STREET SW
ALBANY, OREGON 97322
PHONE: (541) 967-3919
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E-MAIL: Roads@co.linn.or.us

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JOHN LINDSEY
WILLIAM TUCKER

ROADMASTER
DARRIN L. LANE, P.E.
COUNTY ENGINEER
CHARLES R. KNOLL, P.E.

DATE:	REVISION:	BY:

BRIDGE NO: 0020B-0490	DATE: 10/16/2018
PROJECT NO: CB1303	
TRS: T. 12 S., R. 01 W., SEC. 21	
DESIGNED BY: A. Potts	CHECKED BY: K. Groom
DRAFTED BY: A. Potts	REVIEWED BY: C. Knoll

HAMILTON CREEK, BERLIN ROAD BRIDGE REPLACEMENT 90% PRELIMINARY DRAWINGS

LINN COUNTY JANUARY 2019

STORMWATER DRAINAGE PLAN

SCALE: 1" = 30'

SHEET 7

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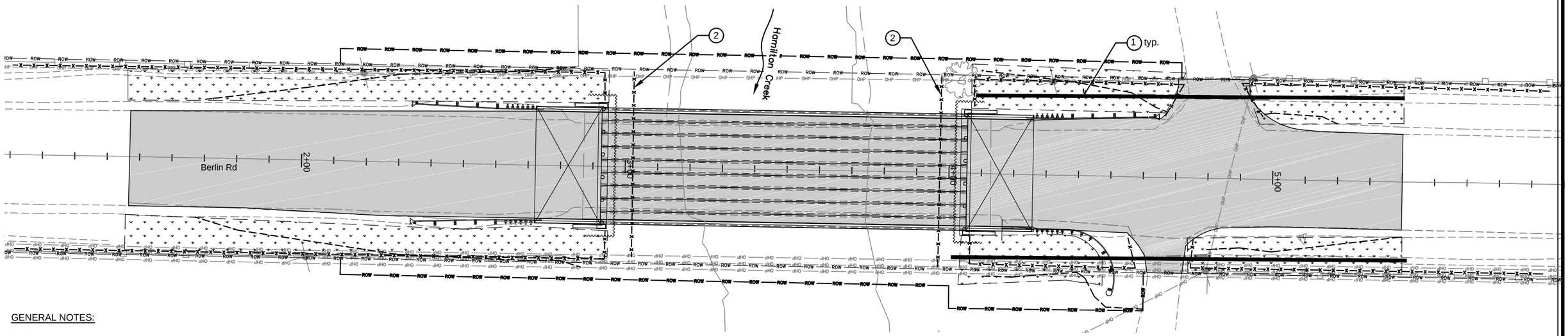


GENERAL NOTES:

1. The implementation of the erosion control plans and the construction, maintenance, replacement and upgrading of the erosion control facilities are the responsibility of the contractor until all construction is completed and approved.

2. Installation, construction, and maintenance of erosion control facilities shall begin prior to clearing, grading or other earth altering activities.

3. The erosion control facilities shown on this plan are anticipated for site conditions. During the construction period these facilities shall be upgraded for unexpected storm events and to ensure that sediment and sediment laden water does not leave the site or enter the Creek.

4. Develop a revised plan of the erosion control facilities shown in accordance with the requirements of section 00280 for the 2018 Oregon Standard Specifications for Construction. This plan must be constructed in conjunction with all clearing and grubbing activities. Construct in such a manner as to ensure that construction debris, sediment and sediment laden water does not enter the drainage system, roadway, or violate applicable water standards. Construct controls in segments applicable to each staging phase.

5. All vegetated areas disturbed during construction shall be permanently seeded.

6. No equipment shall enter into wetlands or the active channel of Hamilton Creek.

7. No contaminated water or debris shall enter into the active channel of Hamilton Creek.

8. A Work Containment System Plan shall be approved by the engineer prior to installation.

1. Install permanent seeding on all ground disturbed by construction. Area directly under new bridge superstructure may be excluded from seeding.

2. Install Type 8 (Compost filter sock) Sediment Barrier for activities During removal of Existing Bridge and Construction of New Bridge per Std Dwg RD1032. Extent and Location is Approximate and Subject to Change Based on Conditions in the Field.

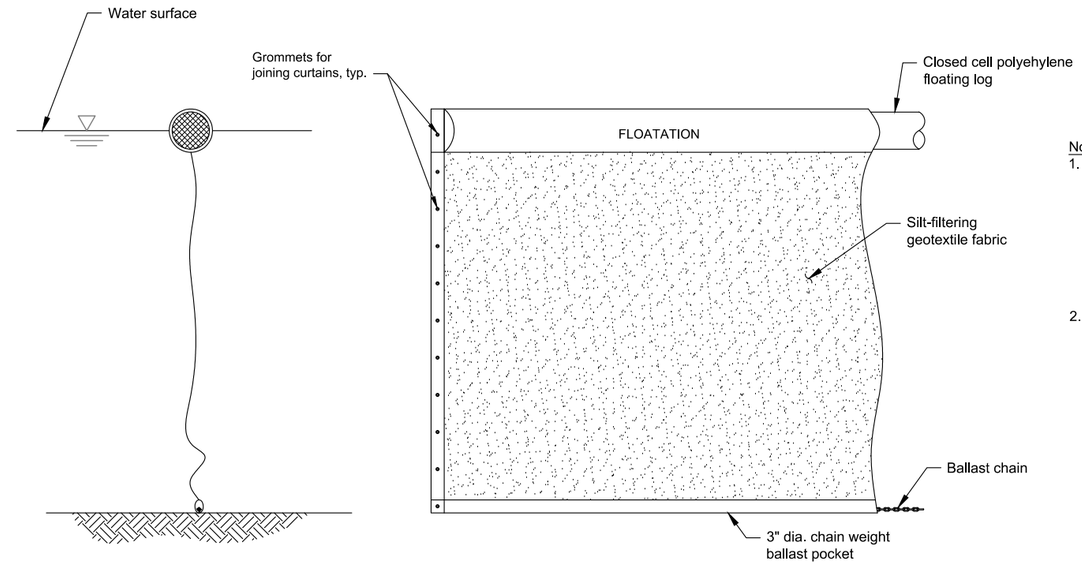
3. A floating silt curtain shall be installed completely surrounding each line of existing pile except the upstream side and remain in place during pile removal. See detail, this Sheet. Sandbags wrapped in a plastic may also be used if the water level is below 3 feet in depth.

4. Install a oil boom downstream within 50 feet of the existing structure during pile removal.

LEGEND

PERMANENT SEEDING

SEDIMENT BARRIER



FLOATING SILT CURTAIN
NO SCALE

Notes:
1. Floating silt curtan shall be a "Layfield FSC7" or approved equal. The body of the floating silt curtain is made from a strong, high-filtration fabric that retains fine silts and sediments on-site. The float and bottom sleeve are constructed from a UV-stable, high-strength polyethylene (i.e. ripstop-typ material). The floating silt curtain is increased in length by joining additional sections of curtain, which typically come in 50-foot lengths.
2. If water elevation is low enough, contractor may elect to use sand bags filled with clean river run rock. Place bags at river's edge as directed by the Engineer.

WARNING
If this bar does not measure 1" then drawing is not to scale

REGISTERED PROFESSIONAL ENGINEER 86074PE OREGON DECEMBER 31, 2016 ANDREW T. POTTS
PRELIMINARY
Expires: 12/31/20

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TRS: T. 12 S., R. 01 W., SEC. 21	
DESIGNED BY: A. Potts	CHECKED BY: K. Groom
DRAFTED BY: A. Potts	REVIEWED BY: C. Knoll

HAMILTON CREEK, BERLIN ROAD BRIDGE REPLACEMENT 90% PRELIMINARY DRAWINGS

LINN COUNTY JANUARY 2019

EROSION CONTROL PLAN

SCALE: 1" = 30'

SHEET 8

K:\Projects - Current\BR 0020B-0490 Hamilton Creek - Berlin Road\Drawings\Base Map.dwg

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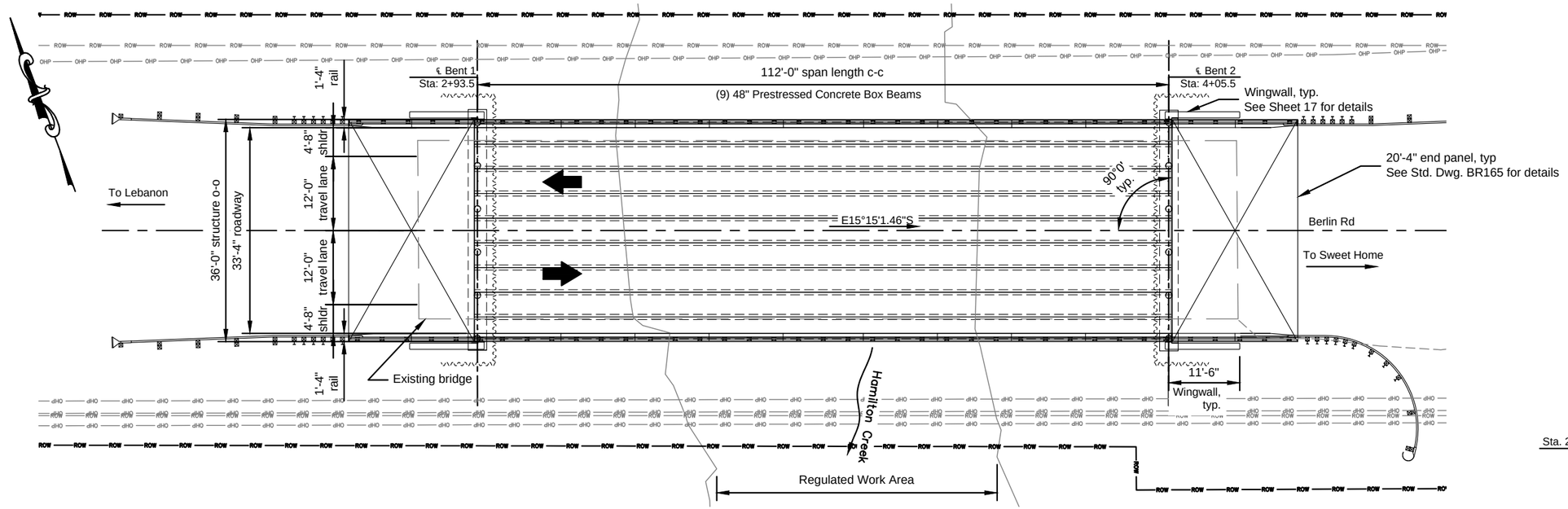
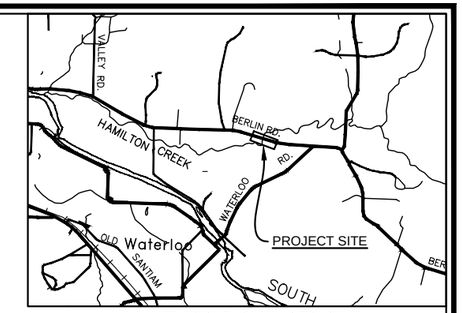
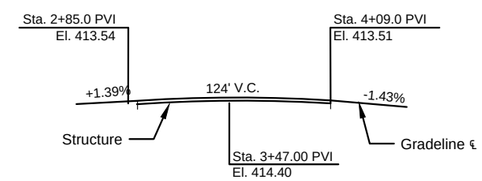


PLAN
1" = 20'-0"

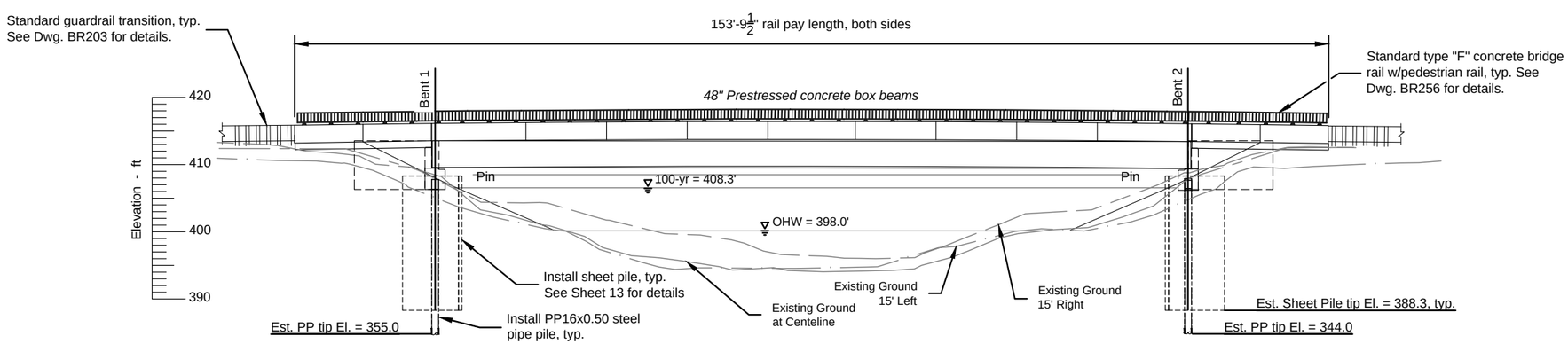


T. 12 S. R. 01 W., SEC. 21

LOCATION MAP
NO SCALE



GRADE LINE DIAGRAM
NO SCALE



ELEVATION
1" = 20'-0"

HYDRAULIC DATA TABLE				
ITEMS	UNITS	DESIGN FLOOD*	BASE FLOOD+	MAX. PROB. FLOOD*
Frequency	Years	100	100	500
Discharge	cfs	4792	4792	6330
H.W. elev. @ upstm. face of bridge	ft	408.3	408.3	409.6
Backwater	ft	0	0	0

*Based on new bridge
+Based on existing bridge

Note:
Elevations are based on NGVD29/47 (M.S.L. = 0.00)

WARNING
If this bar does not measure 1" then drawing is not to scale

REGISTERED PROFESSIONAL ENGINEER 86074PE OREGON DECEMBER 31, 2016 ANDREW T. POTTS
PRELIMINARY
Expires: 12/31/20

LINN COUNTY ROAD DEPARTMENT
3010 FERRY STREET SW
ALBANY, OREGON 97322
PHONE: (541) 967-3919
FAX: (541) 924-0202
E-MAIL: Roads@co.linn.or.us

COUNTY COMMISSION
ROGER NYQUIST
CHAIRMAN
JOHN LINDSEY
WILLIAM TUCKER

ROADMASTER
DARRIN L. LANE, P.E.
COUNTY ENGINEER
CHARLES R. KNOLL, P.E.

DATE:	REVISION:	BY:

BRIDGE NO: 0020B-0490	DATE: 10/16/2018
PROJECT NO: CB1303	
TRS: T. 12 S., R. 01 W., SEC. 21	
DESIGNED BY: A. Potts	CHECKED BY: K. Groom
DRAFTED BY: A. Potts	REVIEWED BY: C. Knoll

HAMILTON CREEK, BERLIN ROAD
BRIDGE REPLACEMENT
90% PRELIMINARY DRAWINGS
LINN COUNTY
JANUARY 2019

BRIDGE PLANS
PLAN & ELEVATION

SCALE: As Shown
SHEET 10

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US Army Corps of Engineers®
Portland District

Nationwide Permit 14
Terms and Conditions

Effective Date: March 19, 2017

A. Description of Activities Authorized by Nationwide Permit 14
B. Nationwide Permit General Conditions
C. District Engineer's Decision
D. Further Information
E. Portland District Regional Conditions

In addition to any special conditions that may be required on a case-by-case basis by the District Engineer, the following terms and conditions must be met, as applicable, for a Nationwide Permit authorization to be valid in Oregon.

