

May 21, 2020

Regional Forester (Reviewing Officer)
Pacific Northwest Regional Office
Attn: 1570 Objections
P.O. Box 3623
Portland, Oregon 97208-3623

submitted electronically to: <https://cara.ecosystem-management.org/Public/CommentInput?project=57259>

RE: Objection to Environmental Assessment, Finding of No Significant Impact and Draft Decision Notice for Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project, Gifford Pinchot National Forest, Mount St. Helens National Volcanic Monument

Dear Regional Forester:

With this letter I object to the Environmental Assessment (EA), Finding of No Significant Impact (FONSI), and Draft Decision Notice (DN) dated April 2020 prepared by the Gifford Pinchot National Forest. I am submitting this objection under 36 CFR 218 Subparts A and B. I am submitting this objection electronically within 45 days of the publication of the legal notice in *The Columbian*.

I have previously submitted timely, specific written comments on the Notice of Proposed Action for Scoping and Comment Period for this project. My comments were received by the electronic system on January 16, 2020 and assigned ID 57259-3236-141. Issues raised in this objection are based on my previous comments.

I am joined in this objection by:

- Washington Native Plant Society
- Conservation Northwest
- Washington Chapter-Sierra Club
- Cascades Volcanoes Broadband-Great Old Broads for Wilderness
- Vancouver Audubon Society
- Kitsap Audubon Society
- Skagit Audubon Society
- Olympic Peninsula Audubon Society
- North Cascades Audubon Society

These organizations also submitted timely, specific written comments on the Notice of Proposed Action for Scoping and Comment Period for this project. Their comments were received by the

electronic system on January 13, 2020, January 14, 2020, or January 16, 2020. Issues raised in this objection are based on their previous comments.

We acknowledge the need to protect public health and safety through the replacement of the Spirit Lake tunnel intake gate. We support the Forest Service's efforts to protect downstream communities, but in the unlikely event of a gate failure there is low potential risk for a catastrophic failure of the debris blockage. Inaction combined with a series of abnormal climatic conditions would be needed before downstream communities would be affected.

We have asked the U.S. Forest Service (Forest Service) to consider the unique geology and ecology of the Pumice Plain and Spirit Lake and the intent of Congress in legislatively designating the Mount St. Helens National Volcanic Monument (Monument) in balance with the ongoing need to replace the tunnel intake gate. The preferred alternative presented in the EA, FONSI and DN fails to protect the Pumice Plain, Spirit Lake and the spirit and intent of the Monument Act.

Although we previously supported the desire to obtain geotechnical drilling data to better understand the physical properties of the debris blockage, we have come to realize that combining the drilling project with the intake gate replacement has limited the consideration of viable alternatives. The preferred alternative fails to adequately protect the Mount St. Helens National Monument's ecological and scientific values and it would cause significant and irreparable harm to those values.

We request that the Forest Service consider an alternative that mitigates both ecological harm and impacts to research and conducts adequate environmental review through preparation of an Environmental Impact Statement (EIS).

Our specific objections to the EA, FONSI and DN and reasons that an EIS should be prepared are explained in detail as follows.

Framing the Need for Action

The Forest Service downplays the significance and value of the Monument while framing the need for action as an imminent emergency, to the extent that the FONSI mischaracterizes the impacts of the preferred alternative by ignoring the fact that they are human caused as compared to natural processes. "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."¹

The FONSI further downplays the effects of the preferred alternative on the Monument by suggesting that every acre of the Monument is of equal geologic, ecologic and research value. "This approximately 160 acre area represents a small percentage (0.14 percent) of the Mount St.

1 Finding of No Significant Impact, Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project, p. 1.

Helens National Volcanic Monument....The small scale of the project limits its effects on the natural resource values and uses in the area.”²

The EA, FONSI and DN focus on project needs while failing to acknowledge the significance of other Monument values or acknowledge the Forest Service’s responsibility for stewardship of those other values. Since 2017, the Forest Service has demonstrated a bias in favor of a road across the Pumice Plain, relentlessly pursuing that linear goal while failing to demonstrate any desire to least impact the Monument’s unique, dynamic and important geological and ecological resources and the on-going scientific research on the Pumice Plain and at Spirit Lake. The Forest Service has never framed the need for action as protecting downstream communities and preserving Monument values.

Failure to respond to scoping comments

Appendix C failed to respond to our scoping comments in any meaningful way throughout the document. We are citing a few examples below to illustrate our objection; these examples are not comprehensive.

Process Theme 2 – The 30-Day Scoping and Comment Period

We commented on scheduling the scoping comment period over the winter holidays and limiting outreach to only the local communities of Longview and Vancouver as indications of Forest Service intent to limit public comment and circumvent opposition to a highly controversial decision. The response simply recited Forest Service regulations without explanation of the rationale for the timing and limited public outreach when establishing the scoping comment period.

We request that the Forest Service provide meaningful response to our comments beyond citation of the regulations.

Process Theme 3 – Decision Making – A.

Appendix C simply repeats the statement from the EA, FONSI and DN that because Congress did not designate any areas as ecologically critical in the Monument Act, that the Forest Service does not have any responsibility to treat research on the Pumice Plain as important or take any special care in protecting the Pumice Plain. This does not respond to our comments regarding congressional intent in creation of the Monument in 1982 with research as one of its primary purposes.

Further, this response ignores the entire legislative record for the Monument Act (Public Law 97-243) and the context within which the act was written. Research was barely starting on the Pumice Plain in 1982, yet members of Congress felt so highly about the importance of research at Mount St. Helens that they invited panels of scientists to testify at both the hearings in Washington, D.C., and the field hearings in Vancouver and Kelso, Washington.³

² Ibid.

