National Park Service
U.S. Department of Interior

Lassen Volcanic National Park
California

Non-Impairment Determination
Lassen Volcanic National Park

Drakesbad Wastewater Disposal Field

By enacting the NPS Organic Act of 1916 (Organic Act), Congress directed the U.S. Department of the Interior and the National Park Service (NPS) to manage units "to conserve the scenery, natural and historic objects, and wild life in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (54 U.S.C. 100101). NPS *Management Policies 2006*, Section 1.4.4, explains the prohibition on impairment of park resources and values:

> "While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the National Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them."

An action constitutes impairment when its impacts "harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of those resources or values" (NPS 2006, Section 1.4.5). To determine impairment, the NPS must evaluate the "particular resources and values that will be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. An impact on any park resource or value may constitute impairment, but an impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;

- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance (NPS 2006, Section 1.4.5).

Fundamental resources and values for Lassen Volcanic National Park are identified in the enabling legislation for the park, the Foundation for Planning and Management, General Management Plan, Warner Valley Environmental Impact Statement, and other park planning documents. Based on a review of these documents, the fundamental resources and values for Lassen Volcanic National Park come from the park's wide array of volcanic and hydrothermal features and associated geology, biodiversity and distinctive range of flora and fauna, human pathways and ties with the landscape, lands with wilderness character and other backcountry areas, and diversity of traditional recreational values and visitor experiences.

Resources that were carried forward for detailed analysis in the EA and are considered necessary to fulfill specific purposes "identified in the establishing legislation or proclamation of the park; are key to the natural or cultural integrity of the park; and/or are identified as a goal in relevant NPS planning documents" include: soils, water resources, vegetation, and cultural resources (archeological resources, historic structures, and cultural landscapes). Accordingly, a non-impairment determination is made for each of these resources. Non-impairment determinations are not necessary for human health and safety or visitor use and experience because impairment findings relate back to park resources and values, and these impact topics are not generally considered park resources or values according to the Organic Act.

This non-impairment determination has been prepared for the selected alternative, replacement of the Drakesbad wastewater disposal field, as described in the Finding of No Significant Impact for the Replace Drakesbad Wastewater Disposal Field.

Soils

Soils within Lassen Volcanic National Park are rocky, shallow, acidic, and originate almost exclusively from volcanic parent rock (NPS 2002). Soil depths vary from several feet in the valleys to thin veneer at higher elevations. In the Warner Valley area, there are organic-rich soils in the wet meadows. These soils are predominately peat and mucky loams.

Impacts: From the replacement of the Drakesbad wastewater disposal system, there would be excavation of approximately 42,000 cubic feet (1,555 cubic yards) of soil within the already disturbed footprint of the Warner Valley Road for the force main line installation and another estimated 3,234 cubic feet to excavate each of four leach field laterals (77-feet long, 14-feet wide, and 3-feet deep), a total of approximately 12,936 cubic feet of leach field. Along the roadway, there would

also be small areas of excavation for placement of the air release valve boxes and cleanouts. These would be located upslope on a bench on the north side of the roadway and would consist of approximately six areas comprising (4 x 3 x 3-feet) or 36 cubic feet each (for a total of 216 cubic feet).

There would also be excavation for the flow-splitter basin in the leach field area (an estimated 36 cubic feet). The flow-splitter basin and leach field excavation would be in an area adjacent to the road. In these areas soils would be removed, and in the case of the force main, some excavated soil could be reused as backfill, depending on whether it met proposed specifications for properties. The flow-splitter and leach field area would be cleared by felling existing trees and moving existing logs away from the area. Heavy equipment would be used to remove approximately 9-inches of topsoil and duff. Although the use of heavy equipment on the roadway would not be expected to cause additional compaction impacts, use to construct the leach field would affect areas now comprised of natural vegetation, causing compaction and disturbance of the soil surface.

There would be effects from logging and from rolling existing logs out of the way. This compaction would alter the structure of area soils, reducing their infiltration capacity and increasing the probability of erosion during runoff where soils are exposed. As a result, following construction of the leach field, the conserved topsoil and duff would be spread in a thin layer over the top of the leach field. Although trees would not be allowed to repopulate the leach field, other small plants and shrubs would be used to rehabilitate the area (see Vegetation section). There would also be indirect beneficial effects in the area of the existing leach field from its abandonment and eventual passive rehabilitation of the area.

