

**Preliminary
Wetland Mitigation Report**



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List of Abbreviations and Acronyms

CFR	Code of Federal Regulations
CWA	Clean Water Act
CWM	Compensatory Wetland Mitigation
E & E	Ecology and Environment, Inc.
EPA	U.S. Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
M & M	Mitigation and Monitoring
NDEP	Nevada Division of Environmental Protection
NRC	National Research Council
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
ODSL	Oregon Department of State Lands
ROW	right-of-way
UDEQ	Utah Department of Environmental Quality
UDNR	Utah Department of Natural Resources
USACE	U.S. Army Corps of Engineers
WDEQ	Wyoming Department of Environmental Quality
WQC	Water Quality Certification

Executive Summary

This report summarizes the federal and state mitigation processes that are applicable to the Ruby Pipeline Project (Project). It includes a brief analysis of the proposed Project impacts; details the applicable federal and state mitigation requirements; and proposes methodology to streamline the overall mitigation process.

At the federal and state levels, the mitigation process begins by selecting the least environmentally damaging practical alternative that avoids and minimizes impacts to jurisdictional waterbodies and wetlands during the construction and operation of the Project. Once all appropriate avoidance and minimization measures have been achieved and on-site restoration has been maximized (or cannot be accomplished) the following options are available to compensate for unavoidable impacts:

1. Mitigation bank credits;
2. In-lieu fee program credits;
3. Permittee-responsible mitigation under a watershed approach;
4. Permittee-responsible on-site and in-kind mitigation; and
5. Permittee-responsible off-site and/or out-of-kind mitigation.

Ruby Pipeline, LLC (Ruby) has implemented all appropriate avoidance and minimization measures during the planning and design of the Project and will continue to do so in coordination with the state and federal resource agencies during the implementation of the Project. Based on field data and impact analyses, unavoidable impacts would primarily be temporary in nature; and a minimal amount of unavoidable impact would be considered permanent and/or require additional compensatory mitigation due to a change in habitat type.

Ruby intends to maximize on-site and in-kind mitigation (i.e., restoration) of temporary impacts to waterbodies and wetlands that may result from Project implementation. However, permanent impacts would require additional, compensatory mitigation measures. As of the drafting of this report, mitigation bank credits and in-lieu of fee program credits are not available within the scope of the Project area. Therefore, Ruby will need to investigate offsite mitigation options.

The Project will follow the federal process laid out by the U.S. Army Corps of Engineers (USACE) for all mitigation requirements in Wyoming, Utah, and Nevada. However, in Oregon, administrative rules require specific coordination with the Department of State Lands to meet their mitigation requirements. Ruby recommends that the mitigation processes be managed and implemented concurrently to minimize review and approval timeframes. We also recommend that the federal and state mitigation requirements be

consolidated into one Mitigation and Monitoring Plan that is coordinated with the federal and state resource agencies.

1 Introduction

1.1 Project Overview

The Project is comprised of approximately 675.2 miles of 42-inch diameter natural gas pipeline, along with associated compression and measurement facilities, located between Opal, Wyoming and Malin, Oregon. An approximate 2.6-mile lateral, the PG&E Lateral, would also be constructed south from the Malin Hub.

The Project's rights-of-way (ROW) would cross four states: Wyoming, Utah, Nevada, and Oregon. In addition to the pipeline facilities, Ruby proposes the installation of four compressor stations for the Project: one located near the Opal Hub, one in western Utah, one near the mid-point of the Project north of Elko, Nevada, and one northwest of Winnemucca, Nevada.

Ruby proposes to construct and operate the Project to reliably deliver Rocky Mountain natural gas to consumers throughout the Project area, including the West Coast (Washington, Oregon, and California) and Nevada. Demand for natural gas in the Project area continues to grow, with additional natural gas supplies needed to replace declining Canadian supplies, increase diversity and reliability of supply, and provide flexibility as renewable energy is developed.

