Appendix T

Right-of-Way Marking Plan

Pacific Connector GAS PIPELINE

Pacific Connector Gas Pipeline, LP

Right-of-Way Marking Plan

Pacific Connector Gas Pipeline Project

January 2018

Table of Contents

List of Attachments

1.0 INTRODUCTION

The purpose of this Right-of-Way Marking Plan is to identify the survey standards and types of survey markings that will be used by Pacific Connector Gas Pipeline LP (PCGP) on federal lands during the pre-construction, construction, and operational phases of the Pacific Connector Gas Pipeline Project (Pipeline). Survey markings will be used to identify the pipeline centerline, construction right-of-way, temporary extra work areas (TEWAs), uncleared storage areas (UCSAs), monuments, property boundaries, wetlands and endangered species areas (ESAs), known archaeological sites, and access road improvement locations. Survey work will commence during the pre-construction activities prior to timber cruising and will be utilized as necessary throughout the construction right-of-way clearing, pipeline construction, final clean up and restoration. All survey markings will be approved by an authorized federal agency representative in coordination with PCGP or its authorized representative.

2.0 SURVEY STANDARDS

All work described herein will be performed by professional land surveyors licensed in the State of Oregon and which hold a valid and current Certified Federal Surveyor certificate. All surveys related to the Pipeline Project will be performed in accordance with procedures found in the Manual of Surveying Instructions (2009), and all applicable State or County statutes, codes and regulations, and specifications of the County Surveyor. These surveys will meet the minimum degree of precision and accuracy defined by the State of Oregon's minimum standard requirement for the recording of surveys.

All monumentation on and along the right-of-way clearing limits, shall be established as described in ORS 92.060, shall meet or exceed the accuracy standards described in ORS 92.050 (2), and shall be platted and recorded as described in ORS 209.250.

Copies of the filed plats shall be sent to both of the following. Electronic copies are acceptable.

a) BLM Chief of Geographic Sciences
   PO Box 2965
   Portland, OR 97208

b) Oregon Lands Zone Boundary Lead
   Willamette National Forest
   3106 Pierce Parkway, Suite D
   Springfield, OR 97477

3.0 RIGHT-OF-WAY MARKING

3.1 MONUMENT PROTECTION AND PRESERVATION

PCGP will identify and protect all existing survey monuments and accessories found on or near the right-of-way which might be disturbed by its construction operation, maintenance or decommissioning of the Pipeline. Reasonable efforts will be made to avoid disturbing these monuments. Survey monuments include, but are not limited to, all marks of the Public Land Survey System (PLSS), all land ownership parcel and subdivision corners, witness corners, reference monuments, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, and military control monuments.

Prior to the commencement of ground-disturbing activities on Federal lands, PCGP shall conduct a records search of any survey monument on or near the right-of-way which has the potential for loss or disturbance during its construction, operation, maintenance, or decommissioning of the Pipeline. PCGP shall be responsible for recording all searched-for survey monuments, found or not, on the appropriate County form, in the appropriate County, and send a copy to the BLM and Forest Service addresses in Section 2.0 above. A copy of the recorded corner search, location and perpetuation of previously-monumented corners shall be recorded and received within one (1) month following the commencement of activities that might disturb the identified monuments. The above requirement does not override State or County filing and recording regulations.

If the disturbance of a survey monument or any of its accessories becomes necessary, PCGP will provide written notification to the authorized federal agency representative, respective installing authority, and professional land surveyor who established the survey monument (if known) before such disturbance occurs. Perpetuation of all PLSS or other property corners shall be to current federal and state standards and include a permanent monument with bearing trees or accessories. In the event that damaged monuments cannot be buried at the re-established position they are to be returned to the party (if known) who originally established the monument. Temporary reference monuments will be established so that the survey monument or accessory may be remonumented in its original position after the completion of ground-disturbing activities. Instruction for the remonumentation of the disturbed monument will be in accordance with the authority upon which the corner was monumented (i.e. federal authority survey, federal standards; state authority survey, state standards). Such remonumentation(s) will be recorded in the proper County Surveyor's office and/or in federal records, as appropriate. If a survey monument or accessory cannot be remonumented in its original location, PCGP will establish permanent reference monuments and record the location(s) in the same manner as described herein and return the original monument to the party (if known) who established it. Nothing in these provisions shall relieve PCGP's liability for the willful destruction or modification of any Government survey monument as provided at 18 U.S.C. §1858 or ORS 209.140 and 209.150.

A written report to the appropriate jurisdictional Agency Officials will also be made immediately by PCGP in the event that a survey monument is inadvertently damaged. If Federal Surveyors are used to restore a survey monument disturbed as a result of pipeline construction activities, PCGP will be responsible for the survey costs. Pending discussions with the agencies, the federal land-managing agency may elect to perform a portion of the survey work in coordination with PCGP and be reimbursed by PCGP for the reasonable costs of such work in accordance with the terms of a separate agreement between PCGP and any such federal land managing agency.

3.2 PROPERTY MONUMENTATION AND MARKING

Prior to the commencement of timber cruising activities or ground-disturbing activities on federal lands, the property boundaries of the federal lands will be located and identified consistent with the guidelines established by the Agency Official. PCGP will monument the property boundary at all intersecting points where the construction right-of-way clearing limits enter or leave BLM, Forest Services, and Private lands according to ORS 92.060 standards (see Attachment A-1 and A-2). These monuments and their corner positions will be maintained, before, during and after construction. Any monumented corner positions disturbed or destroyed will be reestablished.

When the right-of-way clearing limits cross federal lands, a monument is required, at each angle point and at each boundary crossing. Monuments on the right-of-way clearing limits shall not be more than 2,500 feet apart. When the lengths of courses exceed that distance, witness point monuments shall be established on the right-of-way clearing limits in a location which is readily accessible, has a low likelihood of disturbance, and can be occupied by conventional survey instruments. Said monuments shall be located and mapped to ORS 209.250 standards, recorded in the local county surveyor's office and a copy of said document furnished to the applicable agencies. If the point of intersection of the right-of-way clearing limits and a federal property boundary cannot be practically established, a reference monument shall be established along the property boundary no greater than 50 feet from the true intersecting point. During construction, care shall be taken to minimize destroying or disturbing these monumented corner positions. If monumented corner positions are lost, sufficient corners will be reestablished and monumented, to ensuring a minimum linear distance of 2,500 feet between existent corner monuments along either side of the right-of-way clearing limits.

All property boundaries along federal lands monumented, marked and posted prior to clearing or construction activities shall be maintained during construction by PCGP if their location does not hinder construction activities or reposted to agency standards after the completion of construction.

3.3 TEMPORARY RIGHT-OF-WAY, TEWA and UCSA MARKING

The centerline of the Pipeline and the exterior boundaries of the construction right-of-way will be marked with stakes at all angle points and tangents and at the entrance to and exit from BLM, Forest Service, Bureau of Reclamation, and Private lands at no more than 200 foot intervals and to establish a line-of-sight between two points. The top of each survey stake will be painted and/or flagged with a distinct color to identify its purpose. The survey station numbers will be clearly marked on stakes that identify angle points and property boundaries.

All TEWA and UCSA boundaries will be clearly marked at all corners. Stakes and/or flags will be placed at no more than 200-foot intervals, establish a line-of-sight between two points, and/or as agreed upon with the authorized federal agency representative. The top of each survey stake and/or tree will be flagged with a distinct color to identify its purpose. TEWA or UCSA boundaries will be marked at the entrance to and exit from BLM, Forest Services, Bureau of Reclamation, and private lands according to ORS 92.060 standards.

Attachment A identifies the flagging, posting and painting guidelines and corresponding colors and signs to be used for right-of-way marking prior to and during pipeline construction activities (see Attachment A-1, A-2 and A-3).

Lath/stakes used for marking will be premium grade survey lath ¼" x 1-1/2" x 36" (nominal). Survey lath will be firmly set and the top of the lath will be painted or flagged with the appropriate distinct color as described in Attachment A.

All temporary right-of-way, TEWA and UCSA boundaries on federal lands marked by stakes and flags prior to clearing or construction activities shall be maintained during construction by PCGP.

3.4 OTHER (RESTRICTED/SENSITIVE AREAS) MARKING

Specific sites (e.g. known archaeological sites, areas with threatened and endangered species, or wetlands), where construction equipment and vehicles will be restricted, will be clearly staked

and flagged onsite by PCGP before any construction or surface-disturbing activities begin and will be maintained during construction activities. PCGP will be responsible for ensuring that construction personnel are adequately trained to recognize these markers and understand any equipment movement restrictions that may be involved with these areas.

3.5 REFERENCE STAKES

Reference stakes will be placed to allow accurate re-staking of the pipeline angle points once clearing is complete. All reference stakes will have station and distance information clearly marked on them, and will be flagged accordingly.

3.6 ACCESS ROAD MARKING

All access roads/bridges that will require new construction and/or minor improvements such as widening, grading, sloping, and clearing, will be clearly staked and flagged as specified in Attachment A and maintained during construction. In addition to the centerline and construction right-of-way boundaries being staked, where necessary, an Agency Official specified distance beyond the top of the cutslope and below the toe of the fill slope will be marked to identify further clearing limits. This additional distance will be site-specific, depending on existing vegetation and/or safety concerns. The stakes will have a description written on them to specify fill/cut details, footages, and limits of any required clearing, along with the appropriate flagging. All approved access roads will have “PCGP Approved Construction Access” signage erected at the beginning and end points as well as at road intersections.

3.7 EXCESS MATERIAL MARKING

Within the locations identified in the Overburden and Excess Material Disposal Plan of Development (POD) (see Appendix Q to the POD), PCGP will mark and maintain the boundaries of the material placement locations as depicted on the surveyed drawings as part of the Site Development and Reclamation Plan. All areas will be staked and flagged as agreed upon with the federal agencies and will have a description written on them to specify the type of material to be stored.

3.8 TREE MARKING

Along the edge of the construction right-of-way and TEWA boundaries, trees identified as boundary trees will be designated by the surveyors and foresters utilizing an array of monumentations designed to meet the specific needs of the corresponding federal agencies. Paint, tags, posters, thick mill plastic placards, ribbon, and bark chopping are examples of monumentation methods. Attachment A and Illustrations provided in Attachment A-1 identify the tree marking guidelines and corresponding paint colors to be used on BLM lands prior to and during pipeline construction activities. Right-of-way clearing boundaries will be marked by Agency personnel using the paint guidelines in Attachment A and the signage as shown in Attachment C for BLM lands and Attachment D for USFS lands. Any paint used to mark boundaries of right-of-way clearing areas on federal lands or for marking individual trees to cut will be applied by agency personnel. Unless otherwise directed by the Agency, all paint shall include a tracer element specific to the BLM and USFS that can be tested for in the field. PCGP will coordinate with the authorized federal agency representative to ensure that paint color designations are understood by construction contractors. Hazard trees will also be marked with paint accordingly to the guidelines in Attachment A. See Attachments A, C and D for agency paint colors and posters to be used for tree marking.

3.9 PERMANENT MARKING

Permanent pipeline markers will be installed once final clean up and restoration is complete. The purpose of pipeline markers is to reduce the possibility of third-party damage. Per DOT 49 CFR 192.707, PCGP will install and maintain pipeline markers on both sides of each public road crossing and all railroad crossings. Line markers will also be installed wherever necessary to identify the location of the pipeline.

The pipe markers will be located over the centerline of the pipeline and may include signs mounted on fences or steel posts, or commercially available plastic fabricated line markers. Pipeline marker color will follow American Public Works Association (APWA) uniform color code for natural gas (yellow). The height of the markers or signage will be selected based on the construction right-of-way condition to ensure visibility. Where placement of line markers is impractical, other methods shall be used to mark the presence of the pipeline such as plaques, painted street markings, etc.

Pipeline markers will contain the following information:

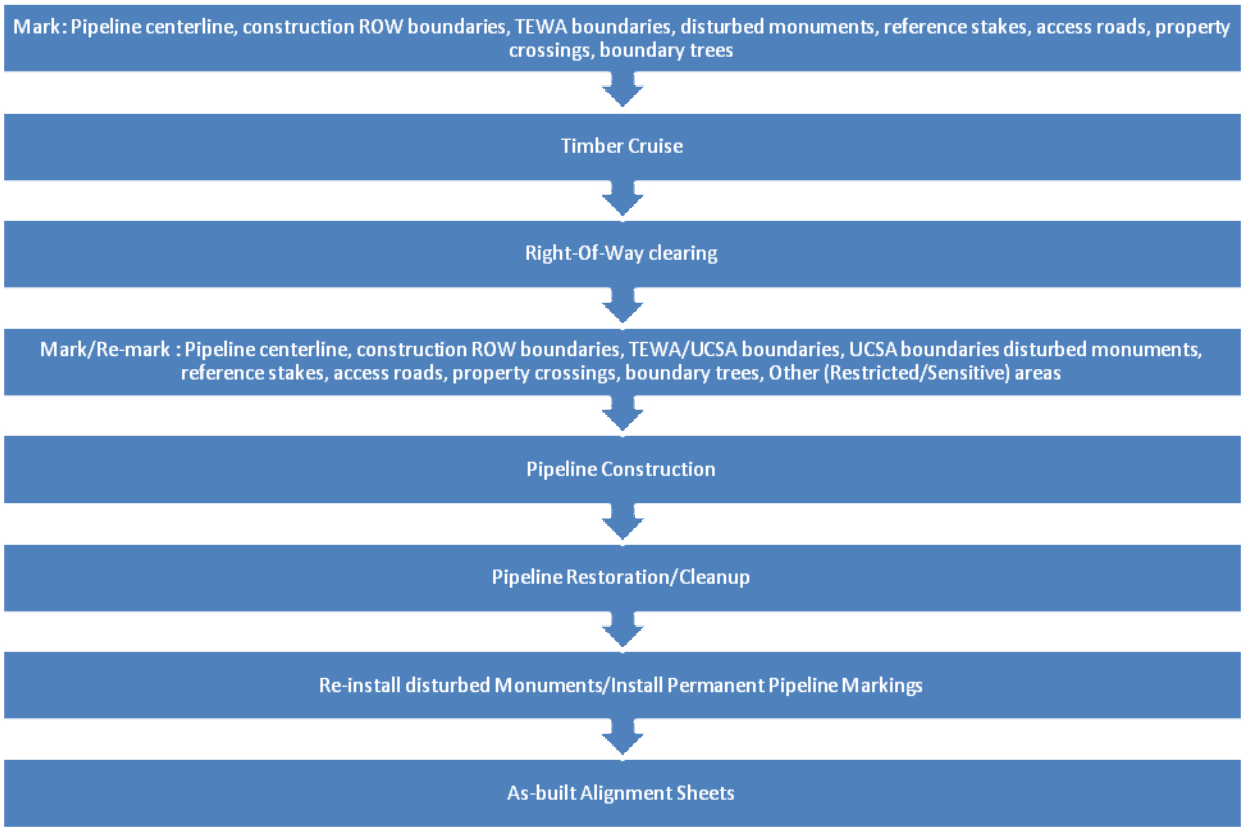
- The word “Warning, Caution, or Danger” followed by the words “Gas Pipeline.” The letters will be at least (1) inch high with ¼ stroke.
- Company name (Pacific Connector Gas Pipeline, LP) and telephone number where an operator can be reached at all times.

Pipeline markers will be maintained by replacing damaged line markers during pipeline patrols and surveys, which shall be at intervals of at least once each calendar year, but not to exceed 15 months. Vegetation around pipeline markers will be controlled so that line markers are visible.

Milepost markers (see Attachment B) will be installed every mile along the pipeline where feasibly possible and will be used for aerial patrol requirements.

4.0 RIGHT-OF-WAY MARKING TIMELINE

The following depicts the sequence of events in which survey markings will be conducted.



5.0 AS-BUILT ALIGNMENT SHEETS

Within six (6) months after the completion of ground-disturbing activities, PCGP will provide the federal agencies with a digital survey of the as-built location of the pipeline and related facilities, including coordinates for all previously monumented property corners located within the construction and permanent right-of-way or identified in the establishment of intersecting points where entering and leaving federal land. The digital data will be geo-referenced and based on NAD-83, state plane coordinates. Said coordinates shall be computed in NAD-83 to within three (3) feet at a ninety-five (95) percent confidence level of National Geodetic Reference System (NGRS) positions. Digital data will meet FGDC standards and be in the form of ASCII files of data, comma delineated, and formatted to be compatible with the federal agency's automated land status mapping programs. Meta Data for each previously-monumented or established corner shall include Township and Range, GCDB number, Datum, Latitude and Longitude. If Global Positioning System (GPS) data is used, metadata shall also include the equipment used, GPS date, PDOP, number of filtered position, horizontal precision, and standard deviation. As-built photo-based alignment sheets will be provided to the proper federal agencies upon completion.

Attachment A – Definitions and Guidelines

FLAGGING (Attachment A-2.1)		
Flagging Code	**Colors**	**Description**
(Y)	Yellow	WGP Pipelines (Existing)
(O/W)	Orange/White	Pipeline Centerline
(B/W)	Blue/ White	Construction ROW / Access Road ROW
(P/B)	Pink/Blue	Temporary Extra Work Space Boundary (TEWA)
(W)	White	Uncleared Storage Area (UCSA) Boundary
(P/W)	Pink/ White	Survey Reference Point (Offset)
(B/Y)	Blue/Yellow	Wetland Delineation Line/Environmentally Restricted/Sensitive Areas
(O/G)	Orange/Green	Silt Fence / Sediment Barrier
(W/G)	White /Green	Access Road Centerline
(O/B)	Orange/Blue	Overburden and Excess Material Storage
Killer Tree	Orange with the words Killer Tree	Flagging contains the printed words Danger Tree/Killer Tree or other variations to denote a Hazard/Safety/Danger Tree. This flagging is used in combination with Green Paint listed below. Flagging will be placed on the tree and at an offset along the edge of the Timber Cutting Area.
Cut Tree	White with Blue Polka Dots	Designates individual trees on the civil surveyed line as being within the Timber Cutting Area.
The American Public Works Association (APWA) has established the following color code guidelines. Pacific Connector Surveys shall conform to these guidelines.		
(Y)	Yellow	Gas, Petroleum, Oil Lines, etc.
(R/W)	Red/White	Hazard Site
TAGS (Attachment A-3)		
Yellow Tag		Uncleared Storage Areas (UCSA) Boundary

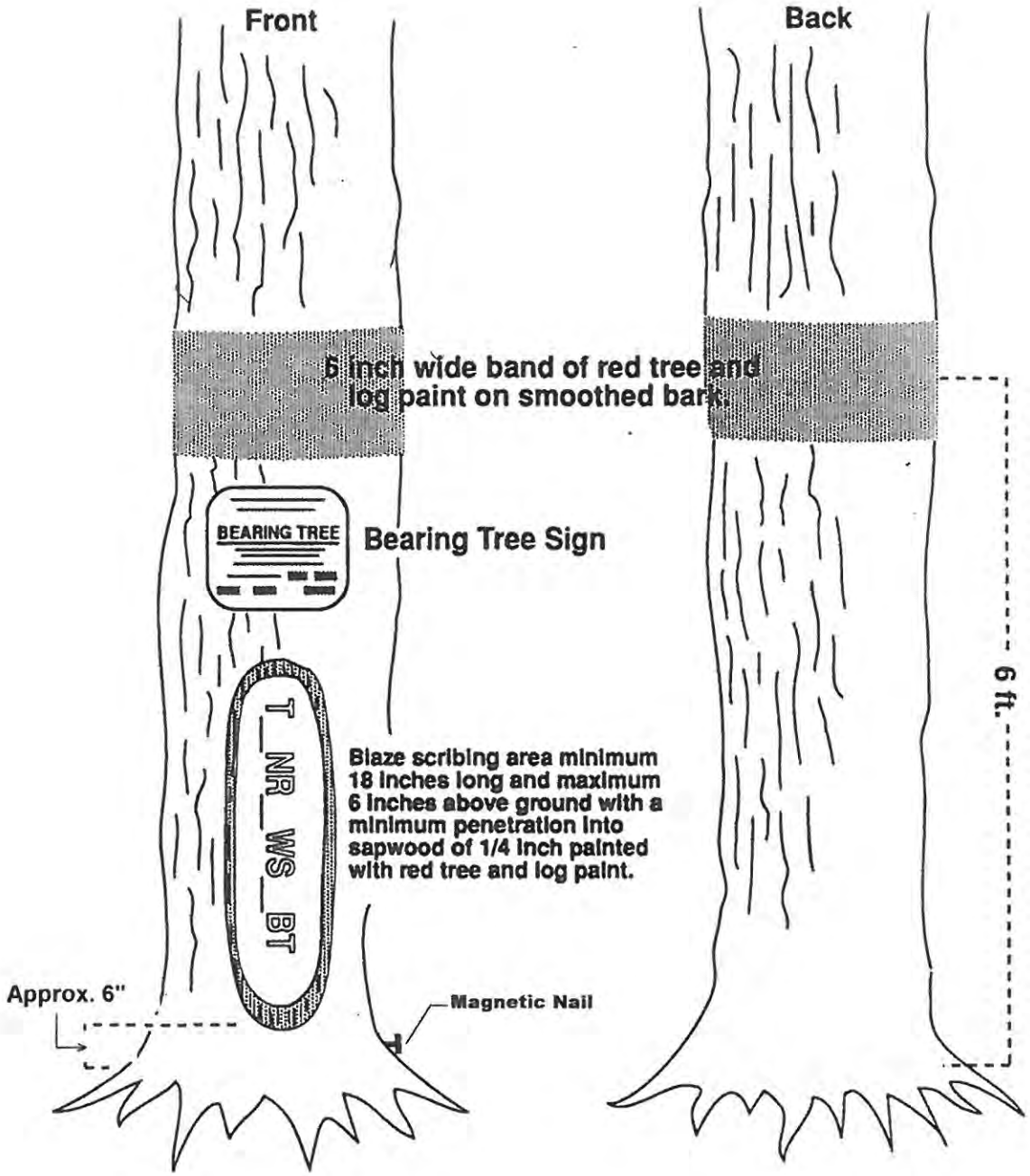
PAINTING (Attachment A-3)	
Blue	Private and USFS – Dots for tally trees and cruise tree numbers on trees inside the Timber Cutting Area designated to be sold and removed. Painted by PCGP.
Green	Private, BLM and USFS - Hazard/Safety/Danger trees outside of Timber Cutting Area designated to be sold. Painted by PCGP. Green letter **C** denotes tree to be cut; green letter **T** denotes tree to be trimmed.
Pink	Private, BLM and USFS - Trees inside Timber Cutting Area to be sold and used during construction to hold/place brush against in order to store spoil material. Painted by PCGP. If significant damage is incurred during construction, trees may be removed or retained as habitat trees. Trees marked with a pink **L** will be used for LWD.
Red	Property Boundary of Private/Federal Lands. Painted by PCGP.
Orange w/Tracer	Boundary of Timber Cutting Area. Painted by BLM/FS
Blue w/Tracer	Hazard/Safety/Danger Trees painted blue by BLM or FS.
Black w/Tracer	Painting out marks from old timber sale activity by BLM or FS.

POSTINGS (Attachment A-1, A-3, C & D)	
Signs and Posters	Boundary Signs: Federal Lands
	Clearing Limit Tags/Posters: Temporary Extra Work Area (TEWA), or Temporary Access Road (TAR) Right-of-way

Attachment A-1 BLM

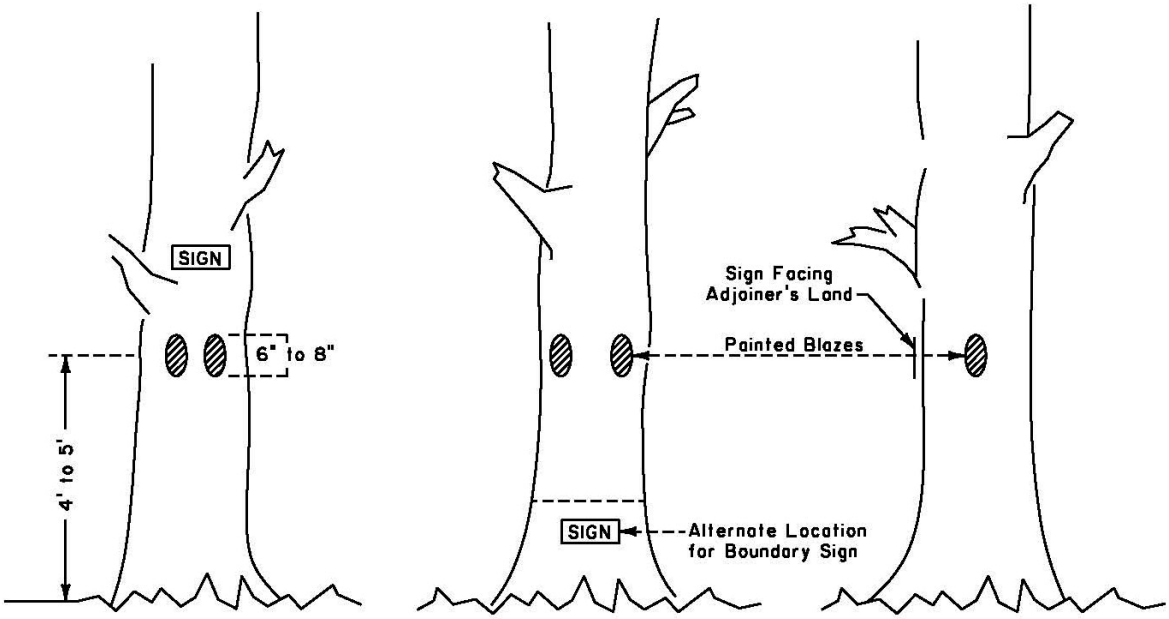
Tree Markings (Bearing Trees, Blazes, Hacks, Markings Boundary Line)

BEARING TREE DETAIL



Attachment A-1 BLM

BLAZES, HACKS AND MARKING, BOUNDARY LINE



LINE BLAZE

Trees on Boundary Line

Permission shall be obtained from adjoining landowners before their side of the boundary line is cleared, marked, painted or signed.

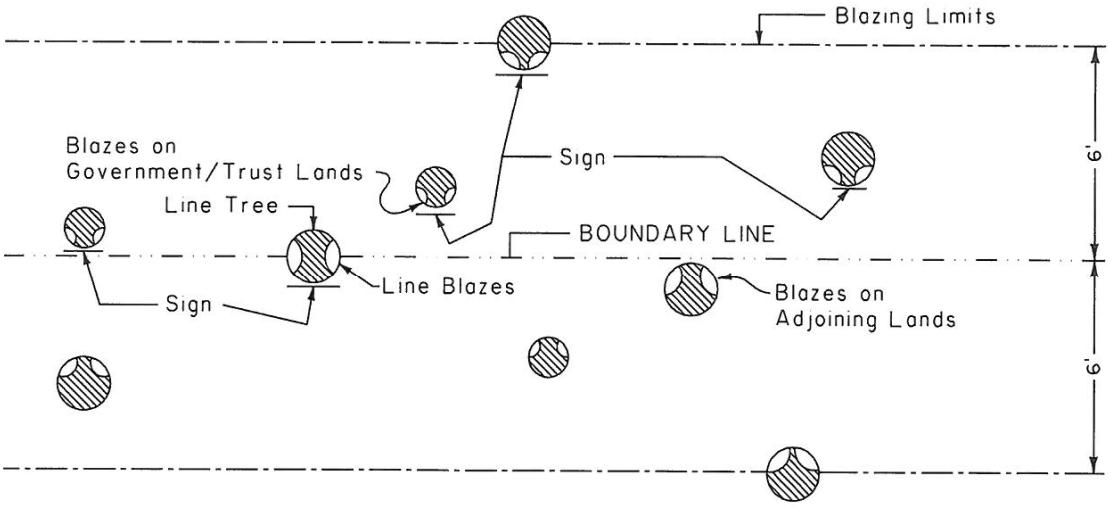
Notes:

1. The markings are used at the locations shown on page 2 of this exhibit. The blaze orientation indicates its distance from the line.
2. A blaze is made by cutting off a vertical strip of bark and a very thin layer of the underlying wood tissue. The strip shall be about 6 to 8 inches wide, and the top and bottom ends shall be smoothed out.
3. The Alternate location for the boundary sign will be utilized only when instructed to do so.

Attachment A-1 BLM

BLAZES, HACKS AND MARKING, BOUNDARY LINE

GOVERNMENT/TRUST LANDS



ADJOINING LANDS

Notes:

1. Permission shall be obtained from adjoining landowners before side of the boundary line is cleared, marked, painted or signed.

2. Trees less than 4" in diameter shall not be blazed but shall be painted as if blazed.

3. Trees on Government/ Trust Land, and within 6' of the boundary line shall be blazed and signed, as shown in these exhibits.

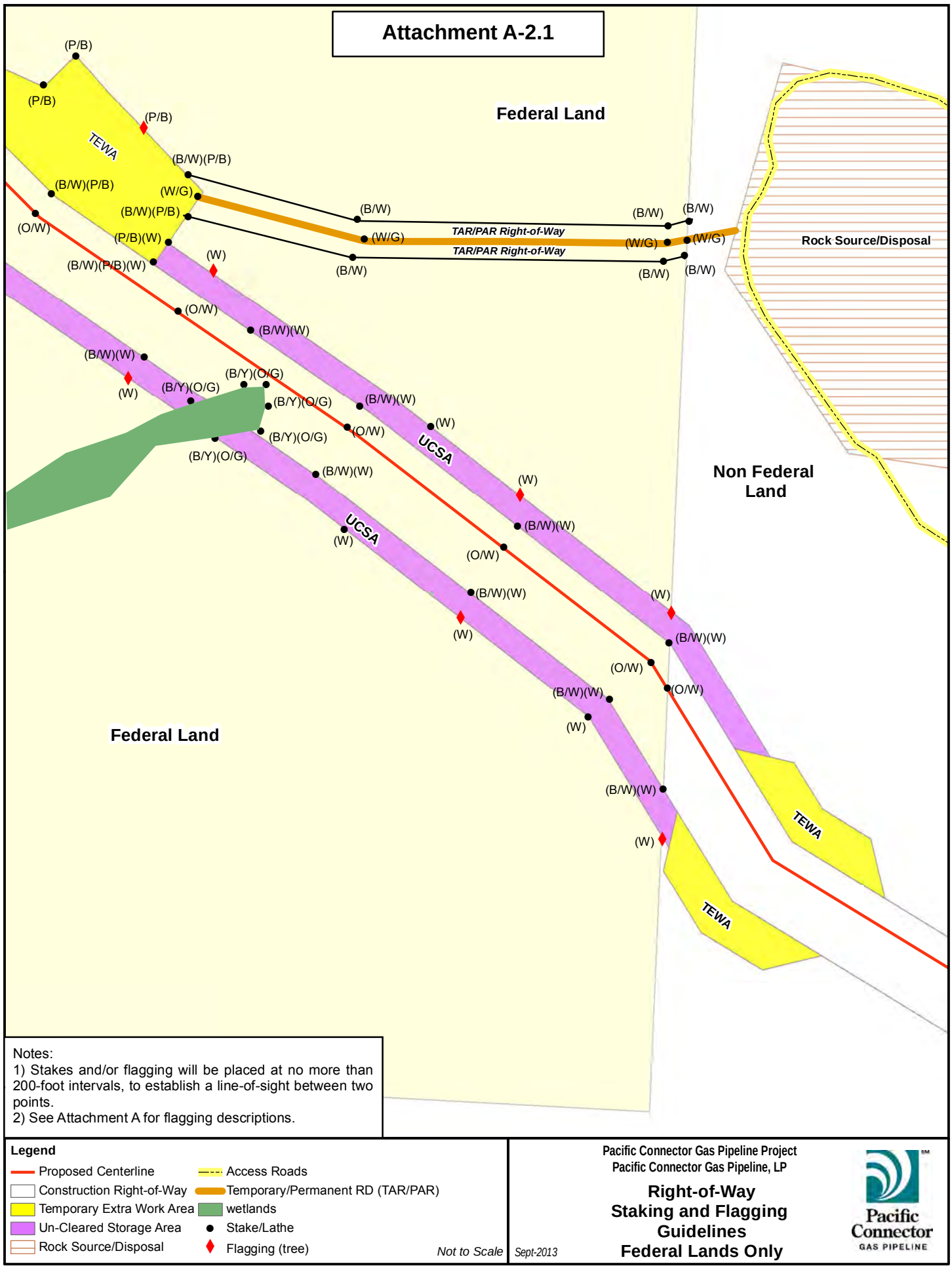
4. Trees on Adjoining Land, and within 6' of the boundary line shall be blazed, as shown in these exhibits.

5. Trees on the Boundary Line, shall be line blazed on both sides of the tree along the direction of the line, as shown in these exhibits.

