



June 03, 2013

Ms. Rebekah Padgett
401/CZM Federal Project Manager
Washington Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

NORTHWEST PIPELINE GP
W. Randall Miller
Environmental Scientist, Staff
295 Chipeta Way
Salt Lake City, UT 84158

(801) 584-6702 Office
(801) 584-6735 Fax

RE: South Seattle Delivery Lateral Expansion Project: Change in Project Description, King County, WA – Corps Reference NWS-2012-574

Dear Ms. Padgett:

Northwest Pipeline GP (Northwest), a Williams Gas Pipeline company, previously submitted applications or consultation requests to your agency in 2012 pertaining to the South Seattle Delivery Lateral Expansion Project. Northwest is withdrawing the previous 401 Water Quality Certification Application and immediately resubmitting the project with a change of project description as follow below. I have also completed, signed and attached the form *Water Quality Certification Processing Request to Washington Department of Ecology* to this letter. I selected “No changes in my project proposal which would affect water quality” since the change in project description removes the project construction in the Cedar River.

Northwest is amending its project description relative to the delivery capacity on the South Seattle Delivery Lateral. Northwest has elected to eliminate the construction of all components of the pipeline project between approximate mileposts 1.74 and 2.17. The original 4 mile long project now is approximately 3.57 miles in length. **This change eliminates approximately 0.43 miles of construction including any clearing, grading, excavation, trenching or other activities in the Cedar River floodplain or the King County Shoreline Management Zone.** As a result of this change, all construction activity will be limited to terrace locations above the Cedar River. This change to the project description is critical to the ability of Northwest to construct natural gas capacity for delivery of gas to local residents and businesses in the South Seattle area. This incremental natural gas supply is essential to assuring that natural gas volumes are available to the public during peak winter demand periods.

Northwest intends to expand the South Seattle Delivery Lateral is comprised of the 2429 (10-inch and 12-inch diameter) mainline (referred to as the '10-inch mainline') and the 2454 (10-inch, 12-inch, and 16-inch diameter) loop pipeline (referred to as the '10-inch loop pipeline'). The Project includes the following new pipeline, new appurtenances, and existing appurtenances modification activities, which are all located in King County, Washington (see Appendix A, Topo Location Map). The more detailed Environmental Alignment Sheets showing the construction areas for the revised project description are in Appendix B to this letter.

Changes to the Project Description

(1) Installation of approximately 3.57 miles of new 16-inch diameter loop pipeline. The Project will utilize approximately Northwest's existing permanent easement and will require no new permanent easement.

(2) Pipeline construction activities consist of:

- Removal and replacement within the same trench of approximately 3.57 miles of the existing 10-inch diameter South Seattle Delivery Lateral loop pipeline (2454) with 16-inch diameter pipeline between mileposts (MPs) 0.00 and 1.74 (1.74 miles) and between MPs 2.17 and 4.00 (1.83 miles).

(3) Replacement of the existing 10-inch tap with a new 16-inch tap at the Cedar Hills Meter Station (MP 0.24) and replacement of the gas chromatograph.

(4) Replacement of the existing 3-inch tap with a new 4-inch tap at the Maple Heights Meter Station (MP 2.57).

(5) Installation or removal of the following aboveground facilities and installation of tieovers (interconnections between the existing 10-inch pipeline and proposed 16-inch loop pipeline):

- Installation of a 16-inch pig launcher and a tieover at MP 0.00;
- Removal of the existing 10-inch pig launcher facility at MP 2.31; and
- Installation of a 16-inch pig receiver, a 10-inch pig launcher, and a tieover at MP 3.99.

**Table 5-1
Summary of Modifications Incorporated into the South Seattle Delivery Lateral Expansion Project**

Modification	Milepost (MP)	Property Owner	Parcel Number	Alignment Sheet/Drawing	Change
Alignment Changes/Construction Right-of-Way					
#1	1.74 to 2.17	See A-G below	See below	See Below	Removed from Project Description
#1A	1.74 – approx. 1.90	Jones Road LLC	2923069005	2454.29-0001	Removed from Project Description
#1B	Approx. 1.90 - 2.02	Cedar Mountain Shale	2923069006	2454.29-0001	Removed from Project Description
#1C	2.05	State of WA	Cedar River	2454.29-0001	Removed from Project Description
#1D	Approx. 2.07 - 2.09	King County (Cedar River Rails to Trails)	2923069021	2454.29-0001	Removed from Project Description
#1E	Approx. 2.09 - 2.11	State of WA	Renton Maple Valley Road Hwy 169	2454.29-0001	Removed from Project Description
#1F	Approx. 2.11 - 2.13	Northwest Pipeline	2923069059	2454.29-0001	Removed from Project Description
#1G	Approx 2.13 - 2.17	King County	196 th Avenue SE	2454.29-0001	Removed from Project Description

Summary of Reduction of Environmental Effects

The revised project description reduces the environmental effects of the project as analyzed by the Federal Energy Regulatory Commission (FERC) as follows. The removal of the portion of the project from the current project description eliminates construction excavation in the Cedar River valley and eliminates the crossing of the Cedar River and any work within the King County Shoreline zone.

The revised project now crosses only the following wetlands and waterbodies as shown in the In-Lieu Fee Plan (ILF) that details the mitigation requirements for the project. The ILF Plan is attached to this letter as Appendix C.

The revised project now affects approximately 9.4 acres of timbered land.

No Effect to Species Listed Pursuant to the Endangered Species Act

The revised project no longer contains construction activities that have potential to “likely adversely affect” threatened or endangered fish species. No construction is occurring in the vicinity of the Cedar River and virtually all remaining construction is on the upper terrace landform above the Cedar River Valley. The remaining construction will have best management practice (BMP) erosion control devices associated with local, state and federal permit requirements. The project’s remaining waterbody crossings consist of intermittent, non-fish-bearing drainages. These crossings will be conducted in the dry, or if flow is present will be flumed or dammed and pumped so that pipeline construction occurs in isolated condition. All construction operations will be conducted in full compliance with the state and federal water quality standards.

Reduced Impacts Reduce Mitigation Requirements

The reduction of construction areas have resulted in a reduced amount of impact to various natural resources. Table 1.5-1 and 1.5-2 in the ILF Plan reflects the revised impacts and resultant revised mitigation calculations for impacts to wetlands and waterbodies. The ILF Plan is attached to this letter as Appendix C.

Due to the elimination of construction in the Cedar River, installation of an Engineered Log Jam (ELJ) is no longer proposed for installation. No BMPs will be required to be installed in or adjacent to the Cedar River.

Limited Revision of Application Documents

Northwest intends to limit the revision of various permit applications by issuing this letter detailing the changes in the project description the result from the elimination of the portion of the originally-proposed project between mileposts 1.74 and 2.17. Northwest will continue to use most of the project plans as originally written with the acknowledgement that any reference to work, impacts or activities between the milepost 1.74 to 2.17 are moot and will no longer occur. The following permit applications are moot with the removal of the pipeline segment from the Shoreline Zone of King County:

R. Miller letter to Rebekah Padgett, WA Ecology, June 03, 2013

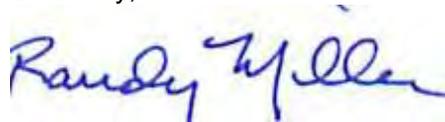
- King County Shoreline Permit
- Washington Department of Ecology Shoreline Approval

Project Components Requiring Permit Reapplications at a Future Date

Northwest recognizes that work associated with the Cedar River crossing is a requirement for Northwest to ultimately render the existing pipeline acceptable for passing in-line inspection tools (commonly known as pipeline “pigs”). Northwest acknowledges that the project components between MP 1.74 and MP 2.17 will be required to have permit applications re-filed as a separate project. Northwest will prepare and file the application for this removed segment of the pipeline at a future date.

Northwest is requesting that your agency immediately recognize this change to the project description for the South Seattle Delivery Lateral Expansion Project. To the extent that this revises pending permit applications, Northwest respectfully requests expedited approval for the remaining portion of the project. I am available for questions at my office 801-584-6702 or via e-mail at randy.miller@williams.com.

Sincerely,

A handwritten signature in blue ink that reads "Randy Miller". The signature is written in a cursive, flowing style.

W. Randall Miller
Environmental Scientist, Staff

Attachment

cc: Kevin Bowman, FERC
Carolyn Last, Edge Environmental

Water Quality Certification Processing
Request to the Washington Department of Ecology

Project Name South Seattle Delivery Lateral Expansion Project _____

Applicant Northwest Pipeline GP _____

Contact Name Randy Miller – randy.miller@williams.com _____

Phone Number 801-584-6702; 801-556-0657 (cell) _____

Address 295 Chipeta Way, Salt Lake City, UT 84108 _____

Check those statements below which correspond to your project.

1. **Withdrawal of certification request:**

_____ I would like to withdraw my request for certification. I do not intend to pursue certification of this project at this time.

 X I would like to withdraw my request for certification and re-apply for certification. I understand that this will extend the review period for this project of one additional year.

