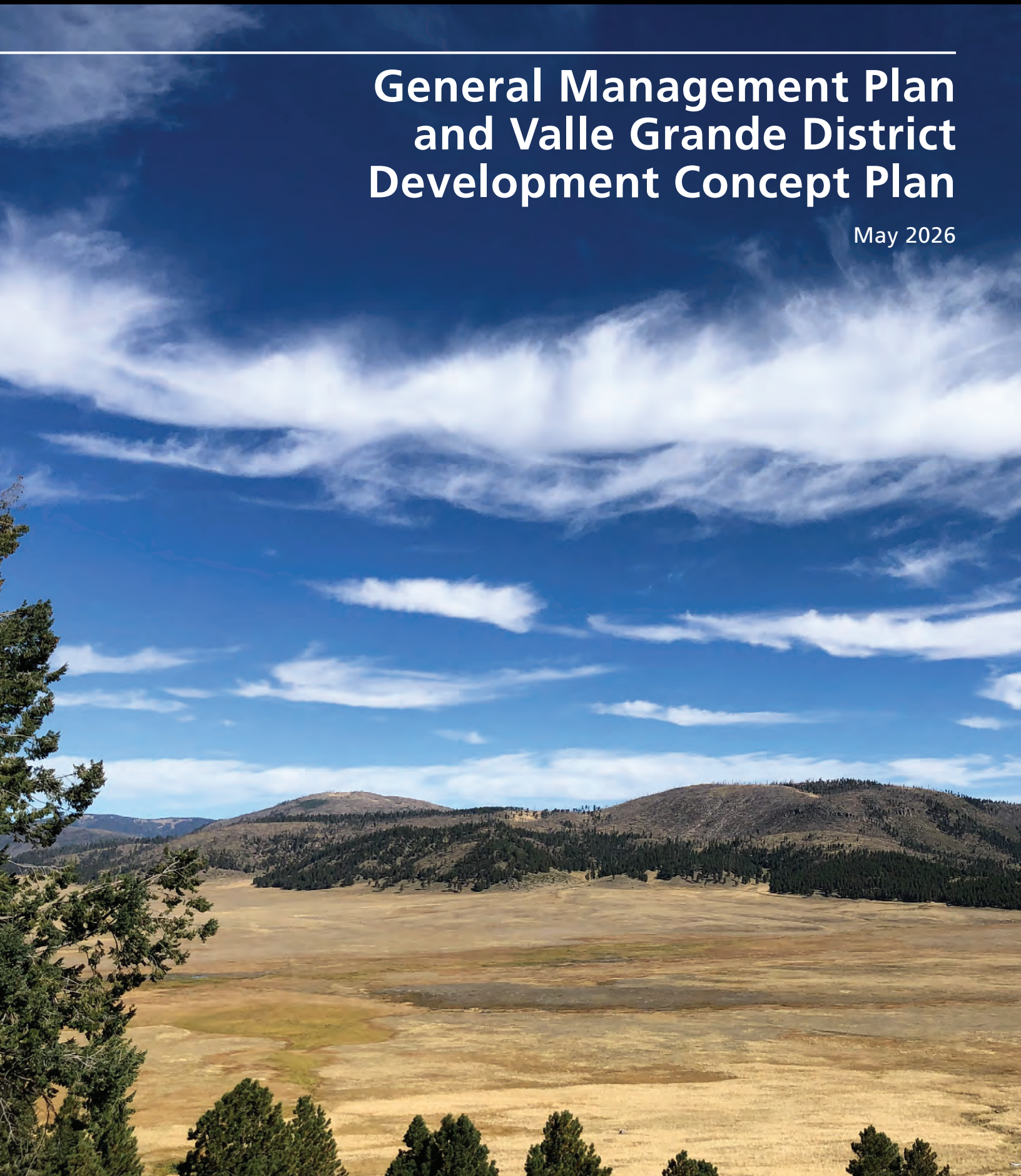




General Management Plan and Valle Grande District Development Concept Plan

May 2026



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National Park Service

US Department of the Interior

Valles Caldera National Preserve

**General Management Plan and Valle Grande
District Development Concept Plan**

PMIS #241186C

NPS-112511

New Mexico

May 2026

A GUIDE TO THIS DOCUMENT

GENERAL MANAGEMENT PLAN AND VALLE GRANDE DISTRICT DEVELOPMENT CONCEPT PLAN

This general management plan and Valle Grande District development concept plan (GMP/DCP or the plan) set the proposed framework for the National Park Service (NPS) to manage Valles Caldera National Preserve. The plan presents a comprehensive vision and criteria to inform management of resource conditions and visitor experiences parkwide. It also describes the desired level of visitor use infrastructure in the park's frontcountry. This plan is organized into three chapters:

- **Chapter 1: Introduction to the Plan** describes the park, the need for the plan, and the plan's relationship to the park planning portfolio.
- **Chapter 2: General Management Direction** outlines the vision for the park, including desired conditions and management zones. Desired conditions are aspirational statements that describe resource conditions and visitor experiences that an agency strives to achieve and maintain in a particular area.
- **Chapter 3: Management Strategies and Actions** identifies actions to achieve and maintain desired conditions for the park.

Appendixes: The appendixes provide supporting information, analyses, and management resources:

- Appendix A: General Management Planning Background
- Appendix B: Indicators and Thresholds
- Appendix C: Visitor Capacity
- Appendix D: References
- Appendix E: 2024 Settlement Agreement with Jemez Pueblo
- Appendix F: 2024 Banco Bonito Boundary Agreement with Jemez Pueblo
- Appendix G: Map(s) in Grayscale for Accessibility

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CHAPTER ONE:
Introduction to
the Plan

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CHAPTER 1: INTRODUCTION TO THE PLAN

BACKGROUND AND OVERVIEW

Park Description

Valles Caldera National Preserve was first established as a unit of the national forest system on July 25, 2000. It was an experiment in public land management (Public Law 106-248). The Valles Caldera Trust, a wholly owned government corporation overseen by a board of trustees appointed by the president of the United States, managed the preserve and undertook several significant planning efforts. Congress redesignated Valles Caldera as a unit of the national park system on December 19, 2014 (Public Law 113-291). The National Park Service assumed management on October 1, 2015, after a brief transition period.

Located in the heart of the Jemez Mountains in north-central New Mexico, the 88,900-acre park encompasses almost all of a 13-mi-wide volcanic caldera. This caldera contains expansive high-elevation grasslands with forested volcanic domes, meandering streams, and abundant wildlife. The area is the ancestral homeland of many native peoples. Beginning in the 19th century, it was used by European Americans for ranching and logging, then later for geothermal energy exploration.

The Santa Fe National Forest surrounds much of the park, which also shares boundaries with the Pueblo of Santa Clara and with Bandelier National Monument. One of the three Manhattan Project National Historical Park sites is in nearby Los Alamos. Most visitors access the park through Valle Grande by way of the main entrance road from New Mexico State Route 4 (NM-4). Santa Fe and Albuquerque are a one- to two-hour scenic drive from the main entrance. This means the park is within a manageable driving distance for about half of New Mexico's population. Visitors to the park enjoy hunting, fishing, hiking, biking, horseback riding, winter recreation, and other activities.

Valles Caldera is the world's premier example of a resurgent caldera: a giant circular volcano with an uplifted central floor (Goff et al. 2011). In 1975, the entire volcanic caldera, which extends outside the park boundary, was designated as a National Natural Landmark. In 2021, the entire park unit, encompassing its numerous individual thermal features, was designated as a significant thermal feature under the Geothermal Steam Act.

Valles Caldera is in the Jemez volcanic field at the intersection of two major fault systems: the Rio Grande rift and the Jemez lineament. This volcanic field has been active for more than 14 million years. But a spectacular volcanic eruption about 1.25 million years ago created the current 12- to 15-mile-wide circular caldera depression. Since then, 15 eruptions and magmatic intrusive events have created numerous volcanic domes within the caldera. They include the major central resurgent dome, Redondo Peak, which is 11,254 ft high.

The caldera is dormant but not extinct, with active hot springs and boiling sulfuric acid fumaroles. The landscape has sweeping views across expansive grasslands (*valles* in Spanish), surrounded by rounded, forest-covered volcanic domes. The park's ecosystems range from 7,800 to 11,300 ft high. Their abundant rainfall, mixed-conifer forests, and deep, rich soils

support many different animals, plants, fungi, and other organisms. These ecosystems have demonstrated stability and resilience in the face of 19th- and 20th-century resource exploitation.