6. Paint shall be neatly applied. Only blazes shall be painted, except as indicated in Item No. 2.

Attachment A-2.1

Right-of-Way Staking and Flagging Guidelines



Notes:
1) Stakes and/or flagging will be placed at no more than 200-foot intervals, to establish a line-of-sight between two points.
2) See Attachment A for flagging descriptions.

Legend

- Proposed Centerline
- Construction Right-of-Way
- Temporary Extra Work Area
- Un-Cleared Storage Area
- Rock Source/Disposal
- Access Roads
- Temporary/Permanent RD (TAR/PAR)
- wetlands
- Stake/Lathe
- Flagging (tree)

Not to Scale

Pacific Connector Gas Pipeline Project
Pacific Connector Gas Pipeline, LP

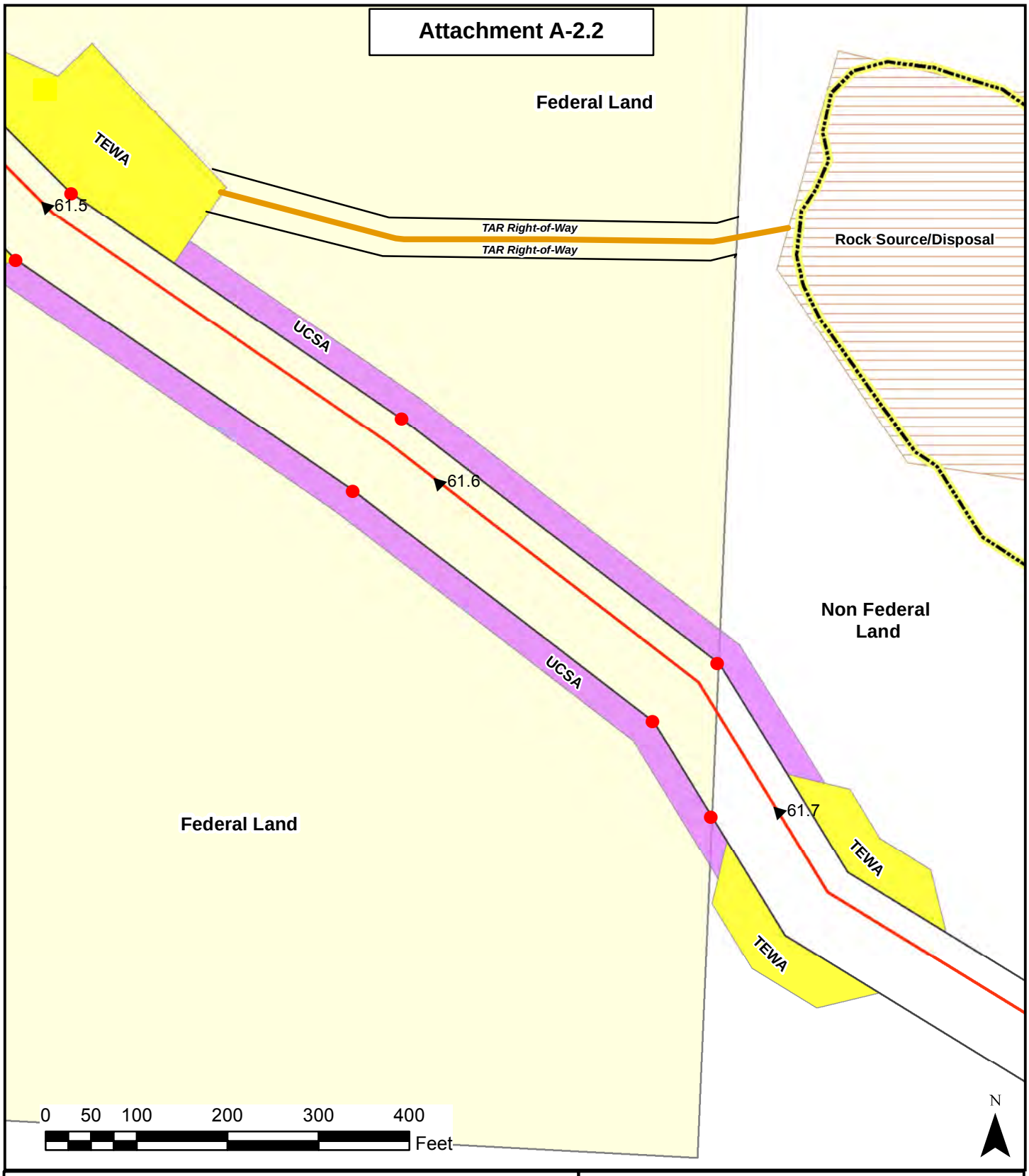
Right-of-Way Staking and Flagging Guidelines Federal Lands Only

Sept-2013

Pacific Connector GAS PIPELINE

Attachment A-2.2

Right-of-Way Monuments



Legend

- Proposed Centerline
- Construction Right-of-Way
- Temporary Extra Work Area
- Un-Cleared Storage Area
- Rock Source/Disposal
- Temporary/Permanent RD (TAR/PAR)
- Existing Access Roads
- Monument

Pacific Connector Gas Pipeline Project
Pacific Connector Gas Pipeline, LP

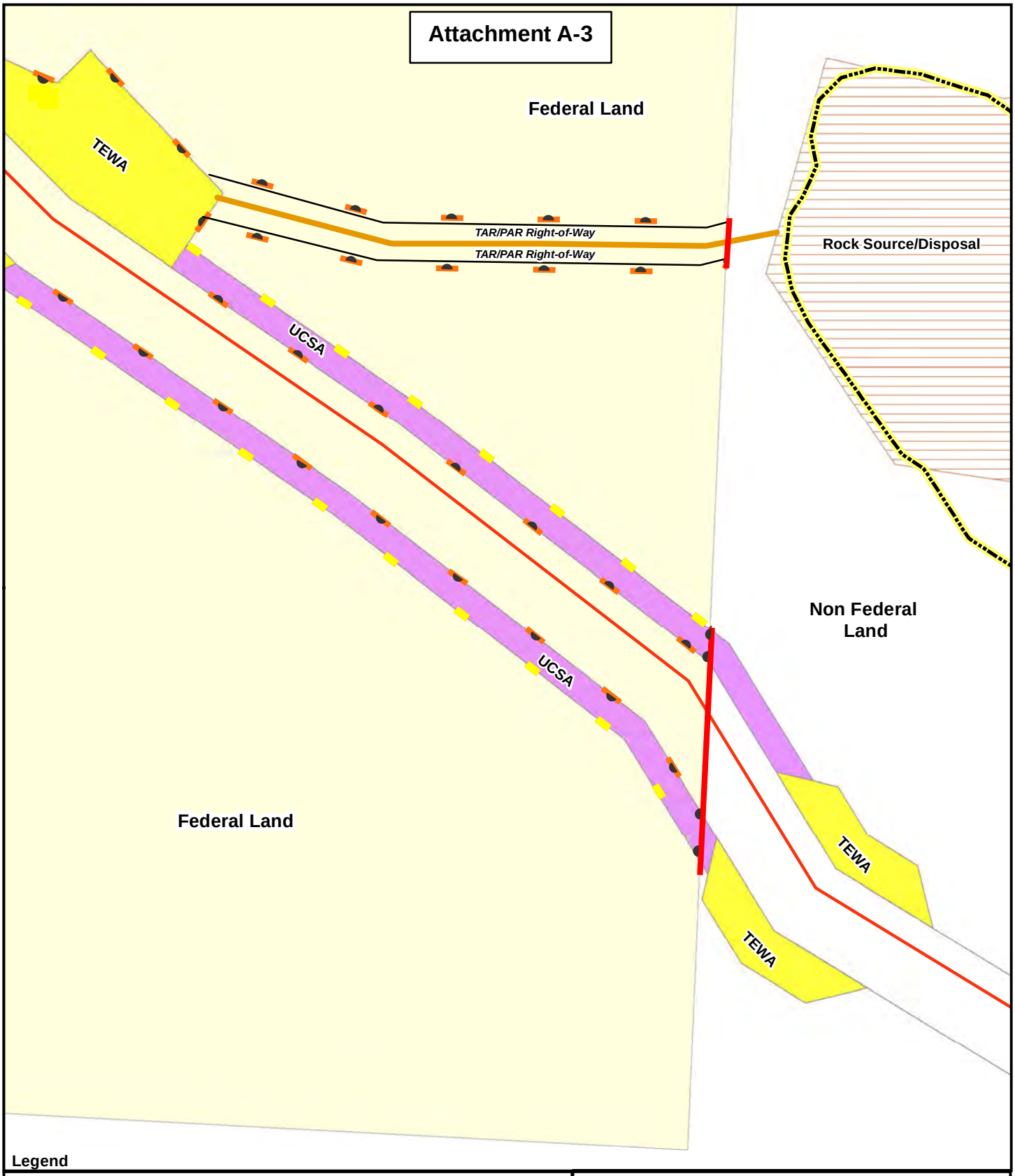
Right-of-Way Monuments
Federal Lands Only

Pacific Connector GAS PIPELINE

Aug-2014

Attachment A-3

Painting, Signing, Tagging and Posting Guidelines


Attachment A-3
Federal Land
TEWA
TAR/PAR Right-of-Way
TAR/PAR Right-of-Way
Rock Source/Disposal
UCSA
UCSA
Non Federal Land
Federal Land
TEWA
TEWA
Legend
Proposed Centerline
Construction Right-of-Way
Temporary Extra Work Area
Un-Cleared Storage Area
Rock Source/Disposal
Existing Access Roads
Temporary/Permanent RD (TAR/PAR)
Red Paint/Signs - Federal Boundary
Orange Paint - Cutting Boundary
Yellow Tags
Signs/Posters - No Cutting
Not to Scale
Pacific Connector Gas Pipeline Project
Pacific Connector Gas Pipeline, LP
Right-of-Way Painting, Signing, and Posting Guidelines Federal Lands Only
Sept-2011
Pacific Connector GAS PIPELINE

Attachment A-3

Example of Yellow Tag

http://www.forestry-suppliers.com/product_pages/Vie

1189

Weatherproof Sealable Tags

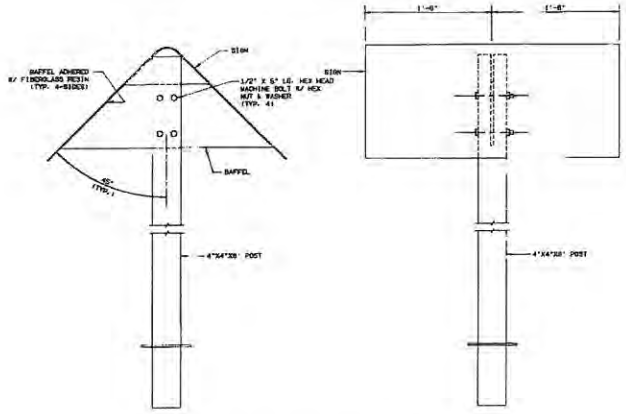
Write on the tag, remove the backing, and press both sides together to seal. Four styles are available, each style comes in a pack of 100 tags. Hi-vis yellow.

Add Selected Items to Cart

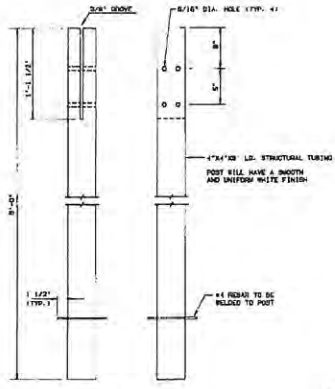
Qty	Item #	Description	Specs	Ships	Price
0	**79604**	2" x 2-1/2" with 2 holes		In Stock	$46.50 5+ $43.95

Attachment B

Pacific Connector Gas Pipeline Mile Markers

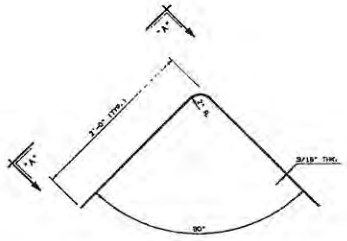


FIBERGLASS SIGN FABRICATION DETAIL

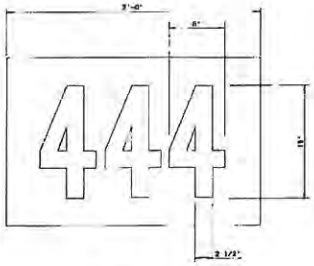


POST DETAIL

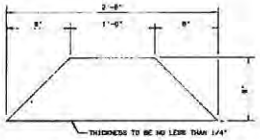
NOTES
1) The fiberglass signs will be constructed per drawing 2' wide x 2' high and bent at the proper radius bend. Alluminum sign surface, to be stucco at 45° radius
2) The sign shelf will be construction of Polyester Resin and Fiberglass Mat 1/4 x uniform thickness of no less than 1/4".
3) Orange background color sprayed in fiberglass by wetted Gelcoat prior to layup to give each sign a smooth uniform finish.
4) Numerals to be 8" x 16" white on clear pressure sensitive vinyl stock



SIGN DETAIL



SECTION "A-A"



BAFFEL DETAIL

REFERENCE DRAWINGS		REVISIONS						
DRAWING NO.	TITLE	NO.	DATE	BY	DESCRIPTION	W.O. NO.	CHK.	APP.

PACIFIC CONNECTOR GAS PIPELINE PROJECT
PACIFIC CONNECTOR GAS PIPELINE, LP
PIPELINE STANDARD
AERIAL MILE POST MARKER
FABRICATION AND DETAILS

DRAWN BY: LCL	DATE: 1-23-2018	ISSUED FOR BID	SCALE:
CHECKED BY:	DATE:	ISSUED FOR CONSTRUCTION	
APPROVED BY:	DATE:	DRAWING NUMBER: STD-D-2-9001	SHEET 1 OF 1
TAG:		PROJECT NO.	

Attachment C

BLM Boundary Signs and Posters

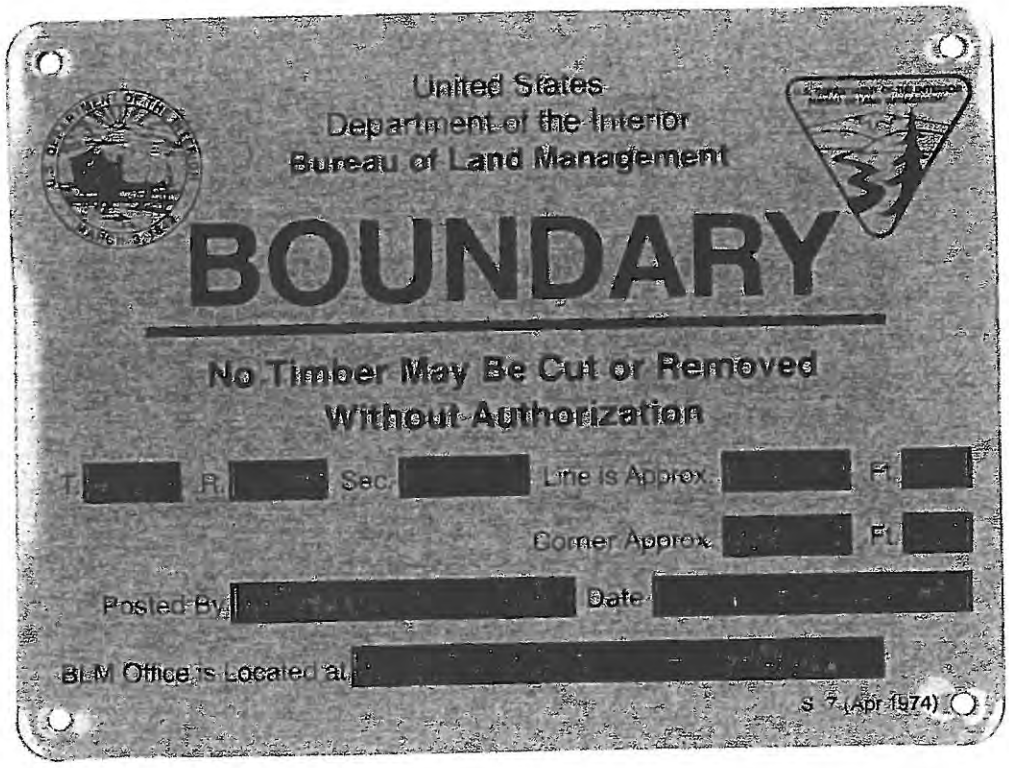
Sign Number S-148

Use to mark the reserve area boundary adjacent to the area to be cleared along the right-of-way. May also be used to post the tree clearing limits across private lands when such clearing is required for roads constructed under terms of reciprocal right-of-way agreements or United States road easements.

Note: Sign faces into (towards) the right-of-way clearing area.

Attachment C

BLM Boundary Signs and Posters



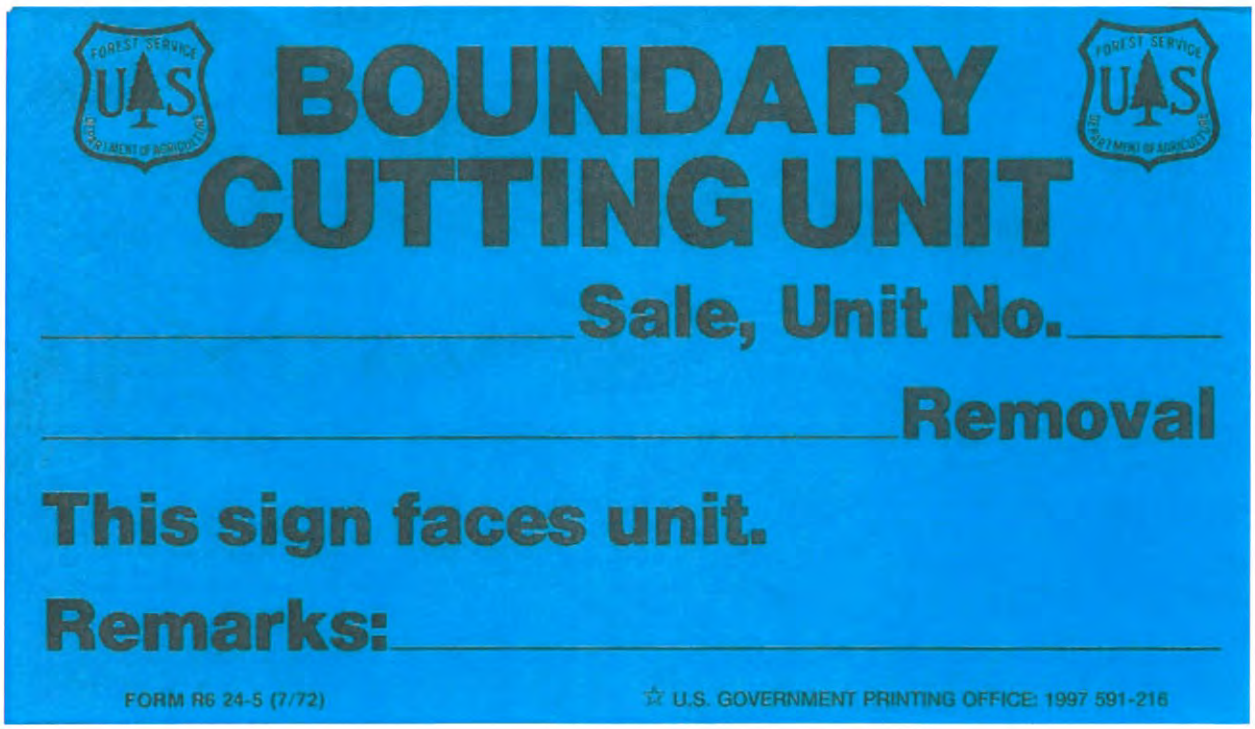
Sign Number S-7

Use to mark the property boundary for BLM lands.

Note: Sign faces away (outward) from BLM lands.

Attachment D

USFS Boundary Signs and Posters



Form R6 24-5

Use to mark the cutting boundary on USFS lands to be cleared along the right-of-way.

Note: Sign faces into (towards) the right-of-way clearing area.

Attachment D

USFS Boundary Signs and Posters

Sign 54-2

Use to mark property boundary of National Forest System Lands.

Note: Sign faces away (outward) from National Forest. Signs must be affixed to metal posts.

Attachment D

USFS Boundary Signs

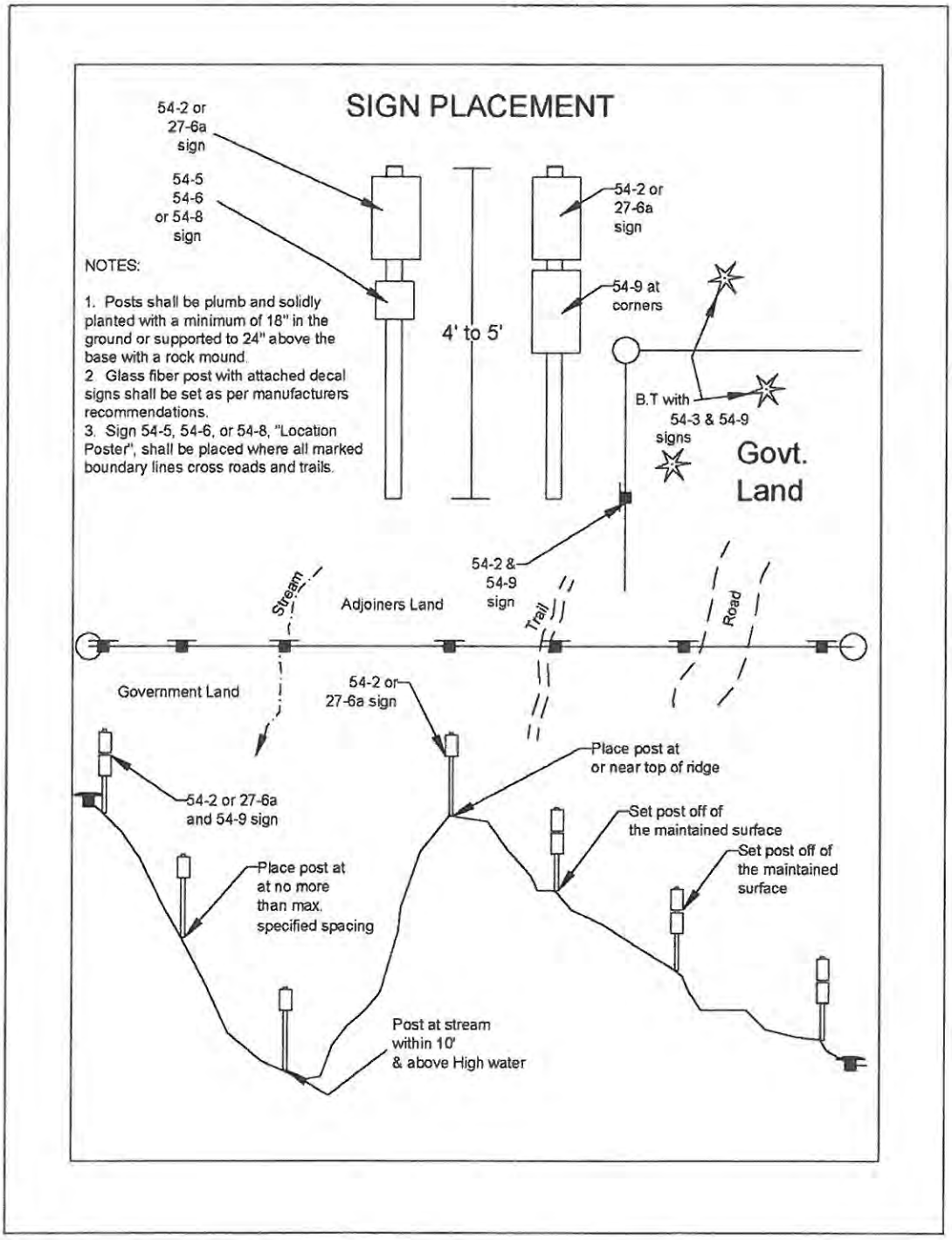
Decal BM-102

Use decal on Carsonite post to mark boundary of National Forest System Lands.

Note: Decal faces away (outward) from National Forest.

Attachment D

USFS Boundary Signs



Appendix U

Right-of-Way Clearing Plan for Federal Lands

Pacific Connector GAS PIPELINE

Pacific Connector Gas Pipeline, LP

Right-of-Way Clearing Plan for Federal Lands

Pacific Connector Gas Pipeline Project

January 2018

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1.0 INTRODUCTION

The Pacific Connector Gas Pipeline Project (Pipeline or Pipeline Project) area extends across portions of the Southern Coast, Klamath Mountains and Cascade Mountain Range in southwest Oregon. The Pipeline crosses a variety of forested terrain and forest types between Coos Bay and Malin, Oregon. The primary goal of Pacific Connector Gas Pipeline, LP (PCGP) is to safely and efficiently install and operate a high-pressure underground natural gas transmission pipeline. The Pipeline will facilitate broad market access via existing pipeline facilities.

Prior to pipeline construction activities, all vegetation (including timber) will be cleared from the 95-foot wide construction right-of-way and the additional temporary extra work areas (TEWAs). . Pipeline installation will require bulldozers, trackhoes, backhoes, side-booms, welding trucks, and support vehicles along the construction right-of-way. PCGP's timber/vegetation removal and construction activities will span a proposed two-year period. Generally, Year One construction will consist of timber and other vegetation removal along the majority of the right-of-way, including some pipeline construction in select areas. Year Two construction will consist of the remaining timber and other vegetation removal not completed during Year One and the majority of pipeline construction.

2.0 PURPOSE

The purpose of this Right-of-Way Clearing Plan (Plan) is to outline the methods that PCGP will implement during timber (and other vegetation) removal within the construction right-of-way and TEWAs. At the request of the federal land-managing agencies, PCGP previously developed a "desktop" analysis that details how right-of-way clearing is to be completed. PCGP has identified and documented the existing timber and other vegetation conditions on all federal lands crossed by the Pipeline and documented the acreage of each type of forest product by land owner parcel. As part of this Plan, PCGP developed vegetation clearing scenarios for the construction right-of-way and TEWAs. This Plan was developed utilizing applicable best management practice (BMP) compliance protocols outlined in the Erosion Control and Revegetation Plan (ECRP) for the Pipeline Project. Attachment A - Regulatory Compliance and Definitions references applicable sections of the ECRP. Attachment B describes the timber harvest methods that would be expected to be utilized and summarizes estimated volume data for each potential harvest method. Timber removal for access road improvements is not included in this document. Access road improvement information is described in the Transportation Management Plan previously reviewed and approved by the Bureau of Land Management (BLM), U.S.D.A. Forest Service (USFS), and the Bureau of Reclamation (Reclamation). If requirements governing timber removal activities differ between agencies, the specific agency requirements are listed separately in this document.

2.1 ROLES AND RESPONSIBILITIES

The USFS has authority in 36 CFR 223.12 to sell merchantable timber required for removal on National Forest System (USFS) Lands directly to PCGP at the current appraised value. The intent would be to execute one contract covering the three National Forests crossed by the proposed Pipeline. Payment for the timber sold would be made in a lump sum in advance of cutting and removal.

The BLM has authority under 43 CFR 5400 to sell the pipeline right-of-way timber through a negotiated sale when determined to be impracticable to obtain competitive bids through an

advertised sale. The BLM intends to sell the right-of-way timber directly to PCGP under lump sum timber sale contracts at not less than the appraised value as determined by the BLM. Timber sale contracts would be prepared, negotiated, and administered by each BLM office involved (Coos Bay, Roseburg, Medford, and Lakeview). Payment for the timber sold would be made lump sum in advance of cutting and removal.

The USFS and BLM would administer their own timber sale contract(s). PCGP would be the Purchaser for timber removal on federal lands, although logging would likely be done by a subcontractor. All federal timber purchased by PCGP will be prohibited from log export and will require domestic processing consistent with existing agency policy and federal law.

In order to comply with ORS 527.670(3), PCGP would be required to provide a written timber harvest plan to the federal land management agencies and the ODF State Forester for each state forest region that would be crossed. Timber harvest plans would include such information as timber sale boundary designation, volume estimation, appraisal, and contract preparation. PCGP indicated that it would file its final logging plans for both federal and non-federal lands after completion of timber cruises and the selection of its timber removal contractor. PCGP has also developed a Prescribed Burning Plan which describes the proposed burning of forest slash as a disposal method and which is included as Appendix R to the Plan of Development (POD).

PCGP would be responsible for log removal, log accountability and disposal of the federal timber. The BLM and USFS would be responsible for monitoring payment, log accountability, and trespass. Many of the operational requirements typically detailed in a timber sale contract, such as erosion control, road use and maintenance, slash disposal, etc. are contained in the Plan of Development and incorporated by reference into the Temporary Use Permit and Right-of-Way Grant. Performance bonding typically required in a timber sale contract would also be included as part of the Right-of-way Grant requirements in a sufficient amount to cover operations performed under the timber sale contracts. BLM and USFS timber sale administrators will review PCGP timber harvest plans and BMPs and may be present during timber/vegetation removal operations to ensure compliance with these plans as well as to ensure payment and proper log accounting for specially designated revenues.

Prior to the commencement of timber cruising and valuation as describe below in Section 2.1.1, PCGP will identify the pipeline centerline, construction right-of-way boundaries, TEWA boundaries, disturbed monuments, reference stakes, access roads, property crossings, and boundary trees, following the guidelines included in the approved PCGP Right-of-Way Marking Plan.

2.1.1 TIMBER CRUISE AND VALUATION

PCGP estimates approximately 29,948 thousand board feet (MBF) of timber may be cleared on federal lands crossed by the Pipeline route, including about 14,564 MBF on BLM lands and 15,384 MBF on USFS lands. The expected volumes of harvested timber, tree types cleared, and their values are further discussed in section 3.2 of this document. Table 2 summarizes the estimated volume of timber that would be harvested on federally managed lands. The timber volume estimates were derived using professional forestry methodologies and protocols to provide a basic timber volume inventory for the proposed Pipeline Project. A preliminary cruise-inventory of stand types (conifer, brush, riparian, roads, rock pits, etc.) was compiled along forested areas of the proposed route using aerial photography and ground visits. Each stand type was ground visited and inventory-cruise plots were established in each stand type to achieve a 5 to 8 percent level of accuracy for determining Scribner decimal C log rule gross and net volumes. Twenty percent of plots were full measure quarter-acre (58.9 feet circular). To

determine Gross MBF timber volumes, "Local" volume tables were developed for each species by stand type to determine gross volume by two inch diameter class total height. Dilworth, MB&G, Atterbury, & FS Cruise timber cruising protocols were used to determine volume, grade, and cruise downfall. No further deductions were taken for harvesting breakage, or local scaling rules-of-thumb factors for hidden defects.

Prior to right-of-way easement acquisition, agency (BLM or FS) representatives or their designated contractors will conduct timber cruises to verify timber volumes and species composition on forested lands to determine timber values. Final timber cruises would be conducted prior to vegetation clearing in order to determine timber volumes, values, and species composition within forested lands. Timber cruise schedules will be determined with the BLM and USFS after PCGP completes survey and marking of property lines and actual right-of-way and TEWA areas. The time needed to complete cruises will depend on actual acres, ease of access and the volume of actual timber to be cruised. Timber cruises will be financed by PCGP.

PCGP would complete a check cruise on the cruises and appraisals completed by the BLM and USFS. The timber cruise would be used to validate PCGP's Right-of-Way Clearing Plan in the field, and help identify the logging systems that would be practical along the route based on the pipeline alignment, construction right-of-way configuration, topographic conditions, existing access, timber types and volumes to be removed, and the various logging system limitations.

2.1.1.1 Execution of Timber Cruises

Timber cruises on federal lands would be conducted by the land management agencies or by an agency approved third party contractor. The BLM and USFS will each determine how timber will be cruised and appraised on their respective lands according to their respective agency policies.

BLM

The BLM is required by regulation to oversee the measurement of the timber it sells. The BLM will determine whether to conduct the cruise itself or oversee the cruise by a qualified third party at the time the Right-of-Way Grant is issued, and the actual construction period is determined. At that time, the BLM will assess contractor and workforce availability. If the BLM chooses the contracting option, the BLM will work with PCGP to ensure contracts meet BLM specifications and contractors are qualified. The BLM will sell its timber in lump-sum based on the cruise volume. The BLM estimates cruising would typically proceed at the approximate rate of 4 acres per day per cruising team.

USFS

The USFS will determine the method by which the USFS timber cruise is implemented. The USFS may complete cruising in-house, or may allow a third party to conduct the cruises, provided the contractor is certified by USFS standards, including a written test and field test plots. The USFS will determine cruise method at the time right-of-way designation has been completed. If a third party contractor is used, the USFS would complete check cruises. Since there will be one timber sale contract for all National Forest land, with multiple payment units, the USFS may execute the contract with Incompletely Measured Payment Units. This would allow USFS cruising to continue while operations have begun in another payment unit. The USFS intent at this time is to complete all cruising before the contract is executed.