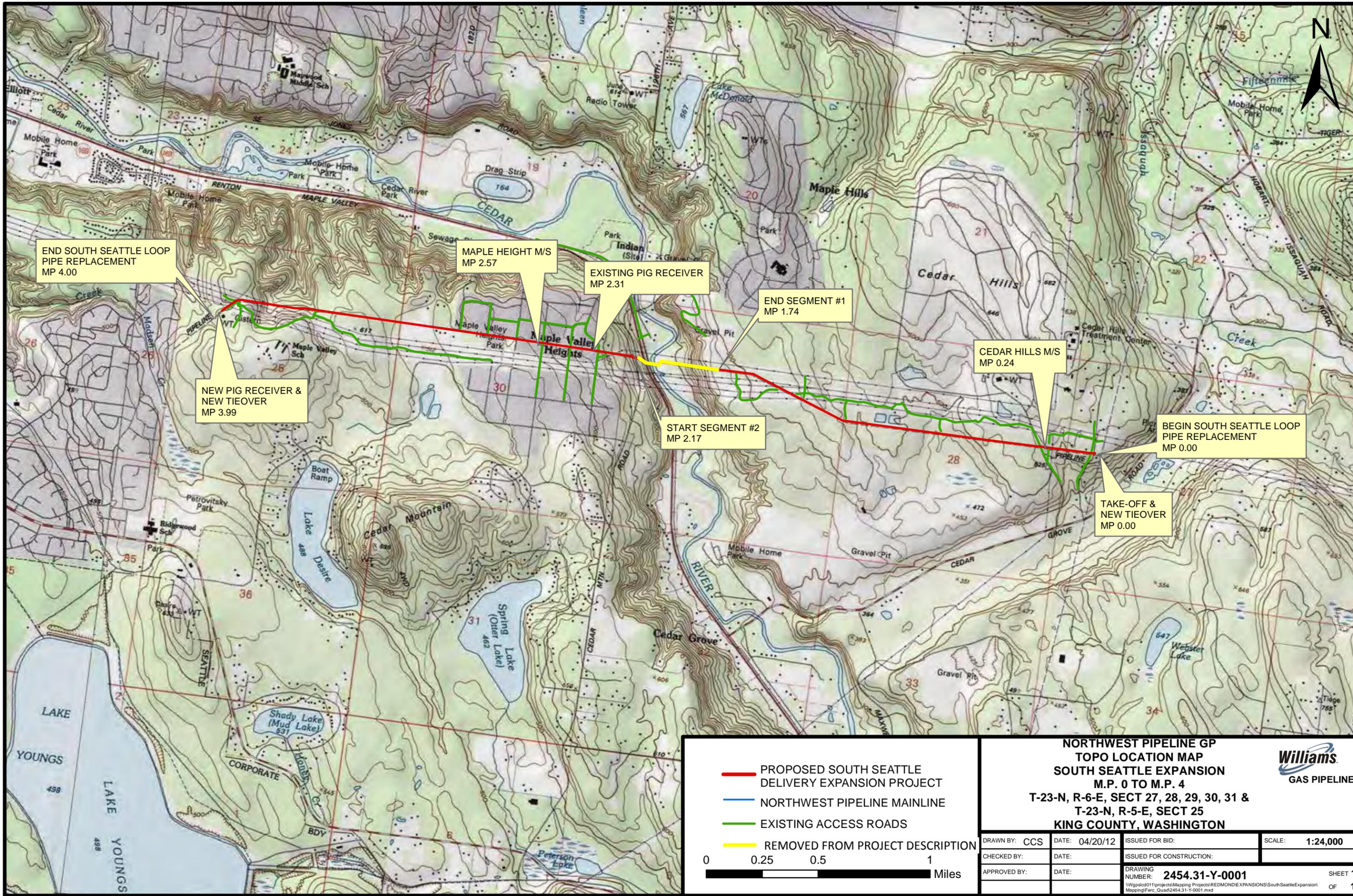
2. **Changes to project:**

 X There are no changes in my project proposal which would affect water quality.

_____ There are changes in my project proposal that may affect water quality. (If this answer is selected, please attach a new JARPA explaining the changes and their impacts on water quality.)

I am authorized to make this request on behalf of this applicant.

Signature William Randall Tyell Date June 3, 2013



END SOUTH SEATTLE LOOP
PIPE REPLACEMENT
MP 4.00

NEW PIG RECEIVER &
NEW TIEOVER
MP 3.99

MAPLE HEIGHT M/S
MP 2.57

EXISTING PIG RECEIVER
MP 2.31

END SEGMENT #1
MP 1.74

CEDAR HILLS M/S
MP 0.24

BEGIN SOUTH SEATTLE LOOP
PIPE REPLACEMENT
MP 0.00

TAKE-OFF &
NEW TIEOVER
MP 0.00

START SEGMENT #2
MP 2.17

PROPOSED SOUTH SEATTLE DELIVERY EXPANSION PROJECT

NORTHWEST PIPELINE MAINLINE

EXISTING ACCESS ROADS

REMOVED FROM PROJECT DESCRIPTION

0 0.25 0.5 1 Miles

NORTHWEST PIPELINE GP TOPO LOCATION MAP SOUTH SEATTLE EXPANSION M.P. 0 TO M.P. 4

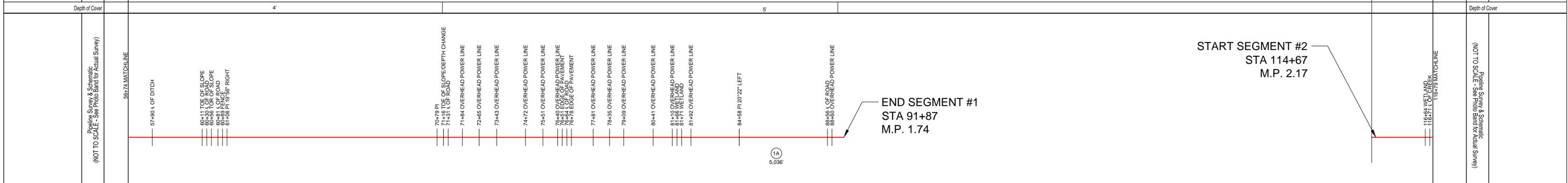
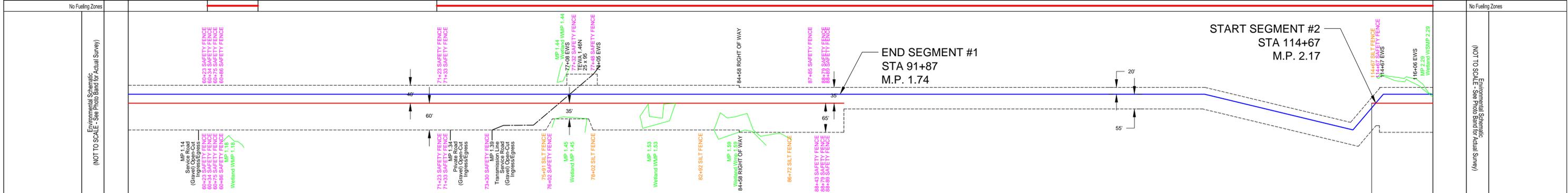
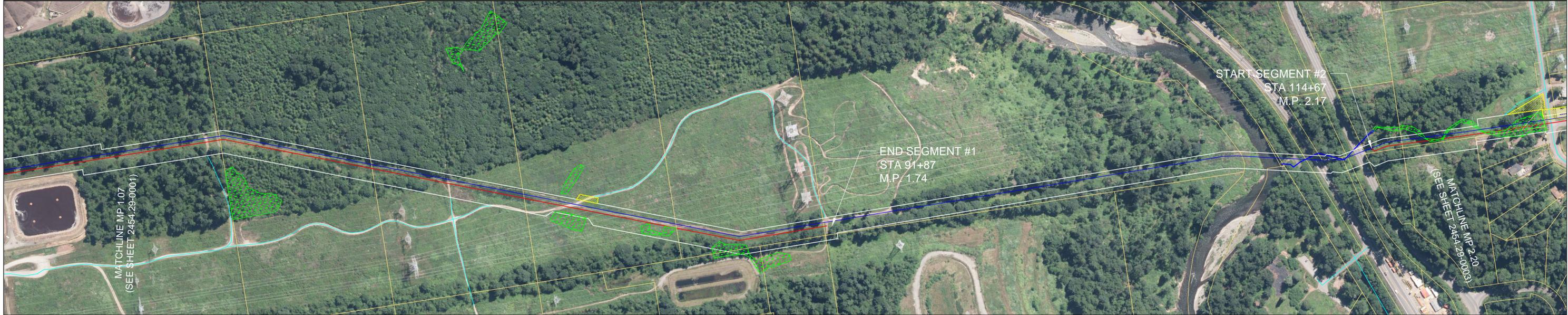
T-23-N, R-6-E, SECT 27, 28, 29, 30, 31 & T-23-N, R-5-E, SECT 25 KING COUNTY, WASHINGTON

Williams GAS PIPELINE

DRAWN BY: CCS	DATE: 04/20/12	ISSUED FOR BID:	SCALE: 1:24,000
CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION:	
APPROVED BY:	DATE:	DRAWING NUMBER: 2454.31-Y-0001	SHEET 1 OF 1

\\wpsol011\projects\Mapping\Projects\REDMOND\EXPANSIONS\SouthSeattleExpansion\Mapping\Ferc_Quad\2454.31-Y-0001.mxd

Legal Location	T23N, R6E, Section 28										T23N, R6E, Section 30																								
Ownership / Management	King County 2123069016					Reeve Resources LLC 2923069079					Reeve Resources LLC 2923069078					Reeve Resources LLC 2923069076					King County 5103300280 Maple Park Meadows HOA 510330TRCT					Northwest Pipeline 242400008 Bonneville Power 302290902									
Jurisdiction	King County																																		
Vegetation	20					0					20					0					22					1					23				
Landuse						14					WMP 1.45					WMP 1.53					WMP 1.59					43					61				
Wetland / Waterbody																																			
Crossing Method	Dry Open-Cut																																		
Instream Construction Window																																			
Topsoil Salvage																																			
Aboveground Facilities																																			
Residential																																			
Waterbars / Mulch																																			
Erosion Control Matting																																			
Hydro Test Source & Discharge																																			



- NOTES:
- In wetlands cut vegetation off at ground level, leaving existing root systems in place and remove the vegetation from the wetland for disposal.
 - In wetlands limit pulling of tree stumps and grading activities to directly over the trench line. Do not grade or remove stumps or root systems from the rest of the construction right-of-way.
 - In wetlands segregate the top one foot of topsoil from the trench line, except in areas where standing water or saturated soils are present.
 - Topsoil will be stripped from the trench line and spoil storage area in croplands, hayfields, pastures and residential areas. Topsoil may be imported in residential areas as necessary or as stipulated by landowner to assure adequate reclamation.
 - If streams proposed to be dry open cut (i.e. flume, dam & pump, etc.) are not flowing at the time of construction, they will be open cut.
 - Right-of-way grading or vegetation clearing as necessary.
 - Seed mixes in the ECRP or according to landowner agreements or as directed by E.I.
 - Northwest Pipeline GP understands that recommended fisheries' construction windows only apply to those waterbodies flowing at the time of construction and that the windows do not apply to HDD crossings.