Conclusion: Replacement of the Drakesbad wastewater disposal system will not adversely affect soils, except in a very small localized area associated with the disposal field. Therefore, there will be no impairment of soil resources or their values from implementation of the project.

Water Resources

Park water resources are diverse and include lakes, streams, ponds and springs.

Hot Springs Creek: Hot Springs Creek is the largest creek in the valley, running through Drakesbad Meadow and then paralleling Warner Valley Road through coniferous forest. Hot Springs Creek is considered an upper perennial riverine wetland, with mostly unconsolidated shore, some bedrock substrate, and seasonally flooded margins. There are numerous pockets of palustrine scrub-shrub seasonally flooded wetlands along the creek as it flows through Warner Valley. According to the Warner Valley Road Culvert Inventory, there are 21 smaller, intermittent tributaries to Hot Springs Creek that are culverted under Warner Valley Road from the park entrance to Drakesbad Guest Ranch. Some of these streams support pockets of emergent and/or scrub-shrub palustrine wetlands and others do not. Because these tributaries carry the water underneath the roadway and there would be no disturbance to the side ditches that comprise parts of the

wetlands along the roadway, they would not be affected by the installation of the new wastewater disposal system. Past digging within the roadway, such as for a water line, has also not found a groundwater connection beneath the culverts to the wetlands.

Water Quality: Water quality in the park is generally considered to be excellent because of the high elevation headwaters in the park and the lack of upstream development that would impact water within the park (NPS 1999). Surface water from Drakesbad Springs and Warner Valley Springs is treated to provide drinking water for park visitors and staff. Drinking water is monitored daily by the NPS to ensure a safe supply for human use. The park also conducts periodic water sampling where wastewater systems or human use could contaminate or alter water quality.

Impacts: Although the Area of Potential Effects (APE) includes a portion of Hot Springs Creek, the creek would not be part of the proposed leach field construction area. In fact, the closest the leach field would be to the creek is approximately 200 feet. In addition, potable uses of water, including the existing drinking water intake are located upstream of the Drakesbad development, approximately 0.75 mile from the proposed leach field. Because the porosity of the leach field soil tests were successful, that means there was no groundwater connection present in the test pits drilled. Therefore, sewage effluent would achieve good treatment during its holding and distribution time in the leach field. As a result, use of the leach field would not be expected to adversely affect either groundwater or water quality in Hot Springs Creek.

With the conversion from the existing force main to the new force main and plugging the current force main during the switchover, there would be no additional contamination of the area that now comprises the current leach field. The area would be left to rehabilitate naturally through microbial activity over time and passive revegetation could increase, with subsequent long-term beneficial effects.

Conclusion: The NPS has determined that the replacement of the Drakesbad wastewater disposal system will not result in an impairment of hydrology or water quality or other aspects of water resources and their functions and values.

Vegetation

Vegetation along the Warner Valley Road from the ranger station to Drakesbad Guest Ranch, near the campground, and at Drakesbad Guest Ranch is generally dominated by mixed coniferous woodland. Mixed conifer or yellow pine forest is the most common, and is comprised of a range of coniferous species, including white fir, Jeffrey pine, lodgepole pine, incense cedar, sugar pine, occasional red fir, and western white pine (NPS 2008). The proposed project area is situated within an ecological setting of this white fir-Jeffrey pine forest and woodland, with a mixed grass understory and infrequent shrubs, such as buckthorn (*Ceanothus cordulatus*), pinemat manzanita (*Arctostaphylos nevadensis*), and various xeric and

mesic grasses (Buckley, pers. comm. 2018). There are a number of logs atop the forest duff, with some evidence of ground disturbance from ground squirrels and voles and/or mice.

The proposed leach field is dominated by white fir, a common species that has become predominant in the absence of fire. In general, long-term fire suppression has led to substantial changes from the historical condition in forest composition and structure throughout the park and within the project area. Forest stands have a higher tree density than was historically present, with widespread increases in shade tolerant and fire intolerant species such as white fir. They also have more dead wood on the ground, and fewer openings in the forest canopy, which results in decreased forest understory cover and diversity. Disturbance from recreational use in and around the campground and Drakesbad Guest Ranch and along trails have increased area impacts. Park management efforts are actively working to reduce stem density, improve forest diversity and cover, and to reintroduce fire to the landscape.

