

Section 8 - Environmental Impact

General

This Study shows that aboveground storage is feasible at two sites within the study area. Anderson Perry & Associates, Inc., performed an initial review of the potential environmental impacts that may result from the implementation of the proposed alternatives outlined in this Study. Three sites were initially identified as having available water and being suitable to building a dam: Rail Hollow, Henderson Hollow, and Larch Creek. The Study determined that Larch Creek is not economically feasible and, therefore, is no longer being considered and is not included in this environmental review.

This section outlines the results of an initial review of the potential environmental harm and/or impacts that may result from this project, if located at the Henderson Hollow or Rail Hollow site.

Land Use/Important Farmland/Formally Classified Lands

The project location is in north central Wasco County, Oregon. Land in the vicinity is primarily unimproved or used for farming, grazing, and agricultural purposes. The Henderson Hollow site and the Rail Hollow site are located at approximately 1,880 and 2,000 feet above mean sea level, respectively. The western edge of the Fifteenmile Creek watershed boundary is located in the Mount Hood National Forest; however, the proposed aboveground storage sites are located outside of this forest.

Construction activities will require excavation of the soil and in-water work. The impacts of construction will be both temporary (noise, dust, vehicles) and permanent (conversion of farmland to an aboveground storage facility).

Land Use

Wasco County adopted a Comprehensive Plan in 1983. The Wasco County Zoning Code identifies both of the potential aboveground water storage locations as A-1 Exclusive Farm Use (EFU zone). A Land Use Compatibility Statement (LUCS) and Conditional Use Permit (CUP) from Wasco County may be required to complete this project.

Important Farmland

There are multiple soil types present in the proposed project area, ranging from cobbly loams to silt loams. The units are primarily rated as Farmland of Statewide Importance or Prime Farmland if Irrigated (NRCS, 2015). If this project is completed by a federal agency or with assistance from a federal agency, the action area may be subject to review under the Farmland Protection Policy Act (FPPA). This project would result in the permanent conversion of farmland and would need to be approved by Natural Resources Conservation Service (NRCS).

Formally Classified Lands

Formally classified lands are lands designated by federal, state, and local governments for special purposes. These include parks, monuments, landmarks, historic trails, wild and scenic areas, wilderness areas, Native American owned lands, etc.

The proposed sites are located more than 10 miles from the nearest state park (White River Falls State Park) and approximately 20 miles east of the Mount Hood National Forest. The project will have no impact on formally classified lands.

Wild and Scenic Rivers

Portions of Fifteenmile Creek are classified as wild and scenic; 10.5 miles are classified as wild, 0.6 mile is classified as scenic, totaling 11.1 miles classified as wild and scenic. The creek is wild and scenic from the headwaters (river mile [RM] 53.3) to RM 42.2. The project area encompasses the Fifteenmile Creek watershed from approximately RM 37 to RM 53.3. The proposed aboveground storage locations are downstream of the wild and scenic portions of Fifteenmile Creek. Thus, this project will unlikely have direct effects on wild and scenic rivers, but may have some indirect effects by impacting the watershed in general (NWSRS, 2015).

Floodplain

According to the Federal Emergency Management Agency (FEMA) Map Service Center (FEMA, 2015) Flood Insurance Rate Map for Wasco County (community number 410229B, Map Panel 39), portions of Fifteenmile Creek are located in Zone A, the 100-year flood zone. Zone C, areas of minimal flooding, has been assigned to the Rail Hollow and Henderson Hollow locations and for the majority of the Fifteenmile Creek watershed area near the proposed project locations. While construction of the aboveground storage facility at either location would not occur in a floodplain, a more substantive evaluation of floodplain dynamics in the area could be needed as part of the engineering design of this project. If this project is completed by a federal agency or with assistance from a federal agency, the action area may be subject to Executive Order 11988 Floodplain Management.