A. Description of Activities Authorized by Nationwide Permit (NWP) 14

14. *Linear Transportation Projects.* Activities required for crossings of waters of the United States associated with the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/ 3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) The loss of waters of the United States exceeds 1/10-acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 32.)

(Authorities: Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act)

Note 1: For linear transportation projects crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Linear transportation projects must comply with 33 CFR 330.6(d).

Note 2: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under section 404(f) of the Clean Water Act (see 33 CFR 323.4).

Note 3: For NWP 14 activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require pre-construction notification (see paragraph (b) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, ''District Engineer's Decision.'' The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

B. NWP General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/ or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. *Navigation*.

(a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. *Aquatic Life Movements*. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. *Spawning Areas*. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. *Migratory Bird Breeding Areas.* Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. *Shellfish Beds*. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. *Suitable Material*. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. *Water Supply Intakes*. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. *Adverse Effects From Impoundments*. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. *Management of Water Flows*. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. *Fills Within 100-Year Floodplains*. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. *Equipment*. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. *Soil Erosion and Sediment Controls*. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. *Removal of Temporary Fills*. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. *Proper Maintenance*. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. *Single and Complete Project*. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. *Wild and Scenic Rivers*.

(a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a ‘‘study river’’ for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a ‘‘study river’’ for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

17. *Tribal Rights*. No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. *Endangered Species*.

(a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which ‘‘may affect’’ a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre- construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity ‘‘may affect’’ or will have ‘‘no effect’’ to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have ‘‘no effect’’ on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the ‘‘take’’ of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with ‘‘incidental take’’ provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any

person subject to the jurisdiction of the United States to take a listed species, where ‘‘take’’ means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word ‘‘harm’’ in the definition of ‘‘take’’ means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide Web pages at http://www.fws.gov/ or http:// www.fws.gov/ipac and http:// and www.nmfs.noaa.gov/pr/species/esa/ respectively.

19. *Migratory Birds and Bald and Golden Eagles.* The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether ‘‘incidental take’’ permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. *Historic Properties*.

(a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional

consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre- construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed.

(d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance

despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/ THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. *Discovery of Previously Unknown Remains and Artifacts*. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. *Designated Critical Resource Waters*. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14,16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. *Mitigation*. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1⁄10-acre and require pre-construction notification, unless the

district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1⁄10-acre or less that require pre-construction notification, the district engineer may determine on a case-by- case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)).

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. *Safety of Impoundment Structures.* To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. *Water Quality*. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. *Coastal Zone Management*. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. *Regional and Case-By-Case Conditions*. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. *Use of Multiple Nationwide Permits*. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1⁄3-acre.

29. *Transfer of Nationwide Permit Verifications*. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities

associated with compliance with its terms and conditions, have the transferee sign and date below.

_____
(Transferee)

_____
(Date)

30. *Compliance Certification*. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. *Activities Affecting Structures or Works Built by the United States*. If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a ‘‘USACE project’’), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. *Pre-Construction Notification*.

(a) *Timing*. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will

notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is ''no effect'' on listed species or ''no potential to cause effects'' on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) *Contents of Pre-Construction Notification*: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other

waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1⁄10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-Federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a ‘‘study river’’ for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the ‘‘study river’’ (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) *Form of Pre-Construction Notification*: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly

indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) *Agency Coordination*:

(1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) All NWP activities that require pre-construction notification and result in the loss of greater than 1⁄2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or email that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the preconstruction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of preconstruction notifications to expedite agency coordination.

C. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the individual crossings of waters of the United States to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51, 52, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects. For those NWPs that have a waivable 300 linear foot limit for losses of intermittent and ephemeral stream bed and a 1⁄2-acre limit (i.e., NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52), the loss of intermittent and ephemeral stream bed, plus any other losses of jurisdictional waters and wetlands, cannot exceed 1⁄2- acre.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1⁄10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters (e.g., streams). The district engineer will consider any proposed compensatory mitigation or other mitigation

measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) That the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31, or to evaluate PCNs for activities authorized by NWPs 21, 49, and 50), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

D. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

E. Portland District Regional Conditions

Note: The following Nationwide Permit (NWP) regional conditions are for the State of Oregon. Regional conditions are placed on NWPs to ensure projects result in no more than minimal adverse impacts to the aquatic environment and to address local resource concerns.

1. *Notification:* For permittees that received written NWP approval, upon starting the authorized activities, you shall notify the U.S. Army Corps of Engineers, Portland District, Regulatory Branch that the work has started. Notification shall be provided by e-mail to cenwp.notify@usace.army.mil and the email subject line shall include: Corps project number and the project location by county.

2. *Aquatic Resources of Special Concern:* Pre-construction notification to the District Engineer is required for all activities proposed in waters of the U.S. within an aquatic resource of special concern. Aquatic resources of special concern are resources that are difficult to replace, unique, and/or have high ecological function. For the purpose of this regional condition, aquatic resources of special concern are native eel grass (*Zostera marina)* beds, mature forested wetlands, bogs, fens, vernal pools, alkali wetlands, wetlands in dunal systems along the Oregon coast, estuarine wetlands, Willamette Valley wet prairie wetlands, marine gardens, marine reserves, kelp beds, and rocky substrate in tidal waters.

In addition to the content requirements of NWP General Condition (GC) 32, the pre-construction notification must include a statement explaining why the effects of the proposed activity are no more than minimal. Written approval from the District Engineer must be obtained prior to commencing work.

Note: If the District Engineer determines that the adverse effects of the proposed activity are more than minimal, then the District Engineer will notify the applicant that either:

(a) the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) the activity is authorized under the NWP subject to submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) the activity is authorized under the NWP with specific modifications or conditions.

3. *Cultural Resources and Human Burials-Inadvertent Discovery Plan:* In addition to the requirements in NWP GCs 20 and 21, the permittee shall immediately notify the District Engineer if, at any time during the course of the work authorized, human burials, cultural items, or historic properties, as defined by the National Historic Preservation Act

and Native American Graves Protection and Repatriation Act, are discovered. The permittee shall implement the following procedures:

a. Immediately cease all ground disturbing activities.

b. Notify the Portland District Engineer as soon as possible following discovery but in no case later than 24 hours. Notification may be sent by fax (503-808-4375) or electronically (cenwp.notify@usace.army.mil) and shall identify the Corps project number and clearly specify the purpose is to report a cultural resource discovery. The permittee shall also notify the Corps representative (by email and telephone) identified in the verification letter.

c. Notify the Oregon State Historic Preservation Office by telephone at (503) 986-0690.

Failure to stop work immediately and until such time as the District Engineer has coordinated with all appropriate agencies and Native American tribes, and complied with the provisions of 33 CFR 325 (Appendix C), the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, and other pertinent regulations could result in violation of state and federal laws. Violators may be subject to civil and criminal penalties.

4. *In-water Work:* To minimize potential impacts to aquatic species and habitat, in-water work will be limited by the following timing considerations:

a. Permittee shall complete all in-water work, to the maximum extent practicable, within the preferred time period (i.e., work window) specified in Oregon Department of Fish and Wildlife's (ODFW) "Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources," June 2008, or most current version, available at: http://www.dfw.state.or.us/lands/inwater/.

b. If work cannot be completed within the preferred timing window, despite every attempt to do so, permittee shall submit a written request to work outside of the preferred window to the District Engineer. The request can be made by means of the joint-agency In-water Work Period Variance Request for Previously Permitted Authorizations form which can be found at http://www.oregon.gov/dsl/WW/Pages/WWforms.aspx. Permittee shall not begin any in-water work outside of the preferred window until they have received written approval from the District Engineer.

Note: The final specified in-water work period will be based on a project-specific evaluation and may supersede these guidelines through special conditions of the permit verification.

5. *Essential Fish Habitat:* Activities which may adversely affect essential fish habitat, as defined under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), are not authorized by NWP until essential fish habitat requirements have been met by the applicant and the Corps. Non-federal permittees must submit a pre-

construction notification to the District Engineer if essential fish habitat may be affected by, or is in the vicinity of, a proposed activity and shall not begin work until notified by the District Engineer that the requirements of the essential fish habitat provisions of the MSA have been satisfied and the activity is authorized. The notification must identify the type(s) of essential fish habitat (e.g., Pacific coast salmon, Pacific coast groundfish, and/or Coastal-pelagic species) managed by a Fishery Management Plan that may be affected. Information about essential fish habitat is available at NOAA's website: http://www.westcoast.fisheries.noaa.gov/.

6. *Bank Stabilization:* Permittee shall include the use of bioengineering techniques and natural materials in the project design to the maximum extent practicable and shall minimize the use of rock. Bioengineering bank stabilization techniques are those that increase the strength and structure of soils with a combination of biological and mechanical elements (e.g., vegetation, root wads and woody debris, rock structures). Riparian plantings shall be included in all project designs unless the permittee can demonstrate that such plantings are not practicable.

7. *Fish Screening:* To prevent injury or mortality to fish due to entrainment, the permittee shall ensure that all intake pipes include adequately sized screens.

Note: Fish passage and screening criteria can be obtained from the National Marine Fisheries Service (NMFS) at http://www.westcoast.fisheries.noaa.gov/fish_passage/solutions/index.html. Information regarding Oregon's fish passage laws can be obtained from ODFW at http://www.dfw.state.or.us/fish/passage/links.asp.

8. *Work Area Isolation and Dewatering:* Appropriate best management practices shall be implemented to prevent erosion and to prevent sediments from entering waters of the U.S.

a. All in-water work shall be isolated from the active channel or conducted during low seasonal stream flows to the maximum extent practicable.

b. Cofferdams shall be constructed of non-erosive material, such as concrete jersey barriers, sand and gravel bag dams, or water bladders. Constructing a cofferdam by pushing material from the streambed or sloughing material from the streambanks is not authorized.

c. Sand and gravel bag dams shall be lined with a plastic liner or geotextile fabric to reduce permeability and prevent sediments and/or construction materials from entering waters of the U.S.

d. Upstream and downstream flows shall be maintained by routing flows around the construction site.

e. When dewatering is necessary for construction, a sediment basin, or other applicable method, shall be used to settle sediments prior to releasing the water back

into the waterbody. Settled water shall be returned to the waterbody in such a manner as to avoid erosion. Sediment basins shall be placed in uplands.

f. Fish and other aquatic species must be salvaged (i.e., safely captured and relocated away from the project or development site) prior to dewatering.

Note: The ODFW requires a Scientific Take Permit be obtained to salvage fish and wildlife. Further information from ODFW is available at http://www.dfw.state.or.us/fish/license_permits_apps/scientific_taking_permit.asp.

9. *Dredging:* For NWP-authorized activities that involve removal of sediment from waters of the U.S., the permittee shall ensure that any necessary sediment characterization regarding size, composition, and potential contaminants is conducted prior to dredging. Sediment characterization must be conducted per the Sediment Evaluation Framework for the Pacific Northwest (available at: http://www.nwp.usace.army.mil/Missions/Environment/DMM.aspx).

Note 1: The return water from a contained disposal area is defined as a discharge of dredged material by 33 CFR Part 323.2(d) and requires separate authorization from the District Engineer (e.g., by NWP 16).

Note 2: The Oregon Department of Environmental Quality (DEQ) requires removed material placed in an upland site to meet the definitions of clean fill as provided in OAR 340-093-0030 or the use must be specifically allowed by DEQ by rule, permit, or other authorization.

10. *Mechanized Equipment:* In addition to the requirements in NWP GC 11, permittee shall implement the following practices to prevent or minimize impacts to the aquatic environment from mechanized equipment:

a. Use existing roads, paths, and construction pads where available. Temporary mats or pads, when required to provide access onto wetlands or tidal flats, shall be removed within 30 days of completing the authorized work.

b. Operate equipment from the top of a streambank and conduct work outside of the active stream channel, unless specifically authorized by the District Engineer.

c. Equipment shall not be staged, fueled, or maintained within waters of the U.S.

d. Spill prevention and containment materials shall be maintained and be readily accessible at vehicle staging areas. The amount of spill response materials (such as straw matting/bales, geotextiles, booms, diapers, and other absorbent materials, shovels, brooms, and containment bags) maintained on-site must be appropriate for the size of the authorized activity.

11. *Stormwater Management:* Pre-construction notification to the District Engineer is required for all activities resulting in the creation of new impervious surfaces if any species or designated critical habitat listed under the Endangered Species Act (ESA)

might be affected or are in the vicinity of the activity. The Corps may require a post-construction stormwater management plan (SWMP) and completion of a supplemental Stormwater Information Form to assist in the determination of the activity's affects to listed species or designated critical habitat and to be used in ESA consultation as necessary.

Note 1: The Corps considers impervious surfaces to include roof tops, walkways, patios, driveways, parking or storage areas, concrete or asphalt paving, gravel roads, packed earthen material, and oiled surfaces.

Note 2: Under the DEQ 401 Water Quality Certification Program, the DEQ evaluates post-construction stormwater pollution for any project resulting in new, an increase in, or redevelopment of impervious surfaces. DEQ may require the applicant to submit a post-construction SWMP for review and approval prior to the start of construction. DEQ provides information on preparing a SWMP at http://www.deq.state.or.us/wq/sec401cert/docs/stormwaterGuidelines.pdf. DEQ requires applicants to first consider low impact development options. If these options can't be implemented, a narrative must be provided explaining why.

12. *Erosion Control:* During construction and until the site is stabilized, the permittee shall ensure all practicable measures are implemented and maintained to prevent erosion and runoff. Temporary stockpiles of excavated or dredged material shall be stabilized to prevent erosion. Once soils or slopes have been stabilized, permittee shall completely remove and properly dispose of or re-use all non-biodegradable components of installed control measures.

Note: DEQ provides information on erosion and sediment control measures at http://www.deq.state.or.us/wq/wqpermit/docs/general/npdes1200c/ErosionSedimentControl.pdf. Details on best management practices are found at http://www.deq.state.or.us/wq/wqpermit/docs/general/npdes1200c/BMPManual.pdf.

13. *Temporary Fills and Impacts:* To ensure no more than minimal adverse environmental effects from temporary fills and impacts to waters of the U.S:

a. Temporary fills and/or impacts to waters of the U.S. shall not exceed six months unless otherwise approved by the District Engineer.

b. No more than one-half (½) acre of waters of the U.S. may be temporarily filled or impacted unless otherwise approved by the District Engineer (temporary fills and impacts do not affect specified limits for loss of waters associated with specific nationwide permits).

c. Native soils and/or sediments removed from waters of the U.S. for project construction shall be stockpiled and used for site restoration to the maximum extent practicable.

d. Site restoration of temporarily filled or impacted areas shall include returning the area to pre-project ground surface contours. The permittee shall appropriately

revegetate temporarily filled or impacted areas with native, noninvasive herbs, shrubs, and/or tree species sufficient in number, spacing, and diversity to replace affected aquatic functions.