Beginning with the connection of the new force main to the pumphouse, there would be small effects on vegetation from excavation of the new line. There would be no effect on vegetation from excavating the force main line in the Warner Valley Road because there is no vegetation in the roadway. Between the roadway and the hillslope adjacent to it, there would be small adverse effects on vegetation from removal to connect the force main to approximately six locations off the north edge of the road and to construct air release valve boxes and cleanouts.

To construct the flow-splitter basin and leach field, approximately 45 trees between 11 and 35 inches in diameter would be removed. Despite the removal of trees, the leach field would continue to be screened from the road edge, approximately 365 feet south of the Warner Valley Road. Trees removed by the project would primarily be white fir, a species that is unnaturally higher in concentration in the area as a result of fire suppression (McGraw, pers. comm. 2019). Effects on vegetation would also be from removing topsoil and duff over the 0.2 acres of the leach field, from direct removal of the trees, shrubs and grasses, from excavation of the leach field and from compaction with people and heavy equipment undertaking this work. Species removed to construct the force main and leach field include white fir, with infrequent Jeffrey Pine. Where practicable, white fir will be removed, primarily leaving behind Jeffrey pine. There would also be long-term adverse effects on vegetation from repeated actions to maintain the area without trees.

Conclusion: The small range of adverse impacts to vegetation from the replacement of the Drakesbad wastewater disposal system would not impair vegetation or vegetation-related values.

Cultural Resources, including Archeological Resources, Historic Structures and Cultural Landscapes

Overview: The Area of Potential Effects (APE) is defined as an 80 acre area in the park (within Plumas County) that extends east to west from an existing lift station near Drakesbad Guest Ranch to the proposed location for the new leach field. The extent of the APE is based on the length of new sewer line needed, and is buffered on all sides to accommodate direct and indirect effects of the project, which would include the use of heavy equipment. Excavation is likely to be relatively shallow, not exceeding five feet, for installation of sewer lines, septic tanks, and distribution lines.

All project activities occur within the boundary of the Warner Valley Developed Area Historic District and are adjacent to, but outside of, the western boundary of the Drakesbad Guest Ranch Historic District and Cultural Landscape. Known cultural resources within the APE also include contributing features to the Warner Valley Developed Area Historic District, specifically the Warner Valley Road and associated original culverts and mortared native stone culvert headwalls. The Warner Valley Campground, located within the APE, is listed as a non-contributing feature to the historic district due to lack of integrity.

Drakesbad Guest Ranch Historic District and Cultural Landscape: The historic district is listed on the National Register. Ten of the buildings at Drakesbad Guest Ranch are listed as contributing resources. These include the lodge, dining hall, cold storage, bunkhouse, and six cabins. Individual guest cabins are located east and west of the core building complex. All of the historic buildings are vernacular in style, wood-frame with gable metal roofs. The building cluster also contains more contemporary buildings including: three Mission 66 duplexes, a tack room, a concession office, and a generator building. With the exception of the concrete generator building, the modern buildings are all wood-frame and are compatible with the architectural character of the historic buildings in terms of material, scale and massing (NPS 2005). Additional features of the area that contribute to the cultural landscape, include the Drakesbad meadow, roads, trails, overall spatial organization and land use.

Warner Valley Developed Area Historic District: The Warner Valley Developed Area Historic District includes the Warner Valley Road, campground (non-contributing) and ranger station. All are located on the north side of Hot Springs Creek. The ranger station and campground are outside the area of potential effects for the proposed project.

The Warner Valley Road is the only automobile access route to Drakesbad Guest Ranch and its character is relatively unchanged from the historic period. The road has been determined to be a contributing structure to the historic district (NPS PWRO 2004: 40). The road was privately constructed ca. 1880, prior to NPS ownership. Because of its early non-NPS construction, its design does not conform to typical NPS standards of the 1930s (Caywood and Emmons 2004: 2).