2.1.1.2 Timber Valuation

The BLM and USFS will each be responsible to establish the value of timber on their lands within the right-of-way clearing limits.

BLM

The BLM will require PCGP to purchase all merchantable timber (7 inches Diameter at Breast Height with minimum 5-inch top diameter inside bark at 16 feet and larger) located within the right-of-way construction clearing area, TEWA and damaged trees in the Uncleared Storage Areas (UCSAs). The contract period for cutting and removing the timber will be up to 36 months (maximum allowed by BLM regulations). PCGP may use the purchased timber as needed to meet other project requirements such as OHV barriers, LWD for stream restoration, redistribution across the construction right-of-way, etc.

The BLM will not designate snags or "wolfy" trees within the cleared area for retention. If PCGP elects to retain specific trees for mitigation purposes, those trees must still be purchased from the BLM.

USFS

The USFS will require PCGP to pay for and remove all designated timber meeting minimum merchantable specifications located within the right-of-way clearing area (including TEWAs and damaged trees within UCSAs). Timber will be cruised and evaluated for two products, each with specific minimum specifications. The timber cruise will determine the volume of each species and product in each payment unit. The USFS will appraise and establish a separate contract rate for each species (or group of like species) and product.

1. Sawtimber: minimum piece is 6" diameter inside bark (dib), 10' long, 40% sound wood.
2. Non-sawtimber: minimum piece is 3" dib, 10' long, no minimum sound wood requirement.

The USFS is required to adjust the contract rate charged for sawtimber during the life of the contract according to changes in the appropriate Western Wood Products Association index specified in the contract. The actual rate paid for timber removed in a payment unit is established when the payment unit is "released" for cutting. That rate is the current contract rate, adjusted at the end of the calendar quarter in which the payment unit is released.

The contract period for cutting and removing the timber on USFS lands may be up to 5 years. The actual termination date will be set when the timber sale contract is executed. There are provisions for extensions and additions to the contract term for specific circumstances.

On USFS lands, snags or "wolfy" trees identified for retention prior to the cruise, may be designated as leave trees and will not be included in the timber appraisal. PCGP will not be required to pay for these trees. The leave tree designation would be at the discretion of PCGP and its Contractor in coordination with the USFS. If these leave trees subsequently need to be cut, they will be individually cruised and paid for prior to cutting.

The USFS timber sale contract will include requirements for painting and branding logs and log export restrictions. If feasible, logs of one ownership shall be removed from a mixed landing prior to skidding another owner's logs to the same landing. All logs of one ownership will be

uniquely marked and segregated from logs of another ownership at any mixed landing location (see Section 2.2).

The USFS will need at least two months after the timber cruise is complete to review and finalize their appraisal, write the contract specifications, sign the contract and receive all advance deposits before clearing may begin.

2.1.1.3 Reproduction Units

BLM

The BLM does not intend to establish a value for reproduction (young trees below merchantable size threshold) destroyed during construction within the designated Pipeline Project area. If reproduction is destroyed within an UCSA, PCGP shall replant the area where reproduction was destroyed as specified in the ECRP (see Appendix I to the POD).

USFS

The USFS has established a value for reproduction destroyed during construction within the designated Pipeline Project area. Compensation for damaged reproduction is not included in the timber sale contract. If reproduction is destroyed within an UCSA, PCGP will rehabilitate the area as specified in the ECRP (see Appendix I to the POD).

2.1.1.4 Credit for Uncleared Timber

Prior to commencement of clearing operations within a payment unit, PCGP will attempt to identify any TEWA or area not required for construction such that these areas may be excluded from timber cruises. If, at the conclusion of construction, any TEWA areas remain fully intact, unentered and unharvested, the BLM or USFS, respectively, would cruise the unharvested, intact TEWA and refund the appraised value to PCGP at the established contract price if the Contracting Officer determines it is within the interests of the agency to do so. If TEWAs are sporadically cleared and/or trees are scattered throughout the TEWA, the BLM or USFS will not cruise the remaining trees, nor will PCGP receive a refund for the value of such trees.

2.1.1.5 Uncleared Storage Area Provisions

Within UCSAs, PCGP has committed to protect standing trees to prevent damage (see the Leave Tree Protection Plan/Appendix P to the POD).

BLM

If a tree is damaged during construction operations, the BLM Authorized Officer will evaluate the extent of the damage and determine whether PCGP will be required to purchase the tree. Considering that a Right-of-Way Grant will have been issued for the Pipeline Project, the BLM will recognize that PCGP may cause inadvertent damage to trees within UCSAs during construction, and the BLM will accordingly abstain from penalizing PCGP for unauthorized use (trespass). However, if PCGP damages any BLM trees outside of the authorized clearing area and the UCSAs, PCGP may be subject to trespass under BLM regulations and Oregon Revised Statutes.

USFS

If trees within UCSAs are damaged by PCGP, these trees are treated under standard provision BT2.13- Damaged Timber, in the USFS timber sale contract. By agreement, such trees may be left without charge if their removal would cause undue damage or be grossly uneconomic. If the USFS determines that a damaged tree should be cut and removed, payment for the tree is

made at current contract rates under BT3.43 – Undesignated Timber Damaged Without Negligence.

There is still the possibility that unnecessary damage will occur, either through negligence or willful action. This timber is handled differently and liquidated damages are assessed under BT3.45.

2.1.2 TREES USED FOR ENVIRONMENTAL MITIGATION

PCGP may elect to use purchased BLM or USFS timber for environmental mitigation. The BLM and USFS will not provide credit, nor will BLM or USFS provide a refund to PCGP, for purchased timber that is used for mitigation purposes. Examples, include timber used for LWD at stream crossings to mitigate the effects of the Pipeline Project as well as timber used to satisfy compensatory mitigation requirements which may be used in offsite mitigation projects implemented by federal agencies or conservation groups.

Prior to clearing operations, PCGP may designate trees as leave trees for green recruitment trees on the edges of the construction right-of-way or TEWAs to protect those trees from removal during timber cutting; where feasible, some of these trees would be girdled to create snags to benefit wildlife. Snags and habitat trees would be retained if they do not pose a safety hazard to construction activities, as per the regulations outlined by OSHA[1]. Measures that will be implemented during construction of the Pipeline Project to identify conserve and protect selected trees within or along the edges of the certificated work limits (i.e., construction right-of-way, UCSAs, and TEWAs) are included in the Leave Tree Protection Plan (see Appendix P to the POD).

2.1.3 HAZARD TREES

Hazard trees are those trees at risk of falling on workers or vehicles and thus would require removal for safety reasons. A tree may be at risk of falling for a number of reasons, including the tree's location and the presence of defects, insects, disease, work activities, and weather conditions. Such trees would be felled in advance of road construction/reconstruction or maintenance, and clearing and construction activities. Additionally, hazard trees could be created from trees felled during the Pipeline Project. This would occur if trees outside of approved construction areas are damaged during felling of harvested timber. This could result in growth loss and PCGP would compensate the Agency for any trees removed and any loss in timber productivity.

All hazard trees along the surveyed edges and inside the right-of-way will be felled. Hazard trees exterior to the right-of-way would be designated by qualified PCGP representatives, in accordance with OSHA standards and the USFS / BLM published "Field Guide for Danger Tree Identification and Response." Hazard trees exterior to the surveyed right-of-way boundary would be directionally felled, when consistent with OSHA guidelines, away from the construction right-of-way if trees are to be left and towards the construction right-of-way if trees are to be removed. PCGP has requested a modification from FERC's Plan for removing hazard trees outside the construction right-of-way limits. PCGP would compensate the respective Agency for any merchantable hazard trees felled.

[1] **OAR 437, Division 7 Forest Activities - Oregon OSHA**: Danger tree – A standing tree, alive or dead, that presents a hazard to personnel due to deterioration or physical damage to the root system, trunk (stem), or limbs, and the degree and direction of lean.

The extent or existence of hazard trees will be identified following the creation of the construction right-of-way, TEWAs or new access roads by PCGP or on roads that have not triggered land managing agency hazard tree removal based on limited road use.

2.2 FELLING AND YARDING

PCGP will ensure that all operations and tree felling would occur within the FERC-certificated construction work area limits, and that trees and other vegetation to be cleared within the certificated construction work area limits would be felled or sheared so as to prevent damage to adjacent trees, facilities, or structures. This may not be practical in steep areas where trees often must be felled on the contour to reduce breakage. Much of the forested portion of the proposed route crosses steep mountainous terrain. Failure to fall trees properly would result in a loss of timber available to local industries and loss of value to the land owners and land management agencies.

Some TEWAs, that are already vacant areas adjacent to existing roads, have been identified for log storage and decking. In addition, some slash and other debris from clearing activities may be temporarily stored in UCSAs.

BLM and USFS timber contracts will include requirements for marking and branding logs and log export restrictions. As part of the written timber logging plan, PCGP will be responsible for detailing how they will handle logs to meet BLM contract stipulations for marking, branding, and conforming to export restrictions. All BLM logs will be branded with a unique registered brand and will be marked with highway yellow paint. The BLM will be responsible for monitoring logging activities on BLM lands.

On USFS and BLM lands, logs from different ownerships will be segregated at shared landings. Where feasible, logs should be removed from one ownership at a time to shared landings. Where this is not feasible, PCGP will be responsible to insure that segregation is maintained. At a minimum, each ownership will have its own log brand assigned. If logs of one owner are decked on the landing and not hauled, the deck would need to be painted its own unique color, all logs branded, and a count made.

All trees designated for cutting within the construction clearing limits shall be felled into the clearing limits, not into the reserved timber located outside the construction clearing limits (see Appendix AA to the POD).

Trees and other vegetation will be felled or cleared in a manner that would minimize impact to adjacent forests or structures outside of the construction right-of-way. Trees will also be felled and directionally removed away from wetlands, waterbodies, and riparian reserves. However, as noted above, PCGP has requested a modification from FERC's Plan where, in some situations during right-of-way clearing/timber felling operations, it may not be possible for specific trees or portions of trees to be completely felled within the construction right-of-way limits (i.e., alignment ascends/descends steep slopes with mature trees [some more than 200 feet tall]; diseased/decayed trees are present; trees are leaning in unmanageable directions or degrees; or other site-specific conditions, based on OSHA safety guidance).

Where tree/woody material inadvertently falls outside the construction right-of-way limits, PCGP will compensate the landowner or the land-managing agency for the value of the danger/hazard

tree, or for any tree damage that may result from felling activities. This modification request complies with best management forest practices and with OSHA regulations[2]. Because timber clearing will be conducted within appropriate seasonal windows to protect sensitive species, this modification will ensure worker safety and will minimize effects to sensitive resources.

PCGP will not remove stumps or root systems from wetlands, except along the trench line, unless necessary for safety reasons during construction. In uplands PCGP will limit stump removal to the trench line and working areas where grading would be necessary to create a level working surface. Any debris as a result of tree cutting that falls into a waterbody would be removed, if practical. Logs and slash would not be yarded across perennial streams unless fully suspended or supported by a temporary bridge crossing or other methods consistent with ODF forest practice rules or BLM or USFS requirements. Existing logs firmly embedded into the bed or banks of streams will not be disturbed, unless their removal is necessary for clearing the construction right-of-way, trenching, fluming or other waterbody crossing methods. Any existing logs removed from waterbodies during installation of the pipeline will be flagged or marked and set aside for return to the waterbody during restoration. Landings for clearing operations will not be located in wetlands or riparian reserves. Where feasible, logs yarded out of wetlands or riparian zones will be skidded with at least one end suspended from the ground so as to minimize soil disturbance and compaction. Any cut timber designated for in-stream or upland wildlife habitat enhancements would be stored at the edge of the construction right-of-way or in TEWAs for later use during restoration activities. Where large woody debris (LWD) is acquired for in-stream habitat use, this material will only be obtained from the certified construction limits and will be collected outside riparian zones to maintain root structure within the riparian zone. An exception to this is where the LWD can be obtained from the trenchline or construction right-of-way cut areas where root systems would be removed during trench excavation or grading operations.

Merchantable timber and other vegetation will be cut and removed from the construction right-of-way and TEWAs to ensure that these areas are cleared prior to construction. In very limited areas, TEWAs have been identified for log storage and decking. These are existing cleared areas adjacent to existing roads where log storage could occur for extended periods of time. The construction right-of-way has been designed to minimize additional TEWAs and overall disturbance. The construction footprint is currently not large enough in many areas to accommodate log clearing and efficient construction activities simultaneously. Therefore, cut timber must be removed from the construction right-of-way to avoid unnecessary delays.

PCGP will be required to pay the appropriate land managing agency for all merchantable trees cut within the construction right-of-way and temporary use areas authorized in the federal Right-of-Way Grant, including trees felled within Riparian Reserves and LSRs. PCGP do not intend to transport cut trees back into these areas, except for those appropriately sized logs that are salvaged (with root-balls attached) for use as LWD and habitat enhancement. PCGP developed a Supplemental Mitigation Plan, which includes the funding of USFS and BLM restoration projects, to mitigate for the impact on these sensitive areas caused by the permanent removal of the trees that are not transported back into the areas or replanted. PCGP has designed and sized the construction right-of-way and TEWAs to be the minimum necessary to safely construct the Pipeline Project. Therefore, it is impractical to store all felled trees within Riparian Reserves

[2] OAR 437, Division 7 Forest Activities - Oregon OSHA: Danger tree – A standing tree, alive or dead, that presents a hazard to personnel due to deterioration or physical damage to the root system, trunk (stem), or limbs, and the degree and direction of lean.

and LSRs onsite for placement back onto these areas after construction. Significantly more TEWAs areas, requiring habitat removal and disturbance would be necessary to store fallen trees within these areas if this material was replaced within the riparian reserves and LSRs.

BLM

Trees cut within the Riparian Reserves and LSRs on BLM lands will be disposed of as determined by PCGP. The BLM will not direct removal or retention of felled trees.

USFS

Trees cut within the Riparian Reserves and LSRs on USFS lands will be left in place or decked as specified by the USFS to meet land management objectives if determined necessary by the USFS. Prior to any timber removal activity, authorized representatives from the USFS and PCGP would evaluate whether felled trees should be removed and which should be retained to meet land management objectives (within LSR and Riparian Reserves).

2.3 LOGGING METHODS

The construction right-of-way will be cleared of all timber and other vegetation using all logging practices and methodologies, in accordance with PCGP's harvest plans approved by the BLM, USFS, and ODF. PCGP expects that a variety of logging methods may be necessary to efficiently remove timber from the construction right-of-way, depending on the specific location (see Section 3.0 – Timber Clearing Operations).

Most of the pipeline route in forested areas is expected to be logged by mechanical cutting and ground skidding equipment. Hand-felling would likely occur on steep slopes; and skidding patterns would be laid out to minimize erosion. Most timber removal would be accomplished through ground skidding and cable yarding; helicopter yarding may be used in some areas that are difficult to access. Where ground skidding is used, the following measures would be employed to minimize significant detrimental soil disturbance (compaction and displacement):

- Low ground weight (pressure) vehicles would be used whenever practicable;
- Logging machinery would be restricted to the 50-foot permanent right-of-way where practical to prevent soil compaction, subject to topographic, safety and other construction considerations;
- The removal of soil duff and surface slash layers would be minimized in order to maintain a cushion between the soil and the logs and the logging equipment;
- Designated skid trails would be used to restrict detrimental soil disturbance (compaction and displacement) to a smaller area of the construction right-of-way (preferably over the pipeline trenching area); and
- Compacted landing, yarding, and load-out areas used for timber harvesting during Year One construction will be scarified after use and prior to the rainy season where the potential for sediment delivery to waterbodies is possible. Scarification will promote infiltration, minimize run-off and the potential for sedimentation.

PCGP may use helicopters for logging and pipe stringing in areas where there are steep slopes and limited access to the right-of-way. PCGP has identified the following areas where helicopters may be utilized, however clearing and construction contractors selected for the Pipeline Project may identify additional areas where helicopter use may be appropriate based on site and seasonal conditions.

Begin MP	End MP	Helicopter Staging
		TEWAs 6.49-W, 7.21-N, 7.44-W, 10.22-W, 13.79-W, 14.62-W, 15.75-W, 16.71-W, 18.05, 21.12-W, 23.99-N, 21.87-N
37.10	38.42	TEWAs 36.63-W, 36.97-W, 37.15-N, 38.32-W, 38.32-N, 38.90-W, 39.18-N
46.70R	47.20R	TEWAs 46.75-N, 47.53-N, 47.52-W
60.50	61.50	TEWAs 60.52-N, 60.54-W, 60.59-N, 60.87-W, 60.88-N, 61.43-N
77.80	79.90	TEWAs 77.72-N, 77.95-W, 78.99-W, 79.85-N
92.46	94.50	TEWAs 92.62, 92.62-N, 92.63-W, 93.01, 93.01-N, 94.56-W
95.10	97.05	TEWAs 95.39, 96.22-N, 96.23-W 97.02-N, 97.04-W
97.70	98.00	TEWAs 97.63, 97.79-N, 97.91-W
101.30	102.30	TEWAs 101.62-N, 101.75-N, 102.19-N
108.50	110.40	TEWAs 109.10-W, 110.34-W, 110.73 (Helicopter landing Peavine Quarry)
116.30	117.85	TEWAs 116.59-W, 117.67-N
123.30	125.15	TEWAs 123.53-W, 123.71-N, 124.30-N, 124.54-W, 124.71-W, 124.96-N

2.4 SLASH DISPOSAL

If the size of trees to be cleared in forested areas along the route is considered too large by PCGP to be taken whole for yarding, trees may be felled, topped, limbed, and bucked on-site where they were felled. Merchantable pieces will be yarded to a landing for decking, loadout, and transport. Some portion of the wood debris from clearing (i.e. limbs, cull logs or broken log pieces, tops) would remain on the ground within the construction right-of-way where the trees were cut. During logging, tree tops and limbs would be broken or crushed creating a volume of small slash that would be impractical to remove from the construction right-of-way. Some of the slash on the ground would act as erosion control between the time the construction right-of-way is cleared and the pipeline is installed.

Residual slash from timber clearing would be stockpiled on or at the edge of the construction right-of-way or TEWAs or within UCSAs, and scattered/redistributed across the construction right-of-way during final cleanup and restoration, after seeding, according to BLM and USFS fuel loading specifications to minimize fire hazard risks. Scattering the slash across the construction right-of-way would hinder off-highway vehicle traffic on the reclaimed construction right-of-way and would act as a natural mulch to minimize erosion. In general, the equipment used for slash pull-back and spreading on the construction right-of-way could include equipment used for pipeline construction. Specific equipment and methods would be determined on-the-ground based on the terrain, equipment capabilities and in consultation with BLM and USFS representatives. On federal lands, larger slash pieces (more than 8 inches in diameter), may be removed from the construction right-of-way and decked in designated storage sites or at road crossings. This material would be made available to the public. Large woody debris would be retained on the construction right-of-way according to agency specifications, as mitigation, to provide down wood for wildlife habitat and to aid in soil productivity.

PCGP has determined that it may be necessary to dispose of forest slash in areas where this material exceeds the BLM or USFS fuel loading specifications (see ECRP in Appendix I to the POD). The Prescribed Burning Plan (see Appendix R to the POD) describes the protocols that PCGP would follow to obtain appropriate agency authorizations to burn forest slash materials on all lands crossed by the Pipeline. This Plan also describes the protocols and BMPs that would be implemented to safely conduct slash burning operations.

2.5 PROTECTING LIVE TREES

Where logs are stored next to conifer trees bordering the sides of the construction right-of-way, they would be decked in a manner to avoid damage to live trees. Logs planned for removal from the site would be hauled off-site as soon as practical following yarding in order to prevent

insect and disease problems, as well as potential theft problems. However, PCGP has stated that LWD may be placed in UCSAs adjacent to standing conifers. The Leave Tree Protection Plan (see Appendix P to the POD) describes the measures that will be implemented during construction of the Pipeline Project to identify, conserve and protect selected trees within or along the edges of the certificated work limits (i.e., construction right-of-way, UCSAs, and TEWAs).

2.6 BEST MANAGEMENT PRACTICES

BLM and USFS contracts for the sale of timber to PCGP will close after the purchased timber has been removed, any damaged timber has been identified, purchased, and removed (including any trespass trees), and any intact TEWA has been cruised for refund. All applicable paperwork required for contract closure, such as the BLM "Log Scale and Deposition Report for Timber Removed" will be completed and submitted by PCGP before the Temporary Use Permit expires unless otherwise arranged in writing with the Authorizing Officer. Potentially, the operations associated with the contracts for sale of timber may end before construction is complete. Soil compaction will be relieved during final restoration following construction. Therefore, the contracts for sale of timber will not include provisions for relief of soil compaction or restoration.

PCGP would implement the measures outlined in its ECRP to prevent erosion of exposed soils along the construction right-of-way between clearing and final restoration. Some of the BMPs that would be implemented during timber and other vegetation clearing operations to minimize the potential for erosion and sedimentation would include:

- Scarification or subsoiling with a self-drafting winged subsoiler to relieve soil compaction, where practical, to promote infiltration and reduce runoff;
- Use of slash/brushpiles at appropriate locations to limit water and sediment from running off the right-of-way (slash filter windrows);
- Installation of temporary slope breakers at appropriate locations and at spacings to shorten slope lengths, prevent concentrated flow and to divert runoff to stabilized areas;
- Installation of silt fences or certified weed free straw bales as sediment barriers;
- Temporary seeding (using appropriate quick-germinating cover crops such as annual ryegrass or other appropriate quick-growing temporary cover species; this measure would not occur on federal lands where introduced species are restricted); and/or
- Selective mulching of areas without effective surface cover.

The BMPs would be designed and implemented to meet the requirements of the CWA, BLM RMPs, USFS LRMPs, and *National Forest Plan Water Quality and Soils Standards and Guidelines* on USFS lands and would include:

- All tree felling and vegetation clearing would occur within the certificated construction work areas, except for hazard trees adjacent to the construction right-of-way, additional work areas, and travel corridors;
- Hazard trees would be designated by qualified company or third-party personnel;
- Trees within the certificated construction work areas would be directionally sheared or felled so as to prevent damage to adjacent trees, facilities, or structures;
- Log landings would not be located in wetlands or Riparian Reserves;

- Logs and slash would not be yarded across perennial streams unless fully suspended over the stream and adjacent banks. Where yarding across intermittent streams is necessary, log movement would be designed to minimize sediment delivery to streams;
- Logs firmly embedded in the bed or bank of waterbodies that are in place prior to felling timber would not be disturbed during logging and yarding operations unless they prevent trenching and fluming operations;
- All timber clearing from the construction right-of-way would be completed in accordance with PCGP's harvest plan requirements. Merchantable timber (and slash, as necessary) would be cut and removed except for trees left to meet resource objectives;
- In limited areas, logs would be decked and stored in TEWAs located outside of the construction right-of-way. These TEWAs generally would be in currently cleared areas next to roads;
- Logging slash material designated to remain on-site as environmental mitigation would be placed in designated UCSAs or TEWAs along the edge of the construction right-of-way and then scattered/redistributed across the construction right-of-way during final cleanup and reclamation (following seeding), in accordance with BLM and USFS fuel loading specifications in order to minimize fire hazard risks. Please see the Leave Tree Protection Plan (Appendix P to the POD), Prescribed Burning Plan (Appendix R to the POD) and the Overburden and Excess Material Disposal Plan (Appendix Q to the POD) for additional measures regarding handling and disposal of excess logging slash and materials. No Douglas-fir felled trees, 12 inches or larger in diameter, would be left in areas on federal lands where there is the potential to create infestations of Douglas-fir beetle;
- Slash concentrations on federal lands would be chipped in areas where yarding out is not feasible; slash on federal lands would not be permanently stored in UCSAs within Riparian Reserves, as noted in the ECRP;
- All landing slash will be utilized to the maximum extent possible. Larger pieces may be made available to the general public, or chipped to be removed for manufacturing chips or hog fuel. Remaining debris may be chipped and spread back across the Right-of-Way without inhibiting revegetation (typically less than 1 inch thick);
- In upland areas, stump removal would be limited to the trenchline and areas where grading is necessary to construct a safe, level working plane;
- Off-site slash disposal and/or burning may occur in areas where slash is concentrated, such as landings. Slash would be machine or hand-piled with the outer edge of piles no closer than 20 feet from the outer drip line of live trees, and burned according to state burning requirements and BLM or USFS stipulations. Burns would occur during the wet season (i.e., November 1 to April 30). PCGP has developed a Prescribed Burning Plan which is included as Appendix R to the POD and describes the procedures that would be implemented if prescribed burning is to be conducted;
- Each construction spread would have one lead Environmental Inspector (EI) and several assistant EIs. The inspectors would ensure compliance with federal, state, and local regulations and permit requirements, including the Right-of-Way Grant and FERC Certificate;
- EIs in coordination with federal agency authorized representatives, would have the authority to stop activities that violate the measures set forth in the timber harvest contracts and Grant with the respective federal land managers and in other permits and authorizations, and would have the authority to order corrective actions;
- PCGP's lead EI would have the authority to stop activities when wet weather or other conditions make it necessary to restrict activities to avoid excessive rutting in sensitive areas; and

- Forested lands disturbed by the construction of the Pipeline Project would be replanted according to state and/or federal (BLM and USFS) requirements. Planting would occur on all forested lands disturbed by construction except for 15 feet from either side of the pipeline centerline. Replanting prescriptions are included in the ECRP which is included as Appendix I to the POD.

The EI would also utilize other effective BMPs as discussed in the ECRP to prevent sedimentation beyond the approved construction right-of-way and associated TEWAs or into waterbodies or wetlands. As stated in the ECRP, effective ground cover is the amount of cover necessary for maintaining a disturbed site in a low hazard category for erosion. The ECRP provides effective ground cover requirements based on potential erosion hazard of areas disturbed by the construction. PCGP assumes that the soils within the construction right-of-way will be categorized within the high to very high erosion hazard classes and would apply the appropriate mulching cover requirements for these erosion hazards classes.

2.7 TIMING RESTRICTIONS FOR RIGHT-OF-WAY CLEARING

The following is a summary of the Applicant Prepared Biological Assessment and provides a brief overview of the proposed timing for timber clearing. The U.S. Fish & Wildlife Service will either approve or modify the timing restrictions in their Biological Opinion and this section will be updated at that time.

PCGP will clear timber and other vegetation as permitted by weather conditions and outside of applicable timing (daily and seasonal) restriction windows. PCGP would apply temporal and spatial restrictions recommended by U.S. Fish & Wildlife Service (FWS) and other agencies to protect nesting marbled murrelets (MAMU), northern spotted owls (NSO), migratory birds, and other raptor species (see Attachment C).

To minimize impacts to MAMU, PCGP is proposing to fell timber and mow other vegetation in occupied or presumed occupied MAMU stands and within 300 feet of those stands after the entire breeding season (April 1 to September 15). Timber or other vegetation removal (including brush mowing) could occur within 0.25 mile of MAMU stands but beyond 300 feet of occupied or presumed occupied stands between April 1 and August 5; however, PCGP would apply daily timing restrictions (activities would occur between 2 hours after sunrise and 2 hours before sunset). The purpose of the daily timing restrictions is to minimize risk of disturbance to adult MAMU entering and leaving the stand and possible dispersal of juveniles. If biologists identify a nest tree or potential nest trees within 0.25 mile of the MAMU stand that would be cleared, timber clearing activities would not occur until after the entire breeding season (after September 15). Daily timing restrictions would also be applied during other construction activities within occupied and presumed occupied stands and within 0.25 mile of those stands during the critical breeding season (April 1 through August 5).

To minimize impacts to NSO from “habitat” removal, PCGP would not remove timber (tree cutting or brush mowing) in active NSO nest patches and within a 0.25-mile buffer of the NSO activity center until after the entire nesting season (March 1 to September 30), provided existing access roads to the construction right-of-way through NSO nest patches or core areas would NOT be restricted. Additionally, other vegetation removal, timber processing, and construction activities, not requiring tree cutting or brush mowing, would not occur between the critical breeding season (March 1 to July 15) in active NSO nest patches and within a 0.25-mile buffer of the NSO activity center.

Prior to timber clearing and brush mowing, ,PCGP would have experienced MAMU biologists survey both the occupied and unoccupied suitable habitat stands in which habitat would be modified by construction and mark trees that currently have nest platforms or potential for nests. If feasible, PCGP would avoid removal of those marked trees. Stands within the analysis area where no occupancy of a site was detected during both years of surveys are considered unoccupied for 5 years after the 2-year survey protocol is complete, and timing constraints and buffers would not apply. However, some of the sites unlikely to be occupied would have daily and seasonal restrictions applied because of their proximity to known occupied stands. Prior to timber clearing (including brush mowing), other vegetation removal, and construction activities, PCGP would also have experienced NSO biologists survey within a 0.25 mile of NSO activity centers to determine nesting activity so that appropriate seasonal timing restrictions could be applied during timber clearing activities and construction activities. Construction, clearing, and/or ground-disturbing activities would adhere to conservation measures specified in the FWS Biological Opinion.

To minimize impacts to other nesting raptors in the Pipeline Project area, PCGP would survey for eagles and other raptors within 0.25 mile to 0.5 mile of the Pipeline Project prior to tree clearing and/or construction and apply appropriate seasonal nesting buffers; no timber removal, other vegetation removal, or construction activities would occur during the appropriate nesting seasons. Additionally, outside areas considered for MAMU and NSO, as described above, and other applied seasonal raptor buffers, PCGP would clear vegetation in woodland and forest (wooded habitats) in all seral stages outside of the primary migratory bird nesting season, which is April 1 to July 15, to minimize effects to nesting migratory birds in the Pipeline Project area (see Attachment C). PCGP would also employ biological monitors to identify migratory bird nests at risk in non-wooded habitats or wooded habitats where felling and brush clearing is necessary during the primary migratory bird season (April 1 to July 15) to further minimize effects to migratory birds nesting in the Pipeline Project area. If nests are identified during the primary nesting bird season, PCGP would work with FWS to identify appropriate buffers based on the species' ecology and relative sensitivity to disturbance, which could include avoiding activity until fledging or nest failure is verified, and if avoidance is not possible, move or remove an active nest, eggs, and/or juveniles.

3.0 TIMBER CLEARING OPERATIONS

Operational Scenario(s) are descriptions of "standard method" "forest / timber clearing" harvest technique designs specific to a distinct terrain / landscape and forest vegetation type.

3.1 HARVEST TECHNIQUES

Harvest techniques are discussed in context of "standard method" traditional capabilities. Two sequential harvesting operations are outlined: tree and timber felling, and methods of retrieving [yarding] material to a site for demolition or hauling to a purchase point. Site by site advantage(s) or disadvantage(s) [pros and cons] via comparative analysis of "standard method" to each other and alternative methods is not assessed in this document.

3.1.1 TREE FELLING

Mechanical –

1) Feller-buncher [shear or saw, come in different configurations, small to large]. Can operate efficiently on slopes to 50%. Versatile in large regeneration [R] to small dbh medium saw [MS] trees of merchantable and non-merchantable timber. Directional felling, species sorting, and volume control of cut trees stacked for accelerated volume skidding.

2) Chainsaw [hand]. Hand tree felling with chainsaws will be used in all vegetation types and Scenarios. Chainsaws will be necessary for trees that are too large or small, leaning, crooked, steep slopes, riparian areas, inaccessible spots [rock piles, etc.], or have defects that may prevent using the mechanical felling method.

3.1.2 TREE YARDING

Two methods:

1) Aerial [Helicopter, Cable yarder, Cable Yoader]
2) Ground-based [tracked or rubber-tired skid equipment, shovel, dangle-head].

Helicopter [aerial]

1) ECRP "3.3.2" - "… in some isolated rugged topographic areas with poor access, helicopter logging may be utilized." Helicopters come in an assortment of configurations and have the capability to clear the vast majority of timbered areas along the alignment during any time of year pending mitigation of restriction(s) [aka – noise, crossing public roadway, environmental, other regulatory].

   Example of Helicopter Alternative Method: Helicopter operations can continue clearing when and where ground-based or yarder harvesting operations cease for extended period of times due to seasonal weather. If environmental and regulatory restriction(s) are mitigated and road conditions are within BMP compliance, clearing may continue.