Note: The Corps will determine compensatory mitigation requirements for temporary fills and impacts on a case-by-case basis depending on the duration and nature of the temporary fill or impact and the type of aquatic resource affected.

14. *Contractor Notification of Permit Requirements:* The permittee must provide a copy of the nationwide permit verification letter, conditions, and permit drawings to all contractors and any other parties performing the authorized work, prior to the commencement of any work in waters of the U.S.

15. *Inspection of the Project Site:* The permittee shall allow representatives of the District Engineer to inspect the authorized activity to confirm compliance with nationwide permit terms and conditions. A request for access to the site will normally be made sufficiently in advance to allow a property owner or representative the option to be on site during the inspection.

Endangered Species Act – Section 7 Programmatic Consultation
Conference and Biological Opinion and
Magnuson-Stevens Fishery Conservation and Management Act
Essential Fish Habitat Consultation

For

Revised Standard Local Operating Procedures for Endangered Species to Administer Maintenance or Improvement of Stormwater, Transportation, and Utility Actions Authorized or Carried Out by the U.S. Army Corps of Engineers in Oregon (SLOPES for Stormwater, Transportation or Utilities)

NMFS Consultation No. NWR-2013-10411

Action Agency: U.S. Army Corps of Engineers
Portland District, Operations and Regulatory Branches

Affected Species and Determinations:

ESA-Listed Species	ESA Status	Is the action likely to adversely affect this species or its critical habitat?	Is the action likely to jeopardize this species?	Is the action likely to destroy or adversely modify critical habitat for this species?
Lower Columbia River Chinook salmon	T	Yes	No	No
Upper Willamette River Chinook salmon	T	Yes	No	No
Upper Columbia River spring-run Chinook salmon	E	Yes	No	No
Snake River spring/summer run Chinook salmon	T	Yes	No	No
Snake River fall-run Chinook salmon	T	Yes	No	No
Columbia River chum salmon	T	Yes	No	No
Lower Columbia River Coho salmon	T	Yes	No	No*
Oregon Coast Coho salmon	T	Yes	No	No
Southern Oregon/Northern California coasts Coho	T	Yes	No	No
Snake River sockeye salmon	E	Yes	No	No
Lower Columbia River steelhead	T	Yes	No	No
Upper Willamette River steelhead	T	Yes	No	No
Middle Columbia River steelhead	T	Yes	No	No
Upper Columbia River steelhead	T	Yes	No	No
Snake River Basin steelhead	T	Yes	No	No
Southern green sturgeon	T	Yes	No	No
Eulachon	T	Yes	No	No
Southern resident killer whale	T	No	No	N/A

*Critical habitat has been proposed for LCR Coho salmon.

Fishery Management Plan that Describes	Would the action adversely affect	Are EFH conservation recommendations
Coastal Pelagic Species	Yes	Yes
Pacific Coast Groundfish	Yes	Yes
Pacific Coast Salmon	Yes	Yes

Consultation Conducted By: National Marine Fisheries Service West Coast Region

Issued by: William W. Stelle, Jr. Regional Administrator

Date Issued: March 14, 2014

Excerpt from SLOPES for Stormwater, Transportation, or Utilities General Construction March 14, 2014

Natural hazard response to complete an unplanned, immediate, or short-term repair of a stormwater facility, road, culvert, bridge, or utility line without federal assistance. These include in-water repairs that must be made before the next in-water work period to resolve critical conditions that, unless corrected, are likely to cause loss of human life, unacceptable loss of property, or natural resources. Natural hazards may include, but are not limited to, a flood that causes scour erosion and significantly weakens the foundation of a road or bridge; culvert failure due to blockage by fluvial debris, overtopping, or crushing; and ground saturation that causes a debris slide, earth flow, or rock fall to cover a road. This category of actions is only included to the extent that they require Corps permits or are undertaken by the Corps, but otherwise do not require federal authorization, funding, or federal agency involvement.. The response will include an assessment of its effects to listed species and critical habitats and a plan to bring the response into conformance with all other applicable PDC in this opinion, including compensatory mitigation based on the baseline conditions prior to the natural hazard.

Streambank and channel stabilization to ensure that roads, culverts, bridges and utility lines do not become hazardous due to the long-term effects of toe erosion, scour, subsurface entrainment, or mass failure. This action includes installation and maintenance of scour protection, such as at a footing, facing, or headwall, to prevent scouring or down-cutting of an existing culvert, road foundation, or bridge support. It does not include scour protection for bridge approach fills. Proposed streambank stabilization methods include alluvium placement, vegetated riprap with large wood (LW), log or roughened rock toe, woody plantings, herbaceous cover, deformable soil reinforcement, coir logs, bank reshaping and slope grading, floodplain flow spreaders, floodplain roughness, and engineered log jams (ELJs), alone or in combination. Any action that requires additional excavation or structural changes to a road, culvert, or bridge foundation is covered under road, culvert and bridge maintenance, rehabilitation, and replacement.

Road surface, culvert and bridge maintenance, rehabilitation and replacement. Maintenance, rehabilitation, and replacement to ensure that roads, culverts and bridges remain safe and reliable for their intended use without impairing fish passage, to extend their service life, and to withdraw temporary access roads from service in a way that promotes watershed restoration when their usefulness has ended. This includes actions necessary to complete geotechnical surveys, such as access road construction, drill pad preparation, mobilization and set up, drilling and sampling operations, demobilization, boring abandonment, and access road and drill pad reclamation. It also includes, excavation, grading, and filling necessary to maintain, rehabilitate, or replace existing roads, culverts, and bridges. This type of action does not include significant channel realignment, installation of fish passage (*e.g.*, fish ladders, juvenile fish bypasses, culvert baffles, roughened chutes, step weirs), tidegate maintenance or replacements other than full removal, construction of new permanent roads within the riparian zone that are not a bridge approach, or construction of a new bridge where a culvert or other road stream crossing did not previously exist, or any project which will result in or contribute to other land use changes that trigger effects, including indirect effects not considered in this opinion.

Stormwater facilities and utility line stream crossings to install, maintain, rehabilitate, or replace stormwater facilities, or pipes or pipelines used to transport gas or liquids, including new or upgraded stormwater outfalls, and cables, or lines or wires used to transmit electricity or communication. Construction, maintenance or improvement of stormwater facilities include surveys, access road construction, excavation, grading, and filling necessary to maintain, rehabilitate, or replace existing stormwater treatment or flow control best management practices (BMPs). Utility line actions involve excavation, temporary side casting of excavated material, backfilling of the trench, and restoration of the work site to preconstruction contours and vegetation. This type of action does not include construction or enlargement of gas, sewer, or water lines to support a new or expanded service area for which effects, including indirect effects from interrelated or interdependent activities, have not been analyzed in this opinion. This opinion also does not include construction of any line that transits the bed of an estuary or saltwater area at depths less than -10.0 feet (mean lower low water).

1.3.1.2 Project Design Criteria - General Construction Measures

13. Project Design

a. Use the best available scientific information regarding the likely impacts of climate change on resources in the project area to design the project so that it will be resilient to those impacts, including projections of local stream flow, water temperature, and extreme events.

b. Assess whether the project area is contaminated by chemical substances that may cause harm if released by the project. The assessment will be commensurate with site history and may include the following:

i. Review available records, *e.g.*, the history of existing structures and contamination events.

ii. If the project area was used for industrial processes, inspect to determine the environmental condition of the property.

iii. Interview people who are knowledgeable about the site, *e.g.*, site owners, operators, and occupants, neighbors, or local government officials.

iv. If contamination is found or suspected, consult with a suitably qualified and experienced contamination professional and NMFS before carrying out ground disturbing activities.

c. Obtain all applicable regulatory permits and authorizations before starting construction.

d. Minimize the extent and duration of earthwork, *e.g.*, compacting, dredging, drilling, excavation, and filling.

14. In-Water Work Timing

a. Unless the in-water work is part of a natural hazard response, complete all work within the wetted channel during dates listed in the most recent version of Oregon In-water Work Guidelines (ODFW 2008), except that that in-water work in the Willamette River below Willamette Falls is not approved between December 1 and January 31.

b. Hydraulic and topographic measurements and placement of LW or gravel may be completed anytime, provided the affected area is not occupied by adult fish congregating for spawning, or redds containing eggs or pre-emergent alevins.

15. Pile Installation. Pile may be concrete, or steel round pile 24 inches in diameter or smaller, steel H-pile designated as HP24 or smaller, or wood that has not been treated with preservatives or pesticides. Any proposal to use treated wood pilings is not covered by this consultation and will require individual consultation.

a. NMFS will review and approve pile installation plans.

b. When practical, use a vibratory hammer for in-water pile installation. In the lower Columbia River only a vibratory hammer may be used in October.

c. Jetting may be used to install pile in areas with coarse, uncontaminated sediments that meet criteria for unconfined in-water disposal (USACE Northwest Division 2009).

d. When using an impact hammer to drive or proof a steel pile, one of the following sound attenuation methods will be used:

i. Completely isolate the pile from flowing water by dewatering the area around the pile.

ii. If water velocity is 1.6 feet per second or less, surround the pile being driven by a confined or unconfined bubble curtain that will distribute small air bubbles around 100% of the pile perimeter for the full depth of the water column. See, *e.g.*, NMFS and USFWS (2006), Wursig *et al*. (2000), and Longmuir and Lively (2001).

iii. If water velocity is greater than 1.6 feet per second, surround the pile being driven with a confined bubble curtain (*e.g*., surrounded by a fabric or non-metallic sleeve) that will distribute air bubbles around 100% of the pile perimeter for the full depth of the water column.

iv. Provide NMFS information regarding the timing of in-water work, the number of impact hammer strikes per pile and the estimated time required to drive piles, hours per day pile driving will occur, depth of water, and type of substrate, hydroacoustic assumptions, and the pile type, diameter, and spacing of the piles.

16. Pile Removal. The following steps will be used to minimize creosote release, sediment disturbance and total suspended solids:

a. Install a floating surface boom to capture floating surface debris.

b. Keep all equipment (*e.g*., bucket, steel cable, vibratory hammer) out of the water, grip piles above the waterline, and complete all work during low water and low current conditions.

c. Dislodge the pile with a vibratory hammer, when possible; never intentionally break a pile by twisting or bending.

d. Slowly lift the pile from the sediment and through the water column.

e. Place the pile in a containment basin on a barge deck, pier, or shoreline without attempting to clean or remove any adhering sediment. A containment basin for the removed piles and any adhering sediment may be constructed of durable plastic sheeting with sidewalls supported by hay bales or another support structure to contain all sediment and return flow which may otherwise be directed back to the waterway.

f. Fill the hole left by each pile with clean, native sediments immediately after removal.

g. Dispose of all removed piles, floating surface debris, any sediment spilled on work surfaces, and all containment supplies at a permitted upland disposal site.

17. Broken or Intractable Pile. If a pile breaks above the surface of uncontaminated sediment, or less than 2 feet below the surface, make every attempt short of excavation to remove it entirely. If the pile cannot be removed without excavation, drive the pile deeper if possible.

a. If a pile in contaminated sediment is intractable or breaks above the surface, cut the pile or stump off at the sediment line.

b. If a pile breaks within contaminated sediment, make no further effort to remove it and cover the hole with a cap of clean substrate appropriate for the site.

c. If dredging is likely where broken piles are buried, use a global positioning system (GPS) device to note the location of all broken piles for future use in site debris characterization.

18. Fish Capture and Release

a. If practicable, allow listed fish species to migrate out of the work area or remove fish before dewatering; otherwise remove fish from an exclusion area as it is slowly dewatered with methods such as hand or dip-nets, seining, or trapping with minnow traps (or gee-minnow traps).

b. Fish capture will be supervised by a qualified fisheries biologist, with experience in work area isolation and competent to ensure the safe handling of all fish.

c. Conduct fish capture activities during periods of the day with the coolest air and water temperatures possible, normally early in the morning to minimize stress and injury of species present.

d. Monitor the nets frequently enough to ensure they stay secured to the banks and free of organic accumulation.

e. Electrofishing will be used during the coolest time of day, only after other means of fish capture are determined to be not feasible or ineffective.

i. Do not electrofish when the water appears turbid, *e.g.*, when objects are not visible at depth of 12 inches.

ii. Do not intentionally contact fish with the anode.

iii. Follow NMFS (2000) electrofishing guidelines, including use of only direct current (DC) or pulsed direct current within the following ranges:[11]

1. If conductivity is less than 100 µs, use 900 to 1100 volts.
2. If conductivity is between 100 and 300 µs, use 500 to 800 volts.
3. If conductivity greater than 300 µs, use less than 400 volts.

iv. Begin electrofishing with a minimum pulse width and recommended voltage, then gradually increase to the point where fish are immobilized.

v. Immediately discontinue electrofishing if fish are killed or injured, *i.e.*, dark bands visible on the body, spinal deformations, significant de-scaling, torpid or inability to maintain upright attitude after sufficient recovery time. Recheck machine settings, water temperature and conductivity, and adjust or postpone procedures as necessary to reduce injuries.

[11] National Marine Fisheries Service. 2000. Guidelines for electrofishing waters containing Salmonid listed under the Endangered Species Act. Portland, Oregon and Santa Rose, California
http://swr.nmfs.noaa.gov/sr/Electrofishing_Guidelines.pdf

f. If buckets are used to transport fish:

i. Minimize the time fish are in a transport bucket.

ii. Keep buckets in shaded areas or, if no shade is available, covered by a canopy.

iii. Limit the number of fish within a bucket; fish will be of relatively comparable size to minimize predation.

iv. Use aerators or replace the water in the buckets at least every 15 minutes with cold clear water.

v. Release fish in an area upstream with adequate cover and flow refuge; downstream is acceptable provided the release site is below the influence of construction.

vi. Be careful to avoid mortality counting errors.

g. Monitor and record fish presence, handling, and injury during all phases of fish capture and submit a fish salvage report (Appendix A, Part 1 with Part 3 completed) to the Corps and the SLOPES mailbox (slopes.nwr@noaa.gov) within 60 days.

19. Fish Passage

a. Provide fish passage for any adult or juvenile ESA-listed fish likely to be present in the action area during construction, unless passage did not exist before construction or the stream is naturally impassable at the time of construction.

b. After construction, provide fish passage for any adult or juvenile ESA-listed fish that meets NMFS's fish passage criteria (NMFS 2011a) for the life of the action.

20. Fish Screens

a. Submit to NMFS for review and approval fish screen designs for surface water diverted by gravity or by pumping at a rate that exceeds 3 cubic feet per second (cfs).

b. All other diversions will have a fish screen that meets the following specifications:

i. An automated cleaning device with a minimum effective surface area of 2.5 square feet per cubic foot per second, and a nominal maximum approach velocity of 0.4 feet per second, <u>or</u> no automated cleaning device, a minimum effective surface area of 1 square foot per cubic foot per second, and a nominal maximum approach rate of 0.2 foot per second; <u>and</u>

ii. A round or square screen mesh that is no larger than 2.38 millimeters (mm) (0.094") in the narrow dimension, <u>or</u> any other shape that is no larger than 1.75 mm (0.069") in the narrow dimension.

c. Each fish screen will be installed, operated, and maintained according to NMFS's fish screen criteria.