The Forest Service testified at both the House and Senate hearings and did not inform the Congress that it would need to designate any areas as ecologically critical in its bills for those areas to be protected. Douglas R. Leisz, Associate Chief, Forest Service, Department of Agriculture, accompanied by Duane Tucker, Deputy Supervisor, Gifford Pinchot National Forest, spoke at the House Joint Subcommittee hearings. Mr. Leisz said. “As a matter of background, Mount St. Helens is a unique area of international scientific and public interest.” He then went on to present the Forest Service proposal for an 84,710-acre national volcanic area “to protect scenic geological features in the volcano impact area for public education purposes, for interpretation, for recreation, and research” while emphasizing the amount of input the agency solicited from scientists in its planning process. He mentions ecological research as one of the activities that the Forest Service was planning for at Mount St. Helens.⁴

The response then excuses the Forest Service determination to ignore the protection of research as an important value by citing Section 4(b)(3) of the Monument Act as it overriding authority to build the proposed road. Section 4(b)(3) needs to be understood in the context of 1982. The U.S. Army Corps of Engineers (Corps) was still trying to figure out whether Spirit Lake would overtop the debris avalanche and Mount St. Helens still was in an eruptive phase. In August 1982, when President Reagan signed the Monument Act, the Corps had not even built the pumping station on the south shore of Spirit Lake.

On August 19, 1982, President Reagan declared a state of emergency and directed the Corps to address the immediate and long-term solutions to the blockage of Spirit Lake by the debris avalanche. The Corps did not install the pumping station until November 1982. The Corps did not begin construction of the tunnel until 1984. Clearly, Section 4(b)(3) was needed in the early 1980s while engineering solutions were under study and there was so much uncertainty about Spirit Lake. The Forest Service fails to consider the emergency clause in the Monument Act in historical context, including a federally declared state of emergency, when used as justification for the proposed action.

The Monument Act clearly expresses a preference for protecting the scientific values of the Monument while granting the Forest Service the ability to occasionally take actions that may impact the Monument’s ecological and scientific values but it also states that these actions should be limited to situations where they are “reasonably necessary” or otherwise related to emergencies.

The Corps knew when it constructed the Spirit Lake tunnel that it had been bored through unstable rock with 12 faults and sheer zones. When the Corps abandoned the road to the

3 U.S., Congress, House, Mount St. Helens National Volcanic Area, Joint Hearings before the Subcommittee of Forests, Family Farms, and Energy of the Committee on Agriculture and the Subcommittee on Public Lands and National Parks of the Committee on Interior and Insular Affairs on H.R. 5281, H.R. 5773, H.R. 5787. 97th Cong., 2nd sess., 1982; and U.S., Congress, Senate, Mount Saint Helens National Volcanic Area Act of 1982, Hearings before the Subcommittee on Public Lands and Reserved Water of the Committee on Energy and Natural Resources on S. 2133, 97th Cong., 2nd sess., 1982.

4 U.S., Congress, House, pp. 34-42.

pumping station in 1985, the Corps did not say that they might need the road again for tunnel repairs. When the Forest Service designated the Pumice Plain as a Class I Research Area in the 1985 Mount St. Helens National Volcanic Monument Comprehensive Management Plan, it did not give special designation to the road corridor and tell scientists not to place plots near the road. The Forest Service and the Corps must take responsibility for creating the current situation by ignoring the known risks that the tunnel could fail and its gate design would become outdated. Instead, they “kicked the can down the road” until risks became “unacceptable” and now want to invoke Section 4(b)(3).

We request that the Forest Service provide meaningful response to our comments.

Process Theme 5 – Need for Action

We commented on the framing of the Need for Action, challenging how the Forest Service downplays the significance and value of research, while presenting the situation as an imminent emergency and threat to downstream communities. The response simply copied the Need for Action statement from the EA and said the current risk situation is “unacceptable.”

It did not respond to our requests for the Forest Service to develop alternatives that least impact the Pumice Plain and its unique, dynamic and important geological and ecological resources and the on-going scientific research on the Pumice Plain and at Spirit Lake. It did not respond to our comments that disrupting and destroying ongoing research, including a research project supported by a grant from the Washington Native Plant Society, one of the partners in this objection, is a significant impact that must be adequately addressed and acknowledged.

We request that the Forest Service provide meaningful response to our comments.

NEPA requires the consideration of an adequate range of alternatives

We object to the Forest Service’s failure to consider, or to dismiss without adequate analysis, a range of alternatives to protect Monument values. Indeed, the purpose and need for the project do not even consider the protection of Monument values to be a project goal.

Besides Alternative A - No Action, the Forest Service has evaluated only two alternatives to achieve the project goals. Alternative B – Proposed Action would build a 3.4-mile road from end of the Road 99 extension to the shore of Spirit Lake. Alternative C would build a 2.0-mile road from the end of the Road 99 extension to Duck Bay on the shore of Spirit Lake for transport of equipment and personnel for the tunnel intake gate replacement while geotechnical drilling would be accomplished by helicopter transport of both equipment and personnel.

Despite suggestions during scoping for additional alternatives, they were dismissed from analysis and not included in the EA. I suggested a modified Alternative C for the use of helicopters to transport equipment in and out of Duck Bay for the tunnel intake gate replacement while personnel would travel daily by utility terrain vehicle and boat to the intake structure, thus negating the need for a road down Forsythe Creek. This modified Alternative C would avoid

building a road in the Forsythe Creek bed to accommodate trucks transporting heavy gate replacement materials and equipment. By only transporting personnel with utility terrain vehicles (UTV) on the current route to Duck Bay, as is current practice, then transfer by boat and/or barge to the tunnel intake gate work site, the project would avoid conflict with the Aquatic Conservation Strategy that caused the Gate Replacement 3 alternative to be dismissed from further consideration.

The Forest Service also should have evaluated a Spirit Lake tunnel gate replacement alternative that did not include the geotechnical drilling project, which is a totally separate action. The National Academy of Sciences report identified the need to fill a data gap regarding the debris blockage but did not give it priority over other data needs. No urgency is associated with the data gap. We are concerned that by combining the gate replacement and geotechnical drilling projects, adequate alternatives that avoid impacts to the Pumice Plain have been dismissed from consideration.