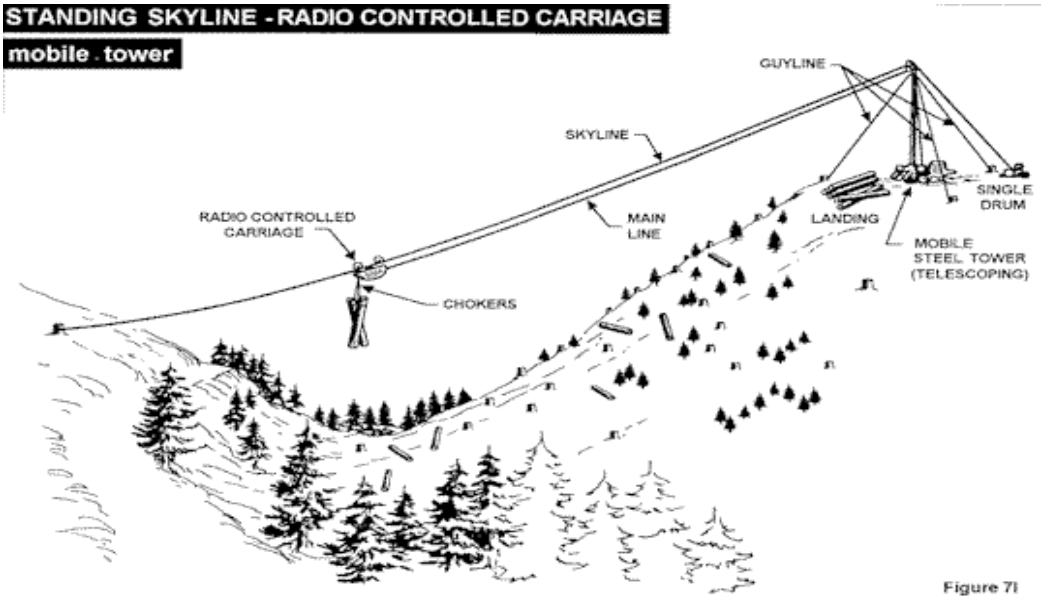
Single engine rotor helicopter configured for harvesting small to large pole size to small sawlog size timber. Capable of removing bundles of choked small to large sapling size trees.

Dual engine and rotor helicopter configured for harvesting all sizes of timber.

Yarder [stationary cable system, aerial]

Three basic configurations –

1) Standing Skyline. Normally has a single tail block and requires the skyline to remain elevated or standing while a carriage [motorized, drift, interlock, running] is winched and/or drifted back and forth from the yarder to retrieve felled trees or logs.



2) Live or Running Skyline. Skyline can be live [raised and lowered] via yarder drum winches [haul back, main line] to allow increased yarding capabilities with different carriage types.

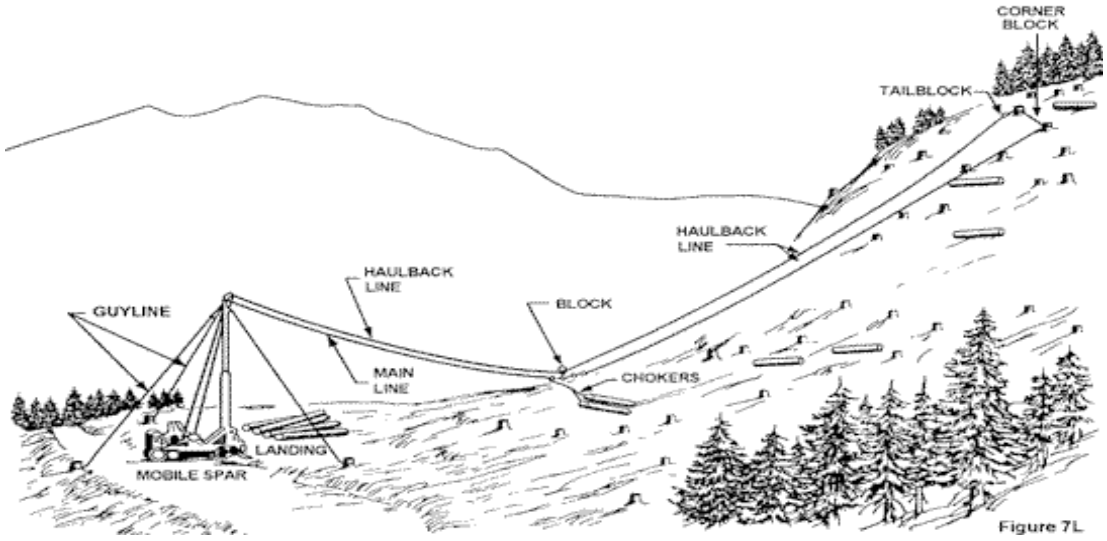


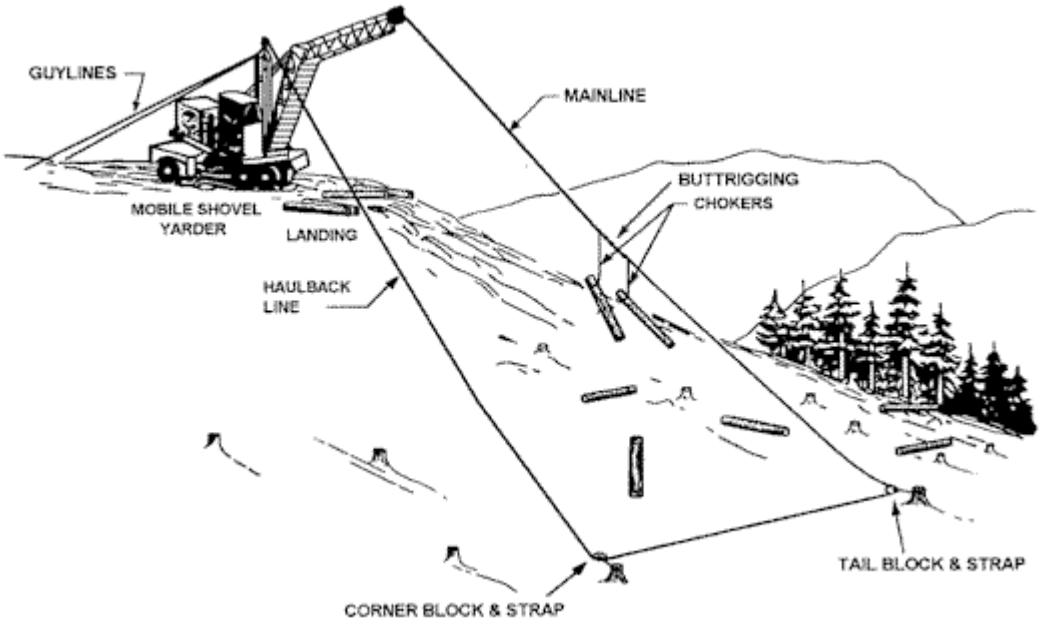
Diagram Reference: U.S. Department of Labor, Occupational Safety & Health Administration, Compliance Assistance, eTools, www.osha.gov.

Self-propelled tracked swing-yarder. Versatile configurations. Can operate on road width area as shown below. Requires larger area than small side-mounted yarder. Usually longer spans and lift capacity for bucked long logs from medium to large size trees.

Rubber-tired self-propelled side-mounted cable yarder operating on narrow road width. Versatile configurations and mobile if safe access to tight rough terrain areas that can be yarder harvested.

3) Yoader [aerial or ground-based]. Preferred base equipment is hydraulic heel boom log loader equipped with at least two winches. Mobile, extremely versatile, multi-tasking equipment: cable yard, log loading, shovel logging, tree pulling, slash piling. Needs minimal area for operation. Suited for cable yarding smaller timber, but can yard short length large diameter logs.

Yoader mobile shovel yarder configuration. Can utilize standing or live skyline setup for drifting carriages [motorized, Christy, buttrigging].



3.1.3 SHOVEL LOGGING

1) Feller-buncher is considered a shovel logging method.

2) Hydraulic grapple heel boom. Versatile operation method. Can be configured as Yoader, log loader at landing, multi-tasking with hand or mechanical tree felling ops. Can sort and stack logs into skid pile for quick removal and clean tree felling area [bunching under carriage corridor for cable or helicopter ops where landscape allows]. Can assist felling ops with pull / push of tree, and remove unmerchantable material pre and during felling ops for storage and later retrieval.

3) Dangle-head processor. Slope limited to +/-30%. Primarily delimbing, log manufacturing, and piling logs by species sort for efficient volume skidding. Production option.

3.1.4 GROUND-BASED SKIDDING

Tracked grapple skid equipment. May also be equipped with cable winch.

Rubber-tired grapple skid equipment. May also be equipped with cable winch.

3.1.5 ALTERNATIVE HARVEST ASSISTANCE EQUIPMENT

1) Tracked crawler stroke-delimber. Primarily oriented for delimbing and log processing of skidded whole trees [YP to SS stand type size class] to a landing site for sorting and truck haul. On allowable terrain following hand or mechanical tree felling, a delimber can receive same type skidded material outside and away from traditional landing sites and develop limbed and bucked logs for skidding to a landing. Or, develop a continuous log landing along one or both sides of an existing road or main skid trail to be converted into a haul road. Both types are very versatile in regards to accelerated clearing operations. This leaves the majority of unmerchantable material at its origin for later treatment [burning, chipping, erosion control, wildlife, etc.].

2) Tracked crawler-chipper. Unique machine comes in several horse-power and grinding capability configurations. The machine can crawl and grind on a range of slopes to process unmerchantable material at site of origin versus additional equipment that requires multiple-handling tasks of collection, skidding, and processing.

3.2 FOREST/TIMBER VEGETATION TYPES

Vegetation forest type data is relational in proposing timber clearing scenarios. Traditional forestry business decisions dictate such information is considered crucial by foresters, forest product buyers, and contractors when designing contracts, particularly when there is significant diversity in board foot volumes and number of trees per acre to be cleared across an atypical elongated project harvest site with a variety of terrains utilizing a variety of scenarios.

Data origin is the pipeline alignment timber volume estimate presented to PCGP in December 2007 [not attached to this document]. Estimated forest type data of interest is two-fold:

1) Table 1 – Trees per acre by forest stand type data utilized to determine the weighted average number of trees per acre [TPA] by size, species, gross and net volume. This data is the building block for extrapolating Table 2.
2) Table 2 - Acres of forest stand type and total net Scribner volume by landowner group of interest [USFS, BLM, All Other Landowners]. Forest stand types along the alignment are by project proxy, specific quantified units of timber size and quantity [volume and number of pieces] to be cleared. This allows for best-fit harvest equipment selection necessary to complete the clearing project and maintain BMP compliance, schedule, etc.

Table 1 (Data is updated from 2006 field sample plots to 2015 plots used to develop the approved Cruise Plans for the 3 USFS districts [Umpqua, Rogue, and Fremont Winema]. Same data used to generate Table 2)

Trees per acre estimate [TPA]. Low [L] to High [H] TPA range. Average [Avg] - weighted average TPA [+/- number of clearance pieces per acre by type]. The QMD [quadratic mean diameter] is the weighted average diameter at breast height of the average tree by type

Size Class	R [1]			YP [1]			SS [1]			MS [1]			LS [1]		
L/Avg/H	L	Avg	H	L	Avg	H	L	Avg	H	L	Avg	H	L	Avg	H
TPA	273	365	733	243	323	523	169	264	429	103	174	343	91	162	233
QMD		5”			9”			14”			22”			31”	
[1] Definitions provided in notes to Table 2 below.															

Table 2 (5/2017: revised data to projected start year of clearing 2020 that matches up with revised data projected to 2020 in Table 3.3-5 of Resource Report 3)

Estimated acres of forest stand type and net volume [Mbf] Scribner Dec. C by ownership

Owner:	HMC	R	YP	SS	MS	LS	Total:
FS acres	0	33	50	142	154	37	416
Mbf Vol	0M	465M	171M	3,841M	7,558M	3,349M	15,384M *
BLM acres	20	14	73	221	136	20	484
Mbf Vol	529M	293M	901M	4,416M	6,462M	1,963M	14,564M
Other acres	101	199	88	485	162	36	1,071
Mbf Vol	342M	109M	1,213M	5,915M	4,319M	1,134M	13,032M
Total Acres	121	246	211	848	452	93	1,971 *
Total Mbf Vol	871M	867M	2,285M	14,172M	18,339M	6,446M	42,980M

General Forest Stand Type Information [types include arboricultural related data for each]:
HMC – Hardwood/Mixed Conifer; R – Regeneration/Plantation; YP – Young Pole [6-10" dbh];
SS – Small sawlog [10-20" dbh];
MS – Medium sawlog [20-30" dbh]; LS – Large sawlog [30"+ dbh].
*Note: Combined FS and BLM volume of 29,948 17,379MBF. Volume estimate from Table 1.
**Note: The differences in acreage between Table 2 and Table B-1 in Attachment B are explained by 1) the estimated acres provided in Table 2 for forest stand and volumes are based on the PCGP's original route filed in the September 4, 2007 FERC Application and only includes forested acres. Miscellaneous land slivers of roads, landings, open areas such as rock pits, grasslands, shrublands or watercourses, etc. that are intermixed with stand types and do not have timber volumes were not included in the estimate acreage. 2) The acres of harvest scenarios provided in Table B-1 of Attachment B are based on the final May 2009 FERC FEIS route which incorporated various route modifications that affected both federal (BLM and FS) and private lands. The final FERC recommended route modifications were included to avoid or minimize impacts to Marbled Murrelet and Northern Spotted Owl as well as landowners. Examples of these route modifications included the Camas Valley East Route Variation, Oregon Women's Land Trust Route Variation, the Umpqua National Forest Route Variation (Peavine reroute) Clover Creek Road modifications, including other minor route or workspace adjustments. The Harvest Scenario acres provided in Table B-1 also include areas and land types affected by the project such as miscellaneous land roads, landings rock pits and some miscellaneous land type slivers such as grasslands and shrub lands intermixed with forested stands.

Harvest Method Codes:

"Harvest Method Code(s)" were generated to signify a selected "standard method" or "combined method [alternate]" harvest technique Scenario. Harvest method codes are listed in Table 3.

Table 3
Harvest Method Codes

Harvest Method Category	Harvest Method Code
Tree / Timber Felling:	
*Chainsaw [hand felling]	C
*Mechanical [feller-buncher, saw or shear]	F
Yarding [Aerial]:	
*Helicopter	H
*Cable Yarder	Ya
*Cable Yoader	Yo
Yarding [Ground-based]:	
*Shovel Logging [tree/log skidding assist] -	
- Hydraulic heel boom	S
- Dangle-head processor	D
- Feller-buncher	F
*Ground-based skidding equipment -	
- Track or rubber-tire	G
*Construction – scattered small amounts of material, veg clearing completed by second phase of construction after forest / clearing.	Const2

The "forest / timber clearing" process is a two-step sequential process: tree and timber felling, followed by yarding. To quantify the two-step list of proposed harvest methods, a tree and timber felling code or codes is algorithmically fused (combined with) to a yarding method code or codes. Each fused code set then represents the area [polygon] of proposed harvest operation scenarios as exhibited on the pipeline alignment maps by landowner, and as listed in the modified PCGP Master Line List.

The scenario code set-up is a two-part [two-halves] alpha based delineation that depicts proposed sequential harvest processes:

Code Set-Up -

a. Yarding [left half] - [separated by slash /] - Tree and timber felling [right half].
b. Either half may contain more than one method. This would indicate a "staged" combination of methods for felling, yarding, or both.

Note: Primary yarding operations are determined first, followed by felling. Logistics being, if timber is not felled to lead or in a pattern conducive to benefit the selected method of yarding, then there is an increased probability that forest clearing BMPs, safety, excessive forest product damage, regulatory compliance, etc. will be compromised.

Harvest Scenario Code List -

The table list displays a permutative compilation of fifteen scenarios. Not all scenarios are utilized for plan development, but are recognized as an option. There may be one or more scenarios presented by a landowner or agency that is different than any proposed [ECRP "3.3.2, … If, based on site-specific conditions, the landowner or land management agency-recommended timber harvesting method is not feasible, an alternate timber harvesting method will be utilized with approval from the landowner or land managing agency."]

Table 4
Harvest Scenario Code List

Code	Yarding	Comments	/	Felling	Felling	Description Comments:
H/C	H	any terrain	/	C	Specify minimum falling specs.	100% hand felling.
H/FC	H	<40-50% slopes	/	F,C	Favorable terrain for feller-buncher	Moderately dense stand of R to MS trees for feller-buncher, hand fall large trees if any, stage felling option.
H/FDC	H	<25-50% slopes	/	F,D,C	Same, option for use of dangle-head processor	High density stand, same scenario, dangle-head option to process high number density of small trees, retain slash at felling site, hand fell large trees if any, stage felling option.
Ya/C	Ya	>40-50% slopes	/	C	Hand felling, ground too steep for mechanical	Narrow alignment corridor and lack of lateral road access limits use, may require more than normal moves.
Ya/FC	Ya	<40-50% slopes	/	F,C	Favorable terrain for feller-buncher	Moderately dense stand of R to MS trees for feller-buncher, hand fell large trees, stage felling option.
Ya/CS	Ya	<30-40% slopes	/	C,S	Hand felling, shovel assist	Ground favorable to shovel doodling felled trees to cable corridor for accelerated tree and log removal, stack slash, push-pull tree assist.
Yo/C	Yo	any terrain	/	C	Hand felling	Versatile, work odd pockets, very mobile compared to yarder, yard steep slopes for skid equip. log forwarding.

Code	Yarding	Comments	/	Felling	Felling	Description Comments:
Yo/FC	Yo	<40-50% slopes	/	FC	Favorable terrain for feller-buncher	Dense R to MS type, fell and bunch understory, hand fell larger material, stage felling option.
Yo/FD	Yo	<25-50% slopes	/	F,C	Favorable terrain for feller-buncher	Dense YP to MS type, fell and bunch, yard bundles, hand fell larger material, stage felling option.
Yo/FDC	Yo	<25-50% slopes	/	F,D,C	Favorable terrain for feller-buncher, optional use with dangle-head	High density stand, feller-bunch for dangle-head option at stump processing, leave slash at site, hand fell large trees if any, stage felling option.
G/C	G	<40-50% slopes	/	C	Hand felling, large MS to LS trees	If dense stand, may require stage hand felling and yarding option.
G/CS	G	<40-50% slopes	/	CS	Primarily large MS to LS trees	Dense stand, may need stage felling, heel boom loader sorting assist.
G/F	G	<40-50% slopes	/	FC	Large R to small MS trees	Efficient at shearing and making bundles for skidding & mobile chipper.
G/FC	G	<40-50% slopes	/	FC	Stage felling	Dense understory of R to SS type for feller-buncher, hand fell larger trees, stage felling option.
G/FD	G	<25-50% slopes	/	FD	Stage felling	High density stand, feller-buncher, dangle-head option at stump, leave slash at site, stage felling option.
G/FDC	G	<25-50% slopes	/	FDC	Stage felling	High density stand, feller-bunch understory, dangle-head option at stump site, leave slash, hand fell large trees, stage felling option.

Support Information:

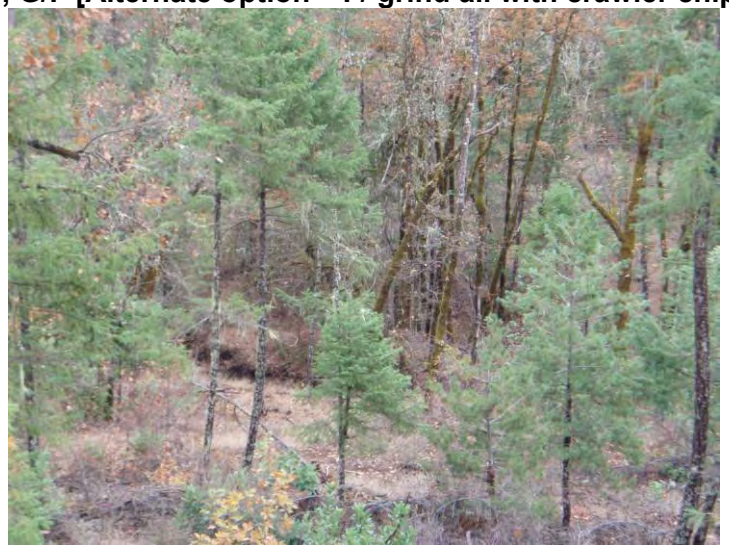
Table 2 exhibits the six basic forest stand types [HMC, R, YP, SS, MS, LS]. The following is a pictorial presentation to aid plan development clarification of what each forest type generally looks like in a range of areas along the alignment. Each photo has an associated proposed harvest scenario code or codes that could be efficiently used to operate this type and terrain. All terrain associated with each type are not presented; e.g., HMC on helicopter or yarder cable terrain.

3.2.1 HARDWOOD/MIXED CONIFER [HMC]

Distinctly a hardwood type [no estimated tonnage or board foot volume per acre]. Small percentage of conifer stocking by density. Approximately +/- 500 board foot gross volume per acre for conifers. Stand is usually lower elevation and south slope; or, shallow, rocky, xeric soils with a low capacity to stock and sustain a significant presence of conifers.

HMC, G/F [Alternate option – F/ grind all with crawler chipper]

HMC, G/F [Alternate option – F/ grind all with crawler chipper]



3.2.2 REGENERATION [R]

Average TPA – 512, QMD – 5" dbh. Plantation. No board foot volume per acre. Older matured plantations considered harvestable if market conditions exist for fuel or clean chips. May be isolated scattered overstory residual associated with wildlife. Plantations range in age from new or recent [0-12 years +/-], to matured plantation [12-20 years +/-] with tree growth and size intersect at entering a marketable harvest size in the YP forest type stage.

R, G/FD [Alternate option – F/ grind all with crawler chipper]

R, G/FD [Alt option – F, grind all with crawler chipper]

3.2.3 YOUNG POLE [YP]

Average TPA – 471, QMD – 9" dbh. Originally a plantation. Stand is generating merchantable logs and chips. Approximate board foot stocking per acre 1MBF of high-taper low volume trees. A few areas of 3-5MBF per acre per stand at high-end micro sites. Fast growing dense stands causing mortality of understory competition.

YP, G/FD [Alternate option – grind slash with crawler chipper]

YP, G/FD [Alternate option – grind slash with crawler chipper]

3.2.4 SMALL SAW AND PEELER LOG [SS]

Average TPA – 372, QMD – 16" dbh. Maturing young growth stand of fast growing timber. Stand primarily generates small saw and peeler log size trees, with secondary production of clean and fuel chips. Approximate 12MBF per acre board foot stocking. Tall and dense stands with higher-end production of overstory competition, and understory mortality. Tight stands with much less understory stocking.

SS, G/FC [Alternate option – grind slash with crawler chipper]

SS, G/FC [Alternate option – grind slash with crawler chipper]

3.2.5 MEDIUM SAW AND PEELER LOG [MS]

Average TPA – 268, QMD – 26" dbh. Growing matured young growth stand. Growth beginning to culminate. Stand primarily generates medium saw and peeler log size trees, and minimum production of clean or fuel chips. Approximate 27MBF per acre board foot stocking. Tall and dense stands with higher-end production of overstory competition, and understory mortality. Mortality now on forest floor and lesser quantities still vertical. Unlogged stands are tight with small amounts of understory stocking, hardwood at fringes, etc.

MS, G/CS

MS, G/CS

3.2.6 LARGE SAW AND PEELER LOG [LS]

Average TPA – 193, QMD – 39" dbh. Matured to over-mature. Some stands very defective trees, some not. Stand primarily generates MS to LS saw and peeler log size trees. Cull logs good for LWD recruitment to riparian areas and other areas lacking of such material. Approximate 89MBF per acre board foot stocking. Tall trees to 130 and 180 feet not uncommon. Unlogged stands exist, and are very dense in tree count stocking and crown canopy. These are usually stocked with more large MS size trees and scattered large LS trees, little understory vegetation. Previously logged stands with spaced trees and natural regeneration filling in the understory.

G\C

G/C

Attachment A
Regulatory Compliance & Definitions

Assessment Development Procedure

Development Protocol – Regulatory and BMP Compliance

The plan was developed via utilization of applicable BMP compliance protocol outlined in PCGP document "Erosion Control and Revegetation Plan (ECRP), Pacific Connector Gas Pipeline, LP, September 2017." Specifically:

1) ECRP "Table of Contents" Sections
   1.0 Introduction
      1.1 Project Description
   2.0 Existing Site Conditions
   3.0 Proposed Construction Activities
      3.1 Project Routing and Design
      3.2 Construction Schedule
      3.3 Pipeline Construction Sequence
         3.3.1 Preconstruction Survey
         3.3.2 Forest / Timber Clearing

Development Protocol – "Forest / Timber Clearing" Operation Scenarios

The plan was developed via application of proposed "forest / timber clearing" operation Scenarios designed relative to:

1) Project Schedules -
   a) ECRP "Table 3.3-1 Spread Locations" within the "3.2 Construction Schedule."
   b) "Draft Biological Assessment, Section 2.1.2.3 Construction Methods and Potential Impacts and Table 3.4-15 Summary of Seasonal Timing Restrictions for Migratory Birds, Endangered Species and Raptors Based on Pipeline Activity

2) "Forest / Timber Clearing" Operation Scenarios –
   Scenarios are developed via application of professional forest harvest engineering methodology to identify and assess the site by site specific best-case techniques to achieve:

   a) Operations designed in response to achieve timely systematic BMP compliance and completion of ECRP "3.3.2 Forest / Timber Clearing."

      ECRP "3.3.2" - "All timber cleared from the right-of-way will be cut and cleared in accordance with landowner and land management agency requirements, where practical. If, based on site-specific conditions, the landowner or land management agency-recommended timber harvesting method is not feasible, an alternate timber harvesting method will be utilized with approval from the landowner or land managing agency."

Response: Clearing development regardless of ownership, assumes this process to include removal of merchantable and non-merchantable "trees" and "timber" as a function of site-specific conditions and in compliance of sequential construction operations requirements.

*****

ECRP "3.3.2" – "Merchantable timber will be cut and removed from the construction right-of-way and TEWAs to ensure that these areas are cleared prior to construction.

Response: Scenarios are considered best-case fit BMPs for clearing merchantable and non-merchantable "trees" and "timber." Scenario utilization to clear and harvest is expected to result in production of high quality forest product(s).

*****

ECRP "3.3.2" - "PCGP expects that the use of all logging methods may be necessary during the project to efficiently remove timber from the right-of-way depending on the specific location. Ground-based skidding and cable (where feasible) logging methods will likely be the standard method; however in some isolated rugged topographic areas with poor access, helicopter logging may be utilized. The specific logging methods will not be determined until a contractor has been selected through the bidding process for each spread."

ECRP "4.1.1 Construction Ingress and Egress," "PCGP has identified ingress/egress points to the construction right-of-way using existing public and private roads. These ingress/egress points are shown on the Environmental Alignment Sheets […]. Traffic will move along the construction right-of-way within the construction right-of-way limit."

ECRP "11.0 Steep and Rugged Terrain," top of pg.47, "The orientation of the ridges requires the pipeline, in numerous areas, to descend and ascent steep ridge slopes to cross stream drainages […]"

Response: Scenario design takes into consideration the projects primary intent of constructing a pipeline that crosses many hundreds of private and government parcels and acreages in mountainous forested terrains. Clearing Scenarios will generally parallel ECRP "standard (logging) methods." The Pipeline Project is not designed as a traditionally engineered forest products harvesting plan with respect to ECRP excerpts "4.1.1" and "11.0," and will require a subset of non-traditional or alternate forest product harvesting techniques to satisfy clearing and BMP compliance.

*****

b) Forest clearing is the initial construction operation and precedes other construction phases as defined in ECRP "3.3 Pipeline Construction Sequence." PCGP construction operations are designed as a "sequence or in assembly-line fashion along the right-of-way with one crew following the next from clearing until final cleanup."
c) Proposed "forest / timber clearing" Scenarios guided by "EI" and contractor compliance is anticipated to successfully initiate, maintain, and achieve desired BMP completion outcomes in advance of proposed sequential construction operations.

Plan Support Information

"Forest / Timber Clearing" Interrelated Terminology

Plan Development Protocol ECRP sections mention three operative interrelated forestry terms. It is important to clarify these terms in context to proposing operational Scenarios in regards to:

1) professional forestry interpretation and usage of terminology utilized in clarifying operations standards.
2) formulating a quantifiable and validatable approach to satisfy the "Mission" intent.
3) enhanced understanding of plan development for non-forestry project proponents.

Interrelated Terms –

"**forest**" - It is necessary to recognize a basic "forest" term concept in context to what type of landscape vegetation exist interior to project right-of-way alignment and TEWAs. This is strategic to plan development regarding what and how designated "forest" vegetation is proposed for ECRP "3.3.2 Forest / Timber Clearing" Scenario operations. BMP compliance will require knowledge of what shall, and shall not be cleared during this initial construction phase.

To establish an estimate of "forest" contents, vegetation type data was quantified for PCGP in November/December 2007 [ACRT] for each parcel intersected by the alignment. Alignment shifts have occurred since December 2007. A retrospect overview of October 2007 to October 2008 Master Line parcel owners and alignment ortho photography comparing "forest" vegetation types indicate variations. Alignment modifications are compensated for in this plan. [Referenced 2007 PCGP delivered documents not attached. Available upon request: Excel files – "County Info Summary," and APN Owner Master Nov06"].

"**tree**" – Generally, "trees" include all woody plants that have genetic capacity to achieve heights greater than twenty feet with one to a few main stems. "Trees" are the primary vegetation make-up of "forest" areas proposed for clearing, and from which "timber" is derived and determined as either merchantable, or not.

"**timber**" – "tree[s] suitable for conversion into industrial forest products." [wordnet.princeton.edu/perl/webwn]. The "timber" definition impacts plan development regarding two *key* "forest / timber clearing" Scenario elements:

1) The plan was designed to determine on a site by site landscape and forest vegetation basis, the designated merchantable timber [trees] suitable for harvest and conversion into industrial forest products [logs, chips, etc.] to be sold. This will include clearing a portion of non-merchantable timber [trees] not suitable for conversion, and will remain at site.

2) Same process as (1); however, pertains to which designated non-merchantable and merchantable trees are not suitable or determined for commercial harvest and shall remain onsite for proposed ECRP environmental mitigation.

"Forest / Timber Clearing" Assumptions

ECRP "3.3.2 Forest / Timber Clearing" states:

> "All timber cleared from the right-of-way will be cut and cleared in accordance with landowner and land management agency requirements, where practical. If, based on site-specific conditions, the landowner or land management agency-approved timber harvesting method is not feasible, an alternate timber harvesting method will be utilized with approval from the landowner or land managing agency."
>
> Response: Clearing scenario development regardless of ownership, assumes this process to include removal of merchantable and non-merchantable "trees" and "timber" as a function of site-specific conditions and in consideration of sequential construction operations.
>
> *****
>
> "Merchantable timber will be cut and removed from the construction right-of-way and TEWAs to ensure that these areas are cleared prior to construction.

Response: Cleared merchantable and non-merchantable "trees" and "timber" is proposed for removal by proposed Scenarios that are designed for maximizing utilization of potential marketable forest products. Basically, two product types: logs and chips.

Attachment B
TIMBER CLEARING OPERATION DRAWINGS
(To be provided during development of the Timber Harvest Plans)

I. Maps

The "PCGP Environmental Alignment sheets, Spreads 1 through 5" are utilized [11"x17" and 24"x36", 226 page set provided in Attachment AA]. These were balanced against the most current PCGP pdfs for updated alignment and transportation corrections. By landowner parcel and each map, the following "Forest/ Timber Clearing" Scenario Map Legend Items were scribed to geographically indicate a generalized pictorial map format of proposed clearing operation scenarios. Certain Items are discussed to enhance Item clarification.

II. Timber Clearing Operation Legend Items and Notes

Code Harvest Scenario Code List.

L Potential temporary landing area [all scenarios].

Mild slope areas [0 to 25-30%+/-]: Landing position is selected to allow for uncongested clearing operation. Continuous landings are recommended within and paralleling the alignment. Using a continuous landing allows for uncongested and accelerated clearing operations whereby trees / logs are yarded or skidded short distances to mild terrain along a road and stacked accordingly for processing equipment and haul trucks to arrive. This leaves most slash at the felling site [erosion control BMP], or can be processed at the continuous landing [option]. Skid trails are kept to a minimum, short length, and mitigates soil impacts. Continuous landings negate existing landings since the areas are relatively flat and will be regenerated. For the same slope type, "standard method" traditional type landings are a sized specific area, and would be congested with a significant variety and quantity of trees and logs in a limiting space, pending flow of forest products trucked off-site. This results in a myriad of repetitive continual short to long skid patterns to bring trees, logs, and slash to a central location for processing. The alignment is well stocked with trees of assorted species and sizes in a regulated, compressed, elongated harvest area that is atypical to traditional forest harvests. As such, operations are spread out linearly, versus a specific set of conducive ingress / egress roads designed specifically for forestry operations.

Steeper than mild slope areas [>25-30%+/-]: These would be more conducive to "standard method" traditional landings within a specified area of confinement due to steepness of slope, watercourses, etc.

HP PCGP designated "Helicopter Usage" [service, etc.]. Designated by PCGP for specified TEWA location.

H,HL Potential new temporary helicopter landing for clearing operations only. Primarily selected to account for ECRP "3.3.2 … areas of rough terrain."

HS Potential new temporary helicopter service landing for clearing operations only. Primarily selected to account for ECRP "3.3.2 … areas of rough terrain."