21. Surface Water Withdrawal

a. Surface water may be diverted to meet construction needs, including dust abatement, only if water from developed sources (*e.g.,* municipal supplies, small ponds, reservoirs, or tank trucks) are unavailable or inadequate; and

b. Diversions may not exceed 10% of the available flow and will have a juvenile fish exclusion device that is consistent with NMFS's criteria (NMFS 2011a).[12]

[12] National Marine Fisheries Service 2011. Anadromous Salmonid passage facility design. Northwest Region. http://www.nwr.noaa.gov/publications/hydropower/ferc/fish-passage-design.pdf

22. Construction Discharge Water. Treat all discharge water using best management practices to remove debris, sediment, petroleum products, and any other pollutants likely to be present (*e.g.*, green concrete, contaminated water, silt, welding slag, sandblasting abrasive, grout cured less than 24 hours, drilling fluids), to avoid or minimize pollutants discharged to any perennial or intermittent water body. Pump seepage water from the de-watered work area to a temporary storage and treatment site or into upland areas and allow water to filter through vegetation prior to reentering the stream channel. Treat water used to cure concrete until pH stabilizes to background levels.

23. Temporary Access Roads and Paths

a. Whenever reasonable, use existing access roads and paths preferentially.

b. Minimize the number and length of temporary access roads and paths through riparian areas and floodplains.

c. Minimize removal of riparian vegetation.

d. When it is necessary to remove vegetation, cut at ground level (no grubbing).

e. Do not build temporary access roads or paths where grade, soil, or other features suggest slope instability.

f. Any road on a slope steeper than 30% will be designed by a civil engineer with experience in steep road design.

g. After construction is complete, obliterate all temporary access roads and paths, stabilize the soil, and revegetate the area.

h. Temporary roads and paths in wet areas or areas prone to flooding will be obliterated by the end of the in-water work window. Decompact road surfaces and drainage areas, pull fill material onto the running surface, and reshape to match the original contours.

24. Temporary Stream Crossings

a. No stream crossing may occur at active spawning sites, when holding adult listed fish are present, or when eggs or alevins are in the gravel.

b. Do not place temporary crossings in areas that may increase the risk of channel re-routing or avulsion, or in potential spawning habitat, *e.g.*, pools and pool tailouts.

c. Minimize the number of temporary stream crossings; use existing stream crossings whenever reasonable.

d. Install temporary bridges and culverts to allow for equipment and vehicle crossing over perennial streams during construction.

e. Wherever possible, vehicles and machinery will cross streams at right angles to the main channel.

f. Equipment and vehicles may cross the stream in the wet only where the streambed is bedrock, or where mats or off-site logs are placed in the stream and used as a crossing.

g. Obliterate all temporary stream crossings as soon as they are no longer needed, and restore any damage to affected stream banks or channel.

25. Equipment, Vehicles and Power Tools

a. Select, operate and maintain all heavy equipment, vehicles, and power tools to minimize adverse effects on the environment, *e.g.*, low pressure tires, minimal hard-turn paths for track vehicles, use of temporary mats or plates to protect wet soils.

b. Before entering wetlands or working within 150 feet of a water body:

i. Power wash all heavy equipment, vehicles and power tools, allow them to fully dry, and inspect them for fluid leaks, and to make certain no plants, soil, or other organic material are adhering to the surface.

ii. Replace petroleum-based hydraulic fluids with biodegradable products[13] in hydraulic equipment, vehicles, and power tools.

c. Repeat cleaning as often as necessary during operation to keep all equipment, vehicles, and power tools free of external fluids and grease, and to prevent a leak or spill from entering the water.

d. Avoid use of heavy equipment, vehicles or power tools below ordinary high water (OHW) unless project specialists determine such work is necessary, or would result in less risk of sedimentation or other ecological damage than work above that elevation.

e. Before entering the water, inspect any watercraft, waders, boots, or other gear to be used in or near water and remove any plants, soil, or other organic material adhering to the surface.

f. Ensure that any generator, crane or other stationary heavy equipment that is operated, maintained, or stored within 150 feet of any water body is also protected as necessary to prevent any leak or spill from entering the water.

26. Site Layout and Flagging

a. Before any significant ground disturbance or entry of mechanized equipment or vehicles into the construction area, clearly mark with flagging or survey marking paint the following areas:

i. Sensitive areas, *e.g.*, wetlands, water bodies, OHW, spawning areas.

ii. Equipment entry and exit points.

iii. Road and stream crossing alignments.

iv. Staging, storage, and stockpile areas.

b. Before the use of herbicides, clearly flag no-application buffer zones.

27. Staging, Storage, and Stockpile Areas

a. Designate and use staging areas to store hazardous materials, or to store, fuel, or service heavy equipment, vehicles and other power equipment with tanks larger than 5 gallons, that are at least 150 feet from any natural water body or wetland, or on an established paved area, such that sediment and other contaminants from the staging area cannot be deposited in the floodplain or stream.

b. Natural materials that are displaced by construction and reserved for restoration, *e.g.*, LW, gravel, and boulders, may be stockpiled within the 100-year floodplain.

c. Dispose of any material not used in restoration and not native to the floodplain outside of the functional floodplain.

[13] For additional information and suppliers of biodegradable hydraulic fluids, motor oil, lubricant, or grease, see, Environmentally Acceptable Lubricants by the U.S. EPA (2011a); *e.g.*, mineral oil, polyglycol, vegetable oil, synthetic ester; Mobil® biodegradable hydraulic oils, Total® hydraulic fluid, Terresolve Technologies Ltd.® bio-based biodegradable lubricants, Cougar Lubrication® 2XT Bio engine oil, Series 4300 Synthetic Bio-degradable Hydraulic Oil, 8060-2 Synthetic Bio-Degradable Grease No. 2, *etc*. The use of trade, firm, or corporation names in this opinion is for the information and convenience of the action agency and applicants and does not constitute an official endorsement or approval by the U.S. Department of Commerce or NMFS of any product or service to the exclusion of others that may be suitable.

d. After construction is complete, obliterate all staging, storage, or stockpile areas, stabilize the soil, and revegetate the area.[14]

28. Drilling and Boring

a. If drilling or boring are used, isolate drilling operations in wetted stream channels using a steel casing or other appropriate isolation method to prevent drilling fluids from contacting water.

b. If drilling through a bridge deck is necessary, use containment measures to prevent drilling debris from entering the channel.

c. Sampling and directional drill recovery/recycling pits, and any associated waste or spoils will be completely isolated from surface waters, off-channel habitats and wetlands.

d. All waste or spoils will be covered if precipitation is falling or imminent.

e. All drilling fluids and waste will be recovered and recycled or disposed to prevent entry into flowing water.

f. If a drill boring case breaks and drilling fluid or waste is visible in water or a wetland, make all possible efforts to contain the waste and contact NMFS within 48 hours.

g. Waste containment

i. All drilling equipment, drill recovery and recycling pits, and any waste or spoil produced, will be contained and then completely recovered and recycled or disposed of as necessary to prevent entry into any waterway. Use a tank to recycle drilling fluids.

ii. When drilling is completed, remove as much of the remaining drilling fluid as possible from the casing (*e.g.*, by pumping) to reduce turbidity when the casing is removed.

29. Pesticide and Preservative-Treated Wood[15]

a. Treated wood may not be used in a structure that will be in or over water or permanently or seasonally flooded wetlands, *except to maintain or repair an existing wood bridge*. The following criteria in b, c, and d below apply to the use of treated wood for maintenance or repair of existing wood bridges.

b. No part of the treated wood may be exposed to leaching by precipitation, overtopping waves, or submersion (*e.g.,* no treated wood piles (per PDC#10, and stringers or decking of a timber bridge can be made from treated wood only if they will be covered by a non-treated wood wearing surface that covers the entire roadway width), and all elements of the structure using the treated wood are designed to avoid or minimize impacts or abrasion that could create treated wood debris or dust.

c. Installation of treated wood

i. Treated wood shipped to the project area will be stored out of contact with standing water and wet soil, and protected from precipitation.

ii. Each load and piece of treated wood will be visually inspected and rejected for use in or above aquatic environments if visible residue, bleeding of preservative, preservative-saturated sawdust, contaminated soil, or other matter is present.

[14] Road and path obliteration refers to the most comprehensive degree of decommissioning and involves decompacting the surface and ditch, pulling the fill material onto the running surface, and reshaping to match the original contour.

[15] Treated woods may contain chromated copper arsenate (CCA), ammoniacal copper zinc arsenate (ACZA), alkaline copper quat (ACQ-B and ACQ-D), ammoniacal copper citrate (CC), copper azole (CBA-A), copper dimethyldithiocarbamate (CDDC), borate preservatives, and oil-type wood preservatives, such as creosote, pentachlorophenol, and copper naphthenate.

iii. Prefabrication will be used whenever possible to minimize cutting, drilling and field preservative treatment.

iv. When field fabrication is necessary, all cutting, drilling, and field preservative treatment of exposed treated wood will be done above OHW to minimize discharge of sawdust, drill shavings, excess preservative and other debris.

v. Tarps, plastic tubs or similar devices will be used to contain the bulk of any fabrication debris, and any excess field preservative will be removed from the treated wood by wiping and proper disposal.

d. Removal of treated wood

i. Evaluate all wood construction debris removed during a project, including pile, to ensure proper disposal of treated wood.

ii. Ensure that no treated wood debris falls into the water or, if debris does fall into the water, remove it immediately.

iii. After removal, place treated wood debris in an appropriate dry storage site until it can be removed from the project area.

iv. Do not leave any treated wood debris in the water or stacked on the streambank at or below OHW.

30. Erosion Control

a. Use site planning and site erosion control measures commensurate with the scope of the project to prevent erosion and sediment discharge from the project site.

b. Before significant earthwork begins, install appropriate, temporary erosion controls downslope to prevent sediment deposition in the riparian area, wetlands, or water body.

c. During construction,

i. Complete earthwork in wetlands, riparian areas, and stream channels as quickly as possible.

ii. Cease project operations when high flows may inundate the project area, except for efforts to avoid or minimize resource damage.

iii. If eroded sediment appears likely to be deposited in the stream during construction, install additional sediment barriers as necessary.

iv. Temporary erosion control measures may include fiber wattles, silt fences, jute matting, wood fiber mulch and soil binder, or geotextiles and geosynthetic fabric.

v. Soil stabilization using wood fiber mulch and tackifier (hydro-applied) may be used to reduce erosion of bare soil, if the materials are free of noxious weeds and nontoxic to aquatic and terrestrial animals, soil microorganisms, and vegetation.

vi. Remove sediment from erosion controls if it reaches 1/3 of the exposed height of the control.

vii. Whenever surface water is present, maintain a supply of sediment control materials and an oil-absorbing floating boom at the project site.

viii. Stabilize all disturbed soils following any break in work unless construction will resume within four days.

d. Remove temporary erosion controls after construction is complete and the site is fully stabilized.

31. Hazardous Material Safety

a. At the project site:

i. Post written procedures for notifying environmental response agencies, including an inventory and description of all hazardous materials present, and the storage and handling procedures for their use.

ii. Maintain a spill containment kit, with supplies and instructions for cleanup and disposal, adequate for the types and quantity of hazardous materials present.

iii. Train workers in spill containment procedures, including the location and use of the spill containment kits.

iv. Temporarily contain any waste liquids generated under an impervious cover, such as a tarpaulin, in the staging area until the wastes can be properly transported to, and disposed of, at an approved receiving facility.

32. Barge Use. Any barge used as a work platform to support construction will be:

a. Large enough to remain stable under foreseeable loads and adverse conditions.

b. Inspected before arrival to ensure vessel and ballast are free of invasive species.

c. Secured, stabilized and maintained as necessary to ensure no loss of balance, stability, anchorage, or other condition that can result in the release of contaminants or construction debris.

33. Dust Abatement

a. Use dust abatement measures commensurate with soil type, equipment use, wind conditions, and the effects of other erosion control measures.

b. Sequence and schedule work to reduce the exposure of bare soil to wind erosion.

c. Maintain spill containment supplies on-site whenever dust abatement chemicals are applied.

d. Do not use petroleum-based products.

e. Do not apply dust-abatement chemicals, *e.g.*, magnesium chloride, calcium chloride salts, lignin sulfonate, within 25 feet of a water body, or in other areas where they may runoff into a wetland or water body.

f. Do not apply lignin sulfonate at rates exceeding 0.5 gallons per square yard of road surface, assuming a 50:50 solution of lignin sulfonate to water.

34. Work Area Isolation

a. Isolate any work area within the wetted channel from the active stream whenever ESA-listed fish are reasonably certain to be present, or if the work area is less than 300 feet upstream from known spawning habitats.

b. Engineering design plans for work area isolation will include all isolation elements and fish release areas.

c. Dewater the shortest linear extent of work area practicable, unless wetted in-stream work is deemed to be minimally harmful to fish, and is beneficial to other aquatic species.[16]

[16] For instructions on how to dewater areas occupied by lamprey, see *Best management practices to minimize adverse effects to Pacific lamprey* (*Entosphenus tridentatus*) (USFWS 2010).

i. Use a coffer dam and a by-pass culvert or pipe, or a lined, non-erodible diversion ditch to divert flow around the dewatered area. Dissipate flow energy to prevent damage to riparian vegetation or stream channel and provide for safe downstream reentry of fish, preferably into pool habitat with cover.

ii. Where gravity feed is not possible, pump water from the work site to avoid rewatering. Maintain a fish screen on the pump intake to avoid juvenile fish entrainment.

iii. Pump seepage water to a temporary storage and treatment site, or into upland areas, to allow water to percolate through soil or to filter through vegetation before reentering the stream channel with a treatment system comprised of either a hay bale basin or other sediment control device.

iv. Monitor below the construction site to prevent stranding of aquatic organisms.

v. When construction is complete, re-water the construction site slowly to prevent loss of surface flow downstream, and to prevent a sudden increase in stream turbidity.

d. Whenever a pump is used to dewater the isolation area and ESA-listed fish may be present, a fish screen will be used that meets the most current version of NMFS's fish screen criteria (NMFS 2011a). NMFS approval is required for pumping at a rate that exceeds 3 cfs.