Wetlands

The National Wetlands Inventory map identifies one wetland within the proposed dam sites, a narrow corridor of palustrine forested/shrub wetland along an unnamed tributary to Rail Hollow on the western end of the proposed Rail Hollow Dam. Outside of the dam sites, numerous small wetlands are mapped in the Fifteenmile Creek watershed, mainly associated with waterways (USFWS, 2015a). To the extent possible, efforts should be made to avoid wetlands when locating the proposed pipeline and during construction. Based on the proposed location and anticipated design, impacts to wetlands are anticipated to be temporary.

A site visit to scope for wetlands should be conducted as part of the design development process. If there is potential for the project to impact wetlands, a Wetland Survey should be conducted and a Wetland Delineation Report prepared and submitted to Oregon Department of State Lands (DSL) and U.S. Army Corps of Engineers (USACE). If wetlands cannot be avoided, the appropriate permits should be obtained from the DSL and the USACE, and any necessary mitigation implemented. If this project is completed by a federal agency or with assistance from a federal agency, the action area may be subject to Executive Order 11990 Protection of Wetlands.

Historic Properties

Searches of the National Register of Historic Places and the Oregon Historic Sites Database were conducted, and there are no listings on either register within five miles of the project area.

A search of the Oregon Archaeological Records Remote Access database was conducted. No known archaeological sites are located within two miles of the project area and no cultural resource surveys have been conducted within the proposed project area.

In the event that the project receives federal funding or requires a federal permit, Section 106 Consultation should occur and a project description and relevant maps should be sent to the Oregon State Historic Preservation Office (SHPO) and relevant tribes for comment and recommendations. A pedestrian survey or other cultural resource fieldwork may be needed to evaluate the potential for impacts to cultural resources. No impacts to cultural resources are currently anticipated. However, excavation associated with the proposed project components could affect as of yet undiscovered cultural resources. Additionally, if the Rail Hollow site is selected, the associated farm structures may require evaluation for historical significance.

In the event that an archaeological resource is discovered during project operations, work should cease in that area and an archaeologist should be contacted to assess the discovery. SHPO and relevant tribal staff will be notified of the discovery. Further work in the area should not re-commence until consultation has occurred and concurrence has been reached with SHPO and the appropriate tribes.

Biological Resources

A list of federally protected species was obtained from the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) on April 2, 2015 (USFWS, 2015b; NMFS, 2015). Table 8-1 identifies the threatened or endangered species that may occur within Wasco County, as well as designated critical habitat.

**TABLE 8-1
ENDANGERED SPECIES ACT (ESA) LISTED AND PROPOSED SPECIES IN WASCO COUNTY**

| Species | ESU/DPS* | Federal ESA Status | Designated Critical Habitat |
|---|-------------------------------------|------------------------|-----------------------------|
| Bull trout (<i>Salvelinus confluentus</i>) | Columbia River DPS | Threatened | Yes |
| Chinook salmon (<i>Oncorhynchus tshawytscha</i>) | Upper Columbia River spring-run ESU | Endangered | Yes |
| | Snake River spring/summer run ESU | Threatened | Yes |
| | Snake River fall-run ESU | Threatened | Yes |
| Steelhead (<i>Oncorhynchus mykiss</i>) | Middle Columbia River DPS | Threatened | Yes |
| | Upper Columbia River DPS | Threatened | Yes |
| | Snake River Basin DPS | Threatened | Yes |
| Sockeye salmon (<i>Oncorhynchus nerka</i>) | Snake River ESU | Endangered | Yes |
| Oregon spotted frog (<i>Rana pretiosa</i>) | N/A | Threatened | Proposed |
| Northern spotted owl (<i>Strix occidentalis caurina</i>) | N/A | Threatened | Yes |
| Fisher (<i>Martes pennanti</i>) | West Coast DPS | Proposed Threatened | No |

* ESU = Evolutionarily Significant Unit

DPS = Distinct Population Segment

A search of the Oregon Biodiversity Information Center database on April 2, 2015, revealed 62 records of 16 tracked rare species within a two-mile radius of the Fifteenmile Creek watershed upstream of Dufur. These records included the following nine federally-listed and/or state-listed species:

**TABLE 8-2
 FEDERALLY AND/OR STATE-LISTED RARE SPECIES**

| Species | ESU/DPS | Federal Listing Status | State Listing Status |
|---|--|------------------------|----------------------|
| Oregon slender salamander (<i>Batrachoseps wright</i>) | N/A | Species of Concern | Sensitive Vulnerable |
| Cope's giant salamander (<i>Dicamptodon copei</i>) | N/A | None | Sensitive Vulnerable |
| Oregon spotted frog (<i>Rana pretiosa</i>) | N/A | Threatened | Sensitive Critical |
| Northern spotted owl (<i>Strix occidentalis caurina</i>) | N/A | Threatened | Threatened |
| Chinook salmon (<i>Oncorhynchus tshawytscha</i>) | Middle Columbia River | None | Sensitive Vulnerable |
| Coastal cutthroat trout (<i>Oncorhynchus clarkia</i>) | Southwestern Washington/ Columbia River | Species of Concern | Sensitive Vulnerable |
| Steelhead (<i>Oncorhynchus mykiss</i>) | Middle Columbia River winter-run | Threatened | None |
| Oregon snail (Dalles sideband) (<i>Monadenia fidelis minor</i>) | N/A | Species of Concern | None |
| Mountain grape-fern (<i>Botrychium montanum</i>) | N/A | Species of Concern | None |

Fish Species

Of the federally protected fish species shown as potentially present in Wasco County, only the Middle Columbia River DPS of steelhead is present in Fifteenmile Creek and its tributaries (StreamNet, 2015), and Fifteenmile Creek is listed as designated critical habitat. Although the Middle Columbia River spring-run ESU of Chinook salmon is also present in Fifteenmile Creek (StreamNet, 2015), this ESU is not federally protected under the ESA. However, Fifteenmile Creek is still considered Essential Fish Habitat under the Magnuson-Stevens Act and is designated as Essential Salmonid Habitat by the DSL.

The remaining federally protected fish species in the table above are not present in Fifteenmile Creek. The closest occurrence is in the Columbia River, approximately 35 river miles downstream of the project area.

Rod French, District Fish Biologist with the Oregon Department of Fish and Wildlife (ODFW), indicated that steelhead may be present in the Fifteenmile Creek watershed during the following times: adult migration (December through May), adult spawning (February through May), and juvenile rearing and migration (year-round). He further indicated that spring-run Chinook are only occasional visitors to this system (ODFW, 2015).

Any in-stream work should occur within the ODFW preferred in-water work window of July 15 to October 31, and steps should be taken to avoid any negative impacts to aquatic species. Prior to

construction, the appropriate permits should be obtained and necessary environmental documents completed.

Wildlife Species

Suitable habitat for the listed terrestrial wildlife species is present in the Fifteenmile Creek watershed, including Oregon spotted frog (perennial emergent wetlands with a variety of water depths), northern spotted owl (old growth forest), and fisher (old growth forest). Any proposed development should take these species into consideration, and the necessary environmental evaluations and documentation should be completed.

Water Quality

Fifteenmile Creek and its tributaries are the primary surface waters located in the project vicinity. Stream flow and temperature have been identified as limiting factors for the abundance of focal species. The potential project area is located from RM 37 to the end (RM 53.3). The portions of the creek associated with this project have been listed as water quality limited for temperature (4a), habitat modification (4c), and sedimentation (5) under Section 303(d) of the Clean Water Act (DEQ, 2012). As a result, several organizations are working in portions of the basin to implement improvements for temperature mitigation to in-stream habitat and riparian areas. Augmenting flows with cool water during the late summer and fall months has been identified as a potential method for improving existing spawning and juvenile habitat, as well as expanding viable habitat. Potential methods for flow augmentation (and temperature mitigation) include storage of surface water in an aboveground reservoir during high flow months for later release and use for irrigation during the late summer low flow periods so existing late season live flow irrigation water can be left in stream.

Ultimately the proposed alternative will improve water quality within the watershed by improving water flows in the summer months.

Coastal Resources

The proposed project is not located within a coastal zone. Thus, the proposed project will have no environmental consequences on coastal resources.