<,>,<> Tree or Log Yarding Direction. The legend symbology will be indicated on maps when yarding or skidding scenario logistics are impaired by obstacles such as unfavorable slope [e.g. slope too steep for adverse ground-based skidding (25-30%+/-)], blind lead [cable yarder skid lines not visible in hazardous area such as cliff, erratic terrain, etc.], watercourse [stream, spring, ditch], public infrastructure, utilities, fence, wildlife, archaeological, property line, etc. Generally, skid direction is given +/- towards a landing [continuous or otherwise].

Where no directional skid symbology is shown, it is estimated there is sufficient volume of material that can be skidded favorably in either direction [i.e. slopes / gravity in favor of terrain to landing; or unfavorably (function of machine efficiency to skid logs upslope)]. Basically, terrain is favorable for any direction of skid.

Const2 ECRP "3.3.3 Clearing and Grading" "non-forested lands." Areas with small amounts of vegetation in concentration, or scattered pockets. Recent conifer plantations several feet in height +/- or less, brushfields, etc.. Not conducive to having traditional forest harvesting type operations attempt to clear.

- E - Existing vehicle road or main skid trail that may be needed as additional TRA [temporary road access] for isolated alignment areas between watercourses, or long stretches of alignment basically too steep for adverse skidding and a secondary TRA is available.

~~~ Proposed temporary "forest / timber clearing" road. Quantity and lengths minimized. Strictly proposed to connect nearby existing road with alignment for harvest scenario logistics [e.g. tree/log flow direction – downhill vs. uphill].

— Alignment Road Construction - ECRP "4.1.1 Construction Ingress and Egress," … "Traffic will move along the construction right-of-way within the construction right-of-way limit." PCGP alignment and transportation maps indicate the current primary transportation system. The majority of (TRA) roads exist outside the alignment right-of-way. There is an assortment of TRAs that exist within. Identified TRA roads do not satisfy the totality of roads required to facilitate clearing scenarios. The additional road system required to satisfy proposed scenarios is the +/- alignment location. Specifically, where pipeline alignment [red line] exists on terrain and slopes favorable to satisfy favorable adverse or downhill usage of forest product haul vehicles [log truck, chip van, etc.] to and from landings and public road access, then it is assumed permissible to develop the necessary temporary road system to facilitate "forest / timber clearing" operations. Sequential construction operations will utilize the "forest / timber clearing" road system.

O Temporary installed small stream crossing for log skidding and haul road at alignment areas in between watercourses and no existing TRA for access and landing. Favorable slopes [15%+/-] within the alignment are equal in usage as ingress / egress access for tree / log skidding, hauling, and other vehicle use.

III. Data

The following Table B-1 s a summary of estimated "Forest / Timber Clearing" harvest scenario acres per landowner group:

Table B-1
Harvest Scenario per Landowner (acres)

Owner:	Scenario									Total:
	H/C	Ya/C	Yo/C	Yo/FC	G/C	G/CS	G/FC	G/F	Const2	
USFS Winema	0	0	0	0	3.8	0	74.5	2.6	1.0	**81.8**
USFS Umpqua	0	0	4.2	0	122.8	0	36.0	0	13.4	**176.4**
USFS Rogue	0	0	0	0	69.8	0	90.7	14.5	27.3	**202.3**
BLM-USA-CBWRGL	22	5.8	1.2	0	49.4	0	65.9	22.5	2	**168.8**
BLM-USA	12.9	0	0.9	0	23.1	0	80.9	0.2	0.2	**118.2**
BLM Public Domain	0.6	0	0	0	1.4	0	1.5	0	0	**3.5**
BLM O & C	25.2	3.2	1.7	0	58.3	0	79.4	1.5	0	**169.3**
All Others	22.1	47.5	7.2	1.7	291.2	1.8	426.5	48.8	199.7	**1046.5**
Total:	**82.8**	**56.5**	**15.2**	**1.7**	**619.8**	**1.8**	**855.4**	**90.1**	**243.6**	**1966.9**

Note: The differences in acreage between Table 2 and Table B-1 in Attachment B are explained by 1) the estimated acres provided in Table 2 for forest stand and volumes are based on PCGP's original route filed in the September 4, 2007 FERC Application and only includes forested acres. Miscellaneous land slivers of roads, landings, open areas such as rock pits, grasslands, shrublands or watercourses, etc. that are intermixed with stand types and do not have timber volumes were not included in the estimate acreage. 2) The acres of harvest scenarios provided in Table B-1 of Attachment B are based on the final May 2009 FERC FEIS route which incorporated various route modifications that affected both federal (BLM and FS) and private lands. The final FERC recommended route modifications were included to avoid or minimize impacts to Marbled Murrelet and Northern Spotted Owl as well as landowners. Examples of these route modifications included the Camas Valley East Route Variation, Oregon Women's Land Trust Route Variation, the Umpqua National Forest Route Variation (Peavine reroute) Clover Creek Road modifications, including other minor route or workspace adjustments. The Harvest Scenario acres provided in Table B-1 also include areas and land types affected by the project such as miscellaneous land roads, landings rock pits and some miscellaneous land type slivers such as grasslands and shrub lands intermixed with forested stands.

Attachment C

Summary of Seasonal Timing Restrictions for Migratory Birds, Endangered Species and Raptors Based on Pipeline Activities

Pipeline Activity	Seasonal Timing Restrictions for Timber Felling, Logging, Clearing and Construction Activities						
	All Migratory Birds	**Northern Spotted Owl**	**Marbled Murrelet**	**Great Grey Owl**	**Bald Eagle**	**Golden Eagle**	**Peregrine Falcon**
Felling and Brush Mowing *	NO WORK Apr 1 - Jul 15 in wooded habitats	NO WORK Mar 1 - Sept 30	NO WORK Apr 1 - Sep 15, 300-ft buffer from stand	NO WORK Mar 1 - Jul 31	NO WORK Jan 1 - Aug 31	NO WORK Jan 1 - Aug 31	NO WORK Jan 1 - Jul 31
Logging, Skidding and Processing	NO RESTRICTION If trees and brush* previously removed	NO WORK Mar 1 - Jul 15	DTR** Apr 1 - Aug 5, 1/4-mi buffer from stand; Apr 1 - Sep 15 w/ helicopters	NO WORK Mar 1 - Jul 31	NO WORK Jan 1 - Aug 31	NO WORK Jan 1 - Aug 31	NO WORK Jan 1 - Jul 31
Clearing, Grubbing, and Stump Removal	NO RESTRICTION If trees and brush* previously removed	NO WORK Mar 1 - Jul 15	DTR** Apr 1 - Aug 5, 1/4-mi buffer from stand	NO WORK Mar 1 - Jul 31	NO WORK Jan 1 - Aug 31	NO WORK Jan 1 - Aug 31	NO WORK Jan 1 - Jul 31
Driving Through Restricted Area on Right-of-Way	NO RESTRICTION If trees and brush* are not impacted or have been previously removed	NO RESTRICTION If trees previously removed	DTR** Apr 1 - Aug 5, 1/4-mi buffer from stand if trees have been previously removed	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION
Driving Through Restricted Area on Existing Access Road	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION
Pipeline Construction	NO RESTRICTION If trees and brush* previously removed	NO WORK Mar 1 - Jul 15	DTR** Apr 1 - Aug 5, 1/4-mi buffer from stand; Apr 1 - Sep 15 w/ helicopters	NO WORK Mar 1 - Jul 31	NO WORK Jan 1 - Aug 31	NO WORK Jan 1 - Aug 31	NO WORK Jan 1 - Jul 31
Maintenance on Existing Access Roads	NORESTRICTION If trees and brush* previously removed	NO WORK Mar 1 - Jul 15	DTR** Apr 1 - Aug 5, 1/4-mi buffer from stand	NO WORK Mar 1 - Jul 31	NO WORK Jan 1 - Aug 31	NO WORK Jan 1 - Aug 31	NO WORK Jan 1 - Jul 31
Access Road Improvement and New Road Construction	NO WORK Apr 1 - Jul 15 If cutting trees or brush*	NO WORK Mar 1 - Sep 30 If cutting trees NO WORK Mar 1 - Jul 15 If no tree removal	NO WORK Apr 1 - Sep 15, 300-ft buffer from stand if cutting trees; DTR** Apr 1 - Aug 5, 1/4-mi buffer from stand if no tree removal	NO WORK Mar 1 - Jul 31	NO WORK Jan 1 - Aug 31	NO WORK Jan 1 - Aug 31	NO WORK Jan 1 - Jul 31
Affected Spreads	ALL	ALL in defined locations	1 & 2 in defined locations	2 & 4 in defined locations	1 in defined location	5 in defined location	3 in defined location

*All forest regenerating areas (not including recent clear-cuts), deciduous tree groves, shrub/brush thickets, etc. are considered migratory bird habitat and will need to be removed outside the nesting window, just like merchantable timber. Crushed understory in felled timbered areas is not considered migratory bird habitat and does not have to be cut to meet MBTA requirements.

** DTR - Daily Timing Restrictions stipulate no work until two hours after sunrise and work must stop two hours before sunset.

Appendix V

Safety & Security Plan

Pacific Connector GAS PIPELINE

Pacific Connector Gas Pipeline, LP

Safety & Security Plan

Pacific Connector Gas Pipeline Project

January 2018

Table of Contents

List of Tables

1.0 INTRODUCTION

This Safety & Security Plan identifies measures to be taken by Pacific Connector Gas Pipeline, LP (PCGP) and its contractors (Contractor) to minimize hazards to persons working on and visiting the Pacific Connector Gas Pipeline Project (Pipeline or Pipeline Project) during construction as well as to the general public and to comply with all applicable safety requirements and regulations.

This plan is not an all inclusive plan covering all areas relating to pipeline construction activities. The following Plans of Development address specific concerns relating to specialized construction activities along the pipeline right-of-way. These other plans should be consulted for more specific detail relating to safety practices to be followed during and after construction.

- Blasting Plan
- Air/Noise and Fugitive Dust Control Plan
- Fire Prevention and Suppression Plan
- Contaminated Substances Discovery Plan
- Prescribed Burning Plan
- Transportation Management Plan
- Cathodic Protection Plan
- Emergency Response Plan
- Spill Prevention Containment and Countermeasures Plan

It also should be noted that PCGP and its contractors will follow the safety guidelines found in existing Federal Codes of Regulation as mandated by the Occupational Safety and Health Act (1997) and all other applicable laws, ordinances, rules, regulations and orders of any body having jurisdiction over safety and health of persons or property for construction activities and operations and maintenance activities. The intent of this plan is not to identify each safety stipulation or security scenario, but rather explain the procedure that PCGP will follow to address, notify and resolve safety or security issues during construction and operations of the PCGP.

The purpose of this plan is to describe safety standards and practices that will be implemented to minimize health and safety concerns related to the construction of the Pipeline Project.

2.0 RESPONSIBILITIES

2.1 PCGP

PCGP will comply and ensure compliance by its employees, suppliers, and visitors with all applicable occupational safety and health laws and regulations. PCGP will observe and monitor the Contractor's practices and procedures and will inform the Contractor of any observed, or otherwise informed, violations to the aforementioned regulations. If PCGP becomes aware of a violation of safety or security requirements that presents immediate danger to human life or property, PCGP will order an immediate stoppage of work until unsafe conditions or practices are corrected. PCGP will also notify the Agency Official or designated representative regarding the safety issue once work has been stopped. Where identified, PCGP will provide trained security personnel with communications capability with Federal, State, and local law enforcement and emergency services at all times. PCGP’s Inspection Staff will also be trained to identify and report security issues to the Federal, State, and local law enforcement agencies.

The construction right-of-way will be closed to the general public and monitored by PCGP on a regular basis during all construction activities. After the pipeline has been put in service, PCGP will conduct routine inspections of the permanent right-of-way (aerial fly over's, on the ground visits, etc.) to identify and correct any security or safety concerns.

Only authorized personnel will have access to the construction right-of-way and areas of active construction. PCGP will require all authorized personnel and visitors to be safety trained and to wear appropriate protective gear (i.e., hard hat, vests, boots, etc.) for the site conditions. All visitors, workers, or monitors to the site during construction shall be required to attend safety training. After receipt of training, all employees and visitors will be issued a safety hardhat decal. The safety decal shall be visible at all times and be good for one year. A record of employee and visitor training will be kept at the jobsite. During construction, site safety meetings will be held on a daily basis to provide additional training, discussion concerning safety, and any other issues or concerns that need to be addressed. Those not completing the safety training will not be allowed on the right-of-way.

2.2 Notification

Prior to the installation of the Pipeline Project facilities, PCGP will provide the detailed construction schedule to Federal and State Agencies at least 90 days in advance identifying all Federal lands, roads, trails, or waterways that may require temporary closure or restriction orders to protect public health and safety. The schedule closure requests shall specify the period of time during which the closure restriction would apply and the personnel who are exempt from the closure or restriction. PCGP will follow the rules of conduct established by the Agency for the protection of Federal lands and resources, and for the protection, comfort and well being of the public.

During the operation phase of the Pipeline, PCGP will make every effort to notify the Federal and State Agencies 90 days prior to performing construction activities on Federal lands, trails, or waterways that may require a temporary shutdown. Where overriding code requirements commit PCGP to respond in a shorter time frame or handle an emergency condition on the construction right-of-way, PCGP will notify the Federal Agency as soon as the problem and remedy has been identified.

Federal road closure notifications guidelines and requirements are discussed in the Transportation Management Plan (Appendix Y to the POD), Section 3.0.

2.3 Contractor

The Contractor has the prime responsibility for the safe construction of the pipeline and associated facilities. The Contractor has the responsibility to provide PCGP with its comprehensive safety plan, which shall, at a minimum, comply with all regulatory and industry safety practices and Agency requirements. The Contractor is responsible for providing safety orientation to all Contractor personnel. Although the construction right-of-way will be closed to the general public, the Contractor will ensure that appropriate precautions are utilized to ensure public safety. The Contractor's comprehensive safety plan will address the precautionary measures that will be utilized at appropriate locations, such as installing signs and/or safety fence near areas of open trench at public road crossings or other areas where public use is likely. The Contractor's plan will also contain a communications section with local emergency response contact information and notification protocol in the event of an emergency. Section

3.3 of the Transportation Management Plan (Appendix Y to the POD) also describes the safety and traffic flow management measures that would be implemented to protect public safety.

2.4 Construction Inspectors

PCGP's Construction Inspectors will be responsible for ensuring Contractor compliance with its safety plan or any other regulatory requirements regarding safety. It is the Construction Inspectors' responsibility to be an attentive, willing and proactive monitor, and observer of the Contractor's work practices and to record, report and if necessary halt all seemingly unsafe work practices. The Construction Inspectors will also facilitate safety training for all visitors, agency personnel, and new construction personnel prior to entering the construction right-of-way during construction. During construction, the Construction Inspectors will guide all unauthorized personnel off of the construction right-of-way on public and private lands to protect public safety.

3.0 HEALTH AND SAFETY REQUIREMENTS

3.1 Safety Training

Prior to initiating construction activities, PCGP will arrange a meeting between the Contractor and PCGP's Construction management personnel and Inspection Staff to discuss safety aspects of the work, safety hazards particular to the work site, and to outline safety responsibility and authority of PCGP and Contractor personnel. During construction, it will be the responsibility of the Contractor to train workers and keep them up-to-date regarding safety matters. The Contractor will provide pre-job orientation as well as daily tail-gate meetings to discuss safety topics relevant to the work being completed that day as well as, any safety issues that were previously encountered, how they were dealt with, and how they will be addressed if similar incidents should occur in the future. The Contractor will ensure all workers are competent to perform any job requested. The Contractor will also make all of its workers available for any required PCGP orientation or safety training.

3.2 General Requirements

The Contractor will ensure that the following measures are implemented:

- Adhere to procedures presented in the Contractor's approved safety plan and to applicable federal, state, and local statutory requirements.
- Report all accidents and injuries to the Construction Inspector.
- Remedy any unsafe conditions or situations as requested by the Construction Inspector.
- Work safely so other employees are not placed at risk.
- Use specified and required personal safety equipment in performance of all duties.
- Maintain all construction sites in a safe, secure, and sanitary condition.
- Cease normal pipeline construction activities, except hydrostatic testing activities, by sunset unless approved by PCGP and all necessary precautions are made including supplemental lighting as deemed necessary.
- Provide fugitive dust control in accordance with federal, state, or local requirements.
- Ensure that equipment is properly maintained to reduce emissions and comply with federal, state, and local air quality emission standards and regulations.
- Prohibit firearms, hunting, alcohol, and drugs on the construction right-of-way, temporary extra work areas, access roads, and off-right-of-way work areas and facilities.

- Ensure, when radiographic equipment is used, that the area is clear and that all personnel are at a safe distance from the radiation source. Radiation warning signs will be placed at the edges of the safe area.
- Heed all OSHA, federal, state, and local trenching regulations, and implement measures as necessary to ensure the safety of workers working in the trench by using trench boxes, sheet piling, proper sloping, etc.
- Comply with all federal, state, and local fire regulations pertaining to the prevention of uncontrolled fires (see Fire Prevention and Suppression Plan (Appendix K to the POD).
- Ensure that all hazardous and potentially hazardous materials are transported, stored, and handled in accordance with all applicable legislation (see Spill Prevention, Containment, and Countermeasures Plan (Appendix X to the POD).
- Implement safety precautions during hydrostatic testing as specified in this plan.
- Comply with requirements in the Transportation Management Plan where personnel or equipment are working at or near road crossings.
- Allow emergency access
- Meet OSHA Competent person guidelines for all Pipeline Project related excavations.

3.3 Working Hours

With the exception of hydrostatic testing and horizontal directional drilling, working hours will generally be from sunrise to sunset Monday through Saturday unless approved otherwise by PCGP.

3.4 Hydrostatic Safety Measures

The Contractor will provide for the safety of all pipeline construction personnel and the general public during hydrostatic testing. The Contractor will:

- Place warning signs in or near populated areas.
- Restrict access to the area involving the hydrostatic test (i.e., test shelter, manifolds, pressure pumps, instruments, etc.) to only those personnel engaged in the testing operations.
- Prohibit major pipeline work not directly associated with the test operations around the pipeline sections being tested. While the pipeline facilities are being pressurized and during the test, all personnel not required for direct operations (checking for leaks, tightening gaskets, checking valve status, operating pumps, recording data, etc.) will be restricted from the area where the pipeline is being tested.
- Provide and maintain a reliable transportation and communication system during the test operations whereby all personnel directly involved in the test will be able to communicate test status or problems that develop during the test.
- Check all hoses, fittings, connectors, and valves for proper pressure rating.
- Restrain and secure fill and discharge lines/hoses.

3.5 Emergency Response

PCGP and the Contractor will utilize the Coos County, Douglas County, Jackson County, and Klamath County Emergency Contact Information. This information is attached to this plan.

Satellite phones will be issued to the PCGP Chief Inspector's along the construction right-of-way. These phones will be used when cell phones do not have service in remote areas of the

Pipeline Project. PCGP's operations personnel are required to carry satellite phones in their trucks at all times.

3.6 Incident Reporting

All injuries, fires, accidents and security incidents will be recorded and reported to PCGP and the required regulatory agencies within the required timeframes. The BLM has primary authority to enforce the Right-of-Way Grant and Temporary Use Permit. County and State have jurisdiction over all lands crossed by the Pipeline Project by statute and/or ordinance. The BLM and USFS also have an MOU which provides for law enforcement reciprocity on each respective agency's land. The federal land managing agencies will take the necessary and appropriate actions to formally close the federal lands to unauthorized users for public health and safety reasons.

If an incident occurs on National Forest System (NFS) lands, the appropriate Federal agent or designee will be notified as soon as reasonably possible, and certainly within 24 hours of the occurrence. Table 3-1 provides contact information for the Forest Service District Coordinators.

Table 3-1
Forest Service District Coordinator Contact Information

National Forest	MPs	District Coordinator
Forest Service – Umpqua	99.31 to 99.83 100.39 to 100.68 101.20 to 101.89 102.32 to 102.85 104.10 to 113.20	David Krantz 541-618-2082
Forest Service – Rogue River-Siskiyou	153.81 to 154.93 155.45 to 168.01	Jeff VonKienast 541-560-3406
Forest Service – Fremont-Winema	168.01 to 169.37 170.04 to 171.39 171.59 to 172.71 173.11 to 174.81 174.95 to 175.37	Catherine Callaghan 541-947-6326

If an incident occurs on BLM-managed land, the appropriate District Coordinator will be notified within 24 hours of the occurrence. Table 3-2 provides contact information for the BLM District Coordinators.

Table 3-2
BLM District Coordinator Contact Information

BLM District	MPs [1]	District Coordinator
Coos Bay District	0.00 to 45.70	Aimee Hoefs 541-756-0100
Roseburg District	45.70 to 109.10	Dorothy Dickey 541-440-4930
Medford District	109.10 to 166.41	Miriam Liberatore 541-618-2200
Lakeview District	166.4 to 228.81	Terry Austin 541-883-6916

[1] See Environmental Alignment Sheets for BLM-managed lands within the mileposts for each BLM District.

If an incident occurs on lands under Bureau of Reclamation's jurisdiction, the appropriate Klamath Basin Area Office (KBAO) Coordinator will be notified within 24 hours of the occurrence. Table 3-3 provides contact information for the KBAO Coordinator.

Table 3-3
KBAO Coordinator Contact Information

Bureau of Reclamation	MPs [1]	Coordinator
KBAO – Klamath Project	200.51 to 214.18	Lila Black 541-883-6935

[1] See Environmental Alignment Sheets for Reclamation-managed lands within the mileposts for the Klamath Project.

Table 3-4 provides contact information for the local county sheriff's offices and state police should an incident occur on federal lands that will require coordination and/or notification to local or state law enforcement.

Table 3-4
Law Enforcement Contacts for Federal Lands

Department	Office Location	Phone Number
Coos County Sheriff	Coquille, Oregon	541-396-7800
Douglas County Sheriff	Roseburg, Oregon	541-440-4463
Jackson County Sheriff	Medford, Oregon	541-776-7206
Klamath County Sheriff	Klamath, Oregon	541-883-5130
Oregon State Police	Salem, Oregon – main office Central Point, Southern Command - Dispatch	503-378-3720 541-776-6111
Emergencies - 911		

3.7 Mechanical Damage to Underground Facilities

The Contractor will give at least three day advance notification of all work that will be performed within existing pipeline easements, right-of-ways, or property so that site preparation and supervision can be provided. Before commencing any excavation, the Contractor will receive authorization to proceed from PCGP's Construction Inspector.

The Contractor will utilize the “One Call” system to locate and stake the centerline and limits of all underground facilities in the area of proposed excavation.

3.8 Damaged Pipe

Any dents, gouges, scratches or other similar defects will be brought to the attention of PCGP’s Inspectors as soon as they are detected. Where these observations are not within tolerances specified in the construction contract, they will be repaired according to PCGP’s Policies and Procedures provided in the construction contracts.

911

Emergency Contact Information
Coos, Douglas, Jackson, and Klamath Counties

Due to the unique location of the Pipeline Project, cell phones and satellite phones may not connect to the nearest 911 call center. If a 911 call center is not available, a direct 24-hour emergency contact number should be used as indicated below by county in the event of an emergency.

PRIMARY PUBLIC SAFETY ANSWERING POINTS FOR 911 DISPATCH

Organization	24-Hour Contact Number	City
Coos County		
Coos County Sheriff	541-396-2106	Coquille
Douglas County		
Douglas County Emergency Communications District	541-440-4471	Roseburg
Jackson County		
Medford Police Department	541-770-4784	Medford
Southern Oregon Regional Communications	541-776-7206	Medford
Klamath County		
Klamath County 9-1-1 Communications	541-884-2152	Klamath Falls

SECONDARY PUBLIC SAFETY ANSWERING POINTS FOR 911 DISPATCH

Organization	Phone	City
Coos County		
Bay Cities Ambulance	541-269-1155	Coos Bay
Coos Bay Police Department	541-269-8911	Coos Bay
Myrtle Point Police Department	541-396-2106	Myrtle Point
North Bend Police Department	541-756-3161	North Bend
Oregon State Police – Central Point Area Command	541-776-6236	Central Point
Oregon State Police – Coos Bay Area Command	541-888-2677	North Bend
Douglas, Jackson, and Klamath Counties		
Oregon State Police Southern Region Communications Center	541-776-6114	Central Point
Oregon State Police – Klamath Falls Area Command	541-883-5713	Klamath Falls
Oregon State Police – Roseburg Area Command	541-440-3334	Roseburg

Emergency Medical Services
Coos, Douglas, Jackson, and Klamath Counties

Facility	City/Department	Phone
Care Flight Services		
Mercy Flights	Medford	800-903-9000
Emergency Airlift	North Bend	541-756-6802
Coos County		
Bay Cities Ambulance	Coos Bay	541-269-1155
Bay Area Hospital 1775 Thompson Road Coos Bay, OR 97420	Level 3 trauma center	541-269-8111
Coquille Valley Hospital 940 East 5th Street Coquille, OR 97423	Level 4 trauma center	541-396-1059
Southern Coos Hospital 900 11th Street Bandon, OR 97411	No trauma rating	541-347-2426
Douglas County		
Medic 4 Ambulance	Roseburg	541-673-3225
Mercy Medical Center 2700 Stewart Parkway Roseburg, OR 97470	Level 3 trauma center	541-673-0611
Jackson County		
Asante Ashland Community Hospital 28 Maple Street Ashland, OR 97520	Level 4 trauma center	541-201-4100
Asante Rogue Regional Medical Center 2825 East Barnett Road Medford, OR 97504	Level 3 trauma center	541-789-7100
Providence Medford Medical Center 1111 Crater Lake Avenue Medford, OR 97504	Level 3 trauma center	541-732-6400
Klamath County		
Sky Lakes Medical Center 2865 Daggett Klamath Falls, OR 97601	Level 3 trauma center	541-882-6311

WHEN YOU CONTACT THE DISPATCH CENTER THE DISPATCHER WILL INITIALLY REQUEST THE FOLLOWING INFORMATION:

For medical:

- Exact location
- Your call-back number
- Chief complaint
- Gender and approximate age of subject/victim
- Is the subject /victim conscious and breathing

For fire:

- Exact location
- Your call-back number
- Any persons injured
- What: brush, structure, tree, etc.

For law:

- Exact location
- Your call-back number
- Chief complaint

    - Dispatch will then contact the appropriate emergency personnel. It is important that you stay on the line with the dispatcher unless: the situation calls for the need to leave the area, the subject/victim needs your immediate assistance and you are unable to take the phone with you, or the dispatcher advises that it is ok to hang up.

    - At this point the dispatcher may have several more questions for you depending on the situation.

    - It is helpful to have someone available to meet and escort emergency personnel from a known location (i.e. a mapped county road) to the site of the emergency.

Attached is a form to be used in the event of an emergency. The form should be filled out and placed with any phone line that may be used to call for emergencies.

911

Coos County
Douglas County
Jackson County
Klamath County

THIS FORM SHOULD BE GIVEN TO YOUR SAFETY PERSONNEL, FILLED OUT AND PLACED IN AN ACCESSIBLE LOCATION IN THE EVENT OF AN EMERGENCY.

MAIN LOCATION_____

DIRECTIONS TO LOCATION_____

_____

_____

_____

CALL BACK NUMBER(S)_____

SUPERVISOR CONTACT_____

LANDING ZONE COORDINATES_____

_____

THE LANDING ZONE (LZ) SHOULD BE THE CLOSEST LARGE FLAT AREA TO YOUR MAIN LOCATION. AN OFFICER SHOULD BE ABLE TO GET THESE COORDINATES FOR YOU.

Appendix W

Sanitation and Waste Management Plan

Pacific Connector GAS PIPELINE

Pacific Connector Gas Pipeline, LP

Sanitation and Waste Management Plan

Pacific Connector Gas Pipeline Project

January 2018

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List of Tables

1.0 INTRODUCTION

The purpose of the Plan is to outline the procedures that will be implemented by Pacific Connector Gas Pipeline, LP (PCGP) and its contractors (Contractor) to manage sanitation and waste materials during construction and operations of the Pacific Connector Gas Pipeline Project (Pipeline or Pipeline Project). The Sanitation and Waste Management Plan is the principal source of direction for the management of solid and construction wastes that will be generated during construction. Definitions of these wastes, according to the Oregon Administrative Rules (OAR 340-093-0030), are provided in Section 2.0. The PCGP Project Plan of Development includes additional plans that describe waste management procedures; these plans include:
1) the Contaminated Substances Discovery Plan (Appendix E to the POD), which describes the procedures that would be implemented in the unlikely event that contaminated material is encountered during construction;
2) the Overburden and Excess Material Disposal Plan, which describes the measures and locations on federal lands that may be used for the permanent and temporary storage of excess rock, timber, and spoil generated during timber removal and pipeline construction; and
3) the Prescribed Burning Plan (Appendix R to the POD), which describes the procedures and Best Management Practices (BMPs) that would be utilized where burning is used to dispose of excess forest slash generated during the construction right-of-way clearing operations; and 4) the Spill Prevention, Containment, and Countermeasures (SPCC) Plan, which includes provisions for the disposal of contaminated articles and soils recovered during a spill event. The Sanitation and Waste Management Plan will be implemented consistently with these other Plans.

2.0 DEFINITIONS

Under OAR 340-093-0030

> "Construction and Demolition Waste" means solid waste resulting from the construction, repair, or demolition of buildings, roads and other structures, and debris from the clearing of land, but does not include clean fill when separated from other construction and demolition wastes and used as fill materials or otherwise land disposed. Such waste typically consists of materials including concrete, bricks, bituminous concrete, asphalt paving, untreated or chemically treated wood, glass, masonry, roofing, siding, plaster; and soils, rock, stumps, boulders, brush and other similar material. This term does not include industrial solid waste and municipal solid waste generated in residential or commercial activities associated with construction and demolition activities.
>
> "Solid Waste" means all useless or discarded putrescible and non-putrescible materials, including but not limited to garbage, rubbish, refuse, ashes, paper and cardboard, sewage sludge, septic tank and cesspool pumpings or other sludge, useless or discarded commercial, industrial, demolition and construction materials, discarded or abandoned vehicles or parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semi-solid materials, dead animals and infectious waste. The term does not include:
>
> (a) Hazardous waste as defined in ORS 466.005;
>
> (b) Materials used for fertilizer, soil conditioning, humus restoration, or for other productive purposes or which are salvageable for these purposes and are used on land

in agricultural operations and the growing or harvesting of crops and the raising of fowls or animals, provided the materials are used at or below agronomic application rates.

3.0 RESPONSIBILITIES

3.1 PCGP

PCGP will be responsible for:

- Ensuring that all company and Contractor management personnel understand and follow the sanitation and waste management requirements for the Pipeline Project.
- Ensuring that all wastes generated during the Pipeline Project are properly characterized/classified (hazardous, non-hazardous, sanitary, municipal, recyclable, universal and electronic waste).
- Providing the waste classification to the Contractors.
- Arranging for sampling, if waste classification is unknown, to determine classification according to EPA-approved analytical protocols.
- Approving all waste vendors/facilities prior to waste disposal.
- Ensuring that all waste is handled in a manner consistent with the health and safety standards set by federal, state, and local waste regulations, and the Pipeline Project's waste management requirements.
- Ensuring that all spills are handled in a manner consistent with the health and safety code standards set by federal, state and local waste regulations, and the Pipeline Project's waste management requirements (see SPCC Plan – Section VI, included as Appendix X to the POD).

3.2 Contractor(s)

The Contractor(s) shall be responsible for:

- Ensuring that all applicable Contractor personnel, including subcontractors, understand and follow the requirements set forth in PCGP's Sanitation and Waste Management Plan.
- Preparing a Pipeline Project-specific Waste Management Plan for PCGP's review and approval.
- Managing and disposing of all waste materials generated during the Pipeline Project according to applicable federal, state, and local regulations, and the Pipeline Project's waste management requirements. In addition, all disposal will be at approved waste disposal facilities.
- Ensuring that all personnel handling waste materials are trained according to the standards set forth by federal, state, and local regulations, and the Pipeline Project's waste management requirements.
- Packaging and labeling all wastes and hazardous materials for storage or shipment in accordance with the requirements set forth by federal, state, and local regulations.
- Keeping records of sanitation and waste management training and disposal manifests and providing copies of these records to PCGP upon request.
- Ensuring that all spills are handled in a manner consistent with the health and safety code standards set by federal, state and local waste regulations, and the Pipeline Project's waste management requirements (see SPCC Plan – Section VI, included as Appendix X to the POD).

4.0 POLICY

PCGP and their Contactor(s) will ensure personnel are properly trained in techniques to minimize the volume of waste generation during construction, operations, and maintenance activities. Materials that would otherwise become a waste will be reused and waste materials will be recycled whenever feasible.

5.0 SANITATION

During construction, the Contractors will comply with sanitation rules under Oregon Occupational Safety and Health Division - OAR 437, Division 3 (Subdivision D, §1926.51). These rules include providing adequate potable water and toilets along the construction right-of-way. PCGP's Contractor(s) will be responsible for contracting with local vendors to supply the adequate number of portable toilets along the construction right-of-way, to maintain and service the toilets, as well as to move the toilets as necessary along the construction right-of-way to ensure areas of active construction are adequately serviced. PCGP will approve the Contractor's(s') selection of vendors and ensure that sanitary wastes are properly disposed of according to federal, state, and local regulations. On federal lands the agency-authorized representative would approve the location of portable toilets. Portable toilets will not be located in Riparian Reserves or other sensitive areas.

6.0 TRASH, FOOD WASTES, AND OTHER CONSTRUCTION DEBRIS

During timber removal, construction, operations and maintenance activities, PCGP will ensure that all trash, food waste, and other items attractive to crows, jays, and other corvids will be contained and removed from the project area on a daily basis to minimize potential predation of murrelet nestlings. PCGP and their Contactor(s) will be responsible for training all project personnel to remove these wastes from the right-of-way and to save/collect these wastes for disposal at the construction yards. PCGP Inspector and Contractor vehicles, crew buses, and equipment shall carry litter bags at all times." PCGP's Environmental Inspectors (EIs) and Utility Inspectors will ensure that these daily "house-keeping" measures are being conducted. The Contractor will provide adequate waste bins/receptacles, including recyclable material receptacles, for the collection and storage of these wastes materials at construction yards. The Contractor will be responsible for properly emptying/disposing of wastes in these receptacles at the construction yards on a weekly or an alternate regular basis in a permitted landfill and contracting with a disposal service to complete these responsibilities. During final cleanup, all construction debris (e.g., mats, garbage, pipe skids, and rope padding, etc.) will be cleared from the construction right-of-way and disposed of in accordance with state and local regulations. PCGP has identified potential solid waste disposal companies, landfills and recycling facilities that may be utilized during construction (see Table 1) and will require the Contractor(s) to identify all disposal locations proposed for use prior to construction.