35. Invasive and Non-Native Plant Control

a. ***Non-herbicide methods*****.** Limit vegetation removal and soil disturbance within the riparian zone by limiting the number of workers there to the minimum necessary to complete manual, mechanical, or hydro-mechanical plant control (*e.g*., hand pulling, bending[17], clipping, stabbing, digging, brush-cutting, mulching, radiant heat, portable flame burner, super-heated steam, pressurized hot water, or hot foam (Arsenault *et al.* 2008; Donohoe *et al.* 2010))[18]. Do not allow cut, mowed, or pulled vegetation to enter waterways.

b. ***Herbicide Label.*** Herbicide applicators will comply with all label instructions

c. ***Power equipment.*** Refuel gas-powered equipment with tanks larger than 5 gallons in a vehicle staging area placed 150 feet or more from any natural water body, or in an isolated hazard zone such as a paved parking lot.

d. ***Maximum herbicide treatment area.*** Do not exceed treating 1.0% of the acres of riparian habitat within a 6^{th-}field HUC with herbicides per year.

e. ***Herbicide applicator qualifications.*** Herbicides may only be applied by an appropriately licensed applicator using an herbicide specifically targeted for a particular plant species that will cause the least impact. The applicator will be responsible for preparing and carrying out the herbicide transportation and safely plan, as follows.

f. ***Herbicide transportation and safety plan.*** The applicator will prepare and carry out an herbicide safety/spill response plan to reduce the likelihood of spills or misapplication, to take remedial actions in the event of spills, and to fully report the event.

[17] Knotweed treatment pre-treatment; See Nickelson (2013).
[18] See http://ahmct.ucdavis.edu/limtask/equipmentdetails.html

g. ***Herbicides.*** The only herbicides proposed for use under this opinion are (some common trade names are shown in parentheses):[19]

i. aquatic imazapyr (*e.g.*, Habitat)
ii. aquatic glyphosate (*e.g.*, AquaMaster, AquaPro, Rodeo)
iii. aquatic triclopyr-TEA (*e.g.*, Renovate 3)
iv. chlorsulfuron (*e.g.*, Telar, Glean, Corsair)
v. clopyralid (*e.g.*, Transline)
vi. imazapic (*e.g.*, Plateau)
vii. imazapyr (*e.g.*, Arsenal, Chopper)
viii. metsulfuron-methyl (*e.g.*, Escort)
ix. picloram (*e.g.*, Tordon)
x. sethoxydim (*e.g.*, Poast, Vantage)
xi. sulfometuron-methyl (*e.g.*, Oust, Oust XP)

h. ***Herbicide adjuvants.*** When recommended by the label, an approved aquatic surfactant or drift retardant can be used to improve herbicidal activity or application characteristics. Adjuvants that contain alky amine etholoxylates, *i.e.*, polyethoxylated tallow amine (POEA), alkylphenol ethoxylates (including alkyl phenol ethoxylate phosphate esters), or herbicides that contain these compounds are **not** covered by this opinion. The following product names are covered by this opinion:

i. Agri-Dex
ii. AquaSurf
iii. Bond
iv. Bronc Max
v. Bronc Plus Dry-EDT
vi. Class Act NG
vii. Competitor
viii. Cut Rate
ix. Cygnet Plus
x. Destiny HC
xi. Exciter
xii. Fraction
xiii. InterLock
xiv. Kinetic
xv. Level 7
xvi. Liberate
xvii. Magnify
xviii. One-AP XL
xix. Pro AMS Plus
xx. Spray-Rite
xxi. Superb HC
xxii. Tactic
xxiii. Tronic

i. ***Herbicide carriers.*** Herbicide carriers (solvents) are limited to water or specifically labeled vegetable oil. Use of diesel oil as an herbicide carrier is not covered by this opinion.

j. ***Dyes.*** Use a non-hazardous indicator dye (*e.g.*, Hi-Light or Dynamark™) with herbicides within 100 feet of water. The presence of dye makes it easier to see where the herbicide has been applied and where or whether it has dripped, spilled, or leaked. Dye also makes it easier to detect missed spots, avoid spraying a plant or area more than once, and minimize over-spraying (SERA 1997).

k. ***Herbicide mixing.*** Mix herbicides and adjuvants, carriers, and/or dyes more than 150 feet from any perennial or intermittent water body to minimize the risk of an accidental discharge.

[19] The use of trade, firm, or corporation names in this opinion is for the information and convenience of the action agency and applicants and does not constitute an official endorsement or approval by the U.S. Department of Commerce or NMFS of any product or service to the exclusion of others that may be suitable.

i. ***Tank Mixtures.*** The potential interactive relationships that exist among most active ingredient combinations have not been defined and are uncertain. Therefore, combinations of herbicides in a tank mix are not covered by this opinion.

m. ***Spill Cleanup Kit.*** Provide a spill cleanup kit whenever herbicides are used, transported, or stored. At a minimum, cleanup kits will include material safety data sheets, the herbicide label, emergency phone numbers, and absorbent material such as cat litter to contain spills.

n. ***Herbicide application rates.*** Apply herbicides at the lowest effective label rates.

o. ***Herbicide application methods.*** Apply liquid or granular forms of herbicides as follows:

i. Broadcast spraying – hand held nozzles attached to back pack tanks or vehicles, or by using vehicle mounted booms.

ii. Spot spraying – hand held nozzles attached to back pack tanks or vehicles, hand-pumped spray, or squirt bottles to spray herbicide directly onto small patches or individual plants.

iii. Hand/selective – wicking and wiping, basal bark, fill ("hack and squirt"), stem injection, cut-stump.

iv. Triclopyr – will not be applied by broadcast spraying.

v. Keep the spray nozzle within four feet of the ground when applying herbicide. If spot or patch spraying tall vegetation more than 15 feet away from the high water mark (HWM), keep the spray nozzle within 6 feet of the ground.

vi. Apply spray in swaths parallel towards the project area, away from the creek and desirable vegetation, *i.e.*, the person applying the spray will generally have their back to the creek or other sensitive resource.

vii. Avoid unnecessary run off during cut surface, basal bark, and hack-squirt/injection applications.

p. ***Washing spray tanks.*** Wash spray tanks 300 feet or more away from any surface water.

q. ***Minimization of herbicide drift and leaching.*** Minimize herbicide drift and leaching as follows:

i. Do not spray when wind speeds exceed 10 miles per hour, or are less than 2 miles per hour.

ii. Be aware of wind directions and potential for herbicides to affect aquatic habitat area downwind.

iii. Keep boom or spray as low as possible to reduce wind effects.

iv. Increase spray droplet size whenever possible by decreasing spray pressure, using high flow rate nozzles, using water diluents instead of oil, and adding thickening agents.

v. Do not apply herbicides during temperature inversions, or when air temperature exceeds 80 degrees Fahrenheit.

vi. Wind and other weather data will be monitored and reported for all broadcast applications.

r. ***Rain.*** Do not apply herbicides when the soil is saturated or when a precipitation event likely to produce direct runoff to salmon bearing waters from the treated area is forecasted by the NOAA National Weather Service or other similar forecasting service within 48 hours following application. Soil-activated herbicides may follow label instructions. Do not conduct hack-squirt/injection applications during periods of heavy rainfall.

s. ***Herbicide buffer distances.*** Observe the following no-application buffer-widths, measured in feet, as map distance perpendicular to the bankfull elevation for streams, the upland boundary for wetlands, or the upper bank for roadside ditches. Widths are based on herbicide formula, stream type, and application method, during herbicide applications (Table 3). Before herbicide application begins, flag or mark the upland boundary of each applicable herbicide buffer to ensure that all buffers are in place and functional during treatment.

Table 3. Herbicide buffer distances by herbicide formula, stream type, and application method.

Herbicide	**No Application Buffer Width (feet)**					
	Streams and Roadside Ditches with flowing or standing water present and Wetlands			Dry Streams, Roadside Ditches, and Wetlands		
	Broadcast Spraying	Spot Spraying	Hand Selective	Broadcast Spraying	Spot Spraying	Hand Selective
Labeled for Aquatic Use						
Aquatic Glyphosate	100	waterline	waterline	50	None	none
Aquatic Imazapyr	100	15	waterline	50	None	none
Aquatic Triclopyr-TEA	**Not Allowed**	15	waterline	**Not Allowed**	None	none
Low Risk to Aquatic Organisms						
Imazapic	100	15	bankfull elevation	50	None	none
Clopyralid	100	15	bankfull elevation	50	None	none
Metsulfuron-methyl	100	15	bankfull elevation	50	None	none
Moderate Risk to Aquatic Organisms						
Imazapyr	100	50	bankfull elevation	50	15	bankfull elevation
Sulfometuron-methyl	100	50	5	50	15	bankfull elevation
Chlorsulfuron	100	50	bankfull elevation	50	15	bankfull elevation
High Risk to Aquatic Organisms						
Picloram	100	50	50	100	50	50
Sethoxydim	100	50	50	100	50	50

36. Actions Requiring Stormwater Management[20]

a. Provide stormwater management for any project that will:

i. Increase the contributing impervious area within the project area

ii. Construct new pavement that increases capacity or widens the road prism.

iii. Reconstructs pavement down to subgrade.

iv. Rehabilitate or restore a bridge to repair structural or functional deficiencies that are too complicated to be corrected through normal maintenance, except for seismic retrofits that make a bridge more resistant to earthquake damage (*e.g.*, external post-tensioning, supplementary dampening) but do not affect the bridge deck or drainage.

v. Replace a stream crossing

vi. Change stormwater conveyance

b. Stormwater management is not required for the following pavement actions: minor repairs, patching, chip seal, grind/inlay, overlay or resurfacing (*i.e.,* nonstructural pavement preservation, a single lift or inlay).

c. Stormwater management plans will consist of:

i. Low impact development.

ii. Water quality (pollution reduction) treatment for post-construction stormwater runoff from all contributing impervious area.

iii. Water quantity treatment (retention or detention facilities), unless the outfall discharges directly into a major water body (*e.g.,* mainstem Columbia River, Willamette River (downstream of Eugene), large lakes, reservoir, ocean, or estuary). Retention or detention facilities must limit discharge to match pre-developed discharge rates (i.e., the discharge rate of the site based on its natural groundcover and grade before any development occurred) using a continuous simulation for flows between 50% of the 2-year event and the 10-year flow event (annual series).

d. Stormwater management plans will:

i. Explain how runoff from all contributing impervious area that is within or contiguous with the project area will be managed using site sketches, drawings, specifications, calculations, or other information commensurate with the scope of the action.

ii. Identify the pollutants of concern.

iii. Identify all contributing and non-contributing impervious areas that are within and contiguous with the project area.

iv. Describe the BMPs that will be used to treat the identified pollutants of concern, and the proposed maintenance activities and schedule for the treatment facilities.

[20] The most efficient way for an applicant or the Corps to prepare and submit a stormwater management plan for NMFS' review is to attach a completed *Checklist for Submission of a Stormwater Management Plan* (the *Checklist*, ODEQ updated 2012, or the most recent version) with the electronic notification when it is sent to the SLOPES mailbox. However, stormwater conveyance to a DEQ permitted Municipal Separate Storm Sewer System (MS4) or consistency with any other program acknowledged by DEQ as adequate for stormwater management will not meet the requirements of this opinion unless NMFS determines that the facility accepting the stormwater will provide a level of treatment that is equivalent to that called for in this opinion. The *Checklist* and guidelines for its use are available from NMFS or the ODEQ in Portland Oregon. The latest version of the *Checklist* is also available online in a portable document format (pdf) through the ODEQ Water Quality Section 401 certification webpage (ODEQ 2014) at http://www.deq.state.or.us/wq/sec401cert/process.htm#add (see "Post Construction Stormwater Management Plan").
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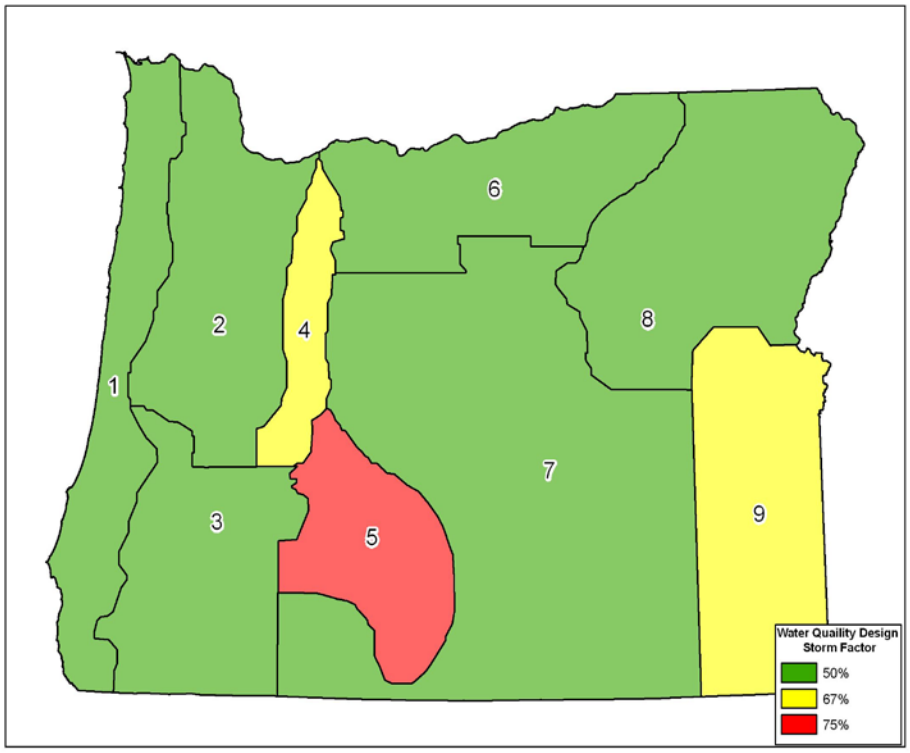
v. Provide a justification for the capacity of the facilities provided based on the expected runoff volume, including, *e.g.*, the design storm, BMP geometry, analyses of residence time, as appropriate.

vi. Include the name, email address, and telephone number of the person responsible for designing the stormwater management facilities that NMFS may contact if additional information is necessary to complete the effects analysis.

vii. The proposed action will include a maintenance, repair, and component replacement plan that details what needs to be done, when, and by whom for each facility.

e. All stormwater quality treatment practices and facilities will be designed to accept and fully treat the volume of water equal to 50% of the cumulative rainfall from the 2-year, 24-hour storm for that site, except as follows: climate zone 4 – 67%; climate zone 5 – 75%; and climate zone 9 – 67% (Figure 1). (ESA-listed species considered in this opinion are unlikely to occur in Zones 5 or 9.) A continuous rainfall/runoff model may be used instead of runoff depths to calculate water quality treatment depth.

Figure 1. Water Quality Design Storm Factor – Oregon Climate Regions (Oregon Department of Transportation 2008)



f. Use low impact development practices to infiltrate or evaporate runoff to the maximum extent feasible. For runoff that cannot be infiltrated or evaporated and therefore will discharge into surface or subsurface waters, apply one or more of the following specific primary treatment practices, supplemented with appropriate soil amendments:

i. Bioretention cell
ii. Bioslope, also known as an “ecology embankment”
iii. Bioswale
iv. Constructed wetlands
v. Infiltration pond
vi. Media filter devices with demonstrated effectiveness. Propriety devices should be on a list of “Approved Proprietary Stormwater Treatment Technologies” *i.e.*, City of Portland (2008) Stormwater Management Manual. Bureau of Environmental Services.
vii. Porous pavement, with no soil amendments and appropriate maintenance
viii. All stormwater flow control treatment practices and facilities will be designed to maintain the frequency and duration of instream flows generated by storms within the following end-points:
1. Lower discharge endpoint, by U.S. Geological Survey (USGS) flood frequency zone:
a. Western Region = 42% of 2-year event
b. Eastern Region
i. Southeast, Northeast, North Central = 48% of 2-year event
ii. Eastern Cascade = 56% of 2-year event
2. Upper discharge endpoint
a. Entrenchment ratio <2.2 = 10-year event, 24-hour storm
b. Entrenchment ratio >2.2 = bank overtopping event

g. When conveyance is necessary to discharge treated stormwater directly into surface water or a wetland, the following requirements apply:

i. Maintain natural drainage patterns.
ii. To the maximum extent feasible, ensure that water quality treatment for contributing impervious area runoff is completed before commingling with offsite runoff for conveyance.
iii. Prevent erosion of the flow path from the project to the receiving water and, if necessary, provide a discharge facility made entirely of manufactured elements (*e.g.*, pipes, ditches, discharge facility protection) that extends at least to OHW.

h. **NMFS review and approval.** NMFS will review proposed stormwater treatment and new or upgraded stormwater outfalls plans.