Specifically, the Project pipeline facilities would consist of the following facilities:

- Approximately 675.2 miles of 42-inch diameter natural gas pipeline (Ruby Mainline);
- Approximately 2.6 miles of 42-inch-diameter natural gas pipeline lateral (PG&E Lateral);
- Ten interconnects located within four measurement facilities;
- Forty-four mainline valves, 11 Launchers, and ten receivers; and

Additionally, the design for the Project requires four compressor stations.

- Roberson Creek Compressor Station, Lincoln County, Wyoming;
- Wildcat Hills Compressor Station, Box Elder County, Utah;
- Wieland Flat Compressor Station, Elko County, Nevada.
- Desert Valley Compressor Station, Humboldt County, Nevada.

The Project would be designed in accordance with the U.S. Department of Transportation Pipeline Safety Regulations, 49 Code of Federal Regulations (CFR) Part 192.

1.2 Project Area Description

The Project would cross four states (Wyoming, Utah, Nevada, and Oregon) and 10 counties in the western United States. It would traverse approximately 48.0 miles in the State of Wyoming, through Lincoln and Uinta counties; 182.5 miles in the State of Utah, through Rich, Cache, and Box Elder counties; 357.6 miles in the State of Nevada, through Elko, Humboldt, and Washoe counties; and 86.9 miles in the State of Oregon, through Lake and Klamath counties. In addition, a 2.6-mile lateral would be installed in Klamath County, Oregon. The Project would result in a total of 4,328.8 acres of permanent (operational) disturbance and an additional 9,681.0 acres of temporary (construction) disturbance.

The construction ROW through wetlands and waterbody crossings would be maintained at 75 feet wide, as feasible. This ROW width would accommodate large equipment, pipe stringing and set up, welding, the trench, and the temporary storage of topsoil and trench spoil. Aboveground facilities have been located outside wetlands.

The Project would also require extra temporary workspace and staging areas necessary for waterbody, roadway, and railroad crossings, and pipeline point of intersection locations. Ruby would use existing public and private roads to access the construction corridor and staging areas. Currently, there are no plans to construct new access roads. If Ruby determines that new access roads are necessary, Ruby would complete the required analysis and approvals prior to use. Access roads may be graded up to 30 feet wide with extra width at turns and where the access road intersects the Project ROW.

As part of the routine maintenance of the Project, Ruby would monitor the condition of the pipeline ROW following pipeline installation and take corrective actions as necessary.

1.3 Regulatory Overview

1.3.1 Federal Regulation

The USACE has permitting authority over activities affecting jurisdictional waters of the United States. Jurisdictional waters of the United States include surface waters such as navigable waters and their tributaries, all interstate waters and their tributaries, natural lakes, all wetlands adjacent to other waters, and all impoundments of these waters.

Two federal statutes mandate USACE jurisdiction over navigable waterways and adjacent wetlands. These are Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (CWA). Section 10 of the Rivers and Harbors Act applies to all navigable waters of the United States. Section 404 of the CWA applies to all jurisdictional waters of the United States, including wetlands that have significant nexus to interstate commerce. Given the absence of navigable waters, Section 404 of the CWA would be the prevailing federal regulation for this Project.

Section 404 of the CWA requires authorization from the Secretary of the Army, acting through the USACE, for the discharge of dredged or fill material into all waters of the United States, including wetlands. Discharges of fill material generally include, without limitation: placement of fill that is necessary for the construction of any structure or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; dams and dikes; artificial islands; property protection or reclamation devices such as riprap, groins, seawalls, breakwaters, and revetments; beach nourishment; levees; fill for intake and outfall pipes and subaqueous utility lines; fill associated with the creation of ponds; and any other work involving the discharge of fill or dredged material. A USACE permit is required whether the work is permanent or temporary.

Pursuant to the Section 404(b)(1) Guidelines in 40 CFR part 230, the USACE will only issue a Section 404 permit upon a determination that the proposed discharge complies with applicable provisions of 40 CFR part 230, including those that require the permit applicant to take all appropriate and practicable steps to avoid and minimize adverse impacts to waters of the United States. Upon completion of these steps, compensatory mitigation for unavoidable impacts may be required to ensure that an activity requiring a Section 404 permit complies with the Section 404(b)(1) Guidelines.