Table 1
Solid Waste Disposal Companies, Potential Landfills and Recycling Facilities Available for Solid Waste Disposal during Construction of the Pipeline Project

County	Facility	Location
Coos	Bandon Disposal & Recycling	3432 Cedar Street, North Bend
	Coos County Solid Waste/Beaver Hill Disposal Site	55722 Highway 101, Coos Bay
	Public Disposal & Recycling	1210 South Broadway, Coos Bay
	West Coast Recycling & Transfer	1210 South Broadway,Coos Bay
Douglas	Canyonville Transfer Station	600 Jordan Creek Road, Canyonville
	Douglas County Disposal and Recycling Center	I-5 Exit 121, McLain Ave., Roseburg
	Glide Transfer Station	13921 Glide Transfer Road, Glide

County	Facility	Location
	Myrtle Creek Transfer Station	300 Myrtle Creek Transfer Road, Myrtle Creek
	Roseburg Disposal	1308 NW Park Street, Roseburg
	Roseburg Landfill and Transfer Station	165 McLain West Ave., Roseburg
	Reedsport Transfer Station	300 Reedsport Landfill Rd., Reedsport
Jackson	Ashland Recycling Center	220 Water Street, Ashland
	North Pacific Recycling & Textiles	407 Boardman Street, Medford
	Recology Ashland	170 Oak Street, Ashland
	Rogue Disposal & Recycling, Transfer Station	8001 Table Rock Road, White City
	Southern Oregon Sanitation	42 Ball Road, Eagle Point
	Valley View Transfer Station	3000 North Valley View Rd., Ashland
Klamath	Klamath County Solid Waste − Landfill	801 Old Fort Road, Klamath Falls

7.0 TREATMENT OF FOREST SLASH

Treatment of forest slash is described in detail in Section 3.3.2 of the Erosion Control and Revegetation Plan (ECRP) (Appendix I to the POD).

8.0 ROCK REMOVAL/EXCESS OVERBURDEN

FERC's Upland Plan requires the removal of excess rock from the top 12 inches of soil to the extent practicable in all rotated and permanent croplands, hayfields, pastures, residential areas, and other areas as agreed between landowner and PCGP. In these areas, PCGP will clean up excess rock to a condition similar to adjacent portions of the construction right-of-way (e.g., size, density, and distribution of rock) unless the landowner and PCGP negotiate different stipulations. Excess rock and spoil materials will be redistributed along the construction right-of-way in upland areas during restoration regrading in a manner that reflects the original contours and preconstruction drainage patterns. Excess materials will be disposed of in existing quarries and in permanent disposal sites that have been identified along the construction right-of-way. Appendix Q to the POD provides PCGP's Overburden and Excess Material Disposal Plan which describes how these materials will be stored and disposed of on federal lands. (Table A.8-4 in Appendix A.8 to Resource Report 8 of PCGP's Certificate application also identifies the permanent disposal areas that will be located on private lands.) Large rock may be provided to the federal land-managing agencies to be used for instream restoration projects and habitat features. Large rocks and boulders may also be used as OHV barriers along the right-of-way and at road crossings to block access at OHV points to restrict traffic on the right-of-way as described in the Recreation Management Plan (Appendix S to the POD). Additionally, large rocks and boulders may be piled in upland areas along the construction right-of-way to create habitat diversity features where approved by the EI or PCGP's authorized representative and the landowner or land-managing agency. The use of alternate disposal locations will be approved by FERC and, if on federal lands, the respective land-managing agency.

9.0 HAZARDOUS WASTES

All spills will be cleaned up in accordance with the applicable federal, state and local regulations, and the Pipeline Project's SPCC Plan. The Pipeline Project's SPCC Plan, included as Appendix X to the POD, describes the BMPs to store oil; fuel and other hazardous materials; prevent spills of these materials; respond to spills if they occur; and to clean up and dispose of contaminated material resulting from a spill. Attachment B to the SPCC Plan includes a Hazardous Substance Inventory including hazardous waste. This inventory will include a listing of all hazardous waste, quantity of each hazardous waste, and its storage location. The Contractor(s) will store all hazardous waste in a secured location (i.e., fenced and locked) until such time as the material is transported off-site in accordance with the SPCC Plan (provided as

Appendix X to the POD). PCGP's EI(s) will inspect these storage areas on a weekly basis to ensure that the waste materials are properly packaged, labeled, and stored according to federal, state, and local regulations. All waste characterized as "hazardous" must have the words "Hazardous Waste" marked on the outside of the storage container along with the date the container was put into storage as well as other OSHA-required labeling requirements. PCGP will ensure that the Contractor(s) disposes of all hazardous waste materials in approved facilities according to applicable federal, state, and local hazardous waste regulations and the SPCC Plan (Appendix X to the POD). PCGP will also ensure that the Contractor(s) transports all waste materials with the proper shipping papers, placards, labels, and manifests, as required by transportation regulations. The Contractor(s) will provide PCGP with all copies of hazardous waste transport manifests and hazardous waste disposal documentation. The Contractor(s) may utilize a remediation firm or a PCGP-approved waste management firm to complete waste disposal activities.

Appendix X

Spill Prevention, Containment, and Countermeasures Plan

Pacific Connector GAS PIPELINE

Pacific Connector Gas Pipeline, LP

Spill Prevention, Containment, and Countermeasures Plan

Pacific Connector Gas Pipeline Project

(During the previous NEPA process, PCGP submitted a Plan of Development to meet BLM Right-of-Way Grant requirements based on BLM regulations. These plans will be updated in consultation with the Federal land managing agencies [BLM, USFS, and Reclamation]) during the current NEPA process.).

September 2017

SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURES PLAN FOR OIL & HAZARDOUS SUBSTANCES

1.0 INTRODUCTION

This Spill Prevention, Containment, and Countermeasures (SPCC) Plan identifies measures to be taken by Pacific Connector Gas Pipeline, LP (Pacific Connector) and its contractors (Contractor) to prevent, contain and respond to spills during the construction of the Pacific Connector Gas Pipeline (PCGP) Project.

2.0 PLAN DETAILS

The following is a description and listing of the different components of the SPCC Plan:

I. Provisions of Plan and Responsibilities of Employees

A. The goal of the plan:

1. To minimize the potential for a spill.
2. In the event of a spill to contain the spillage in the smallest area possible.
3. To protect areas that are of environmental concern.

B. Responsibilities:

It is Pacific Connector's intent that everything practical is done to minimize the potential for and consequences of a spill during the construction of the Pacific Connector Gas Pipeline Project. Therefore, it is the responsibility of every person associated with the project to be on the lookout for spills or leaks from equipment and take the appropriate action. *Pacific Connector will complete Attachment A (Emergency Contact List) prior to beginning work, provide the attachment to the contractor and inspection personnel and update as required during construction.*

II. Training

The Chief Environmental Inspector (EI) will hold Spill Prevention, Containment, and Countermeasure (SPCC) training prior to the start of any construction for all personnel involved with the project. All personnel added during the course of the project must receive the pre-job SPCC training. No one will be allowed to work on the construction right-of-way without project-specific SPCC training. A second training session will be held for all project personnel just prior to hydrostatic testing of the pipeline to train all those involved on response procedures in case of a hydrostatic test failure. Individual training sessions will also be conducted by the EI for those contractor employees responsible for completing the horizontal directional drills (HDDs). The contractor will be required to maintain a record of those workers that have received training.

III. Hazardous Materials Inventory

Attachment B provides an anticipated inventory of oil, fuel and hazardous substances that will be utilized during construction which, if released, may pose a threat to human health or the environment. In addition, Attachment B provides the reportable quantity

(RQ)[1] for each of these materials. Material Safety Data Sheets (MSDS) for each of these chemicals is presented in Attachment B. *Attachment B must be completed by the contractor and MSDSs provided by the contractor prior to beginning work and updated as required during construction.*
Any materials brought to the construction right-of-way, yard or temporary extra work areas will be inventoried, reported to the EI and managed in accordance with the guidelines in this plan.

IV. Precautions for Spill Prevention and Control Equipment and Material Locations

A. Spill Prevention and Control:

Hazardous substances, chemicals, fuels and lubricating oils will not be stored within 150 feet of waterbody banks or wetlands or within 200 feet of water supply wells (400 feet of municipal or community water supply wells). Equipment will not be fueled or maintained in wetlands or within 150 feet of waterbody banks or wetlands or within 200 feet of water supply wells (400 feet of municipal or community water supply wells) unless the procedures specified in Section IV. A. 1. e. of this Plan are utilized. Each of the no fueling areas will be clearly identified and their limits staked in the field. To assure that storage and fueling occur in an environmentally acceptable location, the EI must approve the location of all oil, hazardous substance, and chemical storage and fueling areas, other material storage areas and construction equipment maintenance areas prior to their use.

In compliance with 48 CFR Chapter 4 Part 452.236-74, pollutants such as fuels, lubricants, bitumens, raw sewage, and other harmful materials shall not be discharged on the ground; into or nearby rivers, streams, or impoundments; or into natural or man-made channels. Wash water or waste from concrete or aggregate operations shall not be allowed to enter live streams prior to treatment by filtration, settling, or other means sufficient to reduce the sediment content to not more than that of the stream into which it is discharged.

1. Fueling, lubricating or maintaining equipment.

a. Fuels and lubricating oils will not be stored and equipment will not be fueled, lubricated or otherwise maintained in wetlands or within 150 feet of waterbody banks, wetlands, or Bureau of Reclamation (Reclamation) facilities or within 200 feet of water supply wells (400 feet of municipal or community water supply wells), unless the procedures specified in Section e. below are utilized. Each of these areas will be clearly identified and their limits staked in the field.

b. All vehicles used to transport lubricants and fuel must be equipped with an emergency spill response kit. At a minimum this kit must include:

- Ten, 48" x 3" oil socks;

[1] RQs for specific constituents can be found from one or more of the following:
1) 49 CFR 172;
2) 40 CFR Part 302; or
3) MSDS documents.

- Five, 17" x 17"oil pillows;
- One, 10' x 4" oil boom;
- Twenty, oil absorbent mat pads (Pigalog MAT415 or equivalent);
- Garden size, 6 mil, polyethylene bags;
- Ten pair of liquid proof gloves compatible with materials on-site; and
- One, 55-gallon polyethylene open-head drum.

c. Any fuel or lubricant spilled to the ground during fueling or maintenance of equipment will be cleaned up and properly disposed of immediately. This includes all soil contaminated by the spill.

d. If vehicles/equipment require maintenance on-site, the contractor will install drip pans or other suitable containment devices to collect all fluids. Under no circumstances will the contractor allow material from the liner to spill on the ground surface. All waste fluids will be removed from the site and disposed of properly.

e. Where site-specific conditions/constraints require equipment (including boring machines) to be refueled in wetlands or within 150 feet of waterbody banks, wetlands, or Reclamation facilities or within 200 feet of water supply wells (400 feet of municipal or community water supply wells), the following procedures will be implemented to avoid or minimize potential spills.

1. Where possible, the refueling location will be selected with the best topography to prevent or limit any potential spill from entering a wetland or waterbody.
2. The equipment being refueled will only be filled to ¾ capacity to prevent accidental spills from overtopping.
3. Oil absorbent mat pads or diapers will be placed around the equipment's fuel tank opening to absorb any drips/spills.
4. Drip pans or other suitable containment/liner materials (i.e., plastic sheeting) will also be placed under equipment to ensure that any fuel spills or drips are contained. Under no circumstances will the contractor allow material from the liner to spill on the ground surface. All waste fluids will be removed from the site and disposed of properly.

2. Dewatering pumps, generators and hydrostatic test pumps.

a. Pumps and generators used for dewatering or hydrostatic testing within or in the vicinity (within 150 feet) of waterbodies, wetlands, or Reclamation facilities or within 200 feet water supply wells (400 feet of municipal or community water supply wells) will be set in containment structures.

1. Containment structures may be constructed out of strawbales and lined with a minimum of 2 plastic sheets (6 mil plastic) that drape to the ground outside the structure. However, containment structures for small portable pumps/generators may consist of plastic basins such as a child's pool or other similar containers as approved by the EI. The EI may consult with a federal inspector to

determine appropriate types of containment structures on federal lands. The basins shall not be reused if cracked, punctured or contaminated with oil or grease.

2. Fuel for pumps and generators will be carried in by hand and removed immediately after fueling takes place. Under no circumstances will fuel or lubricants be stored within the containment structure.
3. "Heavy Duty" garbage bags for disposal of used materials and a supply of 40 absorbent pads will be kept in the containment structure.
4. When the containment structure is dismantled, the plastic sheeting will be placed in trash bags and immediately hauled away for proper disposal.

3. Leaks in hoses or fittings on equipment.

   a. The contractor will visually inspect all equipment for leaks and repair all leaks prior to moving the equipment onto the construction right-of-way.
   b. Any leaks that develop while equipment is in use will be repaired immediately. The equipment will not be utilized until repairs are completed.
   c. A minimum of 40 absorbent pads will be kept on all pieces of equipment. When used, they will be properly disposed of and replaced immediately.

4. Hose or fitting (valves, seals, gaskets) failure or rupture.
   Contain spills immediately to reduce spill to the smallest area possible and follow the procedures in this plan.

5. Fuel storage tanks and hazardous materials containers

   a. All fuel storage tanks/hazardous material containers will be located inside earthen-diked berms designed to hold 1.5 times the capacity of the largest tank/container within the berm. The diked area will incorporate a 12-mil (or thicker) liner in its design. The tank will be set directly on the liner. Non-abrasive padding may be used under the tank to provide stability as long as the integrity of the liner is not compromised. The purpose of this liner is to protect soils located under the tank or used in dike construction from contamination. Any spilled materials located on the liner will be removed immediately and prior to dismantling the tank and dike.
   b. Prior to their use, the contractor will visually inspect each tank for cracks, excessive corrosion, or other flaws which may compromise the integrity of the tank. Hoses and valves will be similarly inspected. If the contractor determines that the equipment is in good mechanical condition, it may be moved onto the right-of-way which includes staging areas and pipe yards. Otherwise, the equipment will be rejected and alternative equipment in good condition employed.
   c. The contractor will inspect the integrity of all dikes and the liner at least daily and repair the dikes or replace the liner immediately if they become breached or torn.

d. It may be necessary to drain accumulated stormwater from within the diked area containing fuel storage tanks. If the stormwater has been contaminated with fuel or other pollutants, all water will be removed by vacuum truck or similar means and hauled to a disposal facility approved by the State of Oregon. However, if no oil sheen is present and there are no other visible signs of pollution, the stormwater may be left to evaporate within the dike after the tank has been removed. Under no circumstances will the contractor allow the surface discharge or other release of water contained within the diked area without the prior approval of the EI or a federal inspector on federal lands.

B. Material locations:

1. Each work site will have on hand and maintain emergency response equipment. While construction activities are ongoing, all such equipment will be inspected daily for operability and accessibility. The location of fire extinguishers and related emergency response equipment will be clearly marked with signs. Each foreman in charge of construction activities will be provided with and will maintain readily accessible, a copy of this plan.
2. The contractor will designate a single individual who will be responsible for maintenance of all emergency response/spill response materials and equipment.
3. Spill absorbent material and booms of adequate size and number to handle a spill of fuel or other hazardous materials will be stored at a central location(s) readily accessible to each construction crew for immediate response in case of emergency. The location of these stockpiled materials will be at designated locations to be determined prior to the start of construction. If these materials are not stockpiled at the site as required by this plan, construction will not be allowed to commence.
4. At a minimum the following spill control materials will be included in each centrally located spill response kit stockpile:

   - Six bales (200 count each) of absorbent mat pads (Pigalog MAT423 or equivalent);
   - Four boxes of absorbent spaghetti strips (Pigalog PLP402 or equivalent);
   - Four boxes of absorbent pulp (Pigalog SA8010 or equivalent);
   - 300 feet of 5 or 8-inch diameter absorbent skimmer boom material (Pigalog BOM 408 or equivalent);
   - 20 straw bales;
   - 10 packages of garden size, 6 mil, polyethylene bags;
   - Ten pair of liquid proof gloves compatible with materials on site; and
   - One, 55-gallon polyethylene open-head drum.

   Absorbent pads, spaghetti, pulp, and booms will be of the type that is capable of absorbing petroleum products but repels water. (The above list may be modified by the EI in consultation with Pacific Connector's Environmental Representative to better fit the needs of the project).
5. A minimum of 40 absorbent pads will be kept on each piece of equipment. When used, they will be properly disposed of and replaced immediately.

6. The contractor will stockpile bales of straw on or adjacent to the construction right-of-way for the sole purpose of emergency response. After construction is complete, the unused straw may be utilized as mulch in upland areas during reclamation.
7. Contractor foremen and EIs will keep a minimum of one bale (200 count) of absorbent pads in their vehicles.

V. Spill Response: Initial response to an emergency will be to protect human health and safety, and then the environment.

A. Initiate Control, If Safe. Make every effort to stop source of spill and contain spill.

- Shut off equipment;
- Shut off source of spill, if possible;
- Warn all personnel at the construction site, stop all vehicular traffic and work in the area, and remove unnecessary personnel;
- Immediately contact the EI and report observer's name, location, nature and extent of spill;
- Contain the spill to the smallest area possible and stop it from reaching waterways or other sensitive areas (i.e., wetlands, waterbodies, wells, etc.);
- Block spill with backhoe or other equipment as necessary;
- Construct ditch or dike around spill as necessary - earthen dike, strawbales, sand bags;
- Install straw barriers and booms in stream;
- Excavate side pool and isolate spill; and
- Dam stream channel to stop movement of the spill, if necessary.

B. Conduct Initial Assessment (note the following):

- Observers name;
- Any injuries and their extent;
- Location, time and approximate size of spill area;
- Type and approximate amount of material spilled;
- Status of source;
- Did the spill enter a waterbody? Is there a threat to a waterbody; and
- If not contained, direction spill is heading and rate of release.

C. Contact Pacific Connector’s Environmental Inspector (EI) Or Chief Inspector

- Provide the information collected above;
- EI or Alternate will be the Emergency Coordinator; and
- The EI will contact and dispatch necessary personnel. If the accident is beyond the capabilities of the equipment and material located on-site to handle, the EI will contact appropriate County emergency assistance (i.e., County HazMat Team) and Pacific Connector’s Environmental Representative.

D. EI or Alternate Contact Pacific Connector’s Environmental Representative (ER)

- Obtain initial assessment Information;

- Contact County emergency response agency as appropriate;
- Notify appropriate State officials;
- Report any spill that enters any water to the U.S. Coast Guard National Response Center (800) 424-8802;
- Report any spill that enters any facility, land, or waterbody under the Bureau of Reclamation, Klamath Project's jurisdiction (541) 883-6935 (Environmental Management Systems Coordinator);
- Assist contractor and EI in coordinating response and clean-up; and
- Assist contractor and EI to ensure proper dispose of all waste.

E. Pacific Connector's Construction Superintendent

- Provide equipment and manpower as necessary to quickly and safely control and cleanup the spill; and
- Evaluate spill source and determine if procedural changes are necessary to prevent similar future events.

F. Pacific Connector's Environmental Representative

- Evaluate initial assessment information and assist as required in notification of agencies;
- Coordinate and approve disposal of waste materials;
- Conduct cleanup inspection if required; and
- Evaluate spill source and determine if procedural changes are necessary to prevent similar future events

VI. Cleanup and Disposal of Spills

The following section outlines specific procedures to be followed by the Contractor and Pacific Connector when addressing releases. At all times, worker and public safety is a paramount consideration and should be contemplated in all spill response situations.

1. All spilled liquids and contaminated materials will be cleaned up immediately. Restrict spills to the containment area if possible by stopping or diverting flow from the oil/fuel tank. Every effort shall be made to prevent the seepage of oil into soils and waterways.

2. If a release occurs into a facility drain, nearby stream, or wetland, immediately pump any floating layer into drums. For streams and wetlands, place a barrier between the release area and the site boundary. This barrier may include but is not limited to oil booms, hay bales, and under flow dams. As soon as possible excavate contaminated soils and sediments.

3. Cleanup of contaminated materials includes the removal of all soils which have been subjected to the pollutant. If necessary, the EI may require the contractor to collect samples of soil strata below the spill to assure that all contaminated soils have been removed from the site. On federal lands, soil samples may be required by a third party after any cleanup of contaminated materials. For larger quantities of soils, construct temporary waste piles using plastic liners. Plastic-lined roll-off bins shall be leased for storing this material as soon as feasible.

4. All materials used to clean-up the spill will be double bagged and inspected prior to removal from the spill site. All vegetation contaminated by the spilled material will be similarly collected, bagged and disposed at an approved State of Oregon Department of Environmental Quality (DEQ) disposal facility.

5. Dispose of oily soils and contaminated articles in accordance with applicable federal, state and local regulations. Decontaminate all emergency response equipment used during the incident before storing. Decontamination of equipment used to clean any spill shall occur within a containment structure such as a drip pan or other suitable container/liner such that the contaminated material can be properly contained and hauled off to a DEQ approved disposal facility.

6. Transportation manifests, disposal receipts and weight tickets will be supplied to the EI and be made available to federal inspectors upon request.

Disposal of Contaminated Materials/Soils

1. The Contractor shall be responsible for the proper disposal of wastes generated by their actions, including obtaining applicable authorization, registrations, and/or EPA/State I.D. Numbers.

2. All contaminated articles and soils recovered during a release event shall be properly handled and stored in approved DOT containers.

3. In accordance with Pacific Connector's policy, all wastes generated as a result of spill response activities shall be analyzed to determine if they are hazardous, unless knowledge of contaminant(s) is applied to classify these wastes/spill materials as non-hazardous.

4. Those wastes determined to be hazardous shall be properly labeled, profiled, and manifested to an authorized DEQ hazardous waste treatment, storage, and disposal facility.

5. Pacific Connector may utilize a remediation firm or a waste management firm to initiate waste disposal activities.

6. At no time shall hazardous waste be stored on-site for a period exceeding 90 days.

7. Hazardous wastes shall be stored in a secured location (i.e., fenced and locked) until such time as this material is transported off-site.

8. Non-hazardous, oil contaminated soils and articles shall be properly disposed of at authorized non-hazardous land disposal facilities. While on-site, these materials shall be managed in accordance with the procedures outlined previously, and with applicable federal, state, and local regulations.

VII. Response to Hydrostatic Test Failure

All available personnel will be put into groups of 2 or 3. The groups will be strategically located along the test section. Each group will have a radio, a minimum of one bale (200 count) of absorbent pads, 200 feet of double absorbent booms, 10 fence posts, 1 post driver, 200 feet of rope, and a knife. Radio communication will be used to alert others of the rupture location. Booms and pads will be used at the site and downstream of the rupture on any waterbody to which the ruptured water may be headed. The EI will take water samples to check for oil and grease residues from the rupture pit and downstream of each set of booms installed. A proper chain of custody form will be completed and samples sent to a local laboratory for analysis. On federal lands, all hydrostatic test failure sites resulting in any breach shall be reviewed by a federal inspector in conjunction with EI.

ATTACHMENT A
Emergency Contact List

Emergency all Counties– 911
Coos County Fire and Sheriff's Department – 541-488-1095
Douglas County Fire and Sheriff's Department – 541-440-4450
Jackson County Fire and Sheriff's Department – 541-774-6800
Klamath County Fire and Sheriff's Department – 541-883-5130
Oregon Department of Environmental Quality – Spills contact nearest DEQ office
- **Coos Bay – 541-269-2721**
- **Medford – 541-776-6010**
- **Roseburg – 541-440-3338**

Oregon Emergency Response System (OERS) – 800-452-0311
National 24-Hour Spill Response Center (Coast Guard) - 1-800-424-8802

Forest Service Contacts		
Name	**Title**	**Telephone Number**
Umpqua National Forest		
Robert Marshall	Tiller Ranger District Hazardous Materials Coordinator & Spill Coordinator	541-825-3122
Kevin Sands	Tiller Ranger Alternate	541-825-3132
John Beagle	Forest-wide Hazardous Materials Coordinator	541-957-3397
Mikeal Jones	Forest-wide Spill Coordinator	541-957-3356
Debra Gray	Forest-wide Alternate	541-957-3405
If above personnel are unavailable	Forest Dispatcher	During business hours: 541-957-3325 After business hours: 541-672-6601
Rogue River-Siskiyou National Forest		
Steve Rucker	High Cascades Ranger District Hazardous Materials & Spill Coordinator	541-560-3421 (cell: 541-944-9916)
Pete Jones	Forest-wide Hazardous Materials & Spill Coordinator	541-858-2632
If above personnel are unavailable	Forest Dispatcher	During business hours: 841-618-2510 After business hours: 541-776-7114 or 541-858-2200
Fremont-Winema National Forest		
Waiyen Yee	Hazardous Materials & Spill Coordinator	541-883-6813 (cell: 541-891-6977)
Rich Kehr	Alternate Contact	541-883-6722 (cell: 541-891-0143)
If above personnel are unavailable	Forest Dispatcher	During business hours: 541-883-6850 After business hours: 541-884-0516 or 541-947-6200
Bureau of Land Management – Coos Bay & Roseburg Districts		
Paul Gammon	Hazardous Materials and Spill	541-751-4463

	Coordinator	
Bureau of Land Management – Medford District		
Sonia Mason	Hazardous Materials Alternate	541-618-2287
Bureau of Land Management – Lakeview District		
Tom Cottingham	Hazardous Materials Coordinator	541-883-6916
Bureau of Reclamation		
Timothy Thompson	Klamath Basin Area Office Contact	541-880-2568
Kristen Hiatt	Alternate Contact	541-883-6935

EMERGENCY SPILL COORDINATOR (ESC), usually the Chief EI

Name: _____ Method of Contact: _____
Alternate Phone #:

AUTHORIZED ALTERNATE (Contact only if you are unable to reach the ESC)

Name: _____Method of Contact: _____
Alternate Phone #:

CONTRACTOR

Name of construction foreman and his/her designated representative, and method of contact. This information to be provided by contractor.

Name: _____Method of Contact: _____
Alternate Phone #:

CONTRACTOR SPILL MATERIAL COORDINATOR

This person is responsible for maintaining all spill control equipment and material. This information to be provided by contractor.

Name: _____Method of Contact: _____
Alternate Phone #:

PACIFIC CONNECTOR'S ENVIRONMENTAL REPRESENTATIVE

Name: Mike Warson
(Office) 713-400-2839
(Cell) 713-647-1118

PACIFIC CONNECTOR'S ALTERNATE ENVIRONMENTAL REPRESENTATIVE

Name: Mike Warson
(Office) 713-400-2839
(Cell) 713-647-111

ATTACHMENT B

HAZARDOUS MATERIALS INVENTORY

Material	Quantity (gallons)	Storage Location	Reportable Quantity (include reference)
Oil/Fuel:			
Commercial Chemicals:			
Hazardous Wastes:			

The contractor will designate an individual who will be primarily responsible for maintenance and placement of spill control materials and equipment. This individual will assure that all control equipment is in place and operational prior to the start of construction.

Appendix Y

Transportation Management Plan

Pacific Connector GAS PIPELINE

Pacific Connector Gas Pipeline, LP

Transportation Management Plan

Pacific Connector Gas Pipeline

January 2018

Table of Contents

List of Appendices

Timber Removal and Construction (to be generated in coordination with BLM/FS/BOR)

Operations and Maintenance (to be generated in coordination with BLM/FS/BOR)

1.0 INTRODUCTION

Federal regulations require a Plan of Development (POD) for gas pipeline rights-of-way over federal lands with the estimated schedule for constructing, operating, maintaining and terminating the project. This Transportation Management Plan (TMP) describes the measures to be employed by Pacific Connector Gas Pipeline, LP (PCGP) and its contractors (Contractor) in the construction, use, and maintenance of Roads under the jurisdiction of the BLM, USFS and Bureau of Reclamation (Reclamation), (Agency(ies)) which are necessary to provide and maintain access to the Pacific Connector Gas Pipeline (Pipeline or Pipeline Project) during construction and operation. This TMP describes the anticipated use of these Roads for construction and/or timber removal for the duration of the Temporary Use Permit (TUP), serial No. OR 63542-01 and for operation, maintenance and/or termination of the pipeline during the duration of the Right-of-Way Grant (Grant) serial No. OR 63542. This TMP also includes details regarding timber removal and construction access Road improvements, Road maintenance and management of use before, during, and after construction. A final TMP will be submitted by PCGP to the Agencies for approval prior to issuance of the TUP and Grant. This TMP applies to Agency-jurisdiction Roads located on Agency and privately-owned land. PCGP will be required to comply with this TMP during the term of the TUP and Grant.

This TMP includes sections covering the following topics:

- Defines Agency and PCGP roles and responsibilities and identifies required agreements and permits and necessary coordination with other non-project activities.

- Identifies activities related to the construction, reconstruction, upgrading, decommissioning, and maintenance of Pipeline Project-affected roads, bridges, culverts, and other miscellaneous Pipeline Project-induced impacts; as well as traffic management and reporting requirements.

- Discusses the procedures for how the TMP may be updated and revised over the term of the TUP and Grant. Supplementing this TMP are 1) the TUP Exhibit F – Transportation Stipulations (for construction, timber removal and Initial Operation Period) of the pipeline which provides authorizations, definitions, Road use reporting and license agreement requirements as well as general Road use rules and construction stipulations that apply for all Agency-jurisdiction roads, and 2) the Grant Exhibit F – Transportation Stipulations which provides authorizations, definitions and requirements for Road use for operations, maintenance and/or termination of the Pipeline and PCGP shall also comply with all provisions and requirements found in the Grant and TUP Exhibits F. The Exhibits F go hand-in-hand with and must be administered with the TMP.

1.1 PURPOSE AND INTENT

The TMP is intended to cover all Pipeline Project transportation-related activities involving Agency-jurisdiction roads or rights-of-way and identifies ongoing cooperative procedures. The purpose and intent of the TMP is to:

- Identify a process to annually coordinate all transportation-related activities required for the continued operation of the Pipeline.

- Identify all Agency-authorized Roads and bridges necessary for the continued efficient operation of the Pipeline through the term of the Grant.

- Provide for a uniform federal response to Pipeline-related actions within Federal Lands through the identification and consistent application of roadway policies, requirements, and construction and maintenance specifications and Best Management Practices (BMPs).

- Provide for the protection of Road and adjacent off-road resources during road use and construction and as per any agreements or stipulations set forth in the Grant or TUP.

- Comply with policies and prescriptions identified in the Agencies Land and/or Resource Management Plans.

- Maintain the authorized transportation-related facilities to agreed-upon standards and avoid or mitigate impacts to off-road resources.

- Provide for public health and safety during and following Pipeline activities.

1.2 PLAN IMPLEMENTATION ACTIVITIES SUMMARY

The TMP addresses resource management needs and related transportation system actions for the Pipeline. The TMP includes a number of specific activities:

- Road Maintenance, Modifications and Reconstruction: defines the Road maintenance, reconstruction and related modification activities of PCGP and discusses road reconstruction, modification and maintenance standards, design proposal review and approval scheduling and coordination.

- Road Decommissioning: defines Roads to be decommissioned by PCGP and scheduling and decommissioning standards.

- Culvert/Bridge Upgrades: defines culverts and/or bridges to be replaced or upgraded by PCGP and identifies applicable standards, design review and approval requirements and scheduling.

- New Road Construction: defines a process for new or temporary Road development for Pipeline Project purposes.

- Traffic Management: addresses road and work area signing standards, and hazard analysis. Discusses the process for PCGP proposing and implementing measures for management of Off-Highway Vehicle (OHV) use of Pipeline facilities to the extent feasible.

- Annual Transportation Meeting: to facilitate efficient coordination and action with the Agencies. The annual transportation meeting will be held prior to March 1 of each construction year and will identify activities within the Pipeline Project area and coordination with other planned activities. At the completion of Pipeline construction, transportation management meetings will be held between PCGP

Operations and Agency staff specialists to address road access requirements for the operation of the Pipeline.

- Consistency with Other Plans: the TMP is one of several Plans of Development that provide implementation direction and guidance for PCGP. The TMP is the principal source of implementation direction for the activity listed and will be implemented to be consistent with other applicable Plans.

2.0 RESPONSIBILITIES