There is low potential risk for a catastrophic failure of the tunnel and the debris blockage.⁵ As Jon Major, one of study authors cited in Footnote 5, has previously commented, “...the overall framing of the EA seems to be predicated on the premise that the tunnel WILL fail to be a long-term outlet to Spirit Lake. Grant et al (2017) looked objectively at risks associated with the tunnel under its current condition and at risks associated with a number of alternative outlets – including a tunnel that underwent major rehabilitation...in no way do we suggest that the blockage is under any danger of imminent failure...”⁶

Despite these expert assessments, the Forest Service continuously frames the need for action as an imminent emergency, stating the tunnel will fail and lead to a flood downstream.⁷ When challenged, the Forest Service has admitted that there is no emergency and says so in the EA, FONSI and DN. Forest Service officials spent the majority of a recent news story, however, talking about public safety and threats of failure of the tunnel leading to a flood downstream. “In outreach meetings, too, Forest Service officials have talked up the destructive mudflow Spirit Lake could unleash, showing pictures of flooded towns from 1980 while de-emphasizing that such an outcome is only a distant possibility.” According to the Cowlitz County Commissioners, this project is being sold to the public as essential for safety for downstream communities.⁸

We concur that the outdated gate at the tunnel entrance needs replacement, but we question the urgency of the need for geotechnical drilling and whether that drilling can be accomplished without a road across the Pumice Plain. By combining the two actions into one decision, too much emphasis has been given to the need for a road as the “more reliable and less hazardous”⁹ means of access, while under-estimating the impacts of the proposed road in order to rush to a

5 Gordon E Grant., Jon J. Major, and Sarah L. Lewis, The Geologic, Geomorphic, and Hydrologic Context Underlying Options for Long-term Management of the Spirit Lake Outlet near Mount St. Helens, Washington, General Technical Report PNW-GTR-954, June 2017, p. v.

6 Spirit Lake Motorized Access for Geologic Investigations, 2018, Response to Comments, p. 22.

7 Andre Stepankowsky, “Spirit Lake tunnel in need of repairs,” The Columbian, 9 December 2019.

8 Eric Wagner, “The threat below Mount St. Helens,” High Country News, 1 May 2020.

decision. Alternatives B and C have neither provided an adequate range of alternatives nor a detailed investigation to explore avoidance of potentially significant and irreversible impacts. We request that an adequate range of alternatives be presented and evaluated.

The proposed action requires the preparation of an EIS

Due to flaws in this NEPA process including the potentially significant adverse environmental impacts of the proposed action, the international importance of Mount St. Helens both as a legislatively designated national monument and as a global center for science regarding natural response to volcanic eruptions, and the controversial and significant impacts, we object to the lack of an EIS.

Under NEPA, an agency must prepare an EIS if a proposed federal action could “significantly affect the quality of the human environment.”¹⁰ The significant effect need not actually occur; it is sufficient to trigger the preparation of an EIS if a substantial question is raised “whether a project may have a significant effect on the environment.” Council on Environmental Quality Regulations define significant effect by reference to both the context and intensity of the action. There are a number of factors the agency must consider in assessing the intensity of the action, including:

- (1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
- (2) The degree to which the proposed action affects public health and safety.
- (3) Unique characteristics, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
- (4) The degree to which the effects are likely to be highly controversial.
- (5) The degree to which the possible effects are highly uncertain or involve unique or unknown risks.
- (6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
- (7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it into small component parts.
- (8) The degree to which the action may adversely affect [sites/structures] 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.
- (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.
- (10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

40 C.F.R. § 1508.27(b)

9 Draft Decision Notice, Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project, April 2020, p. 2.

10 42 U.S.C. §4332(c).

The EA, FONSI and DN fail to properly address both context and intensity. The context analysis is flawed because it minimizes the impact of this project by comparing it to events that more impactful, such as volcanic eruptions and storm events, but also are not adequate comparisons to this project. These documents mischaracterize the impact of the proposed action, a human-caused impact, by comparing it with natural events.

The intensity analysis also is flawed and improperly determined that none of the 10 intensity factors cited above was affected by the proposed action.

CEQ Factor 3: The environmental impacts of the proposed decision on landscapes with unique characteristics or ecologically critical areas.

Impacts on Ecologically Critical Areas

The FONSI asserts that, “While the Pumice Plain is an important early seral landscape in terms of research, it is not ecologically critical.”¹¹ This is a misleading statement since “ecologically critical” is not a formal land use designation used by federal land management agencies nor is it a designation used in federal land management plans. Whether the Pumice Plain has a designation of “ecologically critical” is not an appropriate standard for evaluating this factor.

Although neither Congress nor the Forest Service has officially designated any part of the Monument as an “ecologically critical area,” the legislative intent of Congress in designating the Monument and the consensus of scientists regarding the international importance of the Pumice Plain for its unique opportunity to study the process of ecological recovery of a landscape completely lacking a biological legacy must be taken into consideration as evidence of the Pumice Plain being ecologically critical.

The project’s location within the Monument and, further, with the Class I Research Area, is well within the bounds of this factor. In the Class I Research Area, even recreation, such as off-trail travel, is restricted to protect scientific and ecological values. Through highly restrictive management prescribed by the Comprehensive Management Plan, including preventing any kind of vehicle access and off-trail travel, the Forest Service has taken action to protect the unique ecologic and geologic values and scientific research opportunities of the Pumice Plain for 35 years. The DN should not dismiss these unique characteristics of the Pumice Plain but instead consider them as a factor weighing in favor of producing an EIS.

11 FONSI, Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project, April 2020, p. 3.

“Any disruption of this delicate landscape deserves very careful consideration with a detail investigation of its impacts weighed against the benefits of such a transformative installation of infrastructure as a road.”¹²

The EA, FONSI and DN demonstrate a lack of insight into the true impacts of the proposed project on a landscape with unique characteristics. We request that the Forest Service further analyze and document the impacts to the Monument, specifically the Pumice Plain, in an EIS.

Impacts on Wetlands

The EA and FONSI also claim that the proposed road would not cross any wetland as defined by the Clean Water Act Section 404.¹³ According to scientists who work on the Pumice Plain, however, the proposed road would pass through expanses of wetlands, estimated to be one-half mile of the road’s length, that have not been delineated.

We request that the Forest Service conduct additional field work and formal wetlands delineations to identify and assess the presence of wetlands in the project area before the DN is signed. Following delineation, the Forest Service should request that the U.S. Army Corps of Engineers determine whether these wetlands are a “water of the United States,” which are regulated under the Clean Water Act. If the Corps determines a wetland is not subject to the Clean Water Act, the wetland may still be a “water of the state” and subject to regulation by the Washington Department of Ecology.