LEGEND

- 16-inch Proposed Loop Pipeline
- 10-inch Existing Pipeline
- Construction Right-of-Way
 - Temporary Construction Right-of-Way (Shown white on photography)
 - Temporary Extra Work Area
 - Tax Parcel Boundaries
- Wetland
- Stream
- Access Road
- BMP Placement Determined by Environmental Inspector
 - Drivable Berm or Straw Bales or Mats (SW/DB)
 - Silt Fence (SF)
 - Safety Fence
 - Safety Panel
 - Construction Entrance Pad

SUMMARY OF MATERIAL

KEY	O.D.	W.T.	MANUFACTURER	LENGTH
1	16"	0.312"	API-5L-X52 PIPE	5,641'
2	16"	0.375"	API-5L-X52 PIPE	364'

EXTERNAL COATING

KEY	TYPE
A	15-17 MILS FBE
B	15-17 MILS FBE & 40 MILS ARO
C	15-17 MILS FBE & 40 MILS ARO & CONCRETE COATING

LANDUSE CATEGORIES

14	- Trans, Comm, Utility Corridors
17	- Other Urban or Built-up Land
21	- Cropland / Pasture
43	- Mixed Forest Land
51	- Streams and Canals
61	- Forested Wetlands
62	- Nonforested Wetlands

VEGETATION CATEGORIES

0	- Roads
1	- Westside Lowlands Conifer-Hardwood Forest
2	- Railroad
19	- Agriculture, Pasture and Mixed Environments
20	- Urban and Mixed Environments
21	- Open Water - Lakes, Rivers, Streams
22	- Herbaceous Wetlands
23	- Westside Riparian-Wetlands

REVISIONS

NO.	DATE	BY	DESCRIPTION	W.O.	NO.	CHK.	APP.
1	05/24/2013	TAD	REMOVED CEDAR RIVER SECTION		AB		AB

Scale: 200 0 200 400 600 FEET

**Northwest Pipeline GP
S. SEATTLE DELIVERY LATERAL EXPANSION PROJECT
16-INCH PROPOSED PIPELINE
ENVIRONMENTAL/CONSTRUCTION ALIGNMENT**

FROM MP 1.07 TO MP 2.20
KING COUNTY, WASHINGTON

**Williams
GAS PIPELINE**

DRAWN BY: CCS DATE: 01/29/2013 ISSUED FOR BID: 24x36 SCALE: 1 Inch = 200 Feet
CHECKED BY: AB DATE: 02/01/2013 ISSUED FOR CONSTRUCTION: 11x17 SCALE: 1 Inch = 450 Feet
APPROVED BY: DATE: DRAWING NUMBER: 2454.29-0002 SHEET 1 OF 1

FOR BID PURPOSES ONLY
DATE: XX-XX-XX



Northwest Pipeline GP

**Wetland, Waterbody, and Critical Area Buffer
In-Lieu Fee Plan**
(for use of the King County Mitigation Reserves Program [KCMRP])

South Seattle Delivery Lateral Expansion Project

June 2013

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	Table 1-4	Wetland and Wetland Buffers Seed Mixture and Planting Treatments Guide
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Wetland, Waterbody, and Critical Area Buffer In-Lieu Fee Plan

1.0 INTRODUCTION

Construction activities associated with the 3.57-mile South Seattle Delivery Lateral Expansion Project (Project) will directly impact 1.24 acres of wetlands and waterbodies at 11 systems identified along the Project. The pipeline trench will cross wetlands for approximately 553.61 linear feet. Of the total wetland impacts, the Project will affect 0.60 acre of palustrine emergent wetlands, 0.05 acre of riverine wetlands, 0.33 acre of palustrine forested wetlands, and 0.26 acre of palustrine scrub shrub wetlands. Nearly all of the headland wetland/stream systems along the Project route are moderately to highly disturbed. Present impacts include heavy grazing, mowing/cutting of vegetation, trash, untreated and/or undetained stormwater, and past drainage actions. Further, most of the impacts to the wetlands will occur within previously disturbed areas associated with the installation of the South Seattle Delivery Lateral's 10-inch mainline and 10-inch loop pipelines, which were installed in 1956 and 1966, respectively. With the exception of the Cedar River, all waterbodies crossed by the Project are intermittent minor headwater habitats. The Project's temporary disturbance will occur in the dry season and will have minor functional impacts on these degraded systems.

Table 1-1 (see Attachment 1) provides a list of wetlands and waterbodies that will be affected by the Project. The table provides the pipeline trench length in each wetland, excavated volume at each crossing (removal and fill), and area of impact (acres) from the construction right-of-way and temporary extra work areas by Cowardin wetland type and category rating. The Project will cross four minor, intermittent waterbodies.

2.0 WETLAND AND WATERBODY MITIGATION

The Project's wetland impacts will be mitigated according to federal, state, and local regulations following a standard mitigation sequence: (1) avoidance, (2) mitigation/minimization of impacts, and (3) compensation. Current federal and state regulations require that impacts to wetlands be avoided whenever practicable. Where avoidance of wetlands is not possible, impacts will be minimized and mitigated by restoration. Where permanent impacts to wetlands are unavoidable, compensation is required to offset the loss of wetland area and function. The Project is proposing In-Lieu Fee (ILF) to compensate for permanent losses to wetland functions. Each step in the wetland mitigation sequence, as applied to the Project, is described below.

2.1 AVOIDANCE AND MINIMIZATION

2.1.1 Project Design

The Project will expand the delivery capacity of the South Seattle Delivery Lateral by removing 3.57 miles of 10-inch diameter pipeline and replacing it with 3.57 miles of 16-inch diameter pipeline between mileposts (MPs) 0.00 and 1.74 (1.74 miles) and between MPs 2.17 and 4.00 (1.83 miles). Removal and replacement will occur within the same trench and will utilize the existing permanent (i.e., operational) easement established for Northwest's 10-inch 2429 mainline and 10-inch 2454 lateral pipelines. This design feature is an important mitigation measure to minimize and avoid potential landowner and environmental impacts (including wetlands) compared to the alternative of adding delivery capacity by looping (i.e., adding another pipeline) adjacent to Northwest's existing South Seattle Delivery Lateral's 10-inch diameter pipelines.

Northwest did not consider the installation of an additional loop pipeline to expand the delivery capacity of the South Seattle Delivery Lateral to be a reasonable alternative because of the associated landowner and environmental impacts. An additional loop pipeline would require a minimum 20-foot offset from the existing 10-inch mainline and loop pipelines to ensure the safety of the existing pipelines, which would place an additional loop on the edge of the existing, maintained operational easement established for the lateral pipelines. An additional loop would have greater environmental and landowner impacts than the proposed Project because the construction right-of-way to install a new loop would disturb more area outside the existing maintained easement and would require widening of the existing, permanent maintained easement. Widening of the permanent easement would be necessary in forested and scrub-shrub wetlands and riparian areas as well as in forested uplands; which would increase wetland impacts and increase the conversion of wetland types (i.e., forested wetlands to scrub-shrub or emergent wetlands, or scrub-shrub wetlands to emergent wetlands). Furthermore, widening the existing permanent easement would remove existing tree screens and riparian shade, and increase landowner encumbrances because of the need to acquire additional permanent easements to ensure pipeline safety.

2.1.2 General Project Measures to Minimize Impacts

Northwest has minimized potential wetland and waterbody impacts by incorporating the measures outlined in the Federal Energy Regulatory Commission's (FERC's) Wetland and Waterbody Construction and Mitigation Procedures (Wetland and Waterbody Procedures) and FERC's Upland Erosion Control, Revegetation, and Maintenance Plan (Upland Plan) into the Project design (see Attachments B and C of Northwest's Erosion Control and Revegetation Plan [ECRP] provided as Appendix C to the Joint Aquatic Resource Permit Application [JARPA]). There are situations where Northwest has requested a variance from FERC's Wetland and Waterbody Procedures based on site-specific conditions. The variance table is included in the JARPA (see Appendix B - Project Description Table 1.7-1).

The intent of FERC's Wetland and Waterbody Procedures is to minimize the extent and duration of project-related disturbance in wetlands and waterbodies. The intent of FERC's Upland Plan is to confine project-related disturbance to certificated areas (including the construction right-of-way, temporary extra work areas [TEWAs], and access roads), to minimize erosion, and to enhance revegetation in areas affected during construction. The Upland Plan and Wetland and Waterbody Procedures were developed with the participation of other federal, state and local agencies, industry, and the public nationwide, specifically to mitigate potential impacts from pipeline projects.

To minimize the extent of Project-related disturbance, Northwest will verify and clearly mark (with flagging) the construction limits and boundaries of all sensitive areas (including waterbodies and wetlands) prior to clearing for construction. Flagged boundaries will be maintained during construction. Northwest will ensure that all construction activities are confined to the certificated work limits authorized for construction.

As required by FERC's Wetland and Waterbody Procedures, TEWAs have been located a minimum of 50 feet from the edge of wetlands and waterbodies where possible to minimize impacts to wetland buffers and riparian zones. However, there are a number of situations where Northwest has requested variances from the Wetland and Waterbody Procedures based on topographic or other site-specific construction feasibility issues which prevent locating a TEWA 50 feet from the wetland or waterbody boundary (see JARPA/Appendix B - Project Description Table 1.7-1).

Northwest will have an Environmental Inspector (EI) present during all phases of construction within wetlands and waterbodies to ensure compliance with the Upland Plan, the Wetland and Waterbody Procedures, and any other Project permit stipulations or requirements. Section II A and B of FERC's Upland Plan outline the responsibilities of the EI.

Northwest's proposed erosion control and revegetation techniques were developed to minimize erosion and the extent and duration of Project-related impacts, as well as to maximize revegetation success. Those techniques are described in the ECRP. The ECRP incorporates measures outlined in FERC's Upland Plan and Wetland and Waterbody Procedures.

To minimize potential for spills and any impact from such spills, a Spill Plan has been developed and will be implemented during construction (see Appendix F to JARPA). Fueling and storage of hazardous materials will be conducted in accordance with Northwest's Spill Plan and FERC's Wetland and Waterbody Procedures.

2.1.3 Specific Project Measures to Minimize Wetland Impacts

To minimize impacts to wetlands, Northwest reduced (or "necked-down") the construction right-of-way width in wetlands from 100 feet to 75 feet where feasible. This is consistent with FERC's Wetland and Waterbody Procedures. A typical construction right-of-way configuration through wetlands is shown on Drawing 2454.34-X-0005 in the ECRP.