PCGP will be responsible for ensuring that all company and Contractor personnel understand the requirements for transportation uses over Federal Lands and Roads. PCGP will be responsible for performing or paying their commensurate share for maintenance and cost recovery/cost share in accordance with applicable federal regulations, including but not limited to 36 CFR §212.5(c), 36 CFR §212.5(d), and 43 CFR §§429, 2812, 2800 and 2880. All reconstruction and use activities on Road segments affected by Pipeline Project activities will abide by all stipulations shown in the Grant and/or TUP. Any damage to Roads as a result of PCGP's use will be repaired to match pre-existing or better condition in accordance with Agency-specific guidelines. Roads will be maintained as necessary to minimize resource impacts and prevent Road damage. Maintenance standards shall be consistent with the Maintenance Level of the Road. All maintenance, Road modifications, reconstruction and decommissioning shall comply with applicable Agency BMPs. All required permitting, surveys (biological, cultural, etc.) and NEPA activities will be performed by PCGP and performed to a standard to comply with current Agency requirements. PCGP will provide funding to reimburse the Agencies for any expenses incurred by the Agency in performing required design reviews, approvals, and monitoring during planning, construction and operation. PCGP will ensure that access is maintained where pipeline construction crosses existing roads.

PCGP will provide open communication with other Road users, landowners, and land managing agencies to ensure they are apprised of the pipeline construction schedule so that all appropriate measures can be taken to minimize potential Road use impacts and conflicts. Where necessary, PCGP will enter into Road maintenance agreements with third-party users to ensure that adequate maintenance is performed. PCGP will ensure that construction schedules are developed and communicated to Contractors to minimize potential Road use impacts. PCGP will notify the Agencies, private landowners, and interested third parties at least seven (7) business days in advance of planned road work. This notification will include planned road work on any non-federal roads that would directly affect access to federally-managed Roads or lands. In some instances, unforeseen changes to the construction schedule or emergency actions may limit the advance notice to agencies and landowners. PCGP will make every effort to provide at least a 48-hour notice in these cases.

2.1 Existing Access to the Right-of-Way

Existing Agency-jurisdiction Roads proposed for use by PCGP are shown on the **TMP Maps** as follows:

- Appendix A - Authorized Roads Maps – Operation and Maintenance of the Pipeline
- Appendix B – Road Maintenance Maps – Operation and Maintenance of the Pipeline

- Appendix A1 - Authorized Roads Maps - Timber Removal and Construction
- Appendix B1 - Road Maintenance Maps -– Timber Removal and Construction

The authorized Roads are also listed in tabular form on the following **TMP Tables**:

- Appendix C - BLM Authorized Roads Table – Operation and Maintenance of the Pipeline

  Appendix D - FS/BOR – Authorized Roads Table – Operation and Maintenance of the Pipeline
- Appendix C1 - BLM/COQ Authorized Roads Table – Timber Removal and Construction
- Appendix C2 - BLM/COQ Authorized Roads Table – Timber Removal Only (Federal and Non-Federal)
- Appendix C3 - BLM/COQ Authorized Roads Table – Federal Timber Removal Only
- Appendix D1 - FS/BOR - Authorized Roads Table - Timber Removal and Construction

Roads are also shown on the following **Grant and TUP Exhibits**:

- Grant Exhibit A – As-Built Alignment Sheets and Site Location Drawings (to be provided after project completion)
- Grant and TUP Exhibit A1 - Alignment Sheets and Site Location Drawings Issued for Construction

These Roads are either located on lands administered by the Agency or acquired via an easement obtained by the Agency from a private landowner.

Roads were selected by PCGP to minimize transportation impacts and allow for safe, efficient construction and movement of equipment and materials. The Agencies will authorize PCGP to use these Roads to the extent that existing access rights are available and use is consistent with the limitations and stipulations as presented in this TMP and all Appendices herein. PCGP will be required to secure any additional access rights where necessary. Authorized uses in the TUP and/or Grant will include access for timber removal and/or construction, ingress and egress, and operation, maintenance and/or termination of the pipeline as presented in the Appendices, with some Roads being limited to removal of timber only.

The TMP document and corresponding appendices will be updated by PCGP prior to any commensurate share Road maintenance cost calculations and during the construction and maintenance phases of the Pipeline Project as access roads are added or removed from use. The updated information provided by PCGP will include actual truck counts per access Road segment in a format acceptable to the jurisdictional agency. Any additional Roads proposed for Pipeline Project use will be submitted for approval through the Federal Agencies having jurisdiction over the requested access Road.

2.1.1 Federal, State, and County

PCGP will acquire all required federal, state, and county road use permits and approvals and the Contractor will be responsible for following any maintenance or improvement requirements associated with the Road use permits or approvals.

2.1.2 Private

PCGP will obtain landowner agreements for any use of private roads. All conditions agreed to with the landowner must be met by the Contactor for continued use of the road. Where access is not available to Agency lands or Roads, and in cases of private roads of mutual interest, PCGP will coordinate with the appropriate Agency(ies) in the identification and acquisition of access rights related to the right-of-way locations for the Grant and TUP.

2.2 Anticipated Road Work

Road maintenance and improvement/reconstruction (i.e., spot rocking, grading to remove ruts, resurfacing, culvert replacement, clearing of vegetation, dust abatement, danger tree removal, drainage cleanout, road widening, turnout construction, etc.) may be needed on some Agency roads to accommodate oversized and heavy construction equipment. In general, roadwork will involve a minimal amount of site disturbance and earthwork necessary to make the roads useable for timber removal and construction access needs. However, where construction schedules require Road use outside of the normal operating season, more substantial work such as surfacing or resurfacing of Roads may be necessary. No maintenance or improvements will be allowed on any road not authorized for use or approved for improvements. All construction, reconstruction and improvement of Road crossings of Reclamation canals or drains will meet the standards of the Reclamation document, “Engineering and O&M Guidelines for Crossings,” (April 2008) (Exhibit H of the Grant and TUP). All maintenance and improvements will be completed in accordance with Pipeline Project requirements and Agency, state, county and private landowner standards. PCGP has initiated and will complete all required cultural and environmental surveys along the proposed access Roads identified on the Alignment Sheets (Grant Exhibit A and TUP/Grant Exhibit A1) and in Appendices A and A1 to this TMP prior to approval of the Grant and TUP.

2.2.1 New Permanent and Temporary Road Construction

PCGP proposes to construct new temporary access Roads (TARs) and permanent access Roads (PARs) across Federal Lands at locations shown on maps in:

TMP Appendices A, A1
TMP Appendices C, C1, C2, C3, D and D1.

PCGP will submit design drawings, including plan and profile sheets, to the affected land managing agency for review and written approval prior to the commencement of Road construction activity. PCGP will be responsible for performing Road maintenance on all newly-constructed Roads on Federal Lands and decommissioning of temporary Roads as specified in this plan. New Permanent and Temporary Access Roads constructed for Pipeline Project use will meet Agency engineering design and road management standards consistent with the intended use of the road and all applicable Agency BMP’s.

2.2.2 Maintenance Standards

PCGP will perform or make commensurate share payment(s) for maintenance on existing Agency roads used during construction and any subsequent non-casual use in accordance with USDA-FS Manual Chapter 7730, the USDA-FS Handbook section 7709.59, Chapter 60, BLM Manual 9100 Series and the various BLM District Resource Management Plans and as shown in TMP Appendices C1, C2, C3, D, and D1.

Existing Agency-jurisdiction Roads will be maintained to ensure compliance with any applicable Road Use Permit, Reclamation standards for "Engineering and O&M Guidelines for Crossings" (Exhibit H of the Grant and TUP), the Grant and TUP, this TMP and in consultation with the Agencies regarding current standards for the maintenance level identified for the Road(s). Roads constructed by PCGP on Agency lands will be maintained to standards approved by the Agency.

To facilitate consistency across the Pipeline Project, Agencies have agreed to utilize the most current USDA-FS, Pacific Northwest Region (Region 6), standard timber sale road maintenance specifications ("T-specs") and Pipeline Project specific supplemental specifications as appropriate. Agency Roads requiring PCGP maintenance and associated specifications are shown on maps in TMP Appendices B and B1 and in tables in TMP Appendices C, C1, C2, C3, D, and D1. Copies of the specifications are available from the Supervisor's Office of any National Forest in Region 6.

Paved Roads will be kept free of mud and other debris that may be deposited by construction equipment. Track-driven equipment would cross paved Roads on tires or equipment pads to minimize Road damage. Any paved, gravel, or dirt roadways damaged by construction activities will be repaired to a condition equal to or better than the condition prior to damage. Agencies may require PCGP to provide selected pre-use Road and/or sign condition surveys, including photos or video, to aid in assessing use-induced changes.

2.2.3 Straightening, Widening, Cut and Fill, Culverts and Bridges

In general, BLM- and USFS-jurisdiction Roads are single-lane forest Roads designed and built primarily for removal of timber using conventional log trucks. PCGP's pipe-stringing trucks will be hauling 40- to 80-foot sections of pipe to the construction right-of-way. The total length of these vehicles will be approximately 100 feet. These vehicles may track outside of the existing Road width, especially on corners. Due to the size of vehicles that will use access Roads, some minor improvements (straightening, widening, cut and fill, and/or culvert improvements) may be required to some of these existing Roads. These Roads have been identified and are shown or described on:

TMP Appendices B and B1 maps

TMP Appendices C, C1, C2, C3, D and D1 tables

In some circumstances, it may also be necessary to construct turnouts for oncoming traffic to "pull out" of the existing Road footprint for passing purposes.

Areas requiring these minor improvements will be flagged by PCGP for field review by the authorizing Agency prior to construction. Proposed modifications to existing Roads to accommodate equipment access will be submitted for review to the applicable Agency Office

and will meet the agreed-upon Agency design criteria. No improvements will be made until signed approval from the Agency is received.

All required permitting, surveys (biological, cultural, etc.), and NEPA activities will be performed by PCGP and performed to a standard to comply with current Agency requirements. All applicable Agency BMPs will be implemented. PCGP will be responsible for their commensurate share of expenses incurred in the use of existing Roads and will provide funding to reimburse the Agencies for any expenses incurred by the Agency in performing required design reviews, monitoring, and approvals during planning and construction.

These improvements will be accomplished by PCGP and with the Agency's and/or landowner's approval. For all TEWAs (Temporary Extra Work Areas), disposal sites and other temporary and permanent site modifications, PCGP will ensure that existing drainage features (culverts, ditches, dips, grade sags, etc.) continue to function properly, or employ suitable substitute measures to ensure that drainage is controlled to prevent off-site erosion or other resource damage. All applicable Agency BMPs for erosion control will be implemented.

Culverts or other drainage features damaged during construction or operations will be repaired or replaced in consultation with the applicable Agency. PCGP's Contractors will conduct an assessment of major culverts crossed by PCGP access Roads to determine those that may require modifications or replacement for necessary equipment access. Any subsequent culvert modifications or replacements shall be developed in consultation with the Agency and will adhere to the Agency standards.

PCGP will develop and submit site specific proposals for bridge modifications required for pipeline construction to the applicable Agency. If an existing publicly accessible bridge is not suitable for Pipeline Project use, PCGP may elect to construct an adjacent temporary bridge provided all Agency requirements are satisfied and access is restricted to PCGP and Contractor vehicles and personnel. Similarly, PCGP may also install temporary bridges on the construction ROW provided all Agency requirements are satisfied and access is restricted to PCGP and Contractor vehicles and personnel. PCGP will accept liability for all temporary construction bridges and any damage to existing bridges caused as a result of construction activities. Refer to the "Wetland and Waterbody Crossing Plan (Appendix BB of the Grant/TUP Exhibit G, Plan of Development (POD))" for additional criteria regarding the use of temporary bridges.

2.2.4 Reconstruction, Resurfacing and Decommissioning

Where reconstruction and/or resurfacing are necessary on an existing Agency-jurisdiction Road segment, PCGP will comply with the engineering standards established for the individual Road. Crossings of Reclamation water conveyance facilities will be in accordance with the Reclamation document, "Engineering and O&M Guidelines for Crossings (Exhibit H of the Grant and TUP)." All proposed reconstruction designs (including those of section 2.2.3) shall be submitted to the Forest Service, Reclamation and BLM for review. Unless directed otherwise by the Agency in writing, the general guideline will be to reconstruct/resurface the road segment to its previous alignment, grade and width, such that drainage features and surfacing standards function as originally intended or better. Backfill and compaction practices at pipeline road crossings shall comply with or exceed Agency standards to prevent roadway subsidence. Any subsequent subsidence shall be repaired by PCGP. PCGP shall consult with the jurisdictional Agency to ensure that pipeline Road crossing reconstructions include any mitigation measures and specialized road design features needed to allow heavy equipment access for the anticipated future Road use (i.e. adequate for timber harvesting yarder, dozer/lowboy or other vehicle configurations that may exceed ODOT load limits but permitted by the Agencies for

timber sale, fire suppression or other land management activities). All applicable Agency BMPs will be implemented.

TARs and previously decommissioned Roads that are constructed or reconstructed for use during the Pipeline Project will be reclaimed or decommissioned as specified by the Agency. In addition, as mitigation for impacts to various late-successional and riparian-dependent species as well as soil productivity losses, PCGP proposes to decommission off-site Roads in cooperation with the Agency in accordance with Agency specifications and the Compensatory Mitigation Plan (Exhibit G, Appendix CC to the Grant and TUP).

2.3 Wet and/or Freezing Weather Access

PCGP's construction equipment access to the right-of-way may be outside of the normal operating period in order to conduct timber clearing in forested areas and pipeline construction in specific areas. Road surfaces during the late fall, winter and early spring are generally more susceptible to damage because of moisture conditions and freeze/thaw cycles. Agency roads are classified as limited-strength roads and may not be designed or constructed for all-weather use. To minimize the potential for both road-related and off-road resource damage, PCGP will perform road surfacing structural capacity assessments to a standard acceptable to the Agency and place additional road surfacing (aggregate or bituminous as appropriate) as needed for the planned use. It is anticipated that this work will be performed prior to the start of Year 1 or Year 2 activities. PCGP shall submit proposed surfacing enhancements to the jurisdictional Agency for approval prior to implementation. In addition, PCGP will install appropriate erosion and sediment control BMPs along the access Roads as determined necessary by PCGP's Environmental Inspector (EI) in cooperation with Agency Officials. All Agency-jurisdiction Roads are subject to short term traffic restrictions and/or closures due to seasonal or unusual weather conditions, user safety or when necessary to prevent facility or resource damage. Any commercial use of an Agency-jurisdiction Road must be suspended when such use is unsafe and/or will cause damage to the Roads or other Agency resources. Such suspension shall be effective when the commercial user is notified in writing or by Road closure orders posted on the Road per applicable CFR regulations. PCGP will abide by applicable Forest Service Road Rules and Road Damage policies related to Road use (Reference Regulation 36 CFR 261.10(a), 36 CFR 261.12, 36 CFR 261.54, 36 CFR 261.56 and individual Forest Road Rules and Road Damage policies). All work necessary to place the Roads in a useable condition for seasonally weakened use will be completed prior to use and monitored during use. PCGP will obtain an approved snow plowing permit from the Agency prior to removal of snow from any Agency-jurisdiction Road.

2.4 Controlling Off-Highway Vehicle Use of the Right-of-Way

To minimize OHV access on the construction right-of-way, PCGP will install OHV barriers at appropriate locations in coordination with the land management Agency. PCGP will consult with the land managing Agencies for review and approval of site-specific designs for OHV barriers. OHV barrier protection measures are described in PCGP's Erosion Control and Revegetation Plan (ECRP) (Appendix I to the POD) and Recreation Management Plan (Appendix S to the POD). All designs will meet Agency standards, and may include dirt/rock berms, log barriers, vegetative screens, signs, and locked gates. Slash from clearing operations will also be redistributed on the right-of-way which will help discourage OHV use. The proposed OHV barriers will be designed and constructed in a manner that attempts to prevent unauthorized motor vehicle/OHV use to and along the Pipeline right-of-way. It has been PCGP's experience that unauthorized OHV trespass can be difficult to control in some heavy OHV use areas.

PCGP will be responsible to annually monitor and control unauthorized OHV use during the life of the Grant and will implement additional measures as necessary to control OHV access.

3.0 TRANSPORTATION MANAGEMENT PRACTICES

PCGP will acquire all necessary overweight and oversize permits for the use of Agency-jurisdiction Roads and at structural crossings (bridges, culverts, canals, ditches). Any loads in excess of limitations set forth in Oregon Revised Statutes (ORS) 818.010 (Maximum Allowable Weight – Tables I, II, or III only, as applicable), or 818.080 (Maximum Size Limits), or as posted on any Road(s) will require prior approval of the Authorized Officer or Agency Official. PCGP will contact each applicable Agency prior to the start of construction to verify restrictions that may apply to Agency facilities on Roads which are authorized for use. Noxious weed control measures as outlined in section 12.0 of the ECRP, Appendix I to the POD, shall be implemented by PCGP. Such measures include requirements for equipment cleaning and inspections and the use of noxious weed free materials.

3.1 Notifications

PCGP will provide open communication with landowners and land managing agencies to ensure they are apprised of the pipeline construction schedule so that all appropriate measures can be taken to minimize potential access impacts. PCGP will make every effort to notify the Agency(ies) at least seven (7) days in advance of road closures. This includes work on any non-federal roads that would directly affect access to Agency-managed roads. In some instances, unforeseen changes to the construction schedule may limit the advance notice to agencies and landowners. At a minimum, a 48-hour notice will be provided in these cases.

3.2 Road Crossing Methods

3.2.1 Bore

Some major Roads may be crossed by conventional boring to avoid traffic disruptions. Boring requires the excavation of a pit on each side of the crossing, placement of boring equipment in the pit, boring a hole under the Road equal to or greater than the diameter of the pipe and installation of a prefabricated pipe section that will be pushed through the borehole. For long crossings, pipe joints/sections may be welded onto a pipe string before being pushed through the borehole. PCGP will ensure that little or no disruption to traffic at the Road or highway crossings will occur.

3.2.2 Open Cut

The majority of the Road crossings are proposed as open cut crossing method. During an open cut Road crossing, PCGP will attempt to maintain at least one lane of traffic with detours around construction, plating over the open portion of the trench or other suitable methods. However, in some cases, the open cut construction method may require the Road to be closed for up to approximately 24 hours. Traffic control measures such as flaggers, signs, lights, and barriers will be used during construction to ensure public safety, to provide for efficient movement of traffic through or around work areas and to provide safe working conditions for construction workers. Traffic control measures used by PCGP on Agency-jurisdiction Roads will meet the most current standards of USDA-FS FSM 7100-15 regarding signs, posters and traffic control measures. In addition, advanced signage may be utilized in some situations which would provide notice of construction activities and expected delays. Where Road closures occur, PCGP will communicate with landowners and Agencies regarding construction scheduling to minimize potential access impacts and allow emergency vehicles and residential access.

3.2.3 Material Sources and Disposal Sites

PCGP may need to use material sources on USDA-FS or BLM-managed lands for the production of aggregate for Road surfacing, pipe bedding, slope armoring, or other Pipeline Project needs. PCGP's contractor will apply for the appropriate removal permit from the federal land managing agency for any material to be removed from a federal quarry for Pipeline Project use. TMP Appendices, as applicable, shall be amended as needed during the permit application process to include any necessary maintenance and upgrading of Roads used for access to the material source(s) and disposal site(s).

PCGP has prepared an Overburden and Excess Material Disposal Plan (Appendix Q to the POD) which will include a detailed site survey of the disposal site(s) to show how surplus Pipeline Project material is planned for placement and how the site will be reclaimed and the erosion control and revegetation measures implemented. The Overburden and Excess Material Disposal Plan will be approved in writing by the Agency as part of the Grant and TUP and shall be updated upon the Contractor(s) final material quantity estimates and evaluation of the proposed disposal sites.

Once available, PCGP will provide a listing of Roads necessary for the transporting of water for pipeline hydrostatic testing (see Hydrostatic Testing Plan (Appendix M of the POD). These Roads, and the associated traffic type and quantity, shall be added to the TMP Appendices A1-D1 as appropriate. PCGP shall perform or pay their commensurate share for Road maintenance and cost recovery on these Roads as determined by the jurisdictional Agency.

3.3 Safety and Traffic Flow Management

Agency Roads are used by the public, timber companies, contractors, adjacent landowners, etc. PCGP will conduct construction activities during the average workday, as practical, to minimize traffic congestion impacts to other valid users. The construction yards will be used as the primary parking area for personal vehicles, and the majority of pipeline construction workers are anticipated to be transported to the construction right-of-way by buses, as practical. Construction equipment would remain on-site during construction. Construction equipment will be dropped off in one location on the right-of-way and will move generally in a linear direction along the construction right-of-way as work progresses, minimizing traffic on local roads. The amount of equipment moved by hauling from site-to-site will be minimized via the accessibility created along the construction right-of-way. PCGP will comply with local road and bridge weight limits or restrictions as well as Agency, Oregon Department of Transportation, local or private hauling permit requirements regarding weight and size restrictions as defined in the Grant and TUP.

Appropriate traffic control signs will be used at equipment crossings of improved Roads (paved or gravel), and when a high volume of traffic will be entering or exiting an improved Road from the right-of-way, or where engineering judgment shows there is a need. All traffic control measures used by PCGP on Agency Roads will meet the most current standards of USDA-FS FSM 7100-15 and Manual on Uniform Traffic Control Devices (MUTCD) regarding signs, posters and traffic control measures. Flaggers, signs, barricades, guard rails, safety fence, and signals will be placed and maintained at road crossings as required in federal, state, or county permit stipulations. In the absence of such regulations, PCGP will place signs 500 feet or as feasible in each direction from the crossing identifying that construction or flagmen are ahead. Certified Flaggers will be used on each side of the Road crossing whenever equipment is working in or crossing over any improved Road. Flaggers will be equipped with high visibility

safety apparel and stop/slow paddles. At the Agencies' request, PCGP will provide appropriate signing to identify roads not authorized for Pipeline Project access to prevent inadvertent unauthorized use. Posted speed limits will be observed on highways, county roads, and Agency-jurisdiction Roads. If necessary to protect public health and safety, the Agency(ies) may issue temporary closure orders on some roads used by PCGP.

3.4 Fugitive Dust Control

Fugitive dust generated from Road construction or use will be controlled as described in the Air/Noise and Fugitive Dust Control Plan (Appendix B of the POD) and as specified by the Agencies in TMP Appendices C, C1, C2, C3, D, and D1. Whenever vehicles or equipment will access a paved Road directly from the right-of-way, a dust control apron adjacent to the paved structure would be installed to keep all paved Roadways free of accumulated mud and dirt. Construction entrances will be constructed in accordance with the appropriate Agency Road design requirements.

3.5 Potential Federal Facility or Resource Damage Related to Pipeline Project Activities

Refer to Slope Stability Stipulation D.20 of Exhibit D to the Grant and TUP.

3.6 Emergency Response Plan

PCGP has prepared, will maintain, and as it is updated, provide to the Agency(ies) an Emergency Response Plan (ERP) (Appendix H to the POD). The ERP shall contain contact names, organizations, and phone numbers to be used in the event of a Pipeline Project emergency. Both jurisdictional Agency and PCGP personnel information shall be included. In addition, PCGP shall provide to the agencies a listing of access Roads necessary for operation and maintenance during the life of the Pipeline Project. This list should consider that many Agency system Roads are not routinely maintained and may be inaccessible due to snow, downed trees, slope failures, etc. for extended periods of time.

Timber Removal and Construction

Appendix A1

Authorized Roads Maps - Timber Removal and Construction

(to be generated in coordination with BLM/FS/BOR)

Timber Removal and Construction

Appendix B1

Road Maintenance Maps – Timber Removal and Construction

(to be generated in coordination with BLM/FS/BOR)

Timber Removal and Construction

Appendix C1

BLM/COQ – Authorized Roads Table - Timber Removal and Construction

(to be generated in coordination with BLM/FS/BOR)

Timber Removal and Construction

Appendix C2

BLM/COQ - Authorized Roads Table - Timber Removal Only (Federal and Non-Federal)

(to be generated in coordination with BLM/FS/BOR)

Timber Removal and Construction

Appendix C3

BLM/COQ – Authorized Roads Table – Federal Timber Removal Only

(to be generated in coordination with BLM/FS/BOR)

Timber Removal and Construction

Appendix D1

FS/BOR – Authorized Roads Table – Timber Removal and Construction

(to be generated in coordination with BLM/FS/BOR)

Operations and Maintenance

Appendix A

Authorized Roads Maps – Operation and Maintenance of the Pipeline

(to be generated in coordination with BLM/FS/BOR)

Operations and Maintenance

Appendix B

Road Maintenance Maps – Operation and Maintenance of the Pipeline

(to be generated in coordination with BLM/FS/BOR)

Operations and Maintenance

Appendix C

BLM/COQ – Authorized Roads Table – Operation and Maintenance of the Pipeline

(to be generated in coordination with BLM/FS/BOR)

Operations and Maintenance

Appendix D

FS/BOR – Authorized Roads Table – Operation and Maintenance of the Pipeline

(to be generated in coordination with BLM/FS/BOR)

Appendix E

Definitions

Definitions:

EXPLANATION OF TERMS AND DEFINITIONS

The definitions of terms and concepts used in this TMP are relevant to Pipeline Project-related transportation system facilities, operations, maintenance and termination.

Approval - Confirmation or concurrence with plans, design, projects and schedules prior to implementation by the party or parties assigned responsibility in the Right-of-Way Grant (Grant).

Authority - The legal right to approve or modify an action or proposed action; this is based on statute, regulations, or legal agreements.

Capital Improvement - The construction, installation, or assembly of a new fixed asset, or the significant alteration, expansion, or extension of an existing fixed asset, to accommodate a change of purpose.

Casual Use or Insignificant Use - Occasional commercial use by pickups and line and bucket service vehicles on an intermittent basis that does not generate a significant maintenance requirement. Also, non-commercial activities that are not prohibited by closure of lands to such activities, and involve practices that do not ordinarily cause any appreciable disturbance or damage to the public lands, resources or improvements thereon, and, therefore, do not require a written authorization (i.e., ingress and egress on existing Roads and trails where no commercial activity is being conducted such as hauling logs, ore, or use of heavy equipment). The determination of whether the use is casual or insignificant will rest with the Agency depending upon the jurisdictional location. If a need to control the use through stipulations exists, then the use would be formally authorized using the appropriate agreement.

Construction - The erection, construction, installation, or assembly of a new fixed asset.

Consultation - Formal or informal discussions for the purposes of developing and/or reviewing proposed projects and implementation plans. Consultation involves providing another party an opportunity for review and input regarding a proposed plan or project. The objective of consultation is to obtain input and reach a joint understanding of requirements for the proposed project or plans. The results of consultation are generally documented in reports or letters. Informal consultation generally pertains to the results of meetings, exchange of e-mail, or other informal communication between parties. Formal consultation involves procedures that are covered by agency regulations, such as consultation with USDI Fish and Wildlife Service under the Endangered Species Act, and tribal consultation.

Decommissioning - Activities that result in the stabilization and restoration of unneeded Roads to a more natural state (36 CFR 212.1, revised as of July 1, 2006). Existing Roads that are no longer needed for access to and management of Agency lands are candidates for decommissioning. The objectives for decommissioning of a road are to reestablish vegetation and, as necessary, to restore ecological processes interrupted or adversely impacted by the

road and its operation. Decommissioning includes various levels of treatments to stabilize and rehabilitate the road. Treatments may include one or more of the following activities:

- Blocking the entrance to the road;
- Removing culverts and reestablishing former drainage patterns;
- Installing waterbars on the road surface;
- Pulling back road shoulders and removing unstable road fills;
- Ripping of the roadbed to promote water infiltration;
- Stabilizing slopes;
- Scattering slash over the roadbed;
- Restoring vegetation in the road prism; and
- Other methods designed to meet specific conditions associated with the road.

In some instances, road decommissioning may involve complete elimination of the roadbed by restoring natural contours and slopes.

The specific treatments for an individual road are best identified by an interdisciplinary team of resource specialists based on the site specific conditions along that road.

Emergency Access - Access required because of a facility failure, such as a transmission line, canal, or penstock, or because of a disruption of service where power cannot be rerouted on the grid system. Such access is allowed, though immediate agency notification is required and possible mitigation may follow.

Engineering Judgment - The evaluation of available pertinent information, and the application of appropriate principles, standards, guidelines, and practices as contained in agency manuals and other sources, for the purpose of deciding upon the applicability, design, operation, or maintenance of Roads or facilities. Engineering judgment will be exercised by an engineer, or by an individual working under the supervision of an engineer, through the application of procedures and criteria established by the engineer. Documentation of engineering judgment is not required.

"Federal Lands" means all lands or interests in lands to be included in the Grant and associated TUP and owned by the United States, except lands in the National Park System, lands held in trust for an Indian or Indian Tribe, and lands on the Outer Continental Shelf.

Flood Emergency Road Maintenance Plan (FERM) - Flooding conditions are common to federal lands in southwest Oregon. The resultant damage varies with the intensity of the runoff and local conditions. It is important to recognize the potential for flooding damage and take positive action to minimize it through preventative measures and aggressive action prior to and during high runoff periods.

The FERM is designed to align the project with FSM 7734 (Repairs Performed with Emergency Relief-Federally Owned Funds) and also to provide an outline to follow in the event of a storm with enough magnitude to cause damage to forest Roads and resources.

Emergency actions begin when damaging conditions are imminent and continue until the need for immediate action diminishes.

The Agency Official will declare a flood emergency when it can be determined that the storm will cause damage severe enough to warrant such action.

Guideline - A statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if professional judgment or scientific/engineering study indicates the deviation to be appropriate.

Implementation – Accomplishment of on-the-ground or on-site construction, restoration, reconstruction, maintenance, or operational activities. Implementation may involve actual ground or habitat disturbance. Implementation normally will not take place until the appropriate agencies or officials approve required permits, NEPA decisions, designs and/or implementation plans.

Maintenance - The ongoing upkeep of a road necessary to retain or restore the road to the approved road management objective. The act of keeping fixed assets in acceptable condition. It includes preventive maintenance, normal repairs, replacement of parts and structural components, and other activities needed to preserve a fixed asset so that it continues to provide acceptable service and achieves its expected life. Maintenance excludes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from, or significantly greater than, those originally intended.

Maintenance includes work needed to adhere to laws, regulations, codes, and other legal direction as long as the original intent or purpose of the fixed asset is not changed.

Four types of maintenance are identified in the Plan including annual (recurrent), deferred, critical deferred, and emergency.

- Annual Maintenance - Maintenance that is recurrent. Such road maintenance is performed to comply with standards and policies and does not arise out of an emergency condition, and is not reconstructive in nature. This includes both traffic-generated and non-traffic-generated road maintenance. Recurrent maintenance is conducted as a matter of course on a periodic basis.

- Deferred Maintenance - Deferred maintenance is maintenance that was not performed when it normally would have been or when it was scheduled; and therefore, was put off or delayed for a future period of one or more years until it can be economically or efficiently performed. When allowed to accumulate without limits or consideration of useful life, deferred maintenance typically leads to deterioration of performance, increased costs to repair, and decrease in asset value. Deferred maintenance needs may be categorized as critical or noncritical at any point in time. Continued deferral of noncritical maintenance will normally result in an increase in critical deferred maintenance.

