Attachment F: Comments and Responses

Lahar Detection System Environmental Assessment

Mount Rainier National Park

March 2022

The National Park Service (NPS) prepared an environmental assessment (EA) in compliance with the National Environmental Policy Act (NEPA) and released it for public review on May 27, 2021, for a 30-day public comment period. NPS subsequently extended the comment period until July 9, 2021.

During the 43-day public comment period, NPS received 1,300 correspondences through the NPS Planning, Environment, and Public Comment (PEPC) website and one via e-mail. Of the total 1,301 correspondences, 999 were one of 38 variants of a form letter generated by Wilderness Watch. Some unique comments were submitted as part of the form letters and were processed and coded for response. The remaining 302 correspondences were unique letters submitted by individuals and organizations. In total, 1,165 comments were coded from the unique correspondences; 940 of the coded comments were initially identified as substantive by category. Categories of comments were reviewed, and similar comments that were identified as substantive were grouped into concern statements. Concern statements summarize the nature and content of substantive public comments. NPS responses to concern statements are below. All comments, including all form letters received, are incorporated into the project record and are available upon request; contact information is available on the project website: https://parkplanning.nps.gov/projectHome.cfm?projectID=95553.

Concern Statement 1

When the lahar detection system detects activity, does it send a message as to which glacier this activity is happening in and how is that communicated to local leaders?

NPS Response:

As described in the Project's Purpose and Need statement (EA, page 4), the U.S. Geological Survey (USGS)-proposed lahar detection system would provide real-time information on the locations of lahar activity in critical and associated drainages, which are the most vulnerable to spontaneous collapse-driven large lahars. This would allow for early warning to emergency managers and those who would be impacted. The hazards for which the system is intended are often not sourced from the glaciers directly. These critical drainages are described in the EA Alternatives chapter and in EA Appendix B. Consistent with NPS Management Policies (8.2.5.2) that pertain to Emergency Preparedness and Emergency Operations, Mount Rainier National Park (park) will coordinate with the USGS and other parties to develop an emergency preparedness program to provide for visitor and employee safety and the protection of

resources and property to the extent possible. This program will include a systematic method for alerting visitors about potential disasters and closure or evacuation procedures.

Concern Statement 2

A wider network of monitoring stations should be established along key drainages, including the Nisqually River, the South Fork of the White River, the Cowlitz River, and the Muddy Fork of the Cowlitz River, to protect downstream communities, such as Packwood, where a lahar came down less than 200 years ago.

NPS Response:

As disclosed in the EA under "Alternatives Considered but Dismissed" on page 22, the NPS and USGS considered an alternative that would have increased the number of stations sited in the park beyond USGS's proposal, including sites in the following drainages: Carbon River, White River (East and West Forks), Muddy Fork of the Cowlitz River, and Ohanapecosh River. This alternative was not carried forward for detailed analysis based on a number of factors, including necessity, relative risk, and negative impacts on wilderness. Please also see EA Figure 1 (page 3), which shows existing monitoring sites; EA Appendix B, Project Proposal Review; EA, page 22 under "Alternatives Considered but Dismissed," and revised language in the EA errata under "Alternatives Considered but not Carried Forward for Analysis" (Finding of No Significant Impact (FONSI) Attachment A, page 2) for information on USGS site selection.

Concern Statement 3

For all action alternatives, each monitoring station installation should be fenced and not accessible by members of the public. Appropriate durable signs should be placed in a visible location at each location to describe the purpose and use of the equipment.

NPS Response:

Fencing around each installation was not proposed by the USGS as stations are usually very well hidden from commonly used places or are integrated into secured structures. The monitoring stations were designed to be as inobtrusive as possible, and fencing would be an additional installation in wilderness that would not be the minimum requirement (see EA, pages 42-56 under "Wilderness Character"). See also the FONSI Attachment D, Mitigation Measures to Minimize Harm, regarding use of signs at each monitoring station to describe the purpose of the monitoring stations.

Concern Statement 4

Mitigate impacts on sensitive sites (cultural/historical, key observation points, important wildlife habitats, etc.) by siting stations underground, and by using less intrusive monitoring methods such as drones.

NPS Response:

FONSI Attachment D, Mitigation Measures to Minimize Harm, provides a list of proposed mitigation measures, which applies to all action alternatives. EA Appendix B, Project Proposal

Review, provides an explanation of the USGS process in site and equipment selection, including the use of other technologies. See also the response to Concern Statement 5.

Concern Statement 5

Members of the public asked if it is possible to use technology to either remotely monitor or to reduce the footprint of the monitoring system.

NPS Response:

No other technologies are available that obtain the same data as the monitoring system. Ground-based monitoring is needed to detect surface deformation and seismic activity. As such, these monitoring stations represent the best available technology to monitor volcanic activity. A comparison of disturbance by alternative is included in the EA, Table 2 (page 9). The FONSI Attachment D, Mitigation Measures to Minimize Harm, describes measures that would reduce monitoring station footprints and disturbance during installation.