The Jemez Mountains range receives an average of 11 to 35 in. of precipitation per year, primarily winter snow and summer monsoonal rains. They also experience frequent droughts. This dry climate accounts for the predominance of moderately drought-tolerant vegetation. Historically, frequent and mostly low-intensity fires helped maintain ecosystem health, but fire exclusion beginning around the turn of the 20th century altered the landscape, notably by allowing a thick forest understory to develop (Lehnert et al. 2021).

Meanwhile, the climate has also been changing. Climate data from 1895 to the present show a significant and rapid warming trend (Climate Change Response Program 2024). Climate data also show that annual snowfall and snowpack have declined significantly since 1955. The combination of increasing temperatures and changing precipitation patterns contribute to increasing water deficits, which the park has experienced consistently since 2000. Such conditions are a stressor on vegetation (Carlson and Gross 2019).

A decade-long drought beginning in the mid-1990s in the Jemez Mountains interacted with the altered ecosystem and extreme dry, hot weather to cause a series of high-severity wildfires from 1996 to 2013. Fires in 2011 and 2013 burned 60% of the park. These fires caused significant ecological change and infrastructure damage. They severely burned the upper portions of watersheds across the Jemez Mountains. Intense monsoon rains then caused significant downstream flooding and debris flows that scoured the bottoms of canyons. They altered hydrogeomorphic patterns and threatened human communities, cultural resources, and drinking water supplies. Collectively, these events are challenging ecosystem resilience. In some areas, they are resulting in permanent vegetation community shifts (Lehnert et al. 2021).

Since time immemorial, Indigenous peoples have used the caldera for religious and ceremonial purposes; hunting and fishing; collecting seeds, nuts, and berries in abundance; and gathering plants for medicinal and ceremonial purposes. The caldera's signature resource is obsidian, a high-quality volcanic glass. Extensive ancient quarries and numerous sites with obsidian tools and remnants of obsidian worked by humans are known throughout the park. Valles Caldera obsidian has been chemically identified at archeological sites across the United States. In addition to archeological evidence of extensive precontact use of the caldera, historic and ethnographic information documents tribal use of the area from the 16th through the 19th centuries (Norris and Elliot 2022). Numerous Tribal Nations¹ in the region maintain deep historic and cultural connections to the caldera that are expressed through rich oral histories and ongoing ceremonial activities and sacred traditions. Based on this history, the National Park Service has so far identified 37 Tribal Nations that have ongoing traditional cultural associations with the Valles Caldera landscape. They include 17 nearby Pueblo Indian Tribes (see map 1).

The United States has a unique government-to-government relationship with Tribal Nations. That relationship derives from the US Constitution and treaties, statutes, regulations, executive

1. Throughout this document, "Tribal Nations" refers to federally recognized Indigenous Tribes and pueblos.

orders, and federal court decisions. Accordingly, the National Park Service acknowledges its unique trust relationship with Tribal Nations associated with Valles Caldera.² In 2024, the US government and the Pueblo of Jemez entered into a settlement agreement, concluding 12 years of litigation that predated NPS administration of Valles Caldera. It recognizes Jemez Pueblo's right to occupy and use an area in the southwestern portion of the park, known as Banco Bonito, for traditional cultural or religious purposes without obtaining NPS authorization, to the extent consistent with the park's enabling legislation and other applicable statutes and regulations.³ The significance and unique characteristics of Banco Bonito, or *Sée Wâak'î Tûukwâ* ("Eagle Down Place") in the Jemez language of Towa, include the 100 documented fieldhouses and associated agricultural features on Banco Bonito which Hemish people—how members of the Pueblo of Jemez refer to themselves—constructed and occupied between 1500 and 1650 CE. The research of the Hemish fieldhouses and agricultural expansion on Banco Bonito contribute greatly to the science of archeology and other disciplines. Banco Bonito contains Hemish sacred sites, resource procurement sites, remains of farming practices such as terracing, check dams and grid gardens, ceramics, and ground stone. For generations, the Hemish people have gathered, hunted, farmed, and used Banco Bonito for traditional cultural and religious purposes. During peak Hemish occupation of Banco Bonito, Hemish agricultural clearing and use, wood harvesting, and patterns of enhanced low-intensity fire activity helped maintain a resilient and sustainable forest ecosystem. Banco Bonito's ethnographic, archeological, paleoecology and ecological resources provide a model for fire management in a modern setting. To this day, Banco Bonito is the site of the highest elevation fieldhouses ever discovered in the southwestern United States at approximately 8,000 feet.

