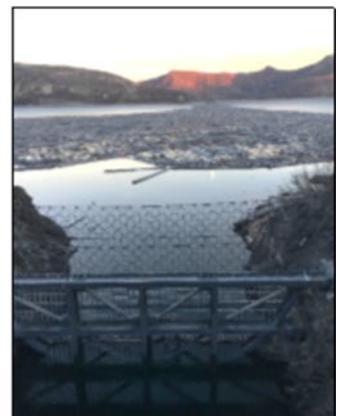


Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project

Finding of No Significant Impact

Gifford Pinchot National Forest, Mount St. Helens National Volcanic Monument, Skamania County, Washington



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Cover photos: Spirit Lake and Mount St. Helens (top), Spirit Lake tunnel intake gate (bottom left), engineer reading piezometer in previously drilled bore hole (bottom center), log debris mat floating on Spirit Lake near the tunnel intake gate (bottom right).

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Finding of No Significant Impact

As the responsible official, I am responsible for evaluating the effects of the project relative to the definition of significance established by the Council for Environmental Quality regulations (40 CFR 1508.13). I have reviewed and considered the environmental assessment and documentation included in the project record, and I have determined that the Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project (the project) selected alternative (Alternative B – Windy Ridge to Pump Station) would not have a significant effect on the quality of the human environment. As a result, an environmental impact statement will not be prepared. My rationale for this finding is detailed below and is organized by subsection of the Council for Environmental Quality definition of significance (40 CFR 1508.27).

Context

The Pumice Plain, and volcanic crater that feeds its small streams, is a geologically active area. The Pumice Plain and Spirit Lake shoreline are subject to considerable scouring and deposition of sediment from volcanic activity, large flood events, spring run-off, and wind erosion and deposition. The selected alternative activities will have impacts that are smaller in scale to what occurs during periods of volcanic activity, elevated runoff, increased streamflow from precipitation, and rain on snow events.

The direct, indirect, and cumulative effects of the proposed action (alternative B) disclosed in the environmental assessment are primarily in the context of the analysis area. As detailed in the environmental assessment, impacts to the project area will be focused around the temporary access road, the disturbance limit corridor¹, barging and staging areas, the geotechnical drilling polygon, potential lake travel corridors, and the intake gate vicinity (approximately 160 acres). This approximately 160 acre area represents a small percentage (0.14 percent) of the Mount St. Helens National Volcanic Monument (the Monument).

I am also considering the direct, indirect, and cumulative effects in the context of the existing condition. The project area is largely undisturbed, however, there is evidence of human activity within the project area. The access road constructed when the original outlet tunnel was installed is still evident and used. The road is used to access the area, albeit not by automobiles, and thus the road remains visible even from a distance. Because the original road bed was not recontoured, the old road cuts and fills along the road bed are evident. Therefore, many of the effects associated with new road construction will be limited since the old road bed still exists and a limited amount of new cut and fill will occur during construction of the temporary access road.

As discussed in more detail below, for the intensity factors of significance, the context of this project is limited to the project area. Even in the local context, this project will not pose significant short- or long term effects, as described in the environmental assessment, Section 3: Analysis Measures and Environmental Effects, and the associated resource write ups. The small scale of the project limits its effects on the natural resource values and uses in the area. The analysis of potential environmental impacts related to project activities demonstrates that no aspect of the selected alternative will result in any significant impact.

¹ The disturbance limit corridor is a corridor of potential ground disturbance typically of 33 to 100 feet from the centerline (66 to 200 feet total width) of the temporary access road alignment. Only a portion of the disturbance limit corridor would actually experience ground disturbance. The final temporary access road alignment could be adjusted within the disturbance limit corridor to avoid or limit impacts to sensitive features.

Intensity

Intensity is a measure of the severity, extent, or quantity of effects, and is based on information from the effects analysis of the environmental assessment and the supporting documentation in the project record. The effects of this project have been appropriately and thoroughly considered with an analysis that is responsive to concerns and issues raised by the public (see draft decision notice Appendix C: Summary of Public Comments on the Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project).

I have taken a hard look at the environmental effects using relevant scientific information and knowledge of site-specific conditions gained from field visits. My finding of no significant impact is based on the context of the project and intensity of effects using the ten factors identified in 40 CFR 1508.27(b).

1. Impacts that may be both beneficial and adverse. A significant effect² may exist even if the federal agency believes that on balance the effect will be beneficial.