37. Site Restoration

a. Restore any significant disturbance of riparian vegetation, soils, stream banks or stream channel.

b. Remove all project related waste; *e.g.*, pick up trash, sweep roadways in the project area to avoid runoff-containing sediment, *etc.*

c. Obliterate all temporary access roads, crossings, and staging areas.

d. Loosen compacted areas of soil when necessary for revegetation or infiltration.

e. Although no single criterion is sufficient to measure restoration success, the intent is that the following features should be present in the upland parts of the project area, within reasonable limits of natural and management variation:

i. Human and livestock disturbance, if any, are confined to small areas necessary for access or other special management situations.

ii. Areas with signs of significant past erosion are completely stabilized and healed, bare soil spaces are small and well-dispersed.

iii. Soil movement, such as active rills and soil deposition around plants or in small basins, is absent or slight and local.

iv. Native woody and herbaceous vegetation, and germination microsites, are present and well distributed across the site; invasive plants are absent.

v. Plants have normal, vigorous growth form, and a high probability of remaining vigorous, healthy and dominant over undesired competing vegetation.

vi. Plant litter is well distributed and effective in protecting the soil with little or no litter accumulated against vegetation as a result of active sheet erosion ("litter dams").

vii. A continuous corridor of shrubs and trees appropriate to the site are present to provide shade and other habitat functions for the entire streambank.

38. Revegetation

a. Plant and seed disturbed areas before or at the beginning of the first growing season after construction.

b. Use a diverse assemblage of vegetation species native to the action area or region, including trees, shrubs, and herbaceous species. Vegetation, such as willow, sedge and rush mats, may be gathered from abandoned floodplains, stream channels, *etc.* When feasible, use vegetation salvaged from local areas scheduled for clearing due to development.

c. Use species native to the project area or region that will achieve shade and erosion control objectives, including forb, grass, shrub, or tree species that are appropriate for the site.

d. Short-term stabilization measures may include use of non-native sterile seed mix if native seeds are not available, weed-free certified straw, jute matting, and similar methods.

e. Do not apply surface fertilizer within 50 feet of any wetland or water body.

f. Install fencing as necessary to prevent access to revegetated sites by livestock or unauthorized persons.

g. Do not use invasive or non-native species for site restoration.

h. Conduct post-construction monitoring and treatment to remove or control invasive plants until native plant species are well-established.

39. Actions That Require Compensatory Mitigation

a. The Corps will rely on 33 CFR 332.3 when considering appropriate mitigation. The first option for an applicant is to purchase credits from an appropriate mitigation bank. The second option is to purchase credits from an approved in-lieu-fee sponsor. The third option is Permittee-responsible mitigation. The fourth option is a combination of some or all of the above options that collectively satisfies the mitigation requirements.

b. NMFS will review and approve compensatory mitigation plans.

c. The following actions require compensatory mitigation:

i. Any stormwater management facility that requires a new or enlarged structure within the riparian zone; or that has insufficient capacity to infiltrate and retain the volume of stormwater called for by this opinion.

ii. Any riprap revetment that extends rock above the streambank toe extends the use of riprap laterally into an area that was not previously revetted, or revetment that does not include adequate vegetation and LW.

iii. Any bridge rehabilitation or replacement that does not span the functional floodplain, or causes a net increase in fill within the functional floodplain.

d. The electronic notification (Appendix A, Part 1 with Part 4 completed) for an action that requires compensatory mitigation will explain how the Corps or applicant will complete the mitigation, including site sketches, drawings, specifications, calculations, or other information commensurate with the scope of the action.

e. Include the name, address, and telephone number of a person responsible for designing this part of the action that NMFS may contact if additional information is necessary to complete the effects analysis.

f. Describe practices that will be used to ensure:

i. No net loss of habitat function

ii. Completion before, or concurrent with, construction whenever possible

iii. Achieve a mitigation ratio that is greater than one-to-one and larger (*e.g.*, 1.5 to1.0 when necessary to compensate for time lags between the loss of conservation value in the project area and replacement of conservation value in the mitigation area, uncertainty of conservation value replacement in the mitigation area, or when the affected area has demonstrably higher conservation value than the mitigation area.[21]

iv. When practicable and environmentally sound, mitigation should be near the project impact site, or within the same local watershed and area occupied by the affected population(s) and age classes. Mitigation should be completed prior to or concurrent with the adverse impacts, or have an increased ratio as noted above.

[21] For additional information on compensatory mitigation, see Compensatory Mitigation for Losses of Aquatic Resources (33CFR332) at *www.poa.usace.army.mil/Portals/34/docs/regulatory/33cfr332.pdf*. More information is available from the U.S. Army Corps of Engineers, Portland District, Portland, Oregon. See: http://www.nwp.usace.army.mil/Missions/Regulatory/Mitigation.aspx

v. To minimize delays and objections during the review process, applicants are encouraged to seek the advice of NMFS during the planning and design of mitigation plans. For complex mitigation projects, such consultation may improve the likelihood of mitigation success and reduce permit-processing time.

g. For stormwater management:

i. The primary habitat functions of concern are related to the physical and biological features essential to the long-term conservation of listed species, *i.e*., water quality, water quantity, channel substrate, floodplain connectivity, forage, natural cover (such as submerged and overhanging LW, aquatic vegetation, large rocks and boulders, side channels and undercut banks), space, and free passage.

ii. Acceptable mitigation for riparian habitat displaced by a stormwater treatment facility is restoration of shallow-water or off-channel habitat

iii. Acceptable mitigation for inadequate stormwater treatment includes providing adequate stormwater treatment where it did not exist before, and retrofitting an existing but substandard stormwater facility to provide capacity necessary to infiltrate and retain the proper volume of stormwater. Such mitigation can be measured in terms of deficit stormwater treatment capacity.

h. For riprap:

i. The primary habitat functions of concern are related to floodplain connectivity, forage, natural cover, and free passage.

ii. Acceptable mitigation for those losses include removal of existing riprap; retrofit existing riprap with vegetated riprap and LW, or one or more other streambank stabilization methods described in this opinion, and restoration of shallow water or off-channel habitats.

i. For a bridge replacement:

i. The primary habitat functions of concern are floodplain connectivity, forage, natural cover, and free passage.

ii. Acceptable mitigation is removing fill from elsewhere in the floodplain – native channel material, soil and vegetation may not be counted as fill.

j. Mitigation actions will meet general construction criteria and other appropriate minimization measures (dependent on the type of proposed mitigation).

1.3.1.3 Project Design Criteria - Types of Actions

40. Natural Hazard Response

a. A manager of a state, regional, county, or municipal stormwater facility, public transportation feature, or utility must initiate a natural hazard response by notifying the Corps.[22] The Corps will encourage the applicant to:

i. Act as necessary to resolve the initial natural hazard.

ii. Without endangering human life or contributing to further loss of property or natural resources, apply all proposed design criteria from this opinion which are applicable to the response to the maximum extent possible.

b. The Corps will also contact NMFS as part of the natural hazard response.

i. As soon as possible after the onset of the natural hazard, the Corps will require the applicant to contact the Corps and NMFS to describe the nature and location of the natural hazard, review design criteria from this opinion that are applicable to the situation, and determine whether additional steps may be taken to further minimize the effects of the initial response action on listed species or their critical habitat.

ii. For the Oregon Coast contact Ken Phippen (541-957-3385), for the Willamette Basin contact Marc Liverman (503-231-2336), and Lower Columbia River up to and including Oregon tributaries contact Jeff Fisher (360-534-9342), and for eastern Oregon contact Dale Bambrick (509-962-8911x221).

41. Streambank and Channel Stabilization

a. The following streambank stabilization methods may be used individually or in combination:

i. Alluvium placement
ii. Large wood placement
iii. Vegetated riprap with large wood
iv. Roughened toe
v. Woody plantings
vi. Herbaceous cover, in areas where the native vegetation does not include trees or shrubs.
vii. Bank reshaping and slope grading
viii. Coir logs
ix. Deformable soil reinforcement
x. Engineered log jams (ELJ)
xi. Floodplain flow spreaders
xii. Floodplain roughness

[22] Natural hazard response actions do not include federal assistance following a gubernatorial, county or local declaration of emergency or disaster with a request for federal assistance; a federal declaration of emergency or disaster; or any response to an emergency or disaster that takes place on federal property or to a federal asset because those actions are subject to emergency consultation provisions of 50 CFR 402.05

b. For more information on the above methods see Federal Emergency Management Agency (2009)[23] or Cramer *et al.* (2003).[24] Other than those methods relying solely upon woody and herbaceous plantings, streambank stabilization projects should be designed by a qualified engineer that is appropriately registered in the state where the work is performed.

c. Stream barbs and full-spanning weirs are not allowed for stream bank stabilization under this opinion.

d. Alluvium Placement can be used as a method for providing bank stabilization using imported gravel/cobble/boulder-sized material of the same composition and size as that in the channel bed and banks, to halt or attenuate streambank erosion, and stabilize riffles. This method is predominantly for use in small to moderately sized channels and is not appropriate for application in mainstem systems. These structures are designed to provide roughness, redirect flow, and provide stability to adjacent streambed and banks or downstream reaches, while providing valuable fish and wildlife habitat.

i. **NMFS fish passage review and approval.** NMFS will review alluvium placement projects that would occupy more than 25% of the channel bed or more than 25% of the bankfull cross sectional area.

ii. This design method is only approved in those areas where the natural sediment supply has been eliminated, significantly reduced through anthropogenic disruptions, or used to initiate or simulate sediment accumulations in conjunction with other structures, such as LW placements and ELJs.

iii. Material used to construct the toe should be placed in a manner that mimics attached longitudinal bars or point bars.

iv. Size distribution of toe material will be diverse and predominately comprised of D_{84} to D_{max} size class material.

v. Spawning gravels will constitute at least one-third of the total alluvial material used in the design.

vi. Spawning gravels are to be placed at or below an elevation consistent with the water surface elevation of a bankfull event.

vii. Spawning size gravel can be used to fill the voids within toe and bank material and placed directly onto stream banks in a manner that mimics natural debris flows and erosion.

viii. All material will be clean alluvium with similar angularity as the natural bed material. When possible use material of the same lithology as found in the watershed. Reference *Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream Crossings* (USDA-Forest Service 2008) to determine gravel sizes appropriate for the stream.

ix. Material can be mined from the floodplain at elevations above bankfull, but not in a manner that will cause stranding during future flood events.

x. Crushed rock is not permitted.

xi. After placement in areas accessible to higher stream flow, allow the stream to naturally sort and distribute the material.

[23] http://www.fema.gov/pdf/about/regions/regionx/Engineering_With_Nature_Web.pdf
[24] http://wdfw.wa.gov/publications/00046/wdfw00046.pdf

xii. Do not place material directly on bars and riffles that are known spawning areas, which may cause fish to spawn on the unsorted and unstable gravel, thus potentially resulting in redd destruction.

xiii. Imported material will be free of invasive species and non-native seeds. If necessary, wash prior to placement.

e. **Large Wood Placements** are defined as structures composed of LW that do not use mechanical methods as the means of providing structure stability (*i.e.,* large rock, rebar, rope, cable, *etc*.). The use of native soil, alluvium with similar angularity as the natural bed material, large wood, or buttressing with adjacent trees as methods for providing structure stability are authorized. This method is predominantly for use in small to moderately sized channels and is not appropriate for application in mainstem systems. These structures are designed to provide roughness, redirect flow, and provide stability to adjacent streambed and banks or downstream reaches, while providing valuable fish and wildlife habitat.

i**.** **NMFS fish passage review and approval.** NMFS will review LW placement projects that would occupy greater than 25% of the bankfull cross section area.

ii. Structure shall simulate disturbance events to the greatest degree possible and include, but not be limited to, log jams, debris flows, wind-throw, and tree breakage.

iii. Structures may partially or completely span stream channels or be positioned along stream banks.

iv. Where structures partially or completely span the stream channel LW should be comprised of whole conifer and hardwood trees, logs, and rootwads. LW size (diameter and length) should account for bankfull width and stream discharge rates.

v. Structures will incorporate a diverse size (diameter and length) distribution of rootwad or non-rootwad, trimmed or untrimmed, whole trees, logs, snags, slash, *etc.*

vi. For individual logs that are completely exposed, or embedded less than half their length, logs with rootwads should be a minimum of 1.5 times bankfull channel width, while logs without rootwads should be a minimum of 2.0 times bankfull width.

vi. Consider orienting key pieces such that the hydraulic forces upon the LW increase stability.

f. Vegetated riprap with large wood (LW)

i. NMFS will review and approve bank stabilization projects that use vegetated riprap with LW.

ii. When this method is necessary, limit installation to the areas identified as most highly erodible, with highest shear stress, or at greatest risk of mass-failure, and provide compensatory mitigation. The greatest risk of mass-failure will usually be at the toe of the slope and will not extend above OHW elevation except in incised streams.

iii. Do not use invasive or non-native species for site restoration.

iv. Remove or control invasive plants until native plant species are well-established.

v. Do not apply surface fertilizer within 50-feet of any stream channel.

vi. Install fencing as necessary to prevent access to revegetated sites by livestock or unauthorized persons.

vii. Vegetated riprap with LW will be installed as follows:

1. When present, use natural hard points, such as large, stable trees or rock outcrops, to begin or end the toe of the revetment.

2. Develop rock size gradations for elevation zones on the bank, especially if the rock will extend above OHW – the largest rock should be placed at the toe of the slope, while small rock can be used higher in the bank where the shear stress is generally lower. Most upper bank areas will not require the use of any rock but can depend on the vegetation for erosion protection.

3. For bank areas above OHW where rock is still deemed necessary, mix rock with soil to provide a better growing medium for plants.

4. Minimum amount of wood incorporated into the treated area, for mitigation of riprap, is equal to the number of whole trees whose cumulative summation of rootwad diameters is equal to 80% of linear-feet of treated streambank or 20% of the treated area (square feet) of streambank, whichever is greater.

5. Where whole trees are not used (*i.e.,* snags, logs, and partial trees) designers are required to estimate the dimensions of parent material based on rootwad diameter, and calculating a cumulative equivalency of whole trees.