> The Warner Valley Road provides vehicular access to the interior of the park from the south. It is roughly 10.4 miles in length, but only the north 3.1 miles lie within the park boundary. Branching from the old road to Mineral, the lower part of the Warner Valley Road provides access to the numerous vacation homes that have been constructed within subdivided homestead claims. This portion of the road is paved. The segment of the road within the park boundary is unpaved, with no major stream crossings that require bridges. Many small streams flow perpendicular to the road, all are channeled through culverts.
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> The road alignment follows a circuitous path contouring into and out of the hill slope above the creek. Within the park, this is basically a one-lane road with pullouts, with a gravel running surface that ranges between 12 and 16 feet in width. In level areas, drainage ditches parallel each side of the road; where the road is cut into the hill slope, drainage ditches on the up-hill side of the road channel flow in the many culverts that are integrated into the road grade.
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> The road contains both crimped aluminum pipe culverts (mostly 18-inch diameter), and corrugated polyethylene culverts. Some of the metal culverts have mortared stone headwalls. Most are simple headwalls made of locally available stone and concrete mortar. These small-scale features have not been counted as individual structures (Caywood and Emmons 2004: 5, Continuation Sheet: Section 7, page 1).

Based on the National Register nomination, the road and its associated features possess integrity of materials, workmanship and design relative to their specific history. They also possess integrity of location and setting, feeling and association (Caywood and Emmons 2004: 5, Continuation Sheet: Section 7, page 1).

Archeological Resources: A 2001 archeological survey of the park included high intensity reconnaissance using 5-10 meter transects in the project area. The survey identified 33 isolates and several sites in the Warner Valley, but none were identified within the APE of this undertaking.

Since the previous survey of the area is 18 years old and the area has a high likelihood of cultural deposits, park archeological staff undertook a new survey, which was completed in summer 2018, of the proposed new leach field location. The survey did not identify any eligible archeological sites, but did identify two isolates within the project area, including a non-tooled obsidian chunk, and a small site consisting of a historic can scatter. These historic isolates have been fully recorded and photographed and are unlikely to provide further significant data at this time. The small historic can scatter found in the survey area would be avoided based on the proposed location for the leach field.

Impacts: There would be no effect on known archeological resources. Known archeological resources have been avoided by selection of the proposed location for

the leach field. Surveys of areas along the Warner Valley Road for archeological resources were conducted to determine probable locations for relocation of the leach field. Findings from these surveys found several ineligible areas. Surveys of the proposed project area did not find any resources either sensitive or eligible for listing in the National Register. Although reconnaissance surveys have not identified archeological resources, implementation of the project could find unidentified resources, therefore an NPS archeologist would monitor ground disturbance and if something was found, work in the affected area would cease until it could be evaluated by a qualified archeologist in accordance with the park's Inadvertent Discovery Plan and a disposition (avoidance of the area, relocation of the impact, or collection) sought).

There would be no adverse effect on historic districts listed or eligible to be listed on the National Register as a result of the implementation of the replacement of the Drakesbad wastewater disposal system. Constructing the force main within the Warner Valley Road would be concealed from views along the roadway because it would primarily be underneath the road. Although some components of the new septic system would be above the road (cleanouts and air release valves), their visibility would be limited to a camouflaged (color to-be-determined) box rising approximately two inches above the ground surface on the north side of the road on a bench above (and therefore not visible from) the road. The system connects to an existing lift station and would not have external components that would affect this area. Other changes in the landscape adjacent to the roadway would affect views from the Warner Valley Historic District from construction of the leach field. This would be detected as a slight opening in the forested area on the south side of the roadway. To minimize the effects of this opening, a screen of trees would be left close to the road. Although generally leach fields do not contain aboveground features there would be evidence of disturbance in views from the roadway, since there would be this small opening in the forest canopy visible in the distance adjacent to the roadway.

Conclusion: There would be no adverse effect on archeological resources under the replacement of the Drakesbad wastewater disposal system. It would have no adverse effect on historic properties, including the Drakesbad or Warner Valley historic districts. Long-term beneficial effects would be contributed in the implementation of the project from actions that would preserve historic uses at the Drakesbad Guest Ranch. Therefore the NPS has determined that the replacement of the Drakesbad wastewater disposal system will not result in impairment of archeological or historic resources. Concurrence from the California State Historic Preservation Office with *No Adverse Effect* for the replacement of the Drakesbad wastewater disposal system supports this conclusion.

Summary

Therefore, as guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the superintendent's professional judgment that there will be no impairment of park resources and

values from the replacement of the Drakesbad wastewater disposal system. The NPS has determined that implementation of the project will not constitute an impairment of the resources or values of Lassen Volcanic National Park. This conclusion is based on consideration of the park's purpose and significance, a thorough analysis of the environmental impacts described in the EA, and the professional judgment of the decision maker guided by the direction of NPS *Management Policies 2006*.