United States Army Corps of Engineers regulations (33 CFR Parts 325 and 332) and United States Environmental Protection Agency (EPA) regulations (40 CFR Part 230) define the compensatory mitigation requirements for unavoidable impacts to wetlands and other jurisdictional waters of the United States. To assist the regulated public in interpreting these regulations, the USACE has issued formal Mitigation and Monitoring Proposal Guidelines (Appendix A). These guidelines apply to development of plans for onsite and/or offsite establishment (creation), enhancement, and restoration activities, as well as mitigation bank design.

In addition to the USACE regulations and guidelines, Ruby will implement its Wetland and Waterbody Construction and Mitigation Procedures (Appendix B) to minimize the extent and duration of project-related disturbance on wetlands and waterbodies.

1.3.2 State Regulations

Many states regulate waterways and adjacent wetlands, either through specific regulatory programs or via Section 401 of the CWA (also known as 401 Water Quality Certification). State regulatory programs may incorporate permitting procedures to authorize jurisdictional impacts to waterways and wetlands and may require compensatory mitigation for unavoidable impacts. In the absence of a specific regulatory program, states may utilize 401 Water Quality Certification to require measures over and above those required by the USACE Section 404 permit. Section 401 allows a state to review, authorize or deny, and implement requirements additional to those of the USACE 404 permit. If a state chooses to

utilize its authority under Section 401, the Section 404 permit does not go into effect until the state issues the 401 authorization.

The state agencies and regulations that are applicable to wetlands and waters permitting and mitigation requirements for this Project are summarized below and detailed in the following sections of this report:

Wyoming

Wyoming Department of Environmental Quality (WDEQ), Water Quality Division:

- CWA Section 401 Water Quality Certification (WQC).
 - Request for WQC submitted to WDEQ by USACE for Section 404 permits.
 - Section 401 certification issued by WDEQ prior to federal Section 404 approval.

Utah

Utah Department of Natural Resources (UDNR), Division of Water Rights:

- Stream Channel Alteration Permit for alteration of bed or banks of a natural stream.
 - State Engineer's Office has entered a joint permitting program with the USACE to issue Section 404 approvals through the State Stream Alteration Program.
- Draft Mitigation Guidance
 - Utah Division of Water Rights, Stream Alteration Program Fact Sheet SA-5, Draft, Post Construction Establishment of Vegetation (refer to Appendix C) (UDWR 2008).

Utah Department of Environmental Quality (UDEQ), Division of Water Quality:

- CWA Section 401 Water Quality Certification.
 - Request for certification submitted to UDEQ by USACE for Section 404 permits.
 - Section 401 certification issued by UDEQ prior to federal Section 404 approval.

Nevada

Nevada Division of Environmental Protection (NDEP), Bureau of Water Pollution Control:

- CWA Section 401 Water Quality Certification.
 - Request for certification submitted to NDEP by USACE for Section 404 permits.
 - Section 401 certification issued by NDEP prior to federal Section 404 approval.

Oregon

Oregon Department of State Lands (ODSL):

- Joint Removal-Fill Permit for removal or fill of materials in waters of the state
 - Complete Joint Permit Application Form for state removal-fill permit and Section 404 permit.
 - The Oregon Department of Environmental Quality (ODEQ) receives the Joint Permit Application from ODSL.

- Additional mitigation regulations will apply under Oregon's Administrative Rules (refer to Appendix D).

Oregon Department of Environmental Quality (ODEQ):

- CWA Section 401 Water Quality Certification.
 - Joint Removal-Fill Permit/Section 404 application forwarded to ODEQ for certification.
 - Section 401 certification to be issued prior to federal Section 404 approval.

1.4 Jurisdictional Impacts

Unavoidable impacts to jurisdictional wetlands and waterways would result from Project construction. For the purpose of this report "jurisdictional impacts" are defined as impacts to wetlands and waterways that are regulated by federal and/or state government. These jurisdictional impacts are broken down into two main categories: (1) temporary impacts and (2) permanent impacts. The jurisdictional impacts are summarized in this report; and detailed discussions are provided in the Ruby Wetland Delineation Report (E & E 2008d).