6. LW should be distributed throughout the structure (not just concentrated at the toe) to engage flows up to the bankfull flow. LW placed above the toe may be in the form of rootwad or non-rootwad, trimmed or untrimmed, whole trees, logs, snags, slash, *etc.* Maximize the exposure of wood to water by placing and orienting wood to project into the water column up to the bankfull elevation.

7. Develop an irregular toe and bank line to increase roughness and habitat value.

8. Use LW and irregular rock to create large interstitial spaces and small alcoves to create planting spaces and habitat to mitigate for flood-refuge impacts – do not use geotextile fabrics as filter behind the riprap whenever possible, if a filter is necessary to prevent sapping, use a graduated gravel filter.

9. Structure toe will incorporate LW with intact rootwads. Minimum spacing between rootwads placed at the toe will be no greater than an average rootwad diameter.

10. Minimum rootwad diameter for LW placed at the toe of the structure shall be 1.0 times the bankfull depth, unless LW availability constrains the project to a smaller rootwad size. Where rootwad size is constrained due to availably, the largest diameter rootwads available should be used.

11. LW placed at the toe will be sturdy material, intact, hard, and undecayed and should be sized or embedded sufficiently to withstand the design flood.

12. Space between root wads may be filled with large boulders, trimmed or untrimmed, whole trees, logs, snags, slash, *etc.*

When used, diameter of boulders placed between toe logs with rootwads should be 1.5 to 2.0 times log diameter at breast height (dbh) of adjacent toe logs. A reasonable maximum rock size is 5-6 feet in diameter.

13. Plant woody vegetation in the joints between the rocks to enhance streambank vegetation.

14. Where possible, use terracing, or other bank shaping, to increase habitat diversity.

15. When possible, create or enhance a vegetated riparian buffer.

viii. Monitor vegetated riprap each year following installation by visual inspection during low flows to examine transitions between undisturbed and treated banks to ensure that native soils above and behind the riprap are not collapsing, sinking, or showing other evidence of piping loss or movement of rock materials; and the overall integrity of the riprap treatment, including:

1. Loss of rock materials
2. Survival rate of vegetation
3. Anchoring success of LW placed in the treatment.
4. Any channel changes since construction.

g. Roughened toe

i. Where designs use any of the approved streambank stabilization methods outlined in this section, in lieu of lining the bank with riprap above the toe, the design of any rock-filled toe will adhere to project criteria outlined in (f) Vegetated riprap with large wood (7-15, from above).

ii. Minimum amount of wood incorporated into the treated area, for mitigation of riprap, is equal to the number of whole trees whose cumulative summation of rootwad diameters is equal to 80% of linear-feet of treated streambank.

h. **Engineered log jams (ELJ).** ELJs are structures composed of LW with at least three key members and incorporating the use of any mechanical anchoring system (*i.e.*, rebar, rope, angular or large rock, *etc.*). Native soil, simulated streambed and bank materials, wood, or buttressing with adjacent trees, are not mechanical anchoring systems. ELJs are designed to redirect flow, provide roughness, and provide stability to adjacent streambed and banks or downstream reaches, while providing valuable fish and wildlife habitat.

i**.** **NMFS fish passage review and approval.** NMFS will review proposed ELJ projects.

ii. ELJs will be patterned, to the greatest degree possible, after stable natural log jams.

iii. Stabilizing or key pieces of LW will be intact and solid (little decay). If possible, acquire LW with untrimmed rootwads to provide functional refugia habitat for fish.

i. If LW mechanical anchoring is required, a variety of methods may be used. These include large angular rock, buttressing the wood between adjacent trees, the use of manila, sisal or other biodegradable ropes for lashing connections. If hydraulic conditions warrant use of structural connections, rebar pinning or bolted connections, may be used. Use of cable is not covered by this opinion.

j. When a hole in the channel bed caused by local scour will be filled with rock to prevent damage to a culvert, road, or bridge foundation, the amount of rock will be limited to the minimum necessary to protect the integrity of the structure.

k. When a footing, facing, head wall, or other protection will be constructed with rock to prevent scouring or down-cutting of, or fill slope erosion or failure at, an existing culvert or bridge, the amount of rock used will be limited to the minimum necessary to protect the integrity of the structure. Whenever feasible, include soil and woody vegetation as a covering and throughout the structure.

42. Road Maintenance, Rehabilitation and Replacement

a. All maintenance and rehabilitation actions shall observe applicable criteria detailed in the most recent version of NMFS fish passage criteria

i. Projects affecting fish passage shall adhere to industry design standards found in the most recent version of any of the following:

1. *Water Crossings Design Guidelines* (Barnard *et al.* 2013)[25]
2. *Part XII, Fish Passage Design and Implementation, Salmonid Stream Habitat Restoration Manual* (California Department of Fish and Game 2009)[26]
3. *Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream* (USDA-Forest Service 2008)[27]
4. Or other design references approved by NMFS.

ii. Routine road surface, culvert and bridge maintenance activity will be completed in accordance with the *ODOT Routine Road Maintenance: Water Quality and Habitat Guide Best Management Practices* (ODOT 2009) or the most recent version approved by NMFS, unless maintenance activities and practices in that manual conflict with PDC in this opinion.

1. Any conflict between ODOT (2009) and this opinion (*e.g.*, stormwater management for maintenance yards, erosion repair related to use of riprap, dust abatement, and use of pesticides) will be resolved in favor of PDC in this opinion.

b. Grade stabilization

i. Grade control materials may include both rock and LW. Material shall not in any part consist of gabion baskets, sheet piles, concrete, articulated concrete blocks, or cable anchors.

ii. Grade control shall be provided using morphologically-appropriate constructed riffles for riffle-pool morphologies, rough constructed riffles/ramps for plane bed morphologies, wood/debris jams, rock bands, and boulder weirs for step-pool morphologies, and roughened channels for cascade morphologies.

iii. LW placements and ELJs may be used to control grade individually or together with other grade control methods by simulating natural log jams and debris accumulation that traps sediment and creates forced, riffle-pool, step-pool, or cascade-pool morphologies.

[25] http://wdfw.wa.gov/publications/01501/
[26] https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=12512
[27] http://stream.fs.fed.us/fishxing/aop_pdfs.html

iv. Stream banks and bed shall be designed to be immobile at the design event to reduce undermining and flanking.

v. The crest of channel spanning structures will be slightly sloped on either side, with the low point in the center, to direct flows to the middle of channel and away from streambanks. Install these structures low in relation to channel dimensions so that they are completely overtopped during channel-forming flow events (approximately a 1.0- to 1.5-year flow event).

vi. Construct boulder weir structures in a 'V' or 'U' shape, oriented with the apex upstream.

vii. Key all structures into the streambed at a depth which minimizes structure undermining due to scour, at least 2.5 times their exposure height, or the Lower Vertical Adjustment Potential (LVAP) line with an offset of 2 times D_{90}, whichever is deeper.

1. LVAP, and 2 times D_{90} offset, as calculated in *Stream Simulation: An ecological approach to providing passage for aquatic organisms at road crossings* (USDA-Forest Service 2008).

viii. Structures should be keyed into both banks—if feasible greater than 8 feet.

ix. If several drop structures will be used in series, space them at the appropriate distances to promote fish passage of target species and life histories. Incorporate NMFS (2011a) fish passage criteria (jump height, pool depth, *etc.*) in the design of drop structures.

x. Recommended spacing for boulder weirs should be no closer than the net drop divided by the channel slope (for example, a one-foot high step structure designed with a project slope of two-percent gradient will have a minimum spacing of 50-feet [1/0.02]). Maximum project slope for boulder weir designs is 5%.

xi. A series of short steep rough ramps/chutes, cascades, or roughened channel type structures, broken up by energy dissipating pools, are required where project slope is greater than 5%.

c. Rock Structures

i. Rock structures will be constructed out of a mix of well-graded boulder, cobble, and gravel, including the appropriate level of fines, to allow for compaction and sealing to ensure minimal loss of surface flow through the newly placed material.

ii. Rock sizing depends on the size of the stream, maximum depth of flow, plan form, entrenchment, and ice and debris loading.

iii. The project designer or an inspector experienced in these structures should be present during installation.

iv. To ensure that the structure is adequately sealed, no sub-surface flow will be present before equipment leaves the site.

v. Rock shall be durable and of suitable quality to assure long-term stability in the climate in which it is to be used.

i. Where feasible, channel spanning structures should be coupled with LW to improve habitat complexity of riparian areas.

d. Structure Stabilization

i. When a footing, facing, head wall, or other protection will be constructed with rock to prevent scouring or down-cutting of, or fill slope erosion or failure at, an existing culvert or bridge, the amount of rock used is limited to the minimum necessary to protect the integrity of the structure. Include soil, vegetation, and wood throughout the structure to the level possible.

e. Road-stream crossing replacement or retrofit

i. Projects shall adhere to industry design standards found in the most recent version any of the following:

1. *Water Crossings Design Guidelines* (Barnard *et al.* 2013)[28]
2. *Part XII, Fish Passage Design and Implementation, Salmonid Stream Habitat Restoration Manual* (California Department of Fish and Game 2009)[29]
3. *Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream* (USDA-Forest Service 2008)[30]
4. Or other design references approved by NMFS.

i. General road-stream crossing criteria

1. Span
   a. Span is determined by the crossing width at the proposed streambed grade.
   b. Single span structures will maintain a clear, unobstructed opening above the general scour elevation that is at least as wide as 1.5 times the active channel width.[31]
   c. Multi-span structures will maintain clear, unobstructed openings above the general scour elevation (except for piers or interior bents) that are at least as wide as 2.2 times the active channel width.
   d. Entrenched streams: If a stream is entrenched (entrenchment ratio of less than 1.4), the crossing width will accommodate the flood prone width. Flood prone width is the channel width measured at twice the maximum bankfull depth (Rosgen 1996).
   e. Minimum structure span is 6 feet.
2. Bed Material
   a. Install clean alluvium with similar angularity as the natural bed material, no crushed rock.
   b. Bed material shall be designed based on the native particle size distribution of the adjacent channel or reference reach, as quantified by a pebble count.
   c. Rock band designs as detailed in *Water Crossings Design Guidelines* (Barnard *et al.* 2013) are authorized.
   d. Bed material in systems where stream gradient exceeds 3% may be conservatively sized to resist movement.

[28] http://wdfw.wa.gov/publications/01501/
[29] https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=12512
[30] http://stream.fs.fed.us/fishxing/aop_pdfs.html
[31] Active channel width means the stream width measured perpendicular to stream flow between the OHW lines, or at the channel bankfull elevation if the OHW lines are indeterminate. This width includes the cumulative active channel width of all individual side- and off-channel components of channels with braided and meandering forms, and measure outside the area influence of any existing stream crossing, *e.g.*, five to seven channel widths upstream and downstream.

3. Scour Prism

a. Designs shall maintain the general scour prism, as a clear, unobstructed opening (*i.e.*, free of any fill, embankment, scour countermeasure, or structural material to include abutments, footings, and culvert inverts). No scour or stream stability countermeasure may be applied above the general scour elevation.[32]

a. The lateral delineation of the scour prism is defined by the criteria span.

b. The vertical delineation of the scour prism is defined by the Lower Vertical Adjustment Potential (LVAP) with an additional offset of 2 times D_{90}, as calculated in *Stream Simulation: An ecological approach to providing passage for aquatic organisms at road crossings* (USDA-Forest Service 2008).

b. When bridge abutments or culvert footings are set back beyond the applicable criteria span they are outside the scour prism.

4. Embedment

a. All abutments, footings, and inverts shall be placed below the thalweg a depth of 3 feet, or the LVAP line with an offset of 2 times D_{90}, whichever is deeper.

i. AP, and 2 times D_{90} offset, as calculated in *Stream Simulation: An ecological approach to providing passage for aquatic organisms at road crossings* (USDA-Forest Service 2008).

b. In addition to embedment depth, embedment of closed bottom culverts shall be between 30% and 50% of the culvert rise.

5. Bridges

a. Primary bridge structural elements will be concrete, metal, fiberglass, or untreated timber. The use of treated wood for bridge construction or replacement is not part of this proposed action. The use of treated wood for maintenance and repair of existing wooden bridges is part of the proposed action if in conformance with project design criterion 29.

b. All concrete will be poured in the dry, or within confined waters not connected to surface waters, and will be allowed to cure a minimum of 7 days before contact with surface water as recommended by Washington State Department of Transportation (2010).

c. Riprap may only be placed below bankfull height of the stream when necessary for protection of abutments and pilings. The amount and placement of riprap will not constrict the bankfull flow.

d. Temporary work bridges will also meet the latest version of NMFS (2011a) criteria.

[32] For guidance on how to complete bridge scour and stream stability analysis, see Lagasse *et al*. (2012) (HEC-20), Lagasse *et al*. (2001) (HEC-23), Richardson and Davis (2001) (HEC-18), ODOT (2011), and AASHTO (2013).

iii. The electronic notification for each permanent stream crossing replacement will contain the following:

1. Site sketches, drawings, aerial photographs, or other supporting specifications, calculations, or information that is commensurate with the scope of the action, that show the active channel, the 100-year floodplain, the functional floodplain, any artificial fill within the project area, the existing crossing to be replaced, and the proposed crossing.

2. A completed scour and stream stability analysis for any crossing that includes scour or stream stability countermeasures within the crossing opening that shows the general scour elevation and the local scour elevation for any pier or interior bent.

3. The name, address, and telephone number of a person responsible for designing this part of the action that NMFS may contact if additional information is necessary to complete the effects analysis.

f. **NMFS fish passage review and approval.** The Corps will not issue a permit to install, replace, or improve a road-stream crossing, step structure, fish ladder, or projects containing grade control, stream stability, or headcut countermeasures, until the action has been reviewed and approved by NMFS for consistency with NMFS's fish passage criteria (NMFS 2011a).

43. Utility Line Stream Crossings

a. Design utility line stream crossings in the following priority:

i. Aerial lines, including lines hung from existing bridges.

ii. Directional drilling, boring and jacking that spans the channel migration zone and any associated wetland.

iii. Trenching – this method is restricted to intermittent streams and may only be used when the stream is naturally dry, all trenches will be backfilled below the OHW line with native material and capped with clean gravel suitable for fish use in the project area.

b. Align each crossing as perpendicular to the watercourse as possible. Ensure that the drilled, bored or jacked crossings are below the total scour prism.

c. Any large wood displaced by trenching or plowing will be returned as nearly as possible to its original position, or otherwise arranged to restore habitat functions.

d. Any action involving a stormwater outfall will meet the stormwater management criteria.[33]

e. NMFS will review new or upgraded stormwater outfalls.

[33] The most efficient way for an applicant or the Corps to prepare and submit a stormwater management plan for NMFS' review is to attach a completed *Checklist for Submission of a Stormwater Management Plan* (the *Checklist*, ODEQ updated 2012, or the most recent version) with the electronic notification when it is sent to the SLOPES mailbox. However, stormwater conveyance to a DEQ permitted Municipal Separate Storm Sewer System (MS4) or consistency with any other program acknowledged by DEQ as adequate for stormwater management will not meet the requirements of this opinion unless NMFS determines that the facility accepting the stormwater will provide a level of treatment that is equivalent to that called for in this opinion. The *Checklist* and guidelines for its use are available from NMFS or the ODEQ in Portland Oregon. The latest version of the *Checklist* is also available online in a portable document format (pdf) through the ODEQ Water Quality Section 401 certification webpage (ODEQ 2014) at http://www.deq.state.or.us/wq/sec401cert/process.htm#add (see "Post Construction Stormwater Management Plan").