Under the Washington State Water Pollution Control Act, Washington State is able to issue Administrative Orders for all wetlands, regardless of whether or not they are under federal jurisdiction.¹⁴

Delineations should be done using the current approved federal manual and supplements as well as all applicable guidance from the Corps, including identifying vegetation on the National Wetland Plant List, field indicators of hydric soils, and hydrology such as water tables. Wetland delineation should result in a map that clearly identifies data-collection points and the boundaries of the delineated wetland and a report that explains how the boundary was determined and a soil survey map. Since 2020 has had below normal rainfall, that factor should be taken into consideration during delineation.

We request that the true impacts to these wetlands should be further analyzed and documented in an EIS.

12 Jennifer L. Apple, PhD., Comments on Notice of Proposed Action and Scoping for Spirit Lake Intake Gate Replacement and Geotechnical Drilling Project, January 10, 2020, p.1.

13 FONSI, p. 3.

14 <https://ecology.wa.gov/Water-Shorelines/Wetlands/Regulations>

CEQ Factor 4: The environmental impacts of the proposed decision are both controversial and significant; there is scientific controversy over the environmental effects of the proposed project.

(1) Impacts on Research

“We can take pride,” Forest Service chief Max Peterson said at the Mount St. Helens National Volcanic Monument’s dedication in 1983, “in having preserved the unique episode of natural history for future generations.” This was to be the monument’s significance, as a place for the landscape to reshape itself on its own; or as the legislation put it, a place that would allow “geologic forces and ecological succession to continue substantially unimpeded.” Scientists would watch these processes in action and so learn how plant and animal communities act when left alone.¹⁵

During the Congressional hearings on the Mount St. Helens National Monument Act in 1982, there were science panels of witnesses. At least one of those witnesses, Dr. Virginia Dale (representing the Washington Native Plant Society), still is involved with research on the Pumice Plain. During witness questioning, a subcommittee chair asked, “Is there anything comparable in the United States for scientific research?” Dr. Estella Leopold responded, “There is nothing like it.”¹⁶

Representative Sid Morrison (R-WA), whose 4th Congressional District at that time included part of the area under consideration, said to the science panel, “First, let me describe my pride in all of you. You as spokesmen for the scientific, academic community should be very proud of yourselves as representatives of the quality of those efforts in the State of Washington. Did the Forest Service leave you completely out of their considerations? Do they listen to you? Did you feel rejected by what they came up with? Did they make any offering at all of areas to you that begin to satisfy your needs?”¹⁷

During the ensuing discussion, Dr. Steve Malone, geophysicist at the University of Washington, explained to the Congress members that not many scientists had gotten permission to go into the blast zone yet due to the volcanic hazards. Representative Morrison concluded, “If so, I would hope that you might coalesce your thinking and organize your scientific community so that we could provide the management mechanisms and controls that would give you the maximum opportunities within the boundaries that we do select.”¹⁸

15 Eric Wagner, After the Blast: The Ecological Recovery of Mount St. Helens, (Seattle: University of Washington Press, 2020), p. 8.

16 U.S., Congress, House, Mount St. Helens National Volcanic Area, Joint Hearings before the Subcommittee of Forests, Family Farms, and Energy of the Committee on Agriculture and the Subcommittee on Public Lands and National Parks of the Committee on Interior and Insular Affairs on H.R. 5281, H.R. 5773, H.R. 5787, 97th Cong., 2nd sess., 1982, p. 81.

17 Ibid, p. 84.

18 Ibid, p. 86

Clearly, it was the advocacy and testimony of scientists about the eruption as a once-in-a-lifetime research opportunity that convinced Congress to create the Monument over the strenuous opposition of the Forest Service and the timber industry. Representative Morrison's remarks summarize the intent of Congress.

Representative Don Bonker, prime sponsor of the Monument Act, wrote in his recently published memoir, "There was consensus that the land around Mount St. Helens should be saved for future generations. That was our moral authority."¹⁹

Forty years and numerous careers have been invested in documenting the development of biological communities on the Pumice Plain starting from a blank slate. Given the longevity of coniferous trees, the successional process will take centuries to unfold, so research still is at the beginning. "The studies have implications beyond the volcano and could uncover new ways to restore nature following other mass disturbances, and it could also inform the battle against climate change."²⁰

Research on the Pumice Plain has led to new ways of thinking about how life responds to seemingly total devastation. Some of these ideas grappled with such things as disturbance, resilience, succession – topics in the gauzier realms of ecological theory. Others had more explicitly practical applications, for even as it had destroyed the land around it, Mount St. Helens would help usher in new, wiser ways of managing forests and streams.²¹

When scientists were testifying before Congress in support of the legislation that created the Monument, "we did not imagine the astounding volume, quality, diversity, and ground-breaking character of the science that has emerged from the Monument over the past 40 years. Equally important has been the sustained nature of the work – early studies are now passing to the next generation and entirely new studies are getting underway and being proposed now."²²

These long-term studies, spanning multiple generations of scientists, are the gold standard of ecology. A long time by human standards is rarely a long time ecologically.²³

The preferred alternative would have irreversible and damaging impacts to this natural laboratory and its ongoing research such that scientists would be forced to abandon their research. For example, Dr. Carri LeRoy has been studying the watersheds on the Pumice Plain since 2015. Five watersheds were formed on the Pumice Plain following the eruption and each consists of several tributaries. The creation of watersheds is a very rare occurrence; there is not another

19 Don Bonker with David Applefield, A Higher Calling: Faith and Politics in the Public Square, Nashville, TN: Elm Hill, 2019, p. 270.

20 Katie Fairbanks,, "Mount St. Helens ecological research could help conserve, restore nature," The Daily News, 8 April 2020

21 Wagner, After the Blast: The Ecological Recovery of Mount St. Helens, p. 8.

22 Fred Swanson, PhD., Comments on Notice of Proposed Action and Scoping for Spirit Lake Intake Gate Replacement and Geotechnical Drilling Project, January 16, 2020, p.1.