  Code compliance (e.g. life safety, ADA, OSHA, environmental, etc.), Forest Plan Direction, Best Management Practices, Biological Evaluations other regulatory or Executive Order compliance requirements, or applicable standards not met on schedule are considered deferred maintenance.

- Critical Deferred Maintenance **-** Maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period; and is to the point that its is a serious threat to public health or safety, a natural resource or the ability to carry out the mission of the organization.

- Emergency Maintenance - An urgent maintenance need that may result in injury, illness, or loss of life, natural resource, or property; and must be satisfied immediately. Emergency needs generally require a declaration of emergency or disaster, or a finding by an Agency Official that an emergency exists.

New Construction - Activities that result in the addition of National Forest authorized or temporary road miles (36 CFR 212.1).

Parties - Parties to the TMP including PCGP, the USDI-BLM, the USDA-FS, and the Bureau of Reclamation.

Pipeline Project - The Pacific Connector Gas Pipeline, including all lands associated therewith as described in the BLM Right-of-Way Grant (Grant), serial number OR 63542.

Pipeline Project-Induced Traffic - Traffic occurring on a road or bridge that is a direct result of the existence or continued operation of the Pipeline Project and would not otherwise occur without the Pipeline Project.

Re-commissioning – Improve a previously decommissioned road for transportation needs required for the construction of the Pipeline Project.

Reconstruction (Rehabilitation) - Replacement of an existing facility involving the reconstruction, reinstallation, or reassembly of a fixed asset. Activity that results in improvement or realignment of an existing road, including: 1) road improvement - where an activity results in an increase in an existing road's traffic service level, an expansion of its capacity, or a change in its original design function, and 2) road realignment – where an activity results in a new location of an existing road or portions of an existing road and treatment of the old roadway (36 CFR 212.1).

Restoration - Work necessary, as a result of major damage, to restore a road, bridge or other transportation facility to the designated standard and serviceability.

Right-of-Way - the Federal Lands which PCGP will be authorized to use or occupy under the Grant or associated TUP.

"Roads" means existing roads located on Federal Lands and/or under the jurisdiction of the Agency (including United States easements) or roads approved for construction on Federal Lands which are necessary for access to and from the Right-of-Way for construction, operation, maintenance or termination of the PCGP.

Road and Bridge Operations - The management and control of traffic, road use, and inspection and evaluation of the condition and safety of roads and bridges.

Road Maintenance Levels (USDA-FS) - The USDA-FS levels of service provided by, and maintenance required for, a road consistent with road management objectives and maintenance criteria. The USDA-FS has defined five road maintenance levels listed below.

- USDA-FS Level 1 - Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period must exceed one year. Basic custodial maintenance is performed to keep damage to adjacent resources to an acceptable level and to perpetuate the road to facilitate future management activities. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road

deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate."

Roads receiving Level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at Level 1, they are closed to vehicular traffic, but may be open and suitable to non-motorized uses.

- USDA-FS Level 2 - Assigned to roads open for use by high clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log hauling may occur at this level. Appropriate traffic management strategies are either to (1) discourage or prohibit passenger cars, or (2) accept or discourage high clearance vehicles.

- USDA-FS Level 3 - Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities.

  Roads in this maintenance level are typically low speed (nominally 15-25 mph), single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material. Appropriate traffic management strategies are either "encourage" or "accept." "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users.

- USDA-FS Level 4 - Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. The most appropriate traffic management strategy is "encourage." However, a "prohibit" strategy may apply to specific classes of vehicles or users at certain times.

- USDA-FS Level 5 - Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated. The appropriate traffic management strategy is "encourage."

Road Maintenance Levels (USDI-BLM) - The USDI-BLM levels of service provided by, and maintenance required for, a road consistent with road management objectives and maintenance criteria. Like the USDA-FS, the USDI-BLM also has defined five maintenance levels. All of the USDI-BLM road maintenance levels, including Western Oregon guidance, are listed in Exhibit S. However, under the USDI-BLM road maintenance definitions, Level 2 roads are defined differently compared to the USDA-FS system. In addition, one special road/trail requirement exists in the Susan Creek area. For transmission line access roads on USDI-BLM-managed land, Level 1 and 2 roads are defined as the following plus special considerations for the Susan Creek Trail:

- USDI-BLM Level 1 - This level is assigned to roads where minimum maintenance is required to protect adjacent lands and resource values. These roads are no longer needed and are closed to traffic. The objective is to remove these roads from the transportation system. In Western Oregon, the objective of this maintenance level

should also include road segments which are closed to vehicles on a long-term basis, but that may be used again in the future. This will facilitate assigning decommissioned roads at this level.

- USDI-BLM Level 2 - This level is assigned to roads where management objectives require the road to be opened for limited administrative traffic. Typically, these roads are passable by high clearance vehicles. In Western Oregon, traffic is generally administrative with some minor specialized use, or moderate seasonal use. These roads are typically low standard, low volume single lane roads, natural and aggregate surfaced, and are functionally classified as a resource road.

- Special Road/Trail Consideration - Special requirements exist for the road alignment that is also used as the Susan Creek Trail (road to access TL39_04/23). This road alignment is shared for both purposes for approximately 500 feet. The accessible hiking trail was constructed to Americans with Disabilities Act (ADA) guidelines to a width of 3.5 feet using compacted crushed rock. To protect both the investment in the trail and the public recreation opportunity, a special standard applies to this segment when transmission line maintenance activities may damage the trail.

Road Maintenance Specifications - The guidelines for the maintenance of roads as identified in the TMP and Appendices B and D (USDA-FS, USDI-BOR) and Appendices B, C1, C2 and C3 (USDI-BLM).

Standard - A statement of required, mandatory, or specifically prohibitive practice regarding land management, safety, or other procedures.

Temporary Roads - Roads authorized by contract, permit, lease, other written authorization, or emergency operation not intended to be a part of the Forest Service transportation system and not necessary for long-term resource management (36 CFR 212.1).

Transportation Management Plan (TMP) - The transportation planning and policy document that describes implementation activities and policies related to the coordination of all transportation-related needs of the Pipeline Project and the agencies for roads and bridges necessary for Pipeline Project operations in the Pipeline Project vicinity for the term of the new right-of-way.

Watershed Analysis - Watershed analysis is a process used to characterize the human, biological and physical conditions, processes, and interactions within a watershed. It is an intermediate analysis between land management planning and project planning. The analysis focuses on specific issues, values and uses identified within the landscape that are essential for making sound management decisions.

Appendix Z

Unanticipated Discovery Plan
(Cultural Resource Preservation)

Jordan Cove LNG, LLC

DRAFT

Unanticipated Discovery Plan

Jordan Cove Energy Project

and

Pacific Connector Gas Pipeline Project

August 2017

Unanticipated Discovery Plan

1.0 Introduction

This document provides an Unanticipated Discovery Plan (UDP) that will be followed by Jordan Cove Energy Project, LP (JCEP) and Pacific Connector Gas Project, LP (PCGP) (JCEP and PCGP are collectively referred to as "Jordan Cove"). JCEP is seeking authorization from the Federal Energy Regulatory Commission (FERC) to site, construct and operate a natural gas liquefaction and liquefied natural gas (LNG) export facility on the North Spit of Coos Bay, Oregon (LNG Terminal). PCGP will simultaneously be seeking an authorization from FERC to construct and operate an approximately 229-mile long, 36 inch diameter natural gas transmission pipeline from near Malin, Oregon to the LNG Terminal (the LNG Terminal and Pipeline are collectively referred to as the "Project"). This UDP provides the procedures Jordan Cove, its personnel and consultants will follow in the event that unanticipated discoveries of historic properties, archaeological objects, archaeological sites, or human remains are made during the construction and operation of the Project.

Potential unanticipated discoveries fall into two primary classes. The first class includes archaeological objects, materials or features such as hearths, pit features, or remains of dwellings. The second class consists of human remains. The two classes are governed by different laws and regulations and require different treatment procedures.

Procedures for dealing with unanticipated discovery of human remains are outlined in Section 3.0, and procedures for dealing with the unanticipated discovery of archaeological objects are outlined in Section 4.0.

This UDP is intended to:

- Comply with applicable Federal and State laws and regulations – the National Historic Preservation Act of 1966, 16 U.S.C. § 470 and its implementing regulations at 36 CFR Part 800, 36 CFR Part 63; 36 CFR Part 61; the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), 25 U.S.C. §§ 3001 *et. seq* and its implementing regulations at 43 CFR Part 10; Archaeological Resources Protection Act of 1979, as amended and its implementing regulations at 36 CFR Part 296; Oregon Revised Statutes (ORS) 97.740-97.760 for Indian Graves and Protected Objects; ORS 358.905-358.955 for the Protection of Archaeological Objects and Sites; ORS 390.235 for Archaeological Permit Requirements; OAR 736-051-0080 through 0090 Administrative Rules for Oregon Archaeological Excavation Permits; the Oregon State Historic Preservation Office's (SHPO's) "Treatment of Native American Human Remains Discovered Inadvertently or Through Criminal Investigations on Private and Non-Federal Public Lands in Oregon"; and Federal Energy Regulatory Commission's Guidelines for Reporting on Cultural Resources Investigations for Pipeline Projects (July 2017);
- Describe to regulatory and review agencies the procedure Jordan Cove and its contractors will follow to address the unanticipated discovery of archaeological objects, historic properties or human remains; and
- Provide direction and guidance to Project personnel as to the proper procedure to be followed should an unanticipated discovery occur.

- Provide contact information for all parties that require notification.

2.0 Training and Orientation

Jordan Cove, in consultation with the FERC, will designate a Cultural Resources Coordinator (CRC) who will be responsible for all archaeological materials and historic properties-related activities on the Project. The CRC will be a professional archaeologist (meeting the Secretary of the Interior's Guidelines as defined in 36 CFR 61). For practical purposes, the CRC may designate an Environmental Inspector (EI) or other supervisor to provide notifications required under this UDP but may not delegate any of the CRC's other responsibilities, unless the EI is a professional archaeologist and meets the requirements of 36 C.F.R. Part 61, in which case the EI may act in the CRC's place if the CRC is unavailable. The CRC will provide archaeological/cultural resource orientation for Jordan Cove and advise construction contractors and personnel on the procedures to follow in the event that an unanticipated discovery is made. Training will occur as part of the pre-construction on-site training program for foremen, environmental inspectors (EIs), construction supervisors, and all other supervisory personnel who supervise any construction or inspection activities. Training will involve both general and detailed instructions regarding how to follow the requirements of the UDP, basic archaeological artifact and site identification, and an overview of the state and federal laws pertaining to the protection of archaeological resources. General instructions shall include:

- Ensure that all construction supervisors have contact information for the CRC.
- Stop work immediately if archaeological objects (artifacts, historic or prehistoric features [wells, privies, shell middens, etc.], bones, or any item suspected of being archaeological) are identified.
- Contact the construction supervisor immediately. The construction supervisor shall notify the CRC or its designee as soon as possible.
- Restrict access to the discovery.
- Drawings, photographs, or analysis will not be permitted without consultation and approval from the appropriate Indian Tribes.
- The discovery will not be shared with the media or individuals not pertinent to the assessment or protection of the remains.
- Comply with all unanticipated discovery procedures.
- Treat human remains, funerary objects, sacred objects, and objects of cultural patrimony with dignity and respect.
- A description of the potential penalties for failure to report discoveries or to comply with the procedures outlined in this UDP.
- The penalties that could be incurred by anyone who illegally collects or destroys any archaeological objects, archaeological sites, or historical artifacts and associated materials and/or their context.

3.0 Procedures for the Inadvertent Discovery of Human Remains or Burial Sites

Any human remains, burial sites, or burial related objects that are discovered during construction will at all times be treated with dignity and respect.

Pursuant to ORS 97.745(4), if suspected Native American remains are encountered on private or non-federal public lands, Jordan Cove will notify the state police, SHPO, the Oregon Commission on Indian Services (OCIS), the FERC, and the appropriate Indian Tribe(s) as soon as possible but in all cases, within twenty-four hours of the determination.

In accordance with NAGPRA, if the remains are found on federal lands, in addition to contacting those entities listed in the previous paragraph, the CRC will immediately contact the applicable federal land management agency in accordance with the requirements of 43 C.F.R. § 10.4. The federal land management agency will then be responsible for further contact with any appropriate Indian Tribes.

Indian Tribes that may have ancestral burial sites in the Project area include, but are not limited to, the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians, the Confederated Tribes of Grand Ronde, the Confederated Tribes of Siletz, the Coquille Indian Tribe, the Cow Creek Band of Umpqua Tribe of Indians, and the Klamath Tribes.

The CRC will, in all cases of a potential discovery, complete a form or provide other written documentation acceptable to FERC and SHPO to document a potential discovery. The CRC and all EIs will comply with the following procedures:

1. If any Jordan Cove personnel or contractors believe he or she has made an unanticipated discovery of human skeletal remains, the remains will not be moved or disturbed, and the construction supervisor shall be immediately notified. The construction supervisor shall, in turn, immediately notify the CRC and the appropriate EI.
2. The CRC or its designee will be responsible for taking appropriate steps to protect the discovery. The construction activity that resulted in the exposure of the discovery will be immediately halted, followed, as soon as possible, by the cessation of all other ground-disturbing activity within 300 ft (91 m) of the discovery, unless a greater distance is required by SHPO to protect a discovery. Construction activities may continue elsewhere on the Project site. After all construction activity within 300 ft (91 m) of the discovery has been halted, the following steps will be taken to ensure that no further disturbance occurs to the discovery:
    a) secure an area at least 300 ft (91 m) around the discovery using orange safety fencing or a similar material, as necessary;
    b) prevent vehicle traffic through the area immediately surrounding the discovery except as necessary to remove vehicles and equipment already present in the area;
    c) consult with the SHPO to determine whether a 24-hour guard is needed to ensure that the find is secure at all times or consult with the applicable federal land management agency if the lands are federal;
    d) limit access to the area surrounding the discovery to essential personnel; and
    e) No photographs will be allowed except those taken by state police or archaeologists. If the remains are suspected to be Native American, no photographs will be allowed unless approval is provided by the appropriate Indian Tribe(s).
3. The CRC or its designee will immediately call FERC, the state police, the appropriate Indian Tribe(s), SHPO, and the LCIS who will examine the discovery and determine whether it should be treated as a crime scene or as a human

burial/cemetery. The CRC or its qualified designee will also have a professional archaeologist trained in human remains identification examine the discovery to concur with the coroner on whether the remains are human and whether or not they are contemporary. A forensic anthropologist may also be required to determine whether the remains are of Native American ancestry. If the remains are determined to be or suspected to be of Native American ancestry, no photographs will be taken. If the discovery occurs on federal lands, the CRC will also immediately notify the applicable federal land management agency, and the Federal Land Archaeologist, if qualified to do so, will make, in consultation with the appropriate Indian Tribe(s), the determination as to whether the remains are human and of possible Native American ancestry. If the Federal Land Archaeologist is not qualified to determine whether the remains are human, the Federal Land Archaeologist will engage a forensic anthropologist or osteo-archaeologist to determine whether the remains are of Native American ancestry. All work within 300 ft buffer around the discovery will halt until permission to resume work is provide by FERC, the SHPO or the applicable federal agency for finds on federal lands.

4. If the remains are determined to be non-human by the archaeologist and/or forensic anthropologist, and there are no archaeological objects identified in association with the remains, then the archaeologist or forensic anthropologist will inform the CRC, who will notify the Construction Superintendent that construction can resume. The CRC will complete the Discovery Form and take photographs of any find. The photographs shall be sufficient for a trained archaeologist to determine that the remains are not human by reviewing them. The Discovery Form and photographs shall be submitted to FERC and the SHPO within 15 days of the discovery.
5. If the remains are determined to be non-human by the archaeologist and/or forensic anthropologist, but associated with an archaeological site, the CRC shall follow the procedures identified in Part 4 below.
6. If the remains are determined to be human and associated with a crime scene by the appropriate county coroner, then the CRC shall immediately inform the Construction Superintendent to follow the coroner's protocol for removal of the remains. The CRC will complete the Discovery Form and take photographs of the find to the extent allowed by State law. The Discovery Form and photographs shall be submitted to FERC and the SHPO within 15 days of the discovery.
7. If the remains are determined to be human and not to be the result of criminal activity, the CRC or its designee will notify the SHPO within 24 hours. The SHPO will be kept informed of all discussions regarding the remains until their final status is resolved.

   The CRC or its designee will contact the OCIS as well as all appropriate Indian Tribes and notify them of the discovery by phone or e-mail as soon as possible but in all cases within twenty-four hours of the discovery. The appropriate Indian Tribe(s) also will be notified in writing within three days of the discovery, and this notification shall include information on the site of the human remains along with the name of the person or agency in charge of the find.

8. If the remains are determined to be human, within an archaeological context, and of Native American ancestry, the CRC shall follow the steps in Section 4

subparagraphs (5)-(13) for the unanticipated discovery of an archaeological site and the following:

- Notifications to the appropriate agencies and Indian Tribes shall indicate that human remains have been identified.
- No photographs shall be taken of Native American human remains.
- No further assessment shall be conducted until a Tribal representative(s) is present.
- The public and non-essential personnel will be excluded from the site.
- The discovery will not be shared with the media or any individuals who are not required for the assessment and protection of the remains.
- The CRC shall request that the appropriate Indian Tribe(s) inform them of any requests they have regarding the treatment of the remains and such requests shall be honored to the greatest extent possible.
- Field investigations to determine the NRHP-eligibility of archaeological materials shall avoid contact with the human remains.
- The CRC will consult with the SHPO and appropriate Tribe(s) to develop field investigations designed to evaluate the potential for additional human remains to be present without disturbing them.
- The CRC will consult with the Construction Superintendent, the SHPO, and appropriate Tribe(s) to determine if the remains can be avoided by an alternative construction technique. If such a technique is possible, construction shall resume upon approval from SHPO and will be monitored by a professional archaeologist and the appropriate Indian Tribe(s) if they request to do so.
- If disturbance of the remains cannot be avoided and the remains are not part of a crime scene or are part of an historic cemetery, the CRC will consult with the SHPO and appropriate Indian Tribe(s), if applicable, or likely descendants to develop a treatment plan. The treatment plan will outline measure to be implemented, including addressing how the remains should be excavated, repatriated, reinterred and reported. The treatment plan will clearly state that Jordan Cove shall be responsible for all costs associated with implementation of an approved treatment plan. Human remains will not be permanently curated.
- If disturbance of the remains cannot be avoided and the remains are part of an archaeological site that will also be affected by construction, the CRC will consult with the SHPO and appropriate Tribe(s) to develop a treatment plan for the site that includes provisions for temporary curation, reporting, repatriation and re-internment of the human remains and disposition of any artifacts. The treatment plan will be implemented after approval from the SHPO.

9. The FERC will consult with the appropriate Indian Tribes to determine best practices for handling human remains of Native American ancestry. No work is to take place 300 feet of the area of the delineated discovery until a treatment plan has been approved and implemented.
10. Jordan Cove will offer to compensate the appropriate Indian Tribe(s) for their time and expenses related to any activities associated with the implementation of this UDP. In the event Jordan Cove has entered into a cost recovery agreement with a Tribe addressing such costs, Jordan Cove will abide by the terms of such agreement.

11. Jordan Cove will be responsible for any reburial costs associated with any human remains encountered during construction of the Project that are not associated with a criminal site.

4.0 Procedures for the Inadvertent Discovery of Archaeological Objects or Sites

In Oregon, it is illegal to disturb an archaeological site or object on private or non-federal public land without obtaining an archaeological excavation permit (ORS 358.920[1] [a]). When archaeological objects or archaeological sites are identified inadvertently, this law applies once the discovery is determined to be archaeological. The CRC and the EIs will be aware of and follow the procedures set out below:

1. If any Jordan Cove personnel or contractors believe he or she has found archaeological object or an archaeological site, all work within 100 ft (30 m) of the discovery will stop and the Construction Superintendent will be notified immediately. The Construction Superintendent shall notify the EI and the CRC or its designee within 24 hours of the discovery. The area of work stoppage will be adequate to provide for the security, protection, and integrity of the objects found and therefore may need to be greater than 100 ft depending on the nature of the find. Examples of archaeological objects include but are not limited to:
    a) An area of charcoal or charcoal-stained soil;
    b) An arrowhead, stone tool, or stone flakes (chips);
    c) A cluster of animal bones or burned rocks in association with stone tools or flakes (chips); or
    d) A cluster of tin cans, bottles, or other historic materials older than 50 years that have not previously been identified as objects that can be removed.
    e) A dense pocket of shells

2. If the CRC believes that the discovery consists of archaeological objects or a site, the Construction Superintendent and/or EI will take appropriate steps to protect the discovery site. At a minimum, the construction activity that resulted in the exposure of the discovery will be immediately halted, followed as soon as possible by the cessation of all other ground-disturbing activity within 100 ft (30 m) of the discovery. Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the buffer zone around the site, provided, however, a travel corridor will be allowed along the edge of the buffer zone furthest removed from the discovery, provided that:
    a) vehicles will not be allowed to pass closer than 45 ft from the discovery;
    b) the edge of the travel corridor nearest the discovery will be secured using orange safety fencing or similar material; and
    c) the CRC will consult with the SHPO to determine whether a 24-hour guard is needed to ensure that the find is secure at all times or if the discovery occurs on federal lands, the CRC will consult with the applicable federal land management agency regarding implementation of any security measures.

3. Work in the immediate area will not be re-started until treatment of the discovery has been completed and authorization to proceed has been provided by FERC and/or the SHPO as applicable, and after any required permits have been issued.

4. The buffer zone of 100 ft (30 m) will be established using orange safety fencing or a similar material.
5. The CRC or its qualified designee will arrange for the discovery to be evaluated by a professional archaeologist as soon as possible. The archaeologist must meet the Secretary of the Interior standards as described in 36 CFR Part 61. The appropriate Indian Tribe(s) shall be notified, afforded and opportunity to monitor the examination and provide comments on any written reports provided to Jordan Cove by the archaeologist. The professional archaeologist shall examine the find within 48 hours of notification. The archaeologist will recommend whether the discovery is potentially eligible for listing in the National Register of Historic Places (NRHP) pursuant to 36 CFR §800.4 and 36 CFR Part 63. The CRC will consider the archaeologist's conclusion, make its own recommendation, and then submit documentation, including any documentation or comments provided by an Indian Tribe(s), about the find, the archaeologist's recommendation and its recommendation to FERC, the SHPO and any appropriate Indian Tribe(s) for concurrence within 72 hours of receipt of the professional archaeologist's recommendation. The documentation will be in memorandum form with appropriate photographs included to facilitate FERC and SHPO's review of the conclusions reached.
6. If FERC, in consultation with the SHPO, Jordan Cove, and the appropriate Indian Tribe(s) determines that the discovery is an NRHP-eligible precontact deposit, FERC, Jordan Cove, the SHPO, and the appropriate Indian Tribe(s) will consult to determine if the Project will adversely affect the resource pursuant to 36 CFR 800.5.
7. If FERC, in consultation with the SHPO, Jordan Cove, and the appropriate Indian Tribe(s) determines that the discovery is not NRHP-eligible, then Jordan Cove will prepare a memorandum to this effect and deliver it to the SHPO and the FERC for concurrence. A copy will also be provided to the appropriate Indian Tribe(s). To the extent any Indian Tribe disagrees with the conclusions in such memorandum, the Indian Tribe reserves its rights pursuant to paragraph 12 below.
8. If FERC, in consultation with the SHPO, Jordan Cove, and the appropriate Indian Tribe(s) determines that the resource is NRHP-eligible and that the Project will have an adverse effect on it, Jordan Cove will first propose whether or not avoidance or minimization of adverse effects is possible via alternative construction techniques.
9. If it is determined that avoidance or minimization of adverse effects via alternative construction techniques to an NRHP-eligible site is not possible, then Jordan Cove will develop a treatment plan in consultation with the appropriate Indian Tribe(s), designed to mitigate the adverse effect pursuant to 36 CFR 800.6. Jordan Cove will consult with the FERC, SHPO, and the appropriate Indian Tribe(s) and follow state and federal regulations for applicable treatment measure(s). Jordan Cove will provide FERC, the SHPO and the appropriate Indian Tribe(s) with a draft treatment plan for review and comment. The SHPO will provide approval of the treatment plan, which will be implemented in accordance with any schedule set out in the plan. Treatment measures may include mapping, photography, subsurface testing and sample collection, complete data recovery, or other activities. Jordan Cove will provide a report on the methods, analysis, and results in compliance with

36 CFR 800.11 and in accordance with the treatment plan. The specific work plan and schedule for these procedures will be included in the treatment plan.

10. If FERC, in consultation with the SHPO, Jordan Cove, and the appropriate Indian Tribe(s) determines that the resource is NRHP-eligible but that the Project will not adversely affect it, then Jordan Cove will prepare a memorandum to this effect and deliver it to the SHPO and the FERC for concurrence and provide a copy to the appropriate Indian Tribe(s).
11. Jordan Cove will ensure that field investigations, research, analysis, reporting, and curation of any materials collected during these investigations are sufficiently funded and implemented and follow all federal and state guidelines and procedures. All treatment efforts shall be conducted under an Oregon permit for archaeological excavation (OAR 736-051-0080 through 0090).
12. If any Indian Tribe does not agree with the findings of the SHPO and Jordan Cove's archaeologist, such Tribe reserves the right to address its concerns with the Advisory Council on Historic Preservation pursuant to 36 C.F.R. Part 800, and otherwise reserves all rights under state and federal law to obtain relief.
13. Upon completion of the treatment plan, Jordan Cove will submit a summary report to the SHPO and appropriate Indian Tribe(s) within thirty (30) days of completion of the treatment plan. If archaeological data recovery is a component of the treatment plan, a full report will be submitted to the SHPO, appropriate Indian Tribes, and the OCIS in accordance with any schedule set out in the treatment plan.

5.0 Parties to Contact

Notice required under this UDP shall be made to those parties set out in the table below. Any party may update its contact information at any time. An effort will be made to update this information on an annual basis during the life of the Project.

Contacts for the Discovery of Archaeological Resources				
Organization	**Name**	**Role**	**Contact Information**	**Mailing Address**
Jordan Cove	To Be Determined	Cultural Resource Coordinator (CRC)	Office: Mobile: Email:	
Historical Research Associates	Bradley Bowden	Archaeological/Historical Consultant	Office: (503) 247-1319 Direct: (971) 386-2042 Mobile: (206) 898-5781 Email: **bbowden@hrassoc.com**	1825 SE 7th Ave, Portland, OR 97214
Oregon State Historic Preservation Office (SHPO)	Dr. Dennis Griffin	State Archaeologist	Office:(503) 986-0674 Fax: (503) 986-0793 Email: **dennis.griffin@state.or.us**	Heritage Conservation Division Oregon Parks and Recreation Dept., 725 Summer Street NE, Suite C, Salem, OR 97301-1266

Contacts for the Discovery of Archaeological Resources				
Organization	**Name**	**Role**	**Contact Information**	**Mailing Address**
Oregon State Historic Preservation Office (SHPO)	John Pouley	Assistant State Archaeologist	Office: (503) 986-0675 Fax: (503) 986-0793 Email: **john.pouley@state.or.us**	Heritage Conservation Division Oregon Parks and Recreation Dept., 725 Summer Street NE, Suite C, Salem, OR 97301-1266
Federal Energy Regulatory Commission (FERC)	Paul Friedman	FERC Cultural Resources Contact	Office: (202) 502-6353 Fax: (202) 208-0353 Email: **paul.friedman@ferc.gov**	888 First Street NE, Washington, D.C. 20426
Federal Energy Regulatory Commission (FERC)		Alternate FERC Contact	Office: Fax: (202) 208-0353 Email:	888 First Street NE, Washington, D.C. 20426
Federal Land Owners				
BLM—Coos Bay District	William Kerwin	Archaeologist	Office: (541) 756-0100 Phone: (541)751-4306-3246 Email: **wkerwin@blm.gov**	1300 Airport Lane North Bend, OR 97459
BLM—Medford District	Cheryl Foster-Curley	Archaeologist	Office: (541) 618-2200 Phone: (541) 618-2280 Email: **cfostercurley@blm.gov**	3040 Biddle Road Medford, OR 97504
BLM—Roseburg District	Molly Casperson	Archaeologist	Office: (541) 440-4930 Phone: Email: **mcasperson@blm.gov**	777 NW Garden Valley Blvd. Roseburg, OR 97471
BLM—Lakeview District: Klamath Falls Resources Area	Laird Naylor II	Archaeologist	Office: (541) 883-6916 Email: **lnaylor@blm.gov**	2795 Anderson Avenue, Bldg. #25 Klamath Falls, OR 97603
Umpqua National Forest	Christopher Kelly	Heritage Program Manager/Tribal Liaison	Office: (541) 957-3200 Email:	2900 NW Stewart Parkway, Roseburg, OR 97471
Rogue River – Siskiyou National Forest	Melissa Schroeder	Heritage Program Manager/Tribal Liaison	Office: (541) 618-2200 Phone: (541) 618-2077 Email:	3040 Biddle Road, Medford, OR 97504
Fremont – Winema National Forest	John Kaiser	Klamath Ranger District Forest Archaeologist	Office: (541) 883-6714 Phone: (541) 947-6260 Email:	2819 Dahlia Street Suite A, Klamath Falls, OR 97601

Contacts for the Discovery of Archaeological Resources				
Organization	**Name**	**Role**	**Contact Information**	**Mailing Address**
Fremont – Winema National Forest	Amy Gowen	Tribal Government Relations	Office: (541) 883-6741 Email:	
Bureau of Reclamation Klamath Basin	Adam Nickels	Archaeologist	Office: (541) 883-6935 Fax: (916) 978-5005 Phone (916) 978-5053 Email:	6600 Washburn, Klamath Falls, OR 97603

Contacts for the Discovery of Human Remains				
Organization	**Name**	**Role**	**Contact Information**	**Mailing Address**
Oregon State Police	Sergeant Chris Allori		Office: (503) 731-4717 Mobile: (503) 708-6461 Dispatch: (503) 731-3030	
Coos Bay Area Command State Police	Lieutenant Jeff Lewis		Office: (541) 888-2677 Email: jeffrey.lewis@state.or.us	
Oregon Medical Examiner's Office	Karen Gunson	Oregon State Medical Examiner	Office: (971) 673-8200	
Oregon Medical Examiner's Office	Eugene Gray	Forensic Administrator	Office: (971) 673-8200 Email: Eugene.Gray@state.or.us	
Oregon Medical Examiner's Office	James Olson, M.D.	Deputy State Medical Examiner-Southern Region	Office: (541) 440-4453	
Tribal Contacts				
Oregon Commission on Indian Services (OCIS)	Karen Quigley	Executive Director	Office: (503) 986-1067 Fax: (503) 986-1071 Email: Karen.Quigley@state.or.us	900 Court Street NE, Rm. 167, Salem OR 97301-1347
Coquille Indian Tribe	Kassandra Rippee	THPO & Archaeologist	Office: (541) 756-0904 ext. 1216 Mobile: (541) 808-5554 Fax: (541) 756-0847 Email: **kassandrarippee@coquilletribe.org**	3050 Tremont Street, North Bend, OR 97459
Confederated Tribes of Coos, Lower Umpqua & Siuslaw Indians	Stacy Scott	THPO, Cultural Resources Protection Specialist	Office: (541) 888-7513 Mobile: (541) 297-5543 Fax: (541) 888-2853 Email: sscott@ctclusi.org	1245 Fulton Avenue, Coos Bay, OR 97420

Contacts for the Discovery of Human Remains				
Organization	**Name**	**Role**	**Contact Information**	**Mailing Address**
Confederated Tribes of Grand Ronde	David Harrelson	THPO, Cultural Resources Protection Specialist	Office: (503) 879-1630 Fax: (503) 879-2126 Email: **david.harrelson@grandronde.org**	9615 Grand Ronde Road, Grand Ronde, OR 97347
Confederated Tribes of Siletz	Robert Kentta	Cultural Resource Program Director	Office: (541) 444-2532 Home: (541) 444-2204 Mobile: (541) 351-0148 Fax: (541) 444-2307 Email: Rkentta@ctsi.nsn.us	PO Box 549, Siletz, OR 97380
Cow Creek Band of Umpqua Tribe of Indians	Jessie Plueard	THPO and Cultural Programs Manager	Office: (541) 677-5575 X5577 Fax: (541) 677-5574 Email: jpluard@cowcreek.com	2371 NE Stephens St. Suite 100, Roseburg OR 97470
The Klamath Tribes	Perry Chocktoot	Director of Culture and Heritage	Office: (541) 783-2219 X159 or (800) 524-9787 Fax: (541) 783-2029 Email: **perry.chocktoot@klamathtribes.com**	PO Box 436, Chiloquin, OR 97624

Appendix AA

Environmental Alignment Sheets

(provided to FERC September 2017)