Where clearing is required, Northwest will cut, mow, or shear woody vegetation so the roots are left intact. This will facilitate the sprouting of trees and shrubs so that the recovery time following construction is minimized. The roots will also help hold the soils so that erosion is minimized. In wetlands, topsoil from the area disturbed by trenching will be segregated and replaced immediately after backfilling, as described in Section 2.2.

Silt fences and/or hay bale sediment barriers will be installed at the edges of the construction right-of-way in wetlands where there is a possibility for excavated trench spoil to flow into undisturbed areas of the wetland. Dewatering of the trench will be accomplished in a manner to prevent heavily silt-laden water from flowing into a wetland or waterbody. Trench breakers will be installed where necessary to prevent the wetland from draining through the pipeline trench and to maintain the wetland's hydrologic integrity. A diagram of a trench breaker is provided in the ECRP (see Drawing 2454.34-X-0011). In cases where the pipeline trench could drain a wetland, the trench bottom will be sealed as necessary to maintain wetland hydrology. After construction, all disturbed areas within wetlands will be returned to their preconstruction contours, to the extent practicable, to maintain the wetland's hydrologic characteristics.

2.1.4 Specific Project Measures to Minimize Waterbody Crossing Impacts

While expected to be dry, if any of the four minor intermittent headwater waterbodies crossed by the Project are flowing at the time of construction, they would be crossed using dry open cut crossing procedures (flume or dam and pump). A full discussion of the fluming and dam and pump crossing methods and safeguards are appended to JARPA. A summary of fluming procedures follows:

- A flume pipe (or pipes) is placed on the bottom of the waterbody and aligned with the flow of the stream. The size of the flume pipe and the number of pipes to be used is determined by the potential amount of flow in the waterbody at the time of construction. The flume pipe will be longer than the construction right-of-way width at the crossing.

- A temporary dam of sandbags and plastic is constructed at the upstream end of the flume, resulting in the entire stream flow passing through the flume and bypassing the construction area. This allows continuous stream flow to downstream reaches.
- A similar temporary dam of sandbags and plastic is constructed at the downstream end of the flume. This prevents the water in the stream from backflowing into the construction area.
- All instream excavation is done between the dams. The dams prevent turbid water created by construction from flowing downstream.
- Adequate downstream flow rates will be maintained through the flume pipe.
- Temporary spoil placement will be at least 10 feet from the waterbody and will be contained by sediment barriers.
- Native backfill material excavated from the trench will be replaced and all banks will be stabilized and temporary sediment barriers will be installed within 24 hours of completing the crossing.
- Flumes will be removed as soon as possible after the trench is backfilled.

The dam and pump crossing method is similar to the fluming method, except instead of a flume pipe to divert stream flow to the downstream side of the construction zone, pumps are used to pump water around the upstream and downstream dams isolating the construction zone. Flumes or dams and pumps will be completely installed and functioning prior to any instream disturbance. All dry open cut crossings will be completed as a single effort to minimize the time of instream disturbance. Based on available data and field review, none of the four minor intermittent headwater waterbodies crossed by the Project support fish; therefore, fish removal/salvage between the temporary dams would not be required.

2.2 IMPACT MITIGATION/RECTIFICATION

Temporary impacts to wetlands and critical area buffers will be mitigated through restoration of disturbed sites. Impacts to palustrine emergent and palustrine scrub-shrub wetlands, as well as agricultural, pasture, urban and mixed environs wetland buffers are considered temporary and short-term. It is expected that palustrine emergent wetlands, including urban, agricultural, pasture, and mixed environs wetland buffers can be re-established within one to two growing seasons. Impacts to palustrine scrub-shrub wetlands are also considered short term, but typically require approximately 2 to 5 years to recover to pre-construction cover and density. Impacts to forested wetlands and westside lowlands conifer-hardwood forest buffers are considered long term (10 to 25 years or longer) because of the time required to re-establish these systems. Restoration measures that would be utilized to mitigate impacts to wetlands and wetland buffers are described below.

Compaction of wetland soils and soil mixing from rutting within wetlands will be minimized by using low ground-weight equipment and/or by working from prefabricated timber mats. In addition, where there is reasonable access around a wetland in upland areas, construction equipment operating in wetland areas will be limited to that needed to clear the right-of-way, dig the trench, fabricate and install the pipe, backfill the trench, and restore the right-of-way. All other equipment traffic in wetlands will be limited to minimize impacts. Compacted surfaces will be appropriately scarified during restoration, as directed by the EI. Minimizing the potential for soil compaction and mitigating any compacted surfaces will reduce potential effects to soil infiltration and transmission characteristics which, in turn, will reduce or prevent potential effects to surface and groundwater flow patterns and wetland hydrology.

Vegetation in wetlands and westside lowlands conifer-hardwood forest buffers will be cut to ground level in the construction right-of-way to promote vegetation regeneration. This will facilitate re-establishment of woody species by enabling sprouting from existing root systems. Grading and stump removal will be performed only over the trench, except where required for safety and as determined by Northwest's Chief Inspector.

To further promote re-establishment of native wetland species, up to 12 inches of topsoil will be salvaged in all unsaturated wetlands. The salvaged topsoil will be stockpiled separately to prevent mixing with subsoils or spoil materials and returned to the top of the trench after construction. Topsoil salvaging will promote re-establishment of wetland species by preserving the vegetative propagules (seeds, roots, tubers, rhizomes, bulbs) present in the soil. Propagules potentially promote re-establishment of existing wetland vegetation by germinating or sprouting from replaced topsoil.

During final clean-up after construction, approximate original topographic conditions and contours of uplands, wetlands, and streambeds will be restored, to the extent practicable, to re-establish drainage patterns and wetland hydrology. Any excess backfill will be spread over upland areas and stabilized during cleanup. Where the pipeline trench may drain a wetland, Northwest will install trench breakers and/or seal the trench bottom as necessary to maintain the original wetland hydrology. A permanent slope breaker and a trench breaker will be installed through wetlands at the base of slopes near boundaries between the wetland and adjacent upland area. The trench breaker will be located immediately upslope of the slope breaker. A diagram of a trench breaker is provided in the ECRP (see Drawing 2454.34-X-0011).

Impacts to wetlands and wetland buffers will also be mitigated using general revegetation procedures outlined in the ECRP. Fertilizer or lime will not be used in wetlands. After construction, wetlands and wetland buffers will be seeded using the seed mixtures provided in Table 1 to further promote vegetation reestablishment. The seed mixtures were approved by the U.S. Army Corps of Engineers (COE), Washington Department of Ecology (WDOE), and King County on Northwest's past projects in the state and county. Individual landowners may also specify specific seed mixtures for their properties. Table 1-3 in Attachment 1 provides the seed mixtures that would be utilized in each wetland and buffer, unless the landowner specifies an alternate mixture.

Table 1
Recommended Seed Mixture for Wetlands and Wetland Buffers
(Excerpted from the ECRP - Table 7.9-1)

Seed Mixture 1 – Upland Right-of-Way Areas		
Common Name	Scientific Name	lbs/ac
Perennial Grasses		
Redtop or Oregon bentgrass	<i>Agrostis alba</i> or <i>Agrostis oregonensis</i>	5
Fescue, Fine or Creeping Red	<i>Festuca rubra</i>	10
Tall Fescue	<i>Festuca arundinacea</i>	10
Orchardgrass	<i>Dactylis glomerata</i>	7
Ryegrass, Annual or Italian	<i>Lolium multiflorum</i>	10
Timothy	<i>Phleum pratense</i>	2
Legumes		
Red Clover	<i>Trifolium pratense</i>	4
White Clover	<i>Trifolium repens</i>	4
Birdsfoot Trefoil	<i>Lotus corniculatus</i>	2
Annual Cereal Grains and Legumes		
Oat	<i>Avena sativa</i>	20
Total Bulk lb/acre		74

Seed Mixture 2 - Pasture Mix – Upland Sites		
Perennial Grasses		
Fescue, Tall	<i>Festuca arundinacea</i>	8
Orchardgrass	<i>Dactylis glomerate</i>	25
Ryegrass, Perennial or English	<i>Lolium perenne</i>	10
Legumes		
Red Clover	<i>Trifolium pratense</i>	3
White Clover	<i>Trifolium repens</i>	5
Total Bulk lb/acre		51
Seed Mixture 3 – Pasture Mix – Wet Sites		
Common Name	Scientific Name	lbs/ac
Perennial Grasses		
Tall Fescue	<i>Festuca arundinacea</i>	30
Ryegrass, Perennial or English	<i>Lolium perenne</i>	20
Meadow foxtail	<i>Alopecurus pratensis</i>	5
Legumes		
Alsike Clover	<i>Trifolium hybridum</i>	4
White Clover	<i>Trifolium repens</i>	4
Birdsfoot Trefoil	<i>Lotus corniculatus</i>	2
Total Bulk lb/acre		65
Seed Mixture 3a – Seed Mixture for Disturbed Emergent Wetlands		
Perennial Grasses		
Annual Ryegrass	<i>Lolium multiflorum</i>	20.0
Creeping bentgrass	<i>Agrostis stolonifera</i>	0.4
Garrison creeping foxtail	<i>Alopecurus arundinaceus</i>	3.0
Meadow foxtail	<i>Alopecurus pratensis</i>	2.0
Red fescue	<i>Festuca rubra</i>	2.0
Tufted Hairgrass	<i>Deschampsia caespitosa</i>	0.5
American sloughgrass ¹	<i>Beckmannia syzigachne</i>	2.0
Western Mannagrass ¹	<i>Glyceria occidentalis</i>	3.0
Total Bulk lb/acre		32.9
Seed Mixture 4 – Wetland Seed Mixture		
Grasses		
Annual Ryegrass	<i>Lolium multiflorum</i>	20
Quick Guard ²		40
Fescue, Fine or Creeping Red	<i>Festuca rubra</i>	5
Tufted Hairgrass	<i>Deschampsia caespitosa</i>	2
Reed Mannagrass ¹	<i>Glyceria grandis</i>	2
Meadow Barley ¹	<i>Hordeum brachyantherum</i>	5
Water Foxtail ¹	<i>Alopecurus geniculatus</i>	2
Rice Cut-grass ¹	<i>Leersia oryzoides</i>	2
Springbank Clover ¹	<i>Trifolium wormskioldii</i>	2
Total Bulk lb/acre		80
¹ These species may be included in the seed mixture if they are readily available from a commercial seed supplier.		
² Quick Guard is a sterile hybrid of wheat and rye.		