Action Completion Reporting. It is the applicant's responsibility to submit this form to the Corps within 60 days of completing all work below ordinary high water (OHW). Upon receipt, the Corps will resubmit this form with the Action Completion Report portion completed to NMFS at *slopes.nwr@noaa.gov*. If it is a Corps project, the Corps shall complete and submit this form within 60 days of completing the project.

Major hazard response reporting. It is the applicant's responsibility to submit this form to the Corps within 30 days of completing all work below OHW. Upon receipt, the Corps will resubmit this form with the Action Completion Report portion completed to NMFS at *slopes.nwr@noaa.gov*. If it is a Corps project, the Corps shall complete and submit this form within 30 days of completing the project.

Fish Salvage Reporting. It is the applicant's responsibility to submit this form to the Corps within 60 days of completing a capture and release as part of an action completed under SLOPES V Transportation. Upon receipt, the Corps will resubmit this form with the Fish Salvage Report portion completed with the following information to NMFS at *slopes.nwr@noaa.gov*. If it is a Corps project, the Corps shall complete and submit this form within 60 days of completing fish salvage operations.

1. ACTION COMPLETION REPORT

The applicant shall submit this form to the Corps within 60 days of completing all work below ordinary high water (OHW). The Corps shall submit this form to NMFS at *slopes.nwr@noaa.gov* upon receipt from the applicant. If it is a Corps project, the Corps shall submit this form within 60 days of completing all work below OHW.

Actual Start and End Dates for the Completion of In-water Work:	***Start***:	***End***:
Actual Linear-feet of Riparian and/or Channel Modification within 150 feet of OHW		
Actual Acreage of Herbicide Treatment		
Turbidity Monitoring/Sampling Completed	☐ Yes (include details below)	☐ No

Please include the following:

1. Attach as-built drawings for any action involving a riprap revetment, stormwater management facility, or a bridge rehabilitation or replacement.
2. Attach photos of habitat conditions before, during, and after action completion.
3. Describe compliance with fish screen criteria, as defined below, for any pump used.
4. Summarize results of pollution and erosion control inspections, including any erosion control failure, contaminant release, and correction effort.
5. Describe number, type and diameter of any pilings removed or broken during removal.
6. Describe any riparian area cleared within 150 feet of OHW.
7. Describe turbidity monitoring (visual or by turbidimeter) including dates, times and location of monitoring and any exceedances and steps taken to reduce turbidity observed.
8. Describe site restoration.

If the project was a Major Hazard Response, ALSO include the following:

1. Name of the major hazard event.
2. Type of major hazard.
3. Name of the public transportation district manager that declared the response necessary.
4. NMFS staff contacted, with date and time of contact.
5. Description of the amount and type of riprap or other material used to repair a culvert, road, or bridge.
6. Assess the effects of the initial response to listed species and critical habitats.
7. Summary of the design criteria followed and not followed.
8. Remedial actions necessary to bring the initial response into compliance with design criteria in this opinion.

2. FISH SALVAGE REPORT

If applicable: The applicant shall submit a completed Fish Salvage Report and Fish Salvage Data Table (see below) to the Corps within 60 days of completing a capture and release as part of an action completed under SLOPES V Transportation. The Corps will submit the report to NMFS at *slopes.nwr@noaa.gov* upon receipt from the applicant. If it is a Corps project, the Corps shall submit this form to NMFS within 60 days of completing a capture and release event.

Date(s) of Fish Salvage Operation(s): _____

Supervisory Fish Biologist: _____

Address _____

Telephone Number _____

Describe methods that were used to isolate the work area and remove fish

Fish Salvage Data

Water Temperature:

Air Temperature:

Time of Day:

ESA-Listed Species	Number Handled		Number Injured		Number Killed	
	Juvenile	Adult	Juvenile	Adult	Juvenile	Adult
Lower Columbia River Chinook						
Upper Willamette River Chinook						
Upper Columbia River spring-run Chinook						
Snake River spring/summer run Chinook						
Snake River fall-run Chinook						
Chinook, unspecified						
Columbia River chum						
Lower Columbia River Coho						
Oregon Coast Coho						
Southern Oregon/Northern California Coasts Coho						
Snake River sockeye						
Lower Columbia River steelhead						
Upper Willamette River steelhead						
Middle Columbia River steelhead						
Upper Columbia River steelhead						
Snake River Basin steelhead						
Steelhead, unspecified						
Southern green sturgeon						
Eulachon						

3. SITE RESTORATION/ COMPENSATORY MITIGATION

By December 31 of any year in which the Corps approves that the site restoration or compensatory mitigation is complete, the Corps, will submit a complete a Site Restoration/Compensatory Mitigation Reporting Form, or its equivalent, with the following information to NMFS at slopes.nwr@noaa.gov.

Describe location of mitigation or restoration work.

Summarize the results of mitigation or restoration work completed.

Inadvertent Discovery Plan

August 22, 2018

1. Introduction

The U.S. Army Corps of Engineers (Corps) completes the requirements of Section 106 of the National Historic Preservation Act (NHPA), as applicable, for projects authorized by a Department of the Army permit. However, cultural resources or historic properties may unexpectedly be encountered during project construction based on the project location or type of work. These unforeseen finds are called an inadvertent discovery. This plan describes requirements should an inadvertent discovery occur.

In accordance with Section 106 of the NHPA, Federal agencies, such as the Corps, are required to take into account the effects of any permitted action to historic properties. The Corps completes these requirements in cooperation with States, local governments, Native American Tribes, and private organizations and individuals. There are numerous federal and state laws and regulations that apply to historic preservation that include, but are not limited to:

National Historic Preservation Act – [54 USC 306108] [36 CFR 60]
Native American Graves Protection and Repatriation Act – [25 USC 3001] [43 CFR 10]
Procedures for the Protection of Historic Properties – [33 CFR 325 – Appendix C]
Consultation and Coordination with Indian Tribal Governments – [Executive Order 13175]
Rights and Duties Relating to Cemeteries, Human Bodies and Anatomical Gifts – [ORS 97.740- 97.760]
Oregon Historical and Heritage Agencies, Programs and Tax Provisions; Museums; Local Symphonies and Bands; Archaeological Objects and Sites – [ORS 358.905 – 358.955]
Permits and Conditions for Excavation or Removal of Archaeological or Historical Material; Rules; Criminal Penalty – [ORS 390.235]

2. Background

For thousands of years, Native American Tribes have lived on the lands that now comprise the state of Oregon. Although these lands are under various ownerships, Native Americans still retain a strong connection to their ancestral lands. Tribal archeological and burial sites are not simply artifacts of the Tribe's cultural past, but are considered sacred and represent a continuing connection with their ancestors. Native American cultural resources, ancestral remains, funerary objects, sacred objects, and objects of cultural patrimony are protected under federal and state laws. Examples of Tribal cultural resources include, but are not limited to: lithic flakes, stone tools, Native American human remains, remnants of structures (e.g. house pits), fish weirs, and/or shell middens.

In addition to potential Tribal-related sites, non-Tribal cultural and historical resources are also protected under federal and state laws. Examples of material that may be found at a historic-period site include, but are not limited to: glass bottles, cans, structural

foundations, machinery or parts, nails and many other items. If material such as this is uncovered during the course of a project, the procedures outlined below are applicable.

3. Inadvertent Discovery – The permittee shall implement the following procedures:

a. Projects that do not require monitoring by a professional archeologist (see permit special conditions):

1) In the event evidence of human burials, human skeletal remains, cultural items, suspected cultural items, or historic properties, as defined by the NHPA, are discovered and/or may be affected during the course of the authorized work, the permittee shall **Immediately Cease All Ground Disturbing Activities** that may cause further disturbance to those remains or resources. The area of the find shall be secured and protected from further disturbance, including an appropriate buffer around the discovery (i.e. 100 feet) using flagging or other visible marker. Sensitive resources, such as human skeletal remains, may not include visual markers in order to avoid attracting attention. The find may be temporarily protected through stabilization or non-destructive covering. Reasonable steps shall be taken to ensure confidentiality of the discovery and restrict access. The permittee or permittee's representative shall immediately notify the Corps and other appropriate agencies as identified in part 3(a)(2) of this plan, below.

2) Notification Procedures:

- Notification to the Corps, Portland District, Regulatory Branch Archeologist shall be made by email to winston.s.zack@usace.army.mil or phone at 503-808-4337 as soon as possible following discovery, but in no case later than 24 hours. The email or call shall clearly specify the purpose is to report a cultural resource discovery, provide the permittee's name, and Corps permit number.
- The permittee shall also notify the Corps representative (by email or telephone) as identified in the permit letter.
- If the inadvertent discovery is identified as human skeletal remains on non-federal or non-tribal public and private lands, the permittee shall report the discovery to the Oregon State Police at (503) 731-4717 and the county medical examiner/coroner in the most expeditious manner possible. The remains shall not be touched, moved, or further disturbed. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the county medical examiner/coroner determines the remains are non-forensic, then they will report that finding to the Oregon State Historic Preservation Office (SHPO) who will then take jurisdiction over the remains.
- In all inadvertent discovery situations, the permittee is also responsible for contacting the SHPO at (503) 986-0690.

3) Failure to stop work immediately and continue such stoppage could result in a violation of federal and state laws. Violators may be subject to civil and criminal penalties. Work shall remain suspended until notified by the Corps that work may proceed.

4) The permittee shall not resume construction in the area surrounding the discovery until the Corps Regulatory Branch re-authorizes project construction, pursuant to 36 CFR Part 800.13.

b. Projects that require monitoring by a professional archeologist (see permit special conditions):

1) The Corps-required archeological monitor has the authority to temporarily stop all ground disturbing activities in the event evidence of human burials, human skeletal remains, cultural items, suspected cultural items, or historic properties, as defined by the NHPA, are discovered and/or may be affected during the course of the authorized work. Upon positive identification of human burials, human skeletal remains, cultural items, suspected cultural items, or historic properties, as defined by the NHPA, the archeological monitor shall notify the permittee of the inadvertent discovery and the permittee shall **Immediately Cease All Ground Disturbing Activities**. The archeological monitor will take actions necessary to secure the discovery location. The permittee or permittee's representative shall immediately notify the Corps and other appropriate agencies as necessary as described in the Notification Procedures above. Work shall remain suspended until notified by the Corps that work may proceed.

2) Before work can proceed, first, the nature of the discovery must be evaluated. If it is determined the discovery contains human remains, then section 4 below shall be initiated. If the discovery contains less than 10 artifacts, then paragraph 3) below shall be followed. If the discovery contains more than 10 artifacts and does not contain human skeletal remains, then the Corps, in consultation with the SHPO and tribes as appropriate, will determine whether the site may be eligible for listing in the National Register of Historic Places (NRHP). If deemed insignificant the Corps will allow work to continue. If deemed significant, the Corps, in consultation with the SHPO, will evaluate whether the continuation of work would constitute an adverse effect. If the Corps determines the effect will not be adverse, or the area can be avoided, then work will be allowed to continue. If the inadvertent discovery location cannot be avoided, and continuing work would have an adverse effect on the site, the Corps, in consultation with the permittee, SHPO, and tribes as appropriate, will need to draft and finalize a Memorandum of Agreement for the treatment of the historic site before work can proceed.

3) If an isolated artifact (defined as fewer than 10 artifacts by the SHPO) is identified, the archeological monitor shall determine: a) whether there is potential for other artifacts to be present in the vicinity of the initial discovery by acquiring a

state-issued archaeological testing permit (pursuant to state law) to conduct additional survey, soil screening, subsurface testing, or other method deemed appropriate, and b) whether the identified artifacts alone are significant. These two considerations will be used to determine if sufficient evidence is present to define a historic site (i.e. potentially eligible for listing in the NRHP). If upon closer examination the materials discovered are not consistent with human burials, human remains, cultural items, suspected cultural items, or historic properties, as defined by the NHPA, the monitoring archeologist shall notify the Corps (via by phone or email message), and can then allow work to proceed but with caution and at a slower rate until the monitor is confident no sites are represented. The isolated finds shall be reported in the archeological monitor's post-construction monitoring report.

4. Human Remains

a. Plan of Action: If human burials and/or human skeletal remains are discovered, the archeological monitor shall ensure all unauthorized personnel have vacated the site location in a safe manner, make reasonable efforts to secure the location, and stabilize the remains if necessary (e.g. prevent remains from falling out of a trench wall). Every reasonable effort will be made by the monitor to ensure the remains are not physically handled or examined by unauthorized personnel until the proper notifications have been made. Reference is made to the Tribal Position Paper on Human Remains found on SHPO's website at: http://www.oregon.gov/OPRD/HCD/ARCH/docs/Tribal_position_paper_on_Human_Remains.pdf.

b. Treatment Plan: The permittee shall develop a Treatment Plan (TP) in consultation with the Corps, SHPO, and tribe(s), as needed, to ensure the proper handling, protection, or temporary storage of human remains and/or cultural items until the proper tribe or other entity, as appropriate, can be identified and those resources can be repatriated. The TP will define the items found; develop a strategy for handling/moving human remains and/or cultural items, if applicable; develop a strategy for determining whether additional human remains and/or cultural items are endangered; determine if additional testing is necessary to identify site boundaries; and determine the disposition of the human remains and/or cultural items. The TP will be agreed upon by all parties involved before any future ground disturbance activities resume.

US Army Corps of Engineers ®
Portland District

Compliance Certification

1. **Permit Number:** NWP-
2. **Permittee Name:**
3. **County Location:**

Upon completing the activity authorized by the permit, please complete the sections below, sign and date this certification, and return it to the U.S. Army Corps of Engineers, Portland District, Regulatory Branch. The certification can be submitted by email at cenwp.notify@usace.army.mil or by regular mail at the following address:

U.S. Army Corps of Engineers
CENWP-OD-GL
P.O. Box 2946
Portland, OR 97208-2946

4. **Corps-required Compensatory Mitigation (see permit special conditions):**
   a. Mitigation Bank / In-lieu Fee Credit Transaction Documents:
   ☐ Not Applicable ☐ Submitted ☐ Enclosed

   b. Permittee-responsible mitigation (e.g., construction and plantings) has been constructed (not including future monitoring). As-built report:
   ☐ Not Applicable ☐ Submitted ☐ Enclosed

5. **Endangered Species Act – Standard Local Operating Procedures (SLOPES)** (see permit special conditions):
   a. SLOPES Action Completion Report:
   ☐ Not Applicable ☐ Submitted ☐ Enclosed

   b. SLOPES Fish Salvage Report:
   ☐ Not Applicable ☐ Submitted ☐ Enclosed

   c. SLOPES Site Restoration / Compensatory Mitigation Report:
   ☐ Not Applicable ☐ Submitted ☐ Enclosed

I hereby certify the work authorized by the above-referenced permit has been completed in accordance with all of the permit terms and conditions.

Signature of Permittee **Date**