Starting in 1860 and up until 1899, the Cabeza de Baca family owned much of the caldera. Then ownership passed to the Otero, Bond, and Dunigan families. The Baca Ranch cabin district⁴ (referred to as "cabin district" throughout this document) was the primary operations center during this private ranching period. It is on the northwest side of Valle Grande and retains buildings and structures from three of these ownership periods (see map 2). Within the loosely defined cabin district is the formally defined Baca Ranch Cabin Area historic district, which was found to be eligible for listing in the National Register of Historic Places in 2024. Sheep grazing gave way to cattle grazing over time, and different owners explored other economic opportunities, such as sulfur mining, geothermal energy exploration, movie filming, private elk hunting, and tourism.

Sulphur Springs is a rare and important geothermal resource. It has bubbling acid-sulfate springs, mud pots, and fumaroles. Sulphur Springs was developed into a health resort that operated from the late 19th century into the 1960s, and in the early 1900s the Otero family also

2. See Director's Order 71C: *Consultation with Indian and Alaska Native Tribes*, <https://www.nps.gov/subjects/policy/directors-orders.htm>.

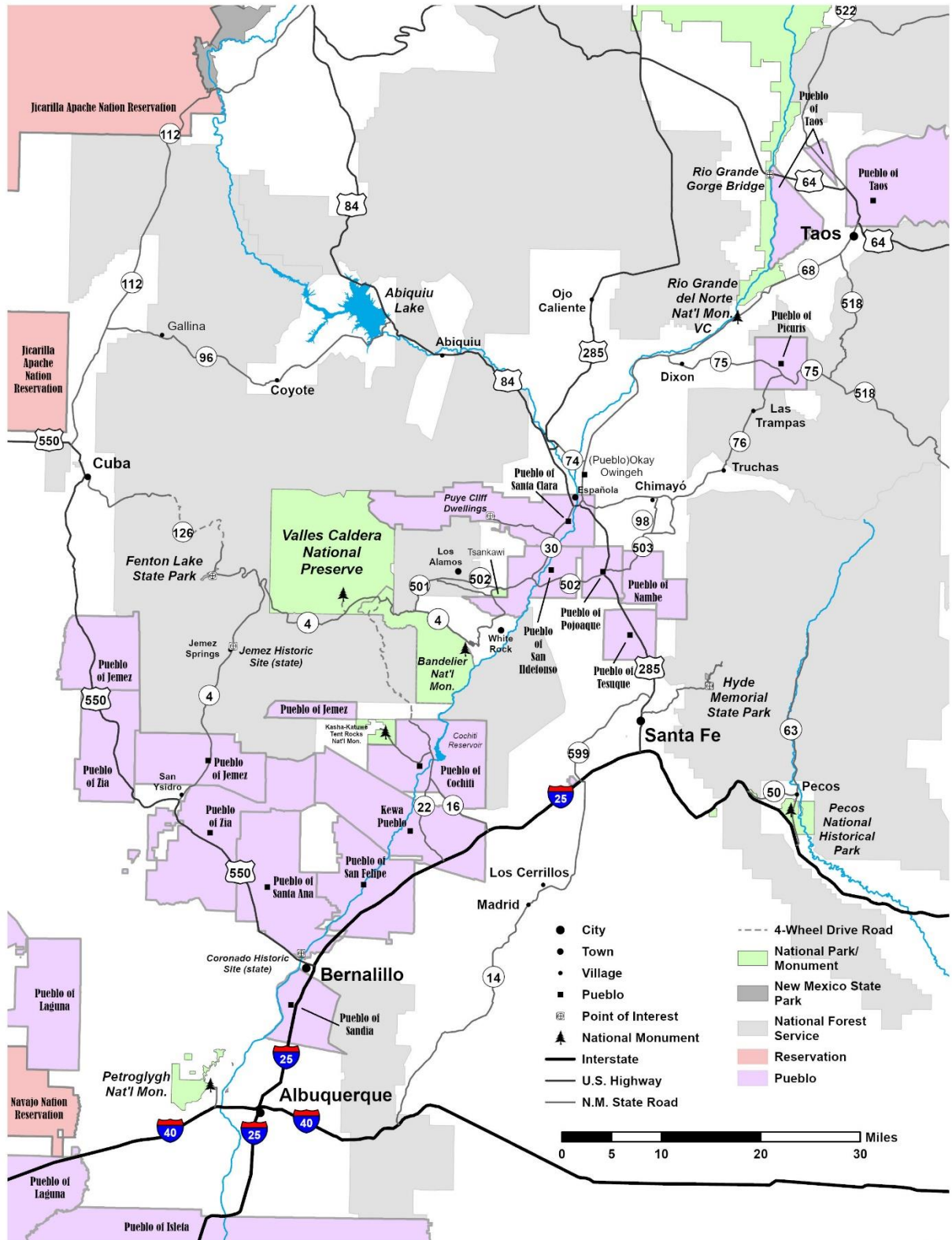
3. The entire settlement agreement is incorporated into the General Management Plan as Appendix E, which further describes Jemez Pueblo's rights under the agreement.