23 Wagner, After the Blast: The Ecological Recovery of Mount St. Helens, p. 90.

location on Earth with this experimental set-up. “Building a road across the Pumice Plain would irreparably harm the development of these watersheds and negatively impact our research and our ability to explore in-stream primary succession.”²⁴

Dr. LeRoy described her research as irreplaceable.²⁵

Dr. LeRoy further stated that once the preferred alternative is implemented, any science that follows would never be able to differentiate between natural recovery and unnatural effects from the road, effectively ending all natural succession-related research on the Pumice Plain.²⁶

These actions will so alter the landscape and ecological processes that the ecological research enterprise on the Pumice Plain, the most intensively studied primary succession landscape in history, worldwide, will likely sputter out.²⁷

One of the unique and most valuable aspects of research at Mount St. Helens is the long-term nature of many research projects. Sampling in many cases began in the early 1980s and in some cases has continued through the present time.²⁸ These include sites on the Pumice Plain within 30 meters of the proposed road, such as the plots established by Roger del Moral in the 1980s which are now being studied by Dr. Cynthia Chang. Dr. John Bishop’s sites have been sampled for 20 or more years and will be directly impacted by the proposed road. These sites have formed the basis for many peer-reviewed papers, some of which have won prestigious awards, as well as for many forthcoming papers.²⁹

Prior to research on the Pumice Plain, Dr. Bishop noted that science had not recognized that insect herbivores are capable of dramatically changing successional processes. Some of these herbivores are newly discovered species. The geographic distribution of all these newly discovered species are unknown; no one has yet investigated where else these new species occur, raising the question whether they are unique to Mount St. Helens and thus require protection.³⁰

According to Dr. Bishop, Pumice Plain research also has revealed the surprising role of nutrient limitation in mediating the interactions of plants and insects, and of invasive and native species. Some of the research plots for this work are within 20 meters of the Truman Trail and would undoubtedly be impacted by the proposed road.³¹

24 Carri LeRoy, PhD., Comments on Notice of Proposed Action and Scoping for Spirit Lake Intake Gate Replacement and Geotechnical Drilling Project, January 13, 2020, p. 1.

25 Ibid, p. 3.

26 Ibid, p. 4.

27 Bishop, John, PhD., Comments on Notice of Proposed Action and Scoping for Spirit Lake Intake Gate Replacement and Geotechnical Drilling Project, January 16, 2020, p.1.

28 Ibid.

29 Ibid, p. 2.

30 Ibid.

31 Ibid.

Sites that are much farther away from the proposed road and not directly impacted would still become useless because the ecological processes such as availability and dispersal of propagules and patterns of erosion would be irrevocably altered within at least 100 meters of the proposed road.

Dr. James Gawel has stated that the potential damage the proposed road would do to his research in Spirit Lake, where he strives to understand the natural processes that connect watershed regeneration to biological, hydrological, and chemical changes in Spirit Lake, would jeopardize his ability to return and would decrease educational opportunities for the non-traditional undergraduate students who conduct field work with him every summer.³²

The EA states that within the 16-foot wide footprint of the proposed road, 25 individual research plots would be directly impacted and that an additional 58 research plots would see direct or indirect effects within the road corridor. This may seriously understate the impact of the proposed road due to the coarse nature of mapping used to support the analysis. The research infrastructure map only uses a single point to identify the location of a plot, but the plots may extend well beyond that point, sometimes up to 100 meters. The proposed road location similarly is not defined clearly enough to determine the actual impact. In fact, the EA states that the road location could shift.³³

Further, the EA and the “Specialist Input for Research” report make the undocumented and unsubstantiated claim that the physical environment is expected to return to pre-project conditions 2 to 15 years after project implementation. Depending on the nature of the study, plots in the project area may be used again or reintroduced into research as the surrounding natural environment returns to the dynamic volcanic landscape.³⁴

This unsubstantiated assumption is based on experience with soil disturbance in timber sale logging and burned area rehabilitation³⁵ which occur in totally different environments than the Pumice Plain and are not locations of primary succession or watershed development research.

Not a single scientist submitted comments supportive of the assumption that the physical environment would return to post-project conditions. Instead, they expressed amazement about “the reality gap between the stated impacts and the actual impacts.”³⁶

32 James Gawel, PhD., Comments on Notice of Proposed Action and Scoping for Spirit Lake Intake Gate Replacement and Geotechnical Drilling Project, January 16, 2020, p.1.

33 Environmental Assessment, Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project, p. 28.

34 Ibid.

35 Final Specialist Input for Research, Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project, p. 8.

36 Kena Fox-Dobbs, Comments on Notice of Proposed Action and Scoping for Spirit Lake Intake Gate Replacement and Geotechnical Drilling Project, January 15, 2020.

It will be impossible to return the area constructed into a road into pre-road condition. Even with the promised restoration, a scar will remain on the landscape. As Eric Wagner wrote, “Slap a road through the Pumice Plain, and the research there would effectively be reduced to how life responds after a road is built.”³⁷ The road would end the natural experiment envisioned in the Monument’s mission.

Indeed, this assumption in the EA demonstrates a gross misunderstanding about how ecological systems respond to disturbance. Once disturbed by a road, the impacted area will not return to its previous state but will, instead, respond to new surface conditions, moisture regimes, propagule arrival, colonization and biotic interactions. The Pumice Plain ecosystem has little resistance to disturbance and is likely to demonstrate little resiliency.

The EA proposes the rehabilitation of the road at the end of the project, including returning the grade to its former repose, removing base rock and aggregate, recontouring the needed cuts and fills, and revegetating the areas of disturbance with native plants. All of these rehabilitation actions will cause even more damage. All the claims in the EA, FONSI and DN that the road is temporary and the Pumice Plain will be restored to its original state are unrealistic and false promises.

The anonymous author of the Botany Input report for the proposed project had a different assessment. “Material and Equipment storage areas, lake access ramps, and drill sites are other project areas which will lose vegetation and create areas of disturbance which will be evident for many years. These areas will also be vulnerable to invasive species, or other native species not present on the Pumice Plain.”³⁸

The EA and Final Specialist Input for Research report demonstrate a dismissive and biased attitude towards research, especially this statement: “Some plots impacted by project activities may no longer contribute to their current study. If a critical number of plots or key plots are impacted, researchers may determine to stop their study or re-define its scope.”³⁹

Similarly, the EA tries to assess the impact on research with simple arithmetic. “The number of impacted plots is approximately 8.5 percent of the total number of documented plots on the Pumice Plain...the majority of research studies on the Pumice Plain are outside the project area (91.5 percent) and will not be directly or indirectly impacted.”⁴⁰ This assumption treats every research plot as being equal when, in fact, every site on the Pumice Plain is unique, with patterns of establishment and change different from any other site.