1.4.1 Temporary Impacts

Temporary wetland impacts resulting from of the Project are anticipated to be limited to those activities associated with construction, including clearing of vegetation, topsoil removal, trenching, pipe installation, and backfilling. The total amount of temporarily affected wetlands is expected to be 197.9 acres (E & E, 2008d).

1.4.2 Permanent Impacts

No potential wetland areas were identified at any of the locations for Project aboveground facilities; therefore, no permanent wetland impacts are anticipated from the construction or operation of those facilities. However, 0.1 acres of forested wetlands would be converted to emergent wetlands as a result of the Project (E & E 2008d). The USACE has the discretion to deem said habitat conversion a permanent impact, and the State of Oregon defines said conversion as a permanent impact.

2 Federal Mitigation Requirements

2.1 Mitigation for Losses of Aquatic Resources

Federal mitigation requirements are outlined in the Compensatory Mitigation for Losses of Aquatic Resources that were jointly developed and issued by the USACE (33 CFR Parts 325 and 332) and the EPA (40 CFR Part 230) on April 10, 2008. These regulations define the compensatory mitigation requirements for unavoidable impacts to wetlands and other jurisdictional waters of the United States. Pursuant to the regulations, compensatory mitigation can be accomplished by restoring, enhancing, creating, or, in certain circumstances, preserving aquatic resources. However, restoration of temporary impacts should generally be the first method considered because its likelihood of success is greater.

If all appropriate avoidance and minimization measures have been achieved, and on-site restoration has been maximized (or cannot be accomplished), the USACE will consider the following five types and location options to compensate for unavoidable impacts (in order to preference):

1. Mitigation bank credits;
2. In-lieu fee program credits;
3. Permittee-responsible mitigation under a watershed approach;
4. Permittee-responsible on-site and in-kind mitigation; and
5. Permittee-responsible off-site and/or out-of-kind mitigation (USACE 2008a).

2.2 USACE District Guidelines

The USACE Districts are committed to improving the success of future compensatory mitigation projects. The Districts have issued Mitigation Guidelines and Monitoring Requirements (Guidelines) that are designed to assist the regulated public with all aspects of the mitigation process and to provide information to ensure that future mitigation sites successfully replace lost functions and values associated with unavoidable, regulated impacts to waters of the United States. The Guidelines utilized by the Sacramento, Portland, and the Omaha Districts of the USACE outline the mitigation criteria Ruby would utilize in selecting, designing, implementing, and monitoring wetland mitigation sites.

There are no major substantive differences between the three District Guidelines. The only variation between them is that the Portland and Omaha Guidelines discuss mitigation criteria in greater detail, and the Sacramento Guidelines include ten Mitigation Principles that were developed by the National Research Council (NRC) and used by the USACE and EPA in developing their mitigation guidelines.

The following is a summary of the Mitigation Principles, Mitigation Guidelines, and Monitoring Requirements that have been adopted by the USACE Districts that Ruby would follow in selecting, designing, implementing, and monitoring wetland mitigation sites.

2.2.1 Sacramento District

In its report entitled “Compensating for Wetland Losses Under the Clean Water Act,” the NRC provided 10 operational guidelines to aid in planning and implementing restoration, enhancement, and creation of aquatic resource systems. The Sacramento District adopted these 10 guidelines as Mitigation Principles for District staff and the regulated public to incorporate into the review and development of mitigation projects. The ten Mitigation Principles are arranged under two headings as outlined below:

A. Basic Requirements for Success

1. Whenever Possible, Choose Wetland Restoration over Creation;
2. Avoid Over-Engineered Structures in the Wetland Design;
3. Restore or Develop Naturally Variable Hydrological Conditions;
4. Consider Complications Associated with Creation or Restoration in Seriously Degraded or Disturbed Sites; and
5. Conduct Early Monitoring as Part of Adaptive Management.