Concern Statement 6

NPS fails to make a convincing case that the proposed action is necessary for emergencies involving the health and safety of persons in the wilderness area, pursuant to the Wilderness Act. There does not seem to be any provision for notifying wilderness users.

NPS Response:

The EA (page 40) describes how the monitoring stations contribute to the administration of the area as wilderness by providing for the health and safety of users: "Although visitors to remote wilderness areas would likely not hear warning signals if a lahar is detected, early detection could help with quicker emergency response for wilderness users. In addition, visitors to lower reaches of wilderness areas could be within range of warning signals." The Final Minimum Requirements Analysis (MRA) has been revised in response to public input to clarify the need for the proposed action (FONSI Attachment B). Consistent with NPS Management Policies (8.2.5.2) that pertain to Emergency Preparedness and Emergency Operations, Mount Rainier National Park will coordinate with the USGS to develop an emergency preparedness program to provide for visitor and employee safety and the protection of resources and property to the extent possible. This program will include a systematic method for alerting visitors about potential disasters and evacuation procedures.

Concern Statement 7

For all alternatives that use helicopters, drones should be used instead as they are more maneuverable, require less support infrastructure, and will be less disruptive to wildlife.

NPS Response:

Although drones have advanced in their capabilities, they would not be a suitable replacement for helicopters for the project due to the weight of the monitoring equipment. Therefore, the use of drones instead of helicopters was determined to be technically infeasible and was not carried forward for analysis. See additional language in the Alternatives Considered but not Carried Forward for Analysis in the EA errata (FONSI Attachment A).

Concern Statement 8

An environmental impact statement should be prepared for the project because there are significant immediate effects on both the historic district and wilderness (i.e., multiple prohibited uses in designated wilderness, including the installation of permanent structures and the associated motorized access to install and maintain them); at a minimum, additional consultation with members of the public and environmental organizations should occur.

NPS Response:

NEPA requires consideration of the potentially affected environment and the degree of the effects on the environment to determine if significant impacts exist and an environmental impact statement (EIS) is required (40 Code of Federal Regulations (CFR) 1501.3). The determination of whether an undertaking is a "major Federal action significantly affecting the quality of the human environment," and therefore requires preparation of an EIS under NEPA, should include consideration of the undertaking's likely effects on historic properties. A finding of adverse effect on a historic property does not necessarily require an EIS under NEPA. In addition, the application of the exception in Section 4c of the Wilderness Act does not automatically result in significant impacts requiring an EIS. As stated in the FONSI/Determination of Non-Impairment for the project and supported by the environmental analysis in the EA, the selected alternative would not significantly affect the quality of the human environment; therefore, an EIS is not required for the project. The NPS has consulted with partner agencies, tribes, and members of the public during scoping and has sought review and comment on the EA and draft MRA (see "Consultation and Coordination" and "Civic Engagement Summary" in the EA, page 57).

Concern Statement 9

The EA should identify if Alternative 4 (the NPS preferred alternative) meets the safety needs identified by USGS in the Dingell Act (2019) and 1988 amended version of the Disaster Relief Act of 1974. The USGS proposal (Alternative 1) is designed to mitigate human risk by reducing the amount of time it takes for an alert to be sent out to potentially affected populations and communities after a lahar has been generated, and as such, makes a compelling case to include the three additional monitoring sites on fire lookout locations.

NPS Response:

The purpose and need for the project as stated in the EA (page 4) is to comply with the Dingell Act and the Disaster Relief Act. Alternative 4 was carried forward for analysis as it was found to meet the purpose and need for the project, including compliance with these two acts. The Public Health and Safety, Alternative 4 section (EA, page 42), describes how monitoring stations proposed in Alternative 4 would address drainages most vulnerable to lahars, as follows: "Under Alternative 4, if Mount Rainier were to start exhibiting signs of volcanic unrest, these three stations would not be in place for rapid installation of new real-time monitoring stations to help mitigate lahar hazards along these other drainages. Modeling and geologic studies (see EA Appendix B) show that the drainages most vulnerable to lahars created by a west-flank landslide are Tahoma Creek and the Puyallup River valley; and the nine sites proposed under Alternative 4 would address the area with the highest known lahar risk to public health and safety."

Additional discussion of compliance with these two acts is provided in the FONSI/Determination of Non-Impairment and the MRA (FONSI Attachment B). The rationale for selection of Alternative 4 is in the FONSI, pages 3-4, and the rationale for why Alternative 1 was not selected is on page 5.

Concern Statement 10

The NPS may waive the Wilderness Act prohibition on structures/installations and landing of aircraft only "...except as necessary to meet minimum requirements for the administration of the area for the purpose of the Act (including measures required in emergencies involving the health and safety of persons within the area)...." The exception applies only where the otherwise-prohibited activity will affirmatively advance the "'preservation and protection' of wilderness lands ... in their natural, untrammeled state." Both the EA and the MRDG acknowledge that the lahar monitoring stations and attendant landing of aircraft are inconsistent with preserving wilderness character. Thus, the proposed action does not serve the "purpose" of the Act.