Adverse and beneficial impacts have been assessed and were not found to be significant. The beneficial effects of the action do not bias my finding of no significant environmental effects. The analysis considered the direct and indirect effects of the project activities as well as their contribution to cumulative effects. Past, present, and reasonably foreseeable future actions have been included in the analysis. Adverse effects from the selected alternative have been minimized or eliminated through project design criteria. The selected alternative will have no significant effects on Endangered Species Act, Forest Service sensitive species, management indicator species for the Gifford Pinchot National Forest, or survey and manage fish, terrestrial wildlife, or botanical species (environmental assessment sections 3.7, 3.8, and 3.9, respectively). Alternative B will not have a significant effect on resources associated with visual values, recreation, soils, hydrology, or cultural and heritage resources (environmental assessment sections 3.2, 3.3, 3.4, 3.5, 3.6, and 3.10, respectively). The impacts to the congressionally designated Monument and the designated Class 1 Research Area³ were analyzed (environmental assessment section 3.1) and I find the effects to be insignificant. Any adverse effects from the action will be minimal and localized. The project activities are being undertaken to provide for long-term beneficial effects to public safety, health, property, and the environment by avoiding a catastrophic breach of the Spirit Lake natural debris blockage through the implementation of the Spirit Lake tunnel intake gate replacement and geotechnical drilling. As such, I find that the selected alternative is not a significant federal action.

2. The degree to which the proposed action affects public health or safety.

I find that this project will benefit public health and safety by allowing the Forest Service and the U.S. Army Corps of Engineers to perform geotechnical drilling within the Spirit Lake debris blockage, replace the Spirit Lake tunnel intake gate structure, and move the excavated rock debris spoils pile located in front of the intake channel. The spoils are within Spirit Lake and left over from the original tunnel construction.

These actions will allow the Spirit Lake outflow to meet current dam safety standards by including an alternate (redundant gates) method of closure in case of an operations failure and will allow for positive (complete) gate closure for personnel safety during inspection, repair, or maintenance activities. The existing, aged fracture-critical intake gate, identified in the October 2016 comprehensive Spirit Lake tunnel inspection report as a gate that cannot be thoroughly inspected, will be replaced. Geotechnical

² “Significantly,” as used in in the National Environmental Policy Act, requires consideration of both context and intensity (40 CFR 1508.27).

³ The Mount St. Helens National Volcanic Monument Comprehensive Management Plan (1985) designated 3,840 acres as a Class 1 Research Area, otherwise known as the Pumice Plain.

investigation, core sampling, and installation of monitoring instruments will occur within the debris blockage. Any future (currently unknown) decisions related to the management of Spirit Lake water levels will be informed by a current characterization of the debris blockage damming the lake; the location and behavior of groundwater in the blockage; a quantified characterization of risks posed by volcanic activity on Spirit Lake water levels; and the potential response of the debris blockage to local and regional seismic events. The selected alternative will reduce the risk presented by the Spirit Lake and Toutle River system at Mount St. Helens.

3. Unique characteristics of the geographic area such as the proximity to historical or cultural resources, parklands, prime farmlands⁴, wetlands⁵, wild and scenic rivers, or ecologically critical areas.

Historical and cultural resources are covered under intensity factor number 8 below. There are no parkland, prime farmland, or wild and scenic rivers within the project area.

Alternative B's proposed temporary access road does not cross any wetland areas, as defined by the Clean Water Act Section 404. However, the construction of the 25 feet wide marine access ramp will cross a 21 acre wetland feature along parts of the western shore of Spirit Lake. This 21 acre wetland area is identified in the U.S. Fish and Wildlife Service National Wetlands Inventory by using the wetlands mapper tool and it meets the Clean Water Act Section 404 definition for wetlands. Construction of the ramp would impact approximately 0.4 acre or 1.6 percent of shoreline wetlands.

I have determined that impacting 0.4 acre of the 21 acre wetland feature (1.6 percent) constitutes as a minimal impact and does not raise to the level of a significant impact. In addition, if the site is validated as a jurisdictional wetland, mitigation will be required (and adhered to) to offset this minimal impact to the identified wetland during construction and will be coordinated with the State of Washington Department of Ecology and the Seattle District for the U.S. Army Corps of Engineers, per Sections 401 and 404 compliance with the Clean Water Act.