B. Guide for Mitigation Site Selection

1. Consider the Hydrogeomorphic and Ecological Landscape and Climate;
2. Adopt a Dynamic Landscape Perspective;
3. Pay Attention to Subsurface Conditions, Including Soil and Sediment Geochemistry and Physics, Groundwater Quantity and Quality, and Infaunal Communities;
4. Pay Particular Attention to Appropriate Planting Elevation, Depth, Soil Type, and Seasonal Timing; and
5. Provide Appropriately Heterogeneous Topography (USACE 2004).

The Sacramento District Mitigation and Monitoring Proposal Guidelines are provided in Appendix E.

2.2.2 Portland District

The Mitigation Guidelines and Monitoring Requirements prepared by the Portland District of the USACE are intended to assist the regulated public in preparing adequate and complete Mitigation and Monitoring (M&M) plans, implementing successful mitigation projects, and monitoring them to identify and remedy any problems that can reduce long term success.

The language in the Portland District Mitigation Guidelines and Monitoring Requirements is consistent with the Federal Mitigation Requirements outlined in 33 CFR Part 332, as noted above. If after all appropriate avoidance and minimization has been achieved, and if on-site restoration can not be accomplished, the USACE will consider the following five (5) types and location options to compensate for unavoidable impacts (in order to preference):

1. Mitigation bank credits;
2. In-lieu fee program credits;
3. Permittee-responsible mitigation under a watershed approach;
4. Permittee-responsible on-site and in-kind mitigation; and
5. Permittee-responsible off-site and/or out-of-kind mitigation (USACE, 2008b).

The USACE policy outlined in the Section C of the Mitigation Guidelines and Monitoring Requirements for the Portland District discusses the mitigation process succinctly and in greater detail (refer to Appendix F).

2.2.3 Omaha District

The Omaha District Compensatory Mitigation Guidelines for Wyoming prepared by the Omaha District of the USACE are intended to provide applicants with projects which involve compensatory mitigation proposals. Below is an outline of information needed by the Wyoming Regulatory Office for compensatory mitigation plans. This guideline would establish the basic information required. At the request of the USACE, more extensive data and information may be required.

1. Mitigation Goals
2. Existing condition of mitigation site
3. Design of Mitigation Site
 - a. Drawings
 - b. Other treatments
 - c. Hydrology
4. Monitoring
 - a. Success Criteria/Performance Standards
 - b. Sampling protocols
 - c. Report content
5. Additional Information Requirements
 - a. Contingency Plans
 - b. Deed Restrictions/Conservation Easements
 - c. Performance Bonds

The Omaha District Compensatory Mitigation Guidelines for Wyoming are provided in Appendix G.

2.3 Ruby's Wetland and Waterbody Construction and Mitigation Procedures

Ruby's Procedures are intended to assist applicants by identifying baseline mitigation measures for minimizing the extent and duration of project-related disturbance on wetlands and waterbodies. The Procedures outline practical construction methods and best management practices (BMPs) that avoid and minimize impacts at waterbody and wetland crossings.

Ruby's Procedures are based on the FERC's Wetland and Waterbody Construction and Mitigation Procedures. The FERC defers to the definition of waters and wetlands as outlined in the *1987 Federal Manual for Identifying and Delineating Jurisdictional Wetlands* and, in effect, utilizes this definition in the specific restoration (i.e., mitigation) and post-construction maintenance, monitoring, and performance requirements prescribe in its Procedures. The FERC's prescriptive mitigation requirements are aligned with USACE mitigation guidelines and monitoring requirements and include "project-specific wetland restoration plans" as requested by FERC. Project-specific restoration plans are to include measures for re-establishing stream beds, banks, riparian and wetland herbaceous and/or woody species; controlling the invasion and spread of undesirable exotic species; and monitoring and reporting the success of the revegetation and weed control efforts.

3 Summary of Jurisdiction Impact

3.1 Stream and Wetland Crossings

Wetland and stream crossings by state are summarized in Appendix H.