Sprigs (live stakes or cuttings) and woody species will be planted at waterbody and wetland crossings where appropriate, including forested wetland buffers (westside lowlands conifer-hardwood forest buffers) to enhance wetland, riparian, and buffer functions and to hasten the recovery of these forested or scrub-shrub wetland, riparian, and buffer systems. All restored sites along the pipeline corridor will be planted no later than the first planting season (October through March) after project completion.

Species' placement will be correlated to moisture regime requirements based on three categories of wet, moist, or dry ground as indicated in Table 2. Similarly, where woody species existed prior to construction along the other four intermittent waterbody crossings and at scrub-shrub and forested wetlands, plantings will conform to Section V.D.1 of FERC's Wetland and

Waterbody Procedures (provided with the ECRP). During monitoring and maintenance, reestablishment of invasive weeds will be controlled to ensure the successful establishment of the riparian shrub and tree plantings.

Table 2
Native Shrub and Tree Plantings for Restoring Wetland, Riparian, and Buffer Areas
(Excerpted from the ECRP - Table 7.12-1)

Common Name	Scientific Name	Planting size ¹	Plant Spacing ²
Shrubs			
Wet Sites			
Red-osier dogwood	<i>Cornus stolonifera</i>	36" cuttings	3'
Willow spp.	<i>Salix spp.</i>	36" cuttings	3'
Moist Sites			
Pacific ninebark	<i>Physocarpus capitatus</i>	1 gal	8'
Red elderberry	<i>Sambucus racemosa</i>	1 gal	8'
Blue elderberry	<i>Sambucus cerulea</i>	1 gal	8'
Salmonberry	<i>Rubus spectabilis</i>	1 gal	4'
Nootka rose/Woods' rose	<i>Rosa nutkana/ Rosa woodsii</i>	1 gal	4'
Golden currant	<i>Ribes aureum</i>	1 gal	6'
Dry Sites			
Snowberry	<i>Symphoricarpos albus</i>	1 gal	4'
Beaked hazelnut	<i>Corylus cornuta</i>	1 gal	8'
Oregon-grape	<i>Berberis repens</i>	1 gal	4'
Trees			
Wet Sites			
Oregon ash	<i>Fraxinus latifolia</i>	1 gal	10'
Red alder	<i>Alnus rubra</i>	1 gal	10'
Sitka spruce	<i>Picea sitchensis</i>	2 gal or bare root	15'
Western red cedar	<i>Thuja plicata</i>	2 gal or bare root	12'
Pacific crabapple	<i>Malus fusca</i>		
Black cottonwood	<i>Populus balsamifera ssp. trichocarpa</i>	36" cuttings or poles	10'
Moist Sites			
Cascara buckthorn	<i>Frangula purshiana</i>	1 gal	8'
Western hemlock	<i>Tsuga heterophylla</i>	1 gal	12'
Dry Sites			
Douglas-fir	<i>Pseudotsuga menziesii</i>	1 gal or bare root	12'
Bigleaf maple	<i>Acer macrophyllum</i>	2 gal	15'
¹ Planting stock sizes may include bare-root equivalents.			
² Shrubs will be installed in clusters of 5 to 10, while trees will be individual specimens.			

According to U.S. Department of Transportation (DOT) requirements, to facilitate periodic pipeline corrosion/leak surveys and to prevent roots from damaging pipe coatings, a 10-foot-wide corridor (centered across each pipeline) will be maintained in an herbaceous state; therefore, shrubs will not be planted in this corridor, and trees will not be planted within 15 feet of the pipeline centerlines. Table 1-4 in Attachment 1 lists the wetlands and waterbodies where supplemental plantings will occur.

By revegetating streambanks with riparian species, streambank stability will be enhanced over the long term and will provide for stream shading, sediment intercept, and input of detrital nutrients to the stream, all of which are key functions of riparian zones. FERC's Wetland and Waterbody Procedures limit vegetation maintenance adjacent to waterbodies to allow

development of a riparian vegetative strip. Herbicides or pesticides will not be used within 100 feet of a wetland or waterbody during maintenance activities.

3.0 COMPENSATORY MITIGATION REQUIREMENTS

The Project will not permanently fill wetlands or wetland buffers. As indicated in Table 1-1 in Attachment 1, approximately 0.31 acre of temporal palustrine forested (PFO) and scrub-shrub (PSS) wetland impact will occur in the Project's temporary construction right-of-way and TEWAs but outside of Northwest's existing permanent easement. In addition, the Project will cause approximately 0.28 acre of permanent wetland vegetation type conversion impacts associated with wetlands located in the temporary construction right-of-way way and within Northwest's existing permanent easement of the South Seattle Lateral (see Attachment 1/Table 1-1). These areas have not been recently maintained and, therefore, have re-established to scrub-shrub or forested conditions. By mitigating for the conversion impacts within the permanent easement, which can be maintained regularly, future maintenance or project conversion impacts within the easement will require no further mitigation.

To mitigate for the Project's temporal impacts to scrub-shrub and forested wetlands and the temporal loss of wetland function, as well as the Project's permanent vegetation type conversion impacts, Northwest proposes to use King County Code requirements (21A.24.340 C) (King County, Washington 2011) and WDOE's Wetland Mitigation Policies and Guidance (WDOE et al. 2006), which are essentially the same (see Attachment 1/Tables Table 1-5.1 and 1-5.2). According to WDOE (2006) guidance for long-term, temporary impacts to forested and scrub-shrub wetlands, the mitigation ratios are one-quarter of the ratios typical for permanent impacts, provided specific restoration measures are completed. These measures, and Northwest's approach to comply with them, are described below:

- An explanation of how hydric soils will be stored and handled: Section 2.2 of this Plan describes how Northwest will handle, store, and protect hydric soils during Project implementation.
- Surface and groundwater flow patterns are maintained or can be restored immediately following construction: Northwest will maintain and restore surface and groundwater flow patterns as outlined in Section 2.2.
- Disturbed buffers are re-vegetated and monitored: Northwest will revegetate and monitor disturbed buffers as described in Sections 2.2 and 4.0, respectively.
- The hydroseeding mixture to be applied on re-established areas is identified: Table 1 in Section 2.2 includes the seed mixtures that will be used in wetlands and wetland buffers for the Project. Table 2 in Section 2.2 also indentifies the shrub and tree species that will be planted in forested and scrub-shrub wetlands, riparian areas, and buffers. Table 1-4 in Attachment 1 provides the seed mixtures that will be utilized and where supplemental plantings will occur in each wetland and buffer, unless the landowner specifies an alternate mixture.
- A 10-year monitoring and maintenance plan is developed and implemented for restored forested and scrub-shrub wetlands: Northwest will re-seed all wetlands and replant shrub and tree species within scrub-shrub wetlands and scrub-shrub and forested buffers affected by the Project (see Table 1-3). Northwest will also implement annual maintenance and monitoring for 3 years to assess restoration success. Maintenance and monitoring will continue, if necessary, in Years 5, 8 and 10. At the end of the third year, Northwest will submit a report summarizing revegetation success and provide

recommendations on any additional maintenance issues and will continue monitoring and reporting in years 5, 8 and 10 (where necessary). Section 4.0 describes Northwest's proposed monitoring program in more detail.

WDOE's guidance also indicates the ratios for conversion of wetlands from one type to another will vary based on the type and degree of alteration, but they are generally one-half of the ratios typical for permanent wetland impacts. To calculate the mitigation requirements associated with the Project, various wetland impact and summary tables are provided in Attachment 1. Table 1-1 presents the Project's wetland effects for each wetland by Cowardin classification, wetland category rating, and by the portion of the Project's construction right-of-way that is within or outside Northwest's existing permanent easement. Table 1-2 provides a summary of the Project's wetland impacts by Cowardin classification and wetland category rating. Table 1-3 presents a summary of Project impacts by vegetation type for each wetland and waterbody buffer and includes the wetland category and buffer width.

As shown in Tables 1-1 and 1-2, the Project will have a total long-term temporal effect of 0.26 acre of palustrine scrub-shrub (PSS) wetlands and 0.33 acre of palustrine forested (PFO) wetlands. Temporal wetland impacts occur in the Project's temporary construction right-of-way and TEWAs but outside of Northwest's existing permanent easement. Tables 1-1 and 1-2 (in Attachment 1) also show that the Project will have a total of 0.28 acre of wetland vegetation type conversion impacts, associated with 0.12 acre of scrub-shrub and 0.16 acre of forested wetlands, which occur within the temporary construction right-of-way within Northwest's existing permanent easement.

Table 1-5.1 presents the compensatory mitigation proposal and calculations for temporal impacts to scrub-shrub and forested wetlands outside Northwest's existing permanent easement. Table 1-5.1 also provides the acres of scrub-shrub and forested wetlands by category and lists the various mitigation ratios according to King County Code and WDOE guidance based on re-establishment/creation projects that are proposed to mitigate the Project's wetland impacts. As previously noted, compensatory mitigation requirements for long-term, temporary impacts are generally one-quarter of those for permanent wetland impacts. As calculated in Table 1-5.1, compensatory mitigation requirements for the Project's temporary impacts to scrub-shrub and forested wetlands (outside Northwest's permanent easement) using re-establishment or creation projects would require 0.18 acre of mitigation.

Similarly, Table 1-5.2 presents the ILF compensatory mitigation proposal and calculations for wetland type conversion impacts to scrub-shrub and forested wetlands within Northwest's permanent easement. Table 1-5.2 provides the acres of scrub-shrub and forested wetland impacts by category and lists the various mitigation ratios according to King County Code and WDOE guidance based on either re-establishment/creation or rehabilitation projects that may be used to mitigate the Project's wetland impacts. As calculated in Table 1-5.2, compensatory mitigation requirements for the Project's wetland type conversion impacts to scrub-shrub and forested wetlands (within Northwest's permanent easement) using re-establishment or creation or restoration projects would require 0.29 acre of mitigation.