While the Pumice Plain is an important early seral landscape in terms of research, it is not ecologically critical. No areas within the Mount St. Helens National Volcanic Monument were designated as ecologically critical within Public Law 97-243, the Mount St. Helens National Volcanic Monument Comprehensive Management Plan, or the Gifford Pinchot National Forest Land and Resource Management Plan. The project area contains no designated critical habitat under the Endangered Species Act, no designated aquatic resources of national importance under the Clean Water Act, and no other special designations indicating an ecologically critical area.

The Mount St. Helens National Volcanic Monument Comprehensive Management Plan designates 3,840 acres of the Monument as a Class 1 Research Area, otherwise known as the Pumice Plain. As detailed in the environmental assessment (section 3.1), impacts to current research will be focused around the proposed project area including the temporary access road, the disturbance limit corridor (see footnote 1), the barging and staging areas, the geotechnical drilling polygon, the potential lake travel corridors, and the intake gate vicinity (approximately 160 acres). This area represents 0.14 percent of the Monument and

⁴ Prime farmland is a designation given by the National Resources Conservation Service for land use and cover, whose criteria for national legislation is concerned with the environment and with agricultural commodity production (U.S. Department of Agriculture Handbook No. 18)

⁵ As defined under the Clean Water Action Section 404, wetlands are "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

4 percent of the designated Class 1 Research Area. The majority of the Class 1 Research Area (96 percent) will see no direct effects from the selected alternative.

I recognize that implementing alternative B will adversely impact 25 research plots and could indirectly adversely impact several research projects; however, the designated Class 1 Research Area will only be temporarily impacted. After completion of the project, the current operations of the water outlet infrastructure would continue and will not affect the ability to conduct future research projects.

In addition, although the adverse impacts of ongoing research is undesirable, the effects to the success of the affected research projects are not an environmental impact. Due to the limited area impacted by project activities and the short-term nature of the effects (less than 10 years) no lasting effects are expected to the Class 1 Research Area as a whole. I do not find that the impacted 4 percent of the Class 1 Research Area will have a significant effect on research within the Class 1 Research Area or the Monument as a whole.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial⁶.

Based on my review of this project's analysis, I do not find that the effects on the quality of the human environment associated with this project are highly controversial. The courts have been clear that the controversy factor is not meant to test whether there is public opposition to the project, but rather scientific controversy over environmental effects. The effects on the quality of the human environment are not likely to be highly controversial. While there may be some opposition to the need for the project as a whole, due to effects on research plots within the Monument, I have concluded that the science behind the need for action and protection of downstream communities (environmental assessment sections 1.3 and 1.4) is not highly controversial based on my understanding and consultation with Forest Service engineers and U.S. Army Corps of Engineers technical experts. I have taken into account that opposition to the selected alternative has been fully considered through documentation of the no-action alternative and the alternatives considered but eliminated from detailed study in the environmental assessment (appendix A).

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

There were no highly uncertain, unique, or unknown risks identified for the selected alternative or its effects. I find that the effects analyses discussed in section 3 of the environmental assessment are based on sound scientific research. Public comments did not identify any highly uncertain, unique or unknown risks; therefore, the possible effects on the human environment are not likely to be highly uncertain nor do they involve unique or uncertain risks.

The proposed action would implement project activities that are similar in scope and scale to actions implemented in other areas of the National Forest System such as: reconstruction of existing National Forest System roadways, construction of temporary access routes, construction and use of staging areas, geotechnical investigation and core sampling, as well as, stabilization and rehabilitation. The selected alternative does not include any unusual management actions; and these actions are based on sound scientific research and previous temporary road building and drilling projects on the Gifford Pinchot National Forest, Mount St. Helens National Volcanic Monument, and elsewhere in the Pacific Northwest.

⁶ The term "controversial" refers to cases where substantial dispute exists as to the size, nature, or effects of a major federal action rather than to the existence of opposition to the project (U.S. Department of Agriculture, Forest Service, Office of General Counsel, 4/24/1991).

6. The degree to which the action may establish precedent for future actions with significant effects or represents a decision in principle about a future consideration.