Miscellaneous Issues (Air, Noise, Transportation, Visual Aesthetics, Hazardous Materials)

Air Quality

The affected environment will include the entire project area and immediate surrounding vicinity. The Clean Air Act and Amendments of 1990 define a "nonattainment area" as a locality where air pollution levels persistently exceed National Ambient Air Quality Standards or that contribute to ambient air quality in a nearby area that fails to meet standards. "Maintenance areas" are those which had a history of nonattainment, but now are meeting National Ambient Air Quality Standards. (DEQ, 2015).

The portion of north central Wasco County identified as the proposed alternative area has not been classified by the Oregon Department of Environmental Quality (DEQ) as a nonattainment area or maintenance area and does not have an air quality maintenance plan or program.

The project has the potential to temporarily affect air quality. Short-term impacts would include emissions from equipment operation and dust generated from construction activities associated with building the aboveground storage facility.

No substantial particulate matter or detrimental emissions will be released as a result of the proposed alternatives. Fugitive dust control measures, such as spraying water in work areas and applying mulch to disturbed ground, should be implemented as necessary during and following construction.

Noise

The affected environment for noise generated as a result of the project will include the project area and immediate surrounding vicinity. Noise is defined as unwanted sound that interferes with the normal activities of humans and the natural environment. The Oregon Department of Energy regulates noise levels through the Site Certification process.

The proposed project is located outside any city limits or urban growth boundaries, and Wasco County does not have a noise ordinance.

All noise created by the project will be intermittent and temporary in nature and confined to the project area during daylight hours for the duration of construction. No long-term noise impacts are anticipated.

Transportation

The purpose of this project is to create a large aboveground water storage site. The Rail Hollow site, as currently proposed, would cover a portion of Rail Hollow Road and a farm with one house and eight buildings (visible on Google Earth Aerials). This site would impact transportation by requiring a permanent detour or closure of Rail Hollow Road and associated roads leading to the farm. The closest road to the Henderson Hollow location is Dufur Mill Road, which would not be permanently impacted by the project.

In both locations, temporary impacts to traffic congestion could occur during construction of the proposed project as more equipment is entering and exiting the County highway. No permanent or long-term impacts to transportation are anticipated as a result of the proposed project if located at the Henderson Hollow site. Permanent realignment of Rail Hollow Road, and removal of roads to the farm, would be necessary if the project is located at the Rail Hollow site. However, it is not anticipated that this project would cause permanent changes to traffic patterns or congestion in the area.

Visual Aesthetics

Temporary impacts to visual aesthetics may occur during construction. Permanent changes to visual aesthetics would occur in both locations if either the Rail Hollow or Henderson Hollow site were

dammed to create an aboveground water storage area. These water storage areas would be visible from the road and would permanently alter visual aesthetics in the area. If required, mitigation could be considered including planting trees to surround the site, or meeting with area residents to discuss whether they consider this project to be visually concerning.

Hazardous Materials

The Oregon DEQ Environmental Cleanup Site Information list was searched, and no cleanup sites or underground storage tanks were listed in the project area. It is unknown whether the farm and associated buildings in the Rail Hollow location contain hazardous materials, but it is considered unlikely. It is unlikely that this project will be affected by hazardous materials.

Summary

The locations being considered for aboveground water storage locations are likely to incur environmental impacts. Mitigation strategies include obtaining a LUCS and CUP from Wasco County; conducting a FPPA review for impacts to farmland; conducting a wetland survey; potentially conducting a review of Executive Order 11988 Floodplain Management; conducting Section 106 consultation; obtaining all ESA clearances and permits before construction; constructing in-water portions of the project during the ODFW in-water work window; using Best Management Practices to mitigate temporary impacts to noise, air quality, and traffic; and determining mitigation requirements for permanent impacts to visual aesthetics and permanent impacts from the road rerouting for the Rail Hollow location. The Henderson Hollow location would have fewer environmental impacts than the Rail Hollow location.

Through appropriate permitting and review, these environmental impacts should be avoided and minimized to the maximum extent possible.