The combined total compensatory mitigation requirement for both temporal and wetland type conversion impacts to scrub-shrub and forested wetlands equates to 0.47 acre for re-establishment or creation projects, as indicated on the bottom of Table 1-5.2. Northwest discussed compensatory mitigation for the Project's potential effects with COE, WDOE, WDFW, National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (FWS), and King County during interagency meetings conducted in 2012. During these meetings, King County

directed Northwest to an established Mitigation Reserves Program¹, an “in-lieu fee” mitigation program certified under 2008 federal rules. Northwest will utilize this program to compensate for the Project’s temporal and wetland type conversion effects to forested and scrub-shrub wetlands (see In-Lieu Fee Mitigation section below).

The Project will also affect a total of 1.79 acres of westside lowlands conifer-hardwood forest wetland and waterbody critical area buffers (see Table 1-3). During post-construction restoration, Northwest will re-establish these buffers as outlined in Section 2.2 as well as in the Project’s ECRP (see Appendix B to JARPA).

Table 3
Northwest’s Compensatory Mitigation Summary

Compensatory Mitigation Action	Acres
Long-Term Temporal Wetland Impacts -ILF	0.18 (see Table 1-5.1)
Wetland Type Conversion Impacts - ILF	0.29 (see Table 1-5.2)

In-Lieu Fee Mitigation

Description of the Mitigation Options Considered. Federal regulations at 33 CFR 332.3(b) specify the hierarchy for compensatory mitigation proposals, namely 1) Wetland Mitigation Banks, 2) In-Lieu Fee Programs, and 3) Permittee-Responsible Mitigation. There currently are no accredited mitigation banks servicing King County or the localized watersheds affected by the proposed Project. Northwest is proposing monitoring of wetland restoration with use of the KCMRP for compensatory mitigation of temporal losses and vegetative conversions.

Selection Rationale. The KCMRP is located in the project area and is available for servicing the project area; Northwest is proposing use of the KCMRP for the following reasons:

- The development project will occur in the Cedar River watershed and the KCRMP focuses on mitigation projects along the course of the river and drainage streams;
- The aquatic resource mitigation needs include a compensatory mitigation requirement for the conversion of scrub shrub and forested wetlands (conversion to emergent wetlands) with a requirement for reestablishment or creation projects. KCMRP has a suite of projects specifically targeted for reestablishment of riparian habitat functions in select locations along the course of the Cedar River and in its drainage streams;
- The KCRMP is designing and implementing projects that provide floodplain creation, side-channel habitat creation with downed wood and timber species plantings, and riparian enhancement with large wood and timber along river banks. Such projects are suited to provide the reestablishment and/or creation credits Northwest is seeking;

Proposed Use of ILF Credits. Northwest is proposing to provide payment to KCMRP for the purchase of 0.47 acre of ILF credit for use in performing projects for the reestablishment and/or creation of wetlands for the impacts shown in Tables 1-5.1 and 1-5.2. Northwest believes that KCMRP has the capability to implement these types of projects in the Cedar River watershed.

¹ <http://www.kingcounty.gov/environment/waterandland/wetlands/mitigation-credit-program.aspx>

4.0 MITIGATION MONITORING

To monitor the success of wetland and critical area buffer restoration efforts, after each wetland and buffer has been replanted Northwest will prepare an “As-Built” Report for each wetland and critical area buffer. The report will be filed with COE, WDOE, and King County and will include the following:

1. Vicinity map showing site access;
2. Drawings clearly identifying the restoration area boundaries;
3. The installed planting scheme showing quantities, densities, sizes, and approximate locations of plants, as well as plant sources and the time of planting;
4. Photographs of the area taken from permanent reference points;
5. Locations of photopoints, sampling, and monitoring sites; and
6. An analysis of any changes to the restoration plan that occurred during construction.

Consistent with FERC’s Wetland and Waterbody Procedures, wetlands restored on the right-of-way will be monitored annually for 3 years following construction to determine the mitigation success of wetlands and critical area buffers impacted within the construction right-of-way. A qualified biologist will conduct monitoring during the growing season by collecting information on plant survival, percent vegetative cover, and hydrologic conditions. Photographs will be taken each year to document the monitoring efforts.

Reports will be prepared after each monitoring period to document collected data. At the end of the 3 years following construction, Northwest will file a report with FERC, COE, WDOE, and King County, identifying the status of the wetland revegetation efforts and indicating any remedial actions that have been implemented or are proposed. If the success criteria are reached, Northwest would request monitoring be suspended. Where remedial measures have been implemented, Northwest would continue maintaining and monitoring restored areas during subsequent years (Years 5, 8 and 10), and would continue monitoring until revegetation success criteria have been met.

Wetland revegetation shall be considered successful if the cover of herbaceous and/or woody species is at least 80 percent of the type, density, and distribution of the vegetation in adjacent wetland areas that were not disturbed by construction.

5.0 REFERENCES

King County, Washington. 2011. King County Code, Title 21A (Zoning), Chapter 24 (Critical Areas), Section 340 (Wetlands - Specific Mitigation Requirements). Available online: http://your.kingcounty.gov/mkcc/clerk/code/29_Title_21A24_21A26.pdf.

Washington State Department of Ecology (DOE), U.S. Army Corps of Engineers Seattle District, and U.S. Environmental Protection Agency Region 10. 2006. Wetland Mitigation in Washington State - Part 1: Agency Policies and Guidance (Version 1). Washington State Department of Ecology Publication #06-06-011a. Olympia, WA. Available online: <http://www.ecy.wa.gov/biblio/0606011a.html>.

Attachment 1

Tables

**Table 1-1
Wetlands and Waterbodies Affected by the South Seattle Delivery Lateral Expansion Project**

Wetland/Waterbody (Coot Company Identifier)	Milepost	Cowardin Classification	Hydrology	Stream Type - Wetland Category Rating (buffer width)	Length of Crossing (feet)	Excavated Volume at Crossing (cubic yards)	Acres of Construction Right-of-Way in Wetland			Acres of Temporary Extra Work Area in Wetland	Acres of Temporary Access Road in Wetland	Acres of Total Construction Disturbance in Wetland	Acres of Total Permanent Wetland Vegetation Type Conversion	Wetland Description
							Within NWP's Existing Permanent Easement	Outside NWP's Existing/ Permanent Easement	Total					
WRIA 8 Cedar-Sammamish, 5th Level HUC 1711001203 – Lake Sammamish, King County, WA														
WMP0.03	0.03	PEM	Seasonal	IV (40 ft.)	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.21	0.00	SLOPE system, seasonally saturated swale that occurs within a heavily grazed, probably year-round horse pasture.
WMP0.07	0.07	PEM	Seasonal	IV (40 ft.)	2.28	1.39	<0.01	<0.01	<0.01	0.00	0.00	<0.01	0.00	SLOPE system, small, constructed surface water channel through a mowed lawn that directs winter runoff from a headwater wetland a couple hundred feet from and upslope of the Project route. Designed to intercept and keep the surface water flows away from buildings and a driveway. Connects to an underground pipe at the property boundary.
SMP0.18	0.18	R4SB	Intermittent	Ns (65 ft.)	4.68	2.58	0.01	0.00	0.01	0.00	0.00	0.01	0.00	Small, 2-foot-wide seasonal stream with a steeply incised channel from stormwater impacts. The headwater beginning to this system is only a few hundred feet upstream
WRIA 8 Cedar-Sammamish, 5th Level HUC 1711001201 – Cedar River, King County, WA														
SMP0.53	0.53	R4SB	Intermittent	Ns (65 ft.)	3.99	2.36	0.01	<0.01	0.01	0.00	0.00	0.01	0.00	Small, ditched (possibly constructed) 1.5-foot-wide channel that directs stormwater overflow from the Cedar River Landfill.
WSMP0.74	0.74	R4SB PEM PFO PSS	Intermittent Permanent	Ns (65 ft.) II (179 ft.)	2.93 149.94 0.00 0.00	2.03 40.28 0.00 0.00	<0.01 0.10 0.00 0.00	0.01 0.00 0.00 0.00	0.01 0.10 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.01 0.10 0.00 0.00	0.00 0.00 0.00 0.00	Constructed drainage channel, 4 feet wide, fed by a portion of the Cedar River Landfill. DEPRESSIONAL, CLOSED system, very large, mostly forested wetland complex that extends well south across the landscape from the pipeline corridor. Provides many primary wetland functions to at least a moderate if not high degree due to its size and complexity.
WMP1.18	1.18	PFO PSS	Seasonal	II (144.5 ft.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	DEPRESSIONAL, CLOSED system, small distinct, fairly oval-shaped

Wetland/Waterbody (Coot Company Identifier)	Milepost	Cowardin Classification	Hydrology	Stream Type - Wetland Category Rating (buffer width)	Length of Crossing (feet)	Excavated Volume at Crossing (cubic yards)	Acres of Construction Right-of-Way in Wetland			Acres of Temporary Extra Work Area in Wetland	Acres of Temporary Access Road in Wetland	Acres of Total Construction Disturbance in Wetland	Acres of Total Permanent Wetland Vegetation Type Conversion	Wetland Description
							Within NWP's Existing Permanent Easement	Outside NWP's Existing/ Permanent Easement	Total					
					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	basin set with the landscape. Surface water is seasonal, with an average depth of about 1 foot. There is no defined outlet, but in very wet conditions surface waters should increase until it would spill over into adjacent low ground. This system is within landscape that drains directly into the Cedar River.
WMP1.44	1.44	PSS	Seasonal	IV (40 ft.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	DEPRESSIONAL, CLOSED system, within a small, somewhat oval-shaped, shallow basin. Surface water occurs seasonally; during periods of excessive heavy precipitation, water may fill up and spill out of the basin. This system is within landscape that drains directly into the Cedar River.
WMP1.45	1.45	PSS	Seasonal	IV (40 ft.)	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.00	DEPRESSIONAL, CLOSED system, within a small, somewhat oval-shaped, shallow basin. Surface water occurs seasonally; during periods of excessive heavy precipitation, water may fill up and spill out of the basin. This system is within landscape that drains directly into the Cedar River.
WMP1.53	1.53	PSS	Seasonal	III (60 ft.)	7.41	2.74	0.05	0.04	0.09	0.00	0.00	0.09	0.05	DEPRESSIONAL, CLOSED system, within a small, somewhat oval-shaped, shallow basin. Surface water occurs seasonally; during periods of excessive heavy precipitation, water may fill up and spill out of the basin. This system is within landscape that drains directly into the Cedar River.
WMP1.59	1.59	PSS	Seasonal	II (75 ft.)	0.00	0.00	0.04	0.08	0.12	0.00	0.00	0.12	0.04	DEPRESSIONAL, CLOSED system, just outside the cleared easement for the powerline, but has been significantly disturbed by past construction of a stormwater facility within a portion of the wetland. Shallow surface water occurs (less than 2-foot maximum depth), with no defined outlet.