4. "Cabin district" is a term of convenience used by the park to loosely refer to the cluster of historic cabins and surrounding environment. There is no strict boundary associated with this term, and it is not to be confused with the Baca Ranch Cabin Area historic district.

briefly attempted to mine sulfur there (see map 2). Although most traces of commercial development there are gone, the landscape modifications remain. Starting in the 1960s, nonlandowners with timber rights built more than 1,000 miles of logging roads throughout the caldera. They also clearcut the majority of old-growth forest before the Dunigans were able to halt this activity. Over time, overgrazing, clearcut logging, and road building left unhealthy forests, riparian damage, degraded wetlands, and reduced stream function. One of the park's legislated purposes is to address these legacy impacts through ecological restoration and historic resource rehabilitation and preservation.

Today, the cabin district offers visitors sweeping views of both a prehistoric archaic period landscape and a historic ranching landscape. Sulphur Springs offers outstanding opportunities for scientific research and geologic and historic interpretation; logging roads are used for recreation or left for potential restoration efforts; and as the landscape as a whole recovers and evolves, it affords visitors a unique opportunity to learn and appreciate natural recovery processes and ecological restoration adaptive management. In 2021 DarkSky International designated the park an international dark sky park.

Map 1. Northern New Mexico Area Map



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Monte K. White
3/30/2026

Foundation Elements

The *Valles Caldera National Preserve Foundation Document*, through a careful analysis of the park's enabling legislation, provides basic guidance for planning and management decisions. The document articulates the legislated purpose of the park, its significance, the focus of its interpretation and education program, and its fundamental resources and values. In addition, the foundation document provides information on special mandates and administrative commitments (legal requirements) and key issues and associated planning and data needs identified at the time of its preparation. A foundation document ensures that park management remains focused on achieving the park purpose and maintaining its significance. This GMP/DCP was developed to support the core elements identified in the foundation document by identifying management zones, desired conditions, and management strategies consistent with the park's purpose to protect, preserve, and restore ecosystems and cultural landscapes within an outstanding example of a volcanic caldera for the purpose of education, scientific research, public enjoyment and use, and cultural continuity. The GMP/DCP promote visitor use and education while articulating management strategies that support the park's fundamental resources and values including the caldera, iconic views, traditional cultural landscapes, a recovering ecosystem, and scientific knowledge. The full foundation document is available at <https://www.nps.gov/vall/learn/management/index.htm>.

PURPOSE AND SCOPE OF THE GENERAL MANAGEMENT PLAN AND VALLE GRANDE DISTRICT DEVELOPMENT CONCEPT PLAN

The National Park Service has prepared this plan to meet the requirements of the following:

- Public Law 113-291, which enabled the establishment of Valles Caldera National Preserve as a unit of the national park system;
- National Parks and Recreation Act of 1978; and
- *NPS Management Policies 2006*.

The plan builds on legislation, resolutions, laws, policies, and on the park's foundation document to develop a management vision for the park. It articulates an overarching management vision based on a shared understanding of the conditions and level of development that will best achieve the park's purpose and conserve its fundamental resources and values. It does this through sustained civic engagement with the public, Tribal Nations, partners, and stakeholders. A general management plan is comprehensive and parkwide and looks holistically at critical issues such as connected conservation outside of park boundaries, resource stewardship within park boundaries, tribal interests and engagement, climate change adaptation and sustainability, and the socioeconomic environment. It addresses how the park will provide inclusive and equitable access and opportunities. It does not, however, describe how particular programs or projects should be implemented.