3.1.1 Wyoming Mitigation Requirements

The federal mitigation requirements of the USACE will prevail within the state of Wyoming. Given that all impacts are proposed to be temporary, wetland restoration will be required at a rate of 1:1 (impact:mitigation). However, the WDEQ, Water Quality Division may request additional measures during their CWA Section 401 Water Quality Certification review process.

3.1.2 Utah Mitigation Requirements

The federal mitigation requirements of the USACE would prevail within the State of Utah. Given that all impacts are proposed to be temporary, wetland restoration will be required at a rate of 1:1 (impact:mitigation). The UDNR, Division of Water Rights has issued draft mitigation guidance to assist applicants in the preparation of mitigation plans: Utah Division of Water Rights, Stream Alteration Program Fact Sheet SA-5, Draft, *Post Construction Establishment of Vegetation* (refer to Appendix I) (UDWR 2008).

3.1.3 Nevada Mitigation Requirements

The federal mitigation requirements of the USACE would prevail within the State of Nevada for jurisdictional waters. Because the State of Nevada takes jurisdiction over all waters in the state, including dry, “non-live” washes, the NDEP, Bureau of Water Pollution Control typically requires restoration as a special condition during its CWA Section 401 Water Quality Certification review process. Restoration typically requires returning a stream bed and banks to its original, pre-disturbance configuration and topography followed by revegetation. Photo documentation of the site before and after the disturbance is also typically required in order to ensure the restoration requirement is met (Gentry 2008). Nevada does not typically require additional compensatory mitigation over and above that required by the USACE. Given that all impacts are proposed to be temporary, wetland restoration would be required at a rate of 1:1 (impact:mitigation).

3.1.4 Oregon Mitigation Requirements

For projects where reasonably expected adverse effects to the water resources, including wetland functions, cannot otherwise be avoided or minimized, Oregon Administrative Rules (OAR-141-085-0121(2)) require a compensatory wetland mitigation (CWM) plan to

compensate for the reasonably expected adverse effects of a project by replacing the functional attributes of the wetland impacted by project development. Compensatory wetland mitigation shall be limited to replacement of the functional attributes of the lost wetland.

3.1.5 Oregon Mitigation Process

There are generally several compensatory mitigation options available to permit applicants in Oregon, including on- and off-site mitigation, payment in lieu, and mitigation banking. However, based on a recent discussion with the ODSL, the payment in lieu and mitigation banking options are not available for the Ruby Project. Please refer to Appendix J for the detailed State of Oregon mitigation requirements (ODSL 2008a); and to Appendix K for the Guidance on Function Assessment and Mitigation Approach for Large Linear Corridor Projects, Draft Regulation 11-19-07 (ODSL 2008).

The State of Oregon wetland and habitat mitigation are as follows:

Onsite Mitigation is conducting the compensatory wetland mitigation project on the same parcel as the wetland impact. Often, this is the best way to replace the lost functions close to where they will be lost. Sometimes, however, onsite mitigation is not practical or would not be ecologically successful.

Offsite Mitigation is conducting the mitigation project somewhere other than on the development site. It may be done through a legal agreement with another landowner or by purchasing wetland mitigation credits from a mitigation bank (note: no banks are available in Lake or Klamath Counties). The offsite mitigation needs to be located in the same watershed and replace the same type of wetland functions that were lost.

Mitigation for Other Waters: Projects on streams or riverbanks may also require mitigation to offset adverse impacts to water resources and navigation, fishing, or public recreation uses on those waters. Compensatory mitigation for non-wetland waters may include onsite or offsite improvement or enhancement of water resources or compensation to a third party to conduct, monitor, and maintain such mitigation sites.

Oregon Department of Fish and Wildlife Compliance Review: It is the Fish and Wildlife Habitat Mitigation Policy of the Oregon Department of Fish and Wildlife (ODFW) to require or recommend, depending upon the habitat protection and mitigation opportunities provided by specific statutes, mitigation for losses of fish and wildlife habitat resulting from development actions. The ODFW shall apply the requirements of its policy when implementing its own development actions and when developing recommendations to other state, federal, or local agencies regarding development actions for which mitigation for impacts to fish and wildlife habitat is authorized or required by federal, state, or local environmental laws or land use regulations. Please refer to Appendix K (ODFW 2008) for the detailed ODFW mitigation requirements.