Wetland/Waterbody (Coot Company Identifier)	Milepost	Cowardin Classification	Hydrology	Stream Type - Wetland Category Rating (buffer width)	Length of Crossing (feet)	Excavated Volume at Crossing (cubic yards)	Acres of Construction Right-of-Way in Wetland			Acres of Temporary Extra Work Area in Wetland	Acres of Temporary Access Road in Wetland	Acres of Total Construction Disturbance in Wetland	Acres of Total Permanent Wetland Vegetation Type Conversion	Wetland Description
							Within NWP's Existing Permanent Easement	Outside NWP's Existing/ Permanent Easement	Total					
WSMP2.29	2.29	R4SB PEM PFO	Intermittent Seasonal	Ns (65 ft.) III (60 ft.)	2.96 33.97 229.03	2.04 9.74 61.11	0.01 0.01 0.16	0.00 0.01 0.17	0.01 0.02 0.33	0.01 0.00 0.00	0.00 0.00 0.33	0.00 0.00 0.16	Small, 3-foot-wide drainage channel for stormwater runoff from adjacent residential areas. DEPRESSIONAL, SLOPE system located in a residential area. Hydrologic support for this wetland is almost entirely from stormwater runoff from adjacent residential areas. The eastern portion is the emergent depressional area. Overflow moves west through slope wetland and eventually is conveyed down slope via a small drainage.	
WMP2.90	2.90	PEM	Seasonal	IV (40 ft.)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Mixed structure of DEPRESSIONAL, OUTFLOW/SLOPE conditions situated within a topographic swale/saddle in the landscape. The wetland is a heavily grazed horse pasture that qualifies as an emergent habitat even though a handful of trees are scattered around on slightly elevated mounds. Shallow seasonal water likely persists for a few months in late winter, but seasonal saturation is probably the more dominant hydrology.	
WMP3.06	3.06	PEM PSS PFO	Seasonal	IV (40 ft.)	56.10 60.32 0.00	15.57 16.68 0.00	0.01 0.03 0.00	0.02 0.00 0.00	0.03 0.03 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.03 0.03 0.00	SLOPE system had a posted boundary (King County Wetland signs) that was delineated within the last few years. Hydrology within this system is likely dominated by seasonal saturation but with at least some of the lower areas having shallow surface water. Topography would indicate that this system drains subsurface.	
WMP3.08	3.08	PEM	Seasonal	III (40 ft.)	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.24	0.00	Small, shallow DEPRESSIONAL, OUTFLOW system, located in the center of a moderately used pasture adjacent to rural residential areas and the existing BPA easement. Hydrologic support appears to be

Wetland/Waterbody (Coot Company Identifier)	Milepost	Cowardin Classification	Hydrology	Stream Type - Wetland Category Rating (buffer width)	Length of Crossing (feet)	Excavated Volume at Crossing (cubic yards)	Acres of Construction Right-of-Way in Wetland			Acres of Temporary Extra Work Area in Wetland	Acres of Temporary Access Road in Wetland	Acres of Total Construction Disturbance in Wetland	Acres of Total Permanent Wetland Vegetation Type Conversion	Wetland Description
							Within NWP's Existing Permanent Easement	Outside NWP's Existing/ Permanent Easement	Total					
														from seasonal high groundwater and runoff from adjacent buffer area. A ditch and small culvert convey water north under a primitive dirt road to an adjacent pasture.
Totals by Wetland Cowardin Classification				R4	14.56	9.01	0.03	0.01	0.04	0.01	0.00	0.05	0.00	
				PEM	242.29	66.98	0.12	0.03	0.15	0.45	0.00	0.60	0.00	
				PFO	229.03	61.11	0.16	0.17	0.33	0.00	0.00	0.33	0.16	
				PSS	67.73	19.42	0.12	0.14	0.26	0.00	0.00	0.26	0.12	
Totals by Wetland/Stream Category Rating				II	149.94	40.29	0.14	0.08	0.22	0.00	0.00	0.22	0.04	
				III	270.41	73.59	0.22	0.22	0.44	0.24	0.00	0.68	0.21	
				IV	118.70	33.64	0.04	0.04	0.08	0.21	0.00	0.29	0.03	
				Ns	14.56	9.01	0.03	0.01	0.04	0.01	0.00	0.05	0.00	
Overall Total					553.61	156.52	0.43	0.35	0.78	0.46	0.00	1.24	0.28	

**Table 1-2
Summary of Wetland Impacts**

Totals	Cowardin Classification or Stream Type Wetland Category Rating		Acres of Construction Right-of-Way in Wetland			Acres of Temporary Extra Work Area in Wetland	Acres of Temporary Access Road in Wetland	Total Construction Disturbance in Wetland	Total Permanent Wetland Vegetation Type Conversion
			Within Existing/ Proposed Permanent Easement	Outside Existing/ Proposed Easement	Total				
Totals by Wetland Cowardin Classification	R4		0.03	0.01	0.04	0.01	0.00	0.05	0.00
	PEM		0.12	0.03	0.15	0.45	0.00	0.60	0.00
	PFO		0.16	0.17	0.33	0.00	0.00	0.33	0.16
	PSS		0.12	0.14	0.26	0.00	0.00	0.26	0.12
Totals by Wetland/ Stream Category Rating	II		0.14	0.08	0.22	0.00	0.00	0.22	0.04
	III		0.22	0.22	0.44	0.24	0.00	0.68	0.21
	IV		0.04	0.04	0.08	0.21	0.00	0.29	0.03
	N/Ns		0.03	0.01	0.04	0.01	0.00	0.05	0.00
Totals by Wetland Cowardin Classification and Wetland Stream Rating	R4	N/Ns	0.03	0.01	0.04	0.01	0.00	0.05	0.00
	PEM	II	0.10	0.00	0.10	0.00	0.00	0.10	0.00
	PEM	III	0.01	0.01	0.02	0.24	0.00	0.26	0.00
	PEM	IV	0.01	0.02	0.03	0.21	0.00	0.24	0.00
	PSS	II	0.04	0.08	0.12	0.00	0.00	0.12	0.04
	PSS	III	0.05	0.04	0.09	0.00	0.00	0.09	0.05
	PSS	IV	0.03	0.02	0.05	0.00	0.00	0.05	0.03
	PFO	II	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PFO	III	0.16	0.17	0.33	0.00	0.00	0.33	0.16
	PFO	IV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total			0.43	0.35	0.78	0.46	0.00	1.24	0.28

**Table 1-3
Wetland Buffer Impacts**

Wetland	Milepost	Wetland Category	Wetland Buffer (feet)	Buffer Vegetation Type	Construction Right-of-Way in Wetland Buffer (acres)	Temporary Extra Work Area in Wetland Buffer (acres)	Total Wetland Buffer (acres)
WMP0.03	0.03	IV	40	Urban and Mixed Environs	0.03	0.49	0.52
				Road – Trans, Comm, Utilities Corridors	0.01	0.00	0.01
				Total	0.04	0.49	0.53
WMP0.07	0.07	IV	40	Urban and Mixed Environs	0.19	0.00	0.19
SMP0.18	0.18	Ns	65	Westside Lowlands Conifer-Hardwood Forest	0.02	0.03	0.05
				Urban and Mixed Environs	0.26	0.00	0.26
				Total	0.28	0.03	0.31
SMP0.53	0.53	Ns	65	Westside Lowlands Conifer-Hardwood Forest	0.11	0.00	0.11
				Urban and Mixed Environs	0.19	0.00	0.19
				Total	0.30	0.00	0.30
WSMP0.74	0.74	Ns II	65 179	Westside Lowlands Conifer-Hardwood Forest	0.56	0.00	0.56
				Urban and Mixed Environs	0.78	0.00	0.78
				Total	1.34	0.00	1.34
WMP1.18	1.18	II	144.5	Westside Lowlands Conifer-Hardwood Forest	0.17	0.00	0.17
				Urban and Mixed Environs	0.32	0.00	0.32
				Road – Trans, Comm, Utilities Corridors	0.02	0.00	0.02
				Total	0.51	0.00	0.51
WMP1.44	1.44	III	40	Urban and Mixed Environs	0.05	0.02	0.07
WMP1.45	1.45	III	40	Urban and Mixed Environs	0.18	0.00	0.18
				Road – Trans, Comm, Utilities Corridors	0.04	0.00	0.04
				Total	0.22	0.00	0.22
WMP1.53	1.53	III	60	Urban and Mixed Environs	0.45	0.00	0.45
				Road – Trans, Comm, Utilities Corridors	0.05	0.00	0.05
				Total	0.50	0.00	0.50
WMP1.59	1.59	III	75	Westside Lowlands Conifer-Hardwood Forest	0.23	0.00	0.23
				Urban and Mixed Environs	0.37	0.00	0.37
				Road – Trans, Comm, Utilities Corridors	0.07	0.00	0.07
				Total	0.67	0.00	0.67

Wetland	Milepost	Wetland Category	Wetland Buffer (feet)	Buffer Vegetation Type	Construction Right-of-Way in Wetland Buffer (acres)	Temporary Extra Work Area in Wetland Buffer (acres)	Total Vegetation Type Conversion of Wetland Buffer (acres)
WSMP2.29	2.29	NS III	65 60	Westside Lowlands Conifer-Hardwood Forest	0.50	0.17	0.67
				Urban and Mixed Environs	0.67	0.04	0.71
				Road – Trans, Comm, Utilities Corridors	0.07	0.03	0.10
				Total	1.24	0.24	1.48
WSMP2.90	2.90	IV	40	Urban and Mixed Environs	0.05	0.00	0.05
				Agriculture, Pasture and Mixed Environs	0.03	0.00	0.03
				Road – Trans, Comm, Utilities Corridors	0.01	0.00	0.01
				Total	0.09	0.00	0.09
WMP3.06	3.06	IV	40	Urban and Mixed Environs	0.52	0.00	0.52
				Road – Trans, Comm, Utilities Corridors	0.04	0.00	0.04
				Total	0.56	0.00	0.56
WMP3.08	3.08	III	40	Urban and Mixed Environs	0.05	0.41	0.46
Totals by Vegetation Type				Westside Lowlands Conifer-Hardwood Forest	1.59	0.20	1.79
				Urban and Mixed Environs	4.11	0.96	5.07
				Road – Trans, Comm, Utilities Corridors	0.31	0.03	0.34
				Agriculture, Pasture, Mixed Environs	0.03	0.00	0.03
				Total Wetland Buffer Impacts	6.04	1.19	7.23