The Valle Grande District development concept plan identifies facility types and general locations to enhance resource protection and visitor experiences. It also identifies potential future facility investments. These would provide baseline services and amenities and enhance

operational efficiency and visitor experiences. Facility investments identified in the plan are subject to available funding, conditions on the ground, and compliance processes.

The purpose of this plan is to

- articulate an overarching management vision for the park and address legislative requirements at a programmatic level;
- clearly define resource conditions and visitor uses and experiences to be achieved, consistent with the park's purpose and significance statements; and
- provide a framework for making decisions about how to best protect the park's natural and cultural resources including traditional cultural connections to the landscape, how to provide quality visitor uses and experiences, and what kinds of facilities, if any, to develop in the park.

PLANNING ISSUES AND OPPORTUNITIES

During internal scoping, tribal consultation, and civic engagement, NPS staff; Tribal Nations; the public; county, state, and city agencies; and various stakeholders helped to identify issues, opportunities, and concerns. In February 2025, the park engaged in renewed government-to-government consultation. The agency also solicited comments at public meetings, through planning newsletters, and at meetings with agencies and other partners. This plan provides high-level strategies for addressing issues and opportunities within the context of the park's purpose, significance, and special mandates. In this document, an issue is defined as a conflict or problem regarding the use or management of public lands.

Overarching Management Vision

Congress designated Valles Caldera National Preserve as a unit of the national park system in 2014, but the park has lacked an overarching management vision. A management vision is needed to guide decisions about enhancing visitor experiences while simultaneously safeguarding the park's natural and cultural resources; and to guide prioritization of facility investments to support visitor use, park operations, and resource protection.

Inadequate Visitor-Related Infrastructure and Services in the Valle Grande District

Despite growing public interest to recreate at the park since designation, visitor access and services within primary visitor use areas of the Valle Grande District remain limited due to minimal facilities and infrastructure. The existing facilities to support opportunities such as interpretation and visitor education are few, small, and intended for interim use only. They are not universally accessible and are generally incompatible with year-round use.

Fundamental services such as potable water, restrooms, and parking facilities are either substandard, inadequate to accommodate any substantial increase in visitor numbers, or missing entirely. These conditions also make it hard for the park to meet its accessibility goals and accommodate visitors of all ability levels. There is also little administrative space for frontline staff.

Given the urgency of basic infrastructure needs, park staff have sought funding to address issues related to key facilities and services on a case-by-case basis. The park has been proactive in identifying and seeking solutions to individual issues. However, the lack of a cohesive management vision has hampered the park. It has been difficult to know where to site facilities, for how many visitors and staff, and how each project relates to a broader strategy.

Climate Change Planning

The NPS Climate Change Response Program summarized existing park data to help the team consider future climate scenarios (Climate Change Response Program 2024). The data suggested an intensified climate system with a mix of interacting pulse disturbances (intense storms and drought; temperature extremes) and press disturbances (warming winters; increased aridity). Climate change is expected to intensify the hydrologic cycle and increase the intensity and frequency of drought. Increased temperatures and aridity will likely mean declining moisture for plants and animals. The park may experience greater water deficits, with more precipitation falling as rain than snow and increased high-intensity precipitation events. The region appears well positioned for a “megadrought.”

The park may also see an increase in visitation as people seek higher elevations for cooler temperatures (Fisichelli et al. 2015; Wilkins et al. 2021). The typical visitor season may expand, beginning earlier and ending later. The expected increase in wildfire frequency and intensity would pose a safety risk to visitors and infrastructure. Fire, along with increased wind speeds, intense storms, and runoff from stronger monsoons, would impact natural and cultural resources.

Resource Stewardship and Preservation

Park management lacks a comprehensive vision and criteria to inform resource stewardship and preservation and management of visitor experiences on a parkwide scale. Visitation to Valles Caldera is expected to grow as the park makes incremental improvements to visitor services and public awareness of the park increases. To ensure fundamental resources and values remain protected, the park needs to incorporate visitor use management principles and climate change considerations into its decision making. This includes identifying visitor capacities and strategies to maintain desired resource conditions in a changing climate. This is particularly important in the Valle Grande District, which has several of the park’s fundamental resources and values. It will also be increasingly important in the backcountry areas of the park as public roads are improved or routes altered.