37 Eric Wagner, “The threat below Mount St. Helens.”

38 Botany Input for the Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project, p. 5.

39 Final Specialist Input for Research, p. 8.

40 Environmental Assessment, pp. 28-29.

The Final Specialist Input for Research admits that “the majority of these plots will be damaged or destroyed and will no longer be used for their original research purposes.”⁴¹ This admission was not carried forward to the EA, FONSI or DN.

The dismissive and non-responsive attitude towards scientists’ concerns continued in the Specialist Input for Research report. “When researchers were asked if their study would be able to continue after the implementation of alternative B, eight (8) of the 11 respondents said that their study would likely not continue as intended or designed. Two (2) of the 11 respondents said their study could likely continue, however it would be impaired and potentially its value would be decreased. One (1) respondent stated it was unknown whether the research would continue based on the information provided.”⁴² The proposed road’s impact on research got a virtual shoulder shrug from Forest Service planners and decision makers.

The FONSI makes the unsubstantiated claim, “While the Pumice Plain is an important early seral landscape in terms of research, it is not ecologically critical.”^{43 44} The scientists quoted above, and many others who commented during scoping, argued that Mount St. Helens stands out as a globally significant location of long-term research following intense disturbance where scientists have been able to follow the development of new biological communities on new substrates. For example, Dr. Carri LeRoy, Dr. Debra Finn and other researchers repeatedly stressed that the brand new stream channels that have developed on top of the pyroclastic deposits of the Pumice Plain are some of the most precious research sites for stream researchers any place in the world, specifically because they are new. Stream and river channels in general are very old systems in geological terms and the opportunity to study primary succession in newly formed channels is exceedingly rare. The new Pumice Plain streams represent a “one-in-a-million chance to observe natural successional trajectories in streams.”⁴⁵

In addition, these are replicate streams: five small streams carving through the same unconsolidated pyroclastic and pumice material, rising from springs that start on the slope of Mount St. Helens and flow into Spirit Lake. There is not another location on Earth with this same experimental setup.⁴⁶

Dr. Michael Allen wrote regarding his research on the genetic response of individual organisms subject to the stresses of volcanic disturbance, the separate invasions of symbiotic mutualistic organisms and how they alter plant growth and establishment, and the role of animals compared

41 Final Specialist Input for Research, p. 11.

42 Ibid, p. 13.

43 Finding of No Significant Impact, p. 3.

44 Courts have found that when an agency decides not to prepare an EIS, the agency “must supply a convincing statement of reasons to explain why a project’s impacts are not significant.”

45 Debra S. Finn, PhD., Comments on Notice of Proposed Action and Scoping for Spirit Lake Intake Gate Replacement and Geotechnical Drilling Project, January 16, 2020, p.1.

46 Joy Hobbs, Comments on Notice of Proposed Action and Scoping for Spirit Lake Intake Gate Replacement and Geotechnical Drilling Project, January 14, 2020, p.1.

with abiotic agents such as wind and water in the immigration and establishment of microbial symbionts. “These studies were and remain unique in all of ecology.”⁴⁷

As documented in this objection, the statement in the FONSI that “the small scale of the project limits its effects on the natural resource values and uses in the area” is totally contradicted by reality, the opinions of scientists with intimate and detailed knowledge of the Pumice Plain, and even by some of the statements in the EA.

Non-emergency actions related to public safety should avoid or minimize loss of research values on the Pumice Plain and in Spirit Lake. The primary focus should be on maintaining the values of past research investments, supporting on-going studies, and preserving future research opportunities. The proposed action would create an unfathomably huge lost opportunity by knowingly introducing non-natural processes onto the landscape that will obscure the natural ecological processes.

We request that the impacts to research should be fully analyzed in an EIS.

(2) Impacts on Hydrologic and Soil Resources

The proposed road in the preferred alternative would cross 17 stream channels (3 perennial channels, 7 seasonal channels and 7 seasonal/perennial channels) and other small channels and minor drainages.⁴⁸ These channels make up five separate watersheds that were created following the eruption of Mount St. Helens – a set of new, globally unique watersheds that are among the youngest on Earth.⁴⁹ Yet the EA is incredibly dismissive of the impacts to these streams.

Building a road across the Pumice Plain would irreparably harm these streams and the ability to study in-stream primary succession. The repeated disturbances caused by road construction, road maintenance and vehicular traffic would significantly alter the streams’ evolutionary trajectories. The proposed road route would cross three of these watersheds at their headwaters, effectively impacting everything downstream. The proposed road route would cross the other two watersheds at upstream location, preserving only a small fraction of stream length above the road.

Based on the scoping comments of stream ecologists, the EA grossly understates the anticipated environmental impacts of road construction, maintenance and use, relying on project design criteria that may be impossible to achieve given the flashy flow regimes of Pumice Plain streams. Elsewhere in the Pacific Northwest, the Forest Service acknowledges the destructive effects of roads; road removal is the central part of watershed restoration over much of the region,

47 Michael Allen, Comments on Notice of Proposed Action and Scoping for Spirit Lake Intake Gate Replacement and Geotechnical Drilling Project, January 16, 2020, p.1.

48 Environmental Assessment, p. 53.

49 Hobbs, p.1.

including on the Gifford Pinchot National Forest. Logging is done with helicopters rather than trucks, reducing the need for new roads.

The DN supposes that using the alignment of the former U.S. Army Corps of Engineers to access the pumping station in the early 1980s will somehow minimize new ground disturbance.⁵⁰ The former road, now the Truman Trail, is so diminished along most of its length that the proposed road will need extensive earthwork.⁵¹ Each stream crossing would need to be excavated, and then re-excavated and rebuilt each year when it washes out. The proposed road would cause continuous disturbance in the 17 stream channels. In addition, the environmental and ecological conditions of the Pumice Plain are vastly different than they were 38 years ago when that road last was used.