**Table 1-4
Wetland and Wetland Buffers Seed Mixture and Planting Treatments Guide ¹**

Wetland	Milepost	Wetland Category	Wetland Buffer (feet)	Buffer Vegetation Type	Total Construction Disturbance in Wetland (acres)	Total Construction Disturbance in Wetland Buffer (acres)	Seed Mix	Planting
WMP0.03	0.03	IV	40	Wetland – PEM	0.21		3	None
				Urban and Mixed Environs		0.52	2	None
				Road – Trans, Comm, Utilities Corridors		0.01		
				Total	0.21	0.53		
WMP0.07	0.07	IV	40	Wetland - PEM	<0.01		3	None
				Urban and Mixed Environs		0.19	2	None
				Total	<0.01	0.19		
SMP0.18	0.18	Ns	65	Wetland – R4SB	0.01		4	Yes ²
				Westside Lowlands Conifer-Hardwood Forest		0.05	1	Yes ²
				Urban and Mixed Environs		0.26		
				Total	0.01	0.31		
SMP0.53	0.53	Ns	65	Wetland – R4SB	0.01		3a	Yes ²
				Westside Lowlands Conifer-Hardwood Forest		0.11	1	Yes ²
				Urban and Mixed Environs		0.19		
				Total	0.01	0.30		
WSMP0.74	0.74	Ns II	65 179	Wetland – R4SB, PEM, PFO, PSS	0.11		4	Yes ²
				Westside Lowlands Conifer-Hardwood Forest		0.56	1	Yes ²
				Urban and Mixed Environs		0.78		
				Total	0.11	1.34		
WMP1.18	1.18	II	144.5	Wetland – PFO, PSS	0.00		N/A	N/A
				Westside Lowlands Conifer-Hardwood Forest		0.17	1	Yes ²
				Urban and Mixed Environs		0.32		
				Road – Trans, Comm, Utilities Corridors		0.02		
				Total	0.00	0.51		
WMP1.44	1.44	III	40	Wetland – PSS	0.00		N/A	N/A
				Urban and Mixed Environs		0.07	1	None
				Total	0.00	0.07		

Wetland	Milepost	Wetland Category	Wetland Buffer (feet)	Buffer Vegetation Type	Total Construction Disturbance in Wetland (acres)	Total Construction Disturbance in Wetland Buffer (acres)	Seed Mix	Planting
WMP1.45	1.45	III	40	Wetland – PSS	0.02		3a	None ³
				Urban and Mixed Environs		0.18	1	None
				Road – Trans, Comm, Utilities Corridors		0.04		
				Total	0.02	0.22		
WMP1.53	1.53	III	60	Wetland – PSS	0.09		3a	None ³
				Urban and Mixed Environs		0.45	1	None
				Road – Trans, Comm, Utilities Corridors		0.05		
				Total	0.09	0.50		
WMP1.59	1.59	III	75	Wetland – PSS	0.12		4	Yes ²
				Westside Lowlands Conifer-Hardwood Forest		0.23	1	Yes ²
				Urban and Mixed Environs		0.37		
				Road – Trans, Comm, Utilities Corridors		0.07		
				Total	0.12	0.67		
WSMP2.29	2.29	Ns III	65 60	Wetland – R4SB, PEM, PFO	0.37		3a	Yes ²
				Westside Lowlands Conifer-Hardwood Forest		0.67	1	Yes ²
				Urban and Mixed Environs		0.71		
				Road – Trans, Comm, Utilities Corridors		0.10		
				Total	0.37	1.48		
WMP2.90	2.90	IV	40	Wetland – PEM	0.00		3	None
				Urban and Mixed Environs		0.05	2	None
				Agriculture, Pasture and Mixed Environs		0.03		
				Road – Trans, Comm, Utilities Corridors		0.01		
				Total	0.00	0.09		
WMP3.06	3.06	IV	40	Wetland – PEM, PSS, PFO	0.06		3	None
				Urban and Mixed Environs		0.52	1 and 2	None
				Road – Trans, Comm, Utilities Corridors		0.04		
				Total	0.06	0.56		
WMP3.08	3.08	III	40	Wetland – PEM	0.24		4	None
				Urban and Mixed Environs		0.46	1	None

Wetland	Milepost	Wetland Category	Wetland Buffer (feet)	Buffer Vegetation Type	Total Construction Disturbance in Wetland (acres)	Total Construction Disturbance in Wetland Buffer (acres)	Seed Mix	Planting
				Total	0.24	0.46		
Totals by Vegetation Type				Westside Lowlands Conifer-Hardwood Forest		1.79		
				Urban and Mixed Environs		5.07		
				Road – Trans, Comm, Utilities Corridors		0.34		
				Agriculture, Pasture, Mixed Environs		0.03		
				Total	1.24	7.23		
<p>¹ The landowner may stipulate other seed mixtures. Based on site-specific conditions, the EI may utilize other appropriate seed mixtures listed in Table 1.</p> <p>² According to U.S. Department of Transportation requirements, to facilitate pipeline corrosion/leak surveys and prevent roots from damaging pipe coatings, a 10-foot-wide corridor (centered across each pipeline) will be maintained in an herbaceous state; therefore, shrubs will not be planted in this corridor, and trees will not be planted within 15 feet of the pipeline centerline.</p> <p>³ Wetland dominated by dense stand of Douglas spirea. During clearing, if necessary, vegetation would be cut at ground level leaving existing root systems for re-establishment by sprouting.</p>								

Table 1-5.1

Wetland Compensatory Mitigation Proposal and Calculations - Temporal Impacts to Scrub-Shrub and Forested Wetlands outside Northwest's Permanent Easement

A	B	C	D	E	F	G	H	
Totals by Wetland Cowardin Classification and Wetland Category Rating	Cowardin Classification and Wetland Category Rating		Total Project Construction Disturbance in Wetland within Construction Right-of-way but <u>outside</u> Northwest's existing Permanent Easement (acres)	Reference - Ratios for Permanent Wetland Impacts	Mitigation Ratios for Temporal Impacts (1/4 those for Permanent Impacts)		Northwest Mitigation Proposal for Temporal Impacts Based on Wetland Mitigation Type	
				Mitigation Ratios for Permanent Impacts using Re-establishment or Creation or restoration Mitigation Projects (Based on King County/ & WDOE Guidance)	Mitigation Ratios for Temporal Impacts using Creation or Restoration Projects King CO ¹	Mitigation Ratios for Temporal Impacts using Re-establishment Creation Mitigation Projects WDOE ²	Compensatory Mitigation Acres Requirement for Temporary Impacts to Shrub and Forested Wetlands or Re-establishment or Creation Projects (Mitigation Requirement = Column D x Column G)	
	PSS	II		0.08	3:1	0.75:1	0.75:1	0.06
	PSS	III		0.04	2:1	0.5:1	0.5:1	0.02
	PSS	IV		0.02	1.5:1	N/A	0.375:1	0.01
	PFO	III	0.17	2:1	0.5:1	0.5:1	0.09	
		Total	0.31				0.18	
<p>¹ King County Code 21A.24.340 C. Available at: http://your.kingcounty.gov/mkcc/clerk/code/29_Title_21A24_21A26.pdf. (Page 21A-240).</p> <p>² WDOE Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance (2006) available at: http://www.ecy.wa.gov/pubs/0606011a.pdf. Assumes compensatory mitigation will be completed by creation or restoration projects. Section 6.5.6 Mitigation Ratios for Temporary Impacts and Conversions (pg. 77). Long-term temporary impacts to forested and scrub-shrub wetlands are one-quarter of typical ratios for permanent impacts, which are shown in this table.</p> <p>³ As noted in WDOE Wetland Mitigation in Washington State Part 1: Agency Policies and Guidance (2006) (available at: http://www.ecy.wa.gov/pubs/0606011a.pdf) the ratios for conversion of wetlands from one type to another will vary based on the type and degree of the alteration, but they are generally one-half of the typical ratios for permanent impacts (page 78).</p>								

Table 1-5.2

Wetland Compensatory Mitigation Proposal and Calculations - Wetland Type Conversion Impacts to Scrub-Shrub and Forested Wetlands within Northwest's Permanent Easement

A	B	C	D	E	F	G	H	
Totals by Wetland Cowardin Classification and Wetland Category Rating	Cowardin Classification and Wetland Category Rating		Total Project Construction Disturbance in Wetland within Construction Right-of-way and <u>within</u> Northwest existing/proposed Permanent Easement (acres)	Reference - Ratios for Permanent Wetland Impacts	Mitigation Ratios for Conversion of forested and shrub wetlands (1/2 those for Permanent Impacts)		Northwest Mitigation Proposal for Wetland Type Conversion Impacts Based on Wetland Mitigation Type	
				Mitigation Ratios For Permanent Impacts using Re-establishment or Creation or restoration Mitigation Projects (Based on King County/ & WDOE Guidance)	Mitigation Ratios for Permanent Conversion Impacts using Creation or Restoration Projects King CO ¹	Mitigation Ratios for Permanent Conversion Impacts using Re-establishment Creation Projects WDOE ³	Compensatory Mitigation Acres Requirement for Conversion of Shrub and Forested Wetlands for Re-establishment or Creation Projects (Mitigation Requirement= Column D x Column H)	
	PSS	II		0.04	3:1	1.5:1	1.5:1	0.06
	PSS	III		0.05	2:1	1:1	1:1	0.05
	PSS	IV		0.03	1.5:1	0.75:1	0.75:1	0.02
	PFO	III	0.16	2:1	1:1	1:1	0.16	
		Total	0.28				0.29	
Combined Total (Tables 1-5.1 and 1-5.2)			Compensatory Mitigation Requirement for both Temporal and Wetland Type Conversion Impacts depending on Mitigation Project Type				0.47	
See footnotes to Table 1-5.1.								