This project does not set a precedent for other projects that may be implemented to meet the goals and objectives of the Mount St. Helens National Volcanic Monument Comprehensive Management Plan, or the Gifford Pinchot National Forest Land and Resource Management Plan. Any future federal actions will be evaluated through the National Environmental Policy Act, if applicable, and will be approved through separate decisions, and will stand on their own with regards to environmental effects and project feasibility.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

The analysis considered not only the direct and indirect effects of the selected alternative with the project design criteria, but also its contribution to cumulative effects. Past, present, and reasonably foreseeable future projects have been included in the analysis (environmental assessment section 3). Past actions considered in the cumulative effects analysis include those that contributed to establishing the baseline conditions of the project area. Each resource effects analysis contained within the environmental assessment discusses cumulative effects; none were found to be significant (environmental assessment Section 3.1 Research; Section 3.2 Visual Resources; Section 3.3 Recreation; Section 3.4 Aviation Use; Section 3.5 Soils; Section 3.6 Hydrological Resources; Section 3.7 Aquatic Species; Section 3.8 Terrestrial (Wildlife) Species; Section 3.9 Botanical Species; and Section 3.10 Heritage Resources). Based on the information presented in the environmental assessment, the selected alternative project activities will not result in a cumulatively significant impact to the environment.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

Although a determination of effects regarding impacts to the Lawetlat'la Traditional Cultural Property is pending based on continued government-to-government consultation, the impacts to the Lawetlat'la Traditional Cultural Property are not expected to be significant because there are no direct impacts to the Traditional Cultural Property since its boundary does not overlap with the project area. Anticipated indirect effects, disclosed in the environmental assessment section 3.10, are short term in nature and will apply only until implementation is accomplished, personnel and equipment are removed, and restoration of disturbed areas is completed.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

The selected alternative complies with the Endangered Species Act for aquatic, wildlife, and botanical species. The anticipated effects determinations and consistency with the Endangered Species Act is described in detail in the environmental assessment (sections 3.7, 3.8, and 3.9) and summarized briefly below to illustrate that the project will not adversely affect any endangered, threatened, or proposed species, or their associated critical habitat.

There will be no effect to threatened, endangered, or proposed aquatic, wildlife, or botanical species from the project because none are present within the project area.

I am aware and understand that a DNA investigation is currently ongoing to determine the Spirit Lake rainbow trout species origin. This DNA study is still in its infancy and implementation of the proposed project will likely occur before peer review and a determination has been made. On March 25, 2020, the Forest Service sent a letter to the National Oceanic Atmospheric Administration requesting concurrence that the project area contains no federally proposed or listed threatened or endangered fish species. It is presumed by many that rainbow trout (an identified management indicator species for the Gifford Pinchot National Forest) were illegally stocked in Spirit Lake following the eruption of Mount St. Helens. The activities proposed under the selected alternative associated with the temporary access road, tunnel intake gate repairs, and geotechnical drilling may affect individuals or habitat but will continue to maintain viable populations of rainbow trout within the Gifford Pinchot National Forest. To reduce potential adverse effects to rainbow trout and their habitat resulting from the proposed activities, several best management practices and project design criteria will be implemented to avoid, reduce, minimize, or otherwise mitigate project effects. For details regarding these project design criteria see table 1 in the environmental assessment.

10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

My decision will not violate Federal, State, or local laws or requirements for the protection of the environment. Applicable laws and regulations were considered in the environmental assessment (section 1.5 and section 3). The action is consistent with the Gifford Pinchot National Forest Land and Resource Management Plan, including the proposed amendment (environmental assessment section 5). This project is consistent with the National Historic Preservation and Endangered Species Act, as described above in intensity factors number 8 and number 9, respectively. It is also consistent with the National Forest Management Act and Public Law 97-243 (enabling legislation for the creation of the National Volcanic Monument), as described in intensity factor number 3 above.

Further, this project is consistent with the Magnuson-Stevens Fishery Conservation and Management Act of 1976; the Floodplains Executive Order 11988 of May 24, 1977; the Clean Water Act; the Invasive Species Executive Order 13112 of February 3, 1999; and the Migratory Birds Executive Order 13186 of January 10, 2001 (see environmental assessment section 1.6 and draft decision notice section 5).

The project complies with Executive Order 12898 regarding environmental justice (draft decision notice section 5). No disproportionately high adverse human or environmental effects on minorities or low-income populations were identified during the analysis or public comment process.

Conclusion

After considering the environmental effects described in the environmental assessment and the associated resource write ups, I have determined that the selected alternative (Alternative B – Windy Ridge to Pump Station) will not have significant effects on the quality of the human environment, considering the context and intensity of impacts (40 CFR 1508.27). Thus, an environmental impact statement will not be prepared.