The EA predicts over 3,500 vehicle trips per year on this proposed road. Depending on the water flow, sediment plumes from road crossings may take hours to days to dissipate and afterwards the aquatic system would be impacted for up to several months. Sediment disturbances can directly impact aquatic insects and fish, indirectly cause them to move downstream, increase turbidity, damage benthic habitat, and reduce hyporheic water exchange. Compaction of the proposed road surface to accommodate equipment transport would cause runoff and redirect water over exposed rock and soil, accelerating sediment transport and modified hydrology. The hydrology of the Pumice Plain streams is not well enough characterized to be able to predict the influences of road construction and sediment inputs throughout the year.⁵²

The removal of riparian vegetation at stream crossings would significantly alter algal productivity and macroinvertebrate communities at these locations. Research has shown that riparian canopy cover is one of the strongest predictors of in-stream aquatic food webs across the Pumice Plain.⁵³

The impacts of road construction, maintenance and use would vary by substrate, slope gradient, moisture content, and specific types of ground disturbing activities associated with road construction. Pyroclastic flow areas that are subjected to down cutting on steep terrain, such as stream crossing approaches, rills, and gullies would be most subject to erosion and deposition.

The EA fails to disclose the type of and amount of road proposed for construction, whether it is a full fill road, cut-and-fill road, or a full bench road, or likely all three types. The EA fails to describe how the proposed road would be built, including the length and amount of cutslope, fillslope, fill, sidecast, and inboard road ditches. The EA does not describe the kind of road surface drainage that would be used, including the amount and type of drainage structures, such as rolling dips, waterbars, culverts, bridges, fords and log crossings.

50 Draft Decision Notice, Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project, p. 2

51 LeRoy, p. 2.

52 LeRoy, p. 2.

53 Hobbs, p. 1.

The EA does not describe the amount of non-native material, such as gravel, that would be brought in for the road, the depth of those layers, the sources of non-native materials, or exactly how those materials would be removed from the landscape and disposed of following the project.

Also, the EA does not disclose the potential for stream crossing failures or mass failures.

Finally, the EA does not address the amount of road maintenance that would be required and how much maintenance would increase the amount of vehicle trips per day over the duration of the project.

The primary sources of water in Spirit Lake come from surface streams and ground water draining the north side of Mount St. Helens through the Pumice Plain. The proposed road would disrupt this hydrology and alter the recovery trajectory of Spirit Lake.⁵⁴ The EA does not address these impacts.

The EA does not discuss wind erosion. Air-borne dust and water-borne fine sediment from vehicle traffic, both the grinding action to produce fine sediment and the wind and water turbulence to launch it, may have far reaching effects on terrestrial and aquatic ecosystems. The Forest Service has essentially no experience dealing with such issues in a landscape like the Pumice Plain.⁵⁵ Standard mitigation measures described in the Project Design Criteria, such as the design and implementation standards in Appendix A of the Washington Department of Fish and Wildlife and U.S. Forest Service Memorandum of Understanding⁵⁶, may be totally inadequate or inappropriate.

After claiming earlier in the EA that the Pumice Plain “is expected to return to the pre-project conditions 2 to 15 years after project implementation,”⁵⁷ the EA then contradicts itself by stating that “original soil layers and properties are permanently altered.”

Potential effects would be management induced erosion, increased detrimental soil disturbance, and resulting negative off-site effects such as sediment deposition downstream. Erosion would potentially increase at stream crossings and areas of earthwork because soils in the area have high potential for erosion.

Loss of Distinctive Pyroclastic Flow Features, one of the important geologic features of the National Monument, would be long lasting at areas where large amounts of soil materials are moved for steep slopes.⁵⁸

The FONSI attempts to dismiss the impacts of the proposed road by comparing apples and oranges. “The selected alternative activities will have impacts that are smaller in scale to what

54 Gawel, p. 1

55 Swanson, p. 2.

56 Environmental Assessment, p. 17

57 Ibid, p. 28

58 Ibid, p. 50

occurs during periods of volcanic activity, elevated runoff, increased streamflow from precipitation, and rain on snow events.”⁵⁹

This is a misleading and unsubstantiated statement without supporting evidence in the EA. Just because the proposed road will not be at the scale of the 1980 eruption does not mean that it won't have significant environmental impacts.

The FONSI further states that 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 road. This is another unsubstantiated statement without supporting evidence in the EA, again suggesting that using the alignment of the former U.S. Army Corps of Engineers to access the pumping station in the early 1980s will somehow minimize new ground disturbance. This statement ignores the fact that ground is different now than in the 1980s.

We request the preparation of an EIS to fully disclose and analyze these contradictions and the full scope of the impacts of the project.

(3) Impacts on Invasive Species

Invasive Plants

The process of road building, material storage, heavy equipment use, construction and crews, and substantial vehicle traffic in the project area, all add to the risk of introducing new species of plants, plant pathogens, or other organisms that could change the trajectory of natural processes. Studies of ecosystem succession are designed to assess the natural environmental changes brought about by resident and immigrant species each of which has its own natural probability of dispersal and establishment with reproducing populations. Long-term studies on the Pumice Plain have assumed a minimal amount of human facilitation of species introductions.

The proposed road, with frequent heavy use during the growing season over 5 to 7 years, and penetrating the entire breadth of the Pumice Plain makes the probability of unintended species introductions a near certainty. Despite well-intended mitigations in the proposed design criteria, there will always be someone who gets careless or cuts corners because they are in a hurry. This was probably how New Zealand mudsnails were introduced into Spirit Lake.

The Specialist Input for Botany report identified incomplete and unavailable information regarding the presence of invasive plant species on the Pumice Plain due to a lack of inventory and mapping. The botanist conducted a field survey in November 2019 when many plant species have gone dormant, but did note the presence of non-native and invasive plant species mainly along the UTV route to Duck Bay, which suggests Forest Service staff are not currently employing invasive species prevention protocols on vehicles, clothing and equipment before and after use on the Pumice Plain.

⁵⁹ FONSI, p. 1.