NPS Response:

The Final MRA (FONSI Attachment B) has been revised in response to public input to clarify the analysis of the proposed action and alternatives in the context of fulfilling the requirements of the Wilderness Act. This is also documented in the EA (see the Wilderness Character, Environmental Consequences section, pages 46-56) and the FONSI/Determination of Non-Impairment.

Concern Statement 11

The "purpose and need statement" for the proposed project is not valid (in violation of NEPA), because placing USGS mechanical monitoring devices in designated wilderness violates statute law (i.e., the Wilderness Act of 1964).

NPS Response:

Consistent with 43 CFR 46.420(a), the purpose and need statement (EA, page 4) for this review is a broad statement of goals that the NPS intends to fulfill through taking action and should be stated in terms of the desired outcome. In addition, monitoring devices may be permitted in wilderness where they are "necessary to meet minimum requirements for the administration of the area for the purpose of this Act." The MRA documents the analysis of the degree to which the proposed action and alternatives are necessary for the administration of the area for the purpose of this act (FONSI Attachment B).

Concern Statement 12

The EA is inconsistent on whether these are permanent installations. In the purpose and need, it states, "These lands must be managed pursuant to the 1964 Wilderness Act, which normally prohibits permanent installations." The EA also states, "The natural quality of the Mount Rainier Wilderness would be affected by small scale, localized, and temporary impacts on the natural environment." Thus, the EA fails to adequately and honestly analyze the impacts from this proposal.

NPS Response:

The EA provides information on the longevity of the monitoring stations (page 5), as follows: "For the purposes of this EA, it is estimated that the monitoring stations would be in place for about 30 years. The installations have no planned removal date but would be expected to be replaced in the future as new technology becomes available. It is expected that the project footprint would become smaller over time with technological advances." Temporary impacts range from short-term (during construction) to long-term (up to 30 years). Some impacts around the installation sites are indeed temporary and short-term, as compared to the actual footprint of the installation (30 years or until removed or replaced). The MRA documents the analysis of the degree to which the proposed action and alternatives are necessary for the administration of the area for the purpose of this act (FONSI Attachment B).

Concern Statement 13

An alternative that includes only temporary and portable equipment with no helicopter installation or maintenance in designated wilderness should be analyzed in the EA.

NPS Response:

NPS did consider alternatives that would have used nonmotorized transport of materials to the project sites and installation using only nonmotorized tools (see pages 55 and 56 in the MRA, FONSI Attachment B). Temporary placement of seismic monitoring equipment would not achieve the purpose of ongoing monitoring of earth movements to provide year-round lahar detection capabilities. Temporary monitoring stations do not transmit data in real time, are not continuous, and are only functional in the summer months. Temporary deployments of instrumentation were completed in the summers of 2020 and 2021 in high-hazard drainages, including Tahoma Creek. These deployments have the goal of understanding the physics of debris flows to better track larger debris flows and lahars. Temporary deployments are short (weeks to a month), and thus minimal batteries are required and instruments are highly portable. The small size allows deployment of a large number of instruments on foot in remote areas, but deployments still require up to 10 people for each installation, maintenance, or retrieval. Unfortunately, none of this equipment has real-time capabilities and thus is inappropriate for hazard alerts. Real-time capabilities require much more power, typically provided through a combination of batteries and solar panels, which are difficult and hazardous to carry by foot in rugged areas. Further, while debris flows at Mount Rainier do tend to occur in the summer months, lahars do not exhibit strong seasonality and monitoring is required year-round.

The use of helicopters has been minimized as much as possible; helicopters would be used for the initial installation of the monitoring stations, given the weight of the equipment (see page 55 in the MRA (FONSI Attachment B). See also additional language in the EA errata under "Alternatives Considered but not Carried Forward for Analysis" (FONSI Attachment A, page 1).

Concern Statement 14

Creative alternatives, such as using remote sensing and radio transmission, repurposing existing models, or using park rangers trained to observe the behavior of animals, should be analyzed in the EA.

NPS Response:

NEPA (40 CFR 1502.14) requires federal agencies to evaluate "reasonable alternatives to the proposed action" and to include "appropriate mitigation measures." Reasonable alternatives are defined in 40 CFR 1508(z) as "alternatives that are technically and economically feasible, meet the purpose and need for the proposed action, and, where applicable, meet the goals of the applicant." Additional discussion has been added to the EA through errata regarding "Alternatives Considered but not Carried Forward for Analysis" (FONSI Attachment A, pages 1-6).

Concern Statement 15

The USGS Lahar map (https://www.usgs.gov/media/images/mt-rainier-lahar-hazard-map) should be included in the EA to provide context and geographically reference the drainages of concern.

NPS Response:

The suggested map has been incorporated into the EA in the errata (FONSI Attachment A, page 8).

Concern Statement 16

The NPS must demonstrate that the proposed project is necessary to preserve the wilderness character of the area, or the project cannot proceed. The NPS must review the MRDG for the project and base it on the exact wording of the Wilderness Act's "necessary to meet minimum requirements."

NPS Response:

The Final MRA (FONSI Attachment B) has been revised in response to public input to clarify the analysis of the proposed action and alternatives in the context of fulfilling the requirements of the Wilderness Act.