Administrative Rule Revisions: Oregon is currently in the process of revising its Administrative Rules regarding fill-removal permits and mitigation (ODSL 2008b). Some of these revisions may affect mitigation requirements for this Project.

3.1.6 Mitigation Ratios and Acreage

State rules establish the following wetland replacement ratios for compensatory mitigation: 1:1 for restoration; 1.5:1 for creation; 3:1 for enhancement; and 2:1 for enhancement of cropped wetlands. However, the administrative rules governing mitigation do provide some flexibility.

The mitigation ratio will need to be specifically negotiated for areas where the wetland impact is temporary (e.g., the surface is restored to wetland after placement of pipe in a trench) but where the wetland habitat type that existed within the corridor will be changed (e.g., the corridor will be maintained as an emergent wetland and trees/shrubs prevented from growing back). Although Ruby will have provided a 1:1 mitigation ratio in the form of onsite restoration, it will also need to offset the loss of functions provided by the vegetative structure—notably thermoregulation (riparian shade) and songbird habitat—at an offsite location. The quantity and type of offsite mitigation would therefore be negotiated in advance with the ODSL.

4 Wetland Mitigation Process

Ruby has implemented all appropriate avoidance and minimization measures during the planning and design of the Project and will continue to do so in coordination with the relevant state and federal resource agencies during the implementation of the Project. Based on field data and impact analyses, unavoidable impacts would primarily be temporary in nature, and a very minimal amount of unavoidable impact would be considered permanent and/or require additional compensatory mitigation.

Ruby intends to maximize on-site and in-kind mitigation (i.e., restoration) of temporary impacts to waterbodies and wetlands that may result from Project implementation. However, permanent impacts would require additional, compensatory mitigation measures. As of the drafting of this report, mitigation bank credits and in-lieu of fee program credits are not available within the scope of the Project area. Therefore, Ruby will need to investigate offsite mitigation options.

The Project would follow the federal process laid out by the USACE for all mitigation requirements in Wyoming, Utah, and Nevada. However, in Oregon, administrative rules require specific coordination with the Department of State Lands to meet its mitigation requirements. E & E recommends that the mitigation processes be managed and implemented concurrently to minimize review and approval timeframes.

4.1 Federal

The Federal mitigation process begins by initiating a pre-application consultation with the USACE to discuss potential mitigation requirements and information needs. Thereafter, Ruby will be required to prepare and submit a draft M & M Plan to the USACE for review and comment. This allows Ruby to get feedback and buy-in from the USACE prior to investing in an un-vetted approach or development of final plans. Before the USACE will authorize construction to begin in jurisdictional waters or wetlands, the USACE will need to approve a final M & M Plan. As outlined in 33 CFR Part 332, an M & M Plan must include the following elements:

1. Mitigation Objectives;
2. Site Selection;
3. Site Protection Instrument;
4. Baseline Information;
5. Determination of Credits;
6. Mitigation Work Plan;
7. Maintenance Plan;
8. Performance Standards;

9. Monitoring Requirements;
10. Long-term Management Plan;
11. Adaptive Management Plan;
12. Financial Assurances; and
13. Other information that the DE may require to determine the appropriateness, feasibility and practicability of the mitigation project (USACE 2008a).

Ruby must proceed through the following five key stages in the development of a compensatory mitigation project, as outlined in the Mitigation Guidelines and Monitoring Requirements issued by the Portland and Sacramento Districts:

- A. Project Site Impact Assessment;
- B. Compensatory Mitigation Site Selection;
- C. Compensatory Mitigation Site Design;
- D. Compensatory Mitigation Site Construction; and
- E. Long-Term Compensatory Mitigation Site Maintenance and Monitoring (USACE 2004 and USACE 2008b).