The Specialist Input for Botany report rated the risk of weed introduction as high from operating heavy equipment; importing soil, cinders, gravel, straw or hay mulch; operating off-road and UTV vehicles; plant restoration; recreation; and operation of Forest Service vehicles.

The Specialist Input for Botany report supporting this proposed project identified an increased risk of invasive species introduction, even with the proposed design criteria. "...a project of this size and duration, with multiple vectors, will still pose an increased risk for species introduction. Increased erosion potential and vegetation loss from this project area are expected to last for 15 years or more. Invasive species treatments along roadways may be necessary."⁶⁰ Even decontamination protocols (for both plants and New Zealand mud snails) may not be entirely effective and the likelihood of introduction and spread during and following construction activities would increase if decontamination protocols are not stringently followed.⁶¹

New Zealand Mudsnailes

In Washington state, New Zealand mudsnails are classified as prohibited because they pose a risk of harming or threatening the state's environmental, economic, or human resources. Scientists have sampled all streams draining the Pumice Plain into Spirit Lake. Three of the five permanent streams have New Zealand mudsnails present, with the greatest density in the southwest corner of Spirit Lake. It would be an ecological disaster downstream if New Zealand mudsnails get out of Spirit Lake into the Toutle River watershed. The EA is deficient in describing the Forest Service's plan to contain and control New Zealand mudsnails and prevent them from being spread from occupied sites into unoccupied sites. Such introductions would have grave consequences to the natural values of the Pumice Plain and would compromise research values of present and future research.

Washington Department of Fish and Wildlife's Level 2 decontamination protocols would have to be scrupulously implemented, including treatment and disposal of wash material. Such protocols would be burdensome for heavy equipment and barges so there would need to be good oversight, but the documents do not describe how decontamination would be monitored and supervised to ensure the decontamination protocols are met.

Both of the action alternatives evaluated for this project pose an inherently increased risk of introducing new organisms to the Pumice Plain, although Alternative C would have less impact. Project design criteria will help mitigate this risk, *but the potential remains that the best-intended decontamination protocols could fall short* [emphasis added]. The effects caused by potential species or pathogen introductions could range from minor to severe.⁶²

Given such potential species introductions, the results of successional studies would become statistically confounded between natural processes and human influences. The measured rates of changes through time in biological communities would be difficult to ascribe to natural

60 Botany Input, p. 6.

61 Aquatic Resources Report for the Spirit Lake Tunnel Intake Gate Replacement and Geotechnical Drilling Project, p. 6.

62 Botany Input, p. 8.

phenomena compared to artificial interventions. Thus, the dispersal of introduced plants and animals, particularly insects, will bias the results of study areas across the Pumice Plain, even those at considerable distances from the road, and degrade the value of the entire Pumice Plain as a research area.⁶³

Further, neither the EA, FONSI nor DN have described the Forest Service's capability to rigorously conduct the proposed decontamination protocols, including the location(s) where the decontamination would occur and how the decontamination effluent would be captured, stored and treated to avoid the risk of invasive species spread within the Monument.

We request that the threat of invasive species be further disclosed and evaluated in an EIS.

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

We suspect, also, that this planning process is "bait and switch." It is disingenuous to call the proposed road "temporary" when the Forest Service currently is engaged in reviewing alternative redundant outflows for Spirit Lake, including a second tunnel, a buried conduit, a pumped buried conduit, and an open channel, all of which would require access for heavy equipment and personnel. We fear that the Forest Service has placed heavy emphasis on the temporary status of the proposed road in order to avoid preparation of an EIS. When the project is completed, however, the Forest Service might then claim that now that the road is present on the landscape and its impacts have occurred, the road will continue to be used to implement the redundant outflow decision without need for further environmental review, certainly without the need for an EIS.

We request that the Forest Service complete an EIS to disclose how this action may establish a precedent for future actions regarding the management of Spirit Lake outflows.

Conclusion

The FONSI statement that, "The analysis of potential environmental impacts related to project activities demonstrates that no aspect of the selected alternative will result in any significant impact"⁶⁴ is not supported by reality, the EA and its supporting documents, or any of the public comments submitted during scoping. This conclusion clearly is flawed. How can a road be constructed through a congressionally designated Monument and an administratively designated Class I Research Area, across 17 stream channels and through expanses of wetlands, removing vegetation, promoting erosion, damaging important geologic features, jeopardizing 40 years of scientific research on the Pumice Plain and compromising future research opportunities without having a significant environmental impact?

63 Robert Parmenter, Comments on Notice of Proposed Action and Scoping for Spirit Lake Intake Gate Replacement and Geotechnical Drilling Project, January 16, 2020, pp. 1-2.

64 Finding of No Significant Impact, p. 1.

The EA, and the FONSI and DN based on that EA, are inadequate and do not comply with NEPA. Each of my objections set forth above demonstrate that the Forest Service relied on deficient analysis and failure to fully disclose impacts. These issues were raised in our scoping comments. In addition, there are internal inconsistencies within the documents and their supporting reports that need to be resolved.

The DN fails to properly address both context and intensity. The context analysis is flawed because it minimizes the impact of this project by comparing it to events that are more impactful, such as volcanic eruptions, but are not adequate comparisons to this project. It mischaracterizes the impact of the proposed action, a human-caused impact, by comparing it with a natural event.

The intensity analysis also is flawed and improperly determined that none of the ten intensity factors would be affected by the proposed action. The documents, particularly the FONSI, are written in tone and language that is clearly aimed toward minimizing and marginalizing the numerous significant impacts of the project to justify a decision that an environmental impact statement would not be prepared. The basis for dismissal of these factors is plainly wrong.

Too much project detail is missing from these documents for decision-makers to make a fully informed and convincing FONSI. The documents are filled with unsubstantiated statements and empty promises.

We request that the Forest Service withdraw the EA, FONSI and DN for further NEPA analysis and preparation of an EIS since significant environmental impacts would occur if the DN is implemented as proposed.

We request an objection resolution meeting to discuss the issues raised in this objection, as well as the full range of objections to the project, and ways they can be resolved.

Sincerely,

A handwritten signature in cursive script that reads "Susan M. Saul". The signature is written in black ink on a white background.

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