Within each of these stages, the USACE has identified mitigation concerns (i.e., criteria) that Ruby will need to consider and address when preparing M & M Plans. To the extent practical, these criteria must also be addressed in the preparation of M & M Plans for restoration of sites that have been temporarily impacted during Project construction. Addressing these criteria in the manner suggested by the USACE will facilitate the review and approval of the M & M Plan proposal. Again, note that that all wetland impacts resulting from the Project in the states of Wyoming, Utah, and Nevada to are proposed to be temporary, wetland restoration would be required at a rate of 1:1 (impact:mitigation) and would be conducted on-site at the location of construction.

4.2 Oregon

The Oregon mitigation process begins by initiating a pre-application consultation with the ODSL to discuss: 1) mitigation requirements and information needs; 2) how ODSL requirements may be coordinated with those of the USACE; and 3) how ODSL requirements may be incorporated into a "joint" M & M Plan. Specific discussion will include the quantity and type of offsite mitigation Ruby would provide to offset the loss of functions resulting from a change in vegetative structure (i.e., wooded to herbaceous).

Following pre-application consultation, Ruby will be required to prepare and submit a draft of the joint M & M Plan to the ODSL for review and comment. This allows Ruby to get feedback and buy-in from the ODSL prior to development of final plans. Before the ODSL will authorize construction to begin in jurisdictional waters or wetlands, it will need to approve a final M & M Plan. As outlined in OAR-141-085-0141, the Oregon component of the joint M & M Plan must include the following elements:

1. CWM site information:

- a. Area/size;
 - b. Site ownership; and
 - c. Legal description.
2. Existing physical and biological baseline:
 - a. Wetland determination/delineation report;
 - b. Functional assessment;
 - c. Description of the major plant communities;
 - d. Description of water source, duration, frequency of inundation or saturation, depth of surface or subsurface water and approximate location of all water features (wetlands, streams, lakes) within 500 feet of the CWM site; and
 - e. Hydrogeomorphic (HGM) and Cowardin classification of any wetlands present within the CWM site.
 3. CWM plan description:
 - a. CWM plan goals, objectives and success criteria;
 - b. The CWM concept:
 - i. How the plan will restore, reverse, minimize or control the causes of wetland degradation; and
 - ii. Ensure that the wetland functions of the effected wetland are replaced;
 - c. Description of the rationale for the CWM site selection;
 - d. Proposed water source, duration, frequency of inundation or saturation;
 - e. Any known CWM site constraints or limitations;
 - f. Proposed HGM and Cowardin classification;
 - g. Proposed net losses and gains of wetland functions; and
 - h. Description of how the applicant will maintain and protect the direct CWM site beyond the monitoring period.
 4. CWM construction plans including:
 - a. Scaled site plan showing CWM project boundaries, existing wetlands, restoration, creation and enhancement areas;
 - b. Scaled grading plan with existing and proposed contours and cross section locations;
 - c. Description of construction methods (access, equipment);
 - d. Schematic of any proposed hydrological structures;
 - e. Scaled cross sections showing elevations, distance;
 - f. Planting plan (with species, size, number, spacing and installation methods);
 - g. Monitoring plan (schedule, timetable, methods);
 - h. Contingency plan for CWM failures; and
 - i. Implementation schedule and construction sequence.
 5. Reference site, combination of reference sites, or reference data of the same HGM class (compare and relate the sites and/or data to the CWM goal).

6. Provisions for a financial security instrument.
7. Plans for vegetated buffers, if needed, to protect the viability and functions of the CWM site.
8. Plans for the long-term protection of the CWM site (ODSL 2008b).

4.3 Wyoming, Utah, and Nevada

Although the Project will follow the federal process laid out by the USACE for mitigation requirements in Wyoming, Utah, and Nevada, Ruby will initiate pre-application consultation with the appropriate state personnel to ensure that the M & M plan will meet any special conditions that may apply under their 401 Water Quality Certification process.

5 References

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Appendices

Appendix A

Appendix B

Appendix C

Appendix D

Appendix E

Appendix F

Appendix G

Appendix H

Appendix I

Appendix J

Appendix K