Access and Circulation

Access and circulation within the park is fragmented and has been heavily influenced and affected by legacy impacts from mid-20th-century logging and geothermal exploration. Hundreds of miles of old logging roads weave haphazardly throughout the park, and existing roads and trails repurposed from legacy circulation were not designed in a coherent or sustainable manner. Moreover, major fires in 2011 and 2013 burned over 60% of the park, leading to erosion and hazards in some existing and potential visitor use areas. Despite legacy land use and changes to the landscape, the park remains largely undeveloped. A main gravel

road facilitates entry 4 miles into the park to the cabin district, beyond which all vehicular access requires a backcountry vehicle pass, with a limit of 35 vehicles per day. Few established trails or parking areas exist beyond that initial entry point. As a result, many visitors are unable to experience the fundamental resources and values of the park. The park should consider providing access for the wide range of potential visitors. This would encourage visitor support, thereby ensuring the park's relevancy and long-term sustainability.

Roads

The current road network in the park was not designed or engineered for public recreation. It is unpaved, subject to seasonal closures, and requires continual maintenance. In the Valle Grande District, staff and visitors find it challenging to travel on the main entrance road (VC01). This road runs through a wetland and is subject to frequent flooding and upwelling events during the spring season. Parking and pullouts along the road are inadequate and unsafe for visitors wanting to use trails. The road's condition is a primary deterrent to visiting the park.

Vehicular access beyond the backcountry gate in the cabin district requires a backcountry vehicle pass, and passes are limited to 35 vehicles per day. The Valles Caldera Trust established this limit. The National Park Service maintained this practice because of the poor condition of the backcountry visitor access route. Many visitors are unaware of the backcountry vehicle pass system and infrastructure limitations, and they leave without going beyond the backcountry gate.

The National Park Service moved the backcountry vehicle pass reservation system to Recreation.gov in 2023. This has helped raise public awareness of the reservation system. However, the public backcountry vehicle route and the broader road network have yet to be formalized. The park needs a long-term strategy to determine where visitor vehicle access is appropriate throughout the park.

Trails

Similarly to the road network, most trails in the park were established based on legacy logging road alignments and have yet to be incorporated into a formalized trail system. The public has increasingly expressed frustration with the park's lack of a formalized trail system and associated facilities such as improved parking areas or trailhead access. A first step toward providing an improved visitor experience is improving and expanding the trails and trailheads in the Valles Grande District.

HOW VALLES CALDERA NATIONAL PRESERVE IS ADDRESSING THE FOUR STATUTORY GENERAL MANAGEMENT PLAN REQUIREMENTS

The Valles Caldera National Preserve general management plan addresses the park's four statutory requirements at a programmatic level. These requirements are resource preservation, types and general intensities of development, visitor carrying capacity, and external boundary modifications. Other existing and subsequent plans in the park's planning portfolio will complement this management plan, as appropriate. Those other plans may be comprehensive, strategic, or designed to assist the park in carrying out specific actions.

Resource Preservation Requirement

This general management plan identifies desired conditions for natural and cultural resources in the park's management zones. The management actions direct research and monitoring programs to improve resource knowledge (to inform preservation) and identify impacts that require adaptive management; and treatments that improve resource condition. This statutory requirement may be complemented by future planning efforts that apply updated inventory and monitoring data to resource stewardship goals.

Types and General Intensities of Development Requirement

This general management plan indicates the types and general intensities of development associated with public enjoyment and use of the area for each of the park's management zones. The Valle Grande District development concept plan provides long-term guidance for development in Valle Grande, the park's highest visitor use district. This statutory requirement may be complemented by future planning efforts as the need for additional management guidance is identified, significant changes occur, or new issues arise.

Visitor Carrying Capacity Requirement

This general management plan identifies desired conditions for visitor use and experience. It also identifies indicators, thresholds, and potential management strategies to respond to changes in visitation. The Valle Grande District development concept plan identifies visitor capacity for all of the district in the visitor engagement zone. This statutory requirement may be complemented by future planning efforts that identify visitor capacities for other areas of the park.

External Boundary Modifications Requirement

The park's current legislative boundaries were established on December 19, 2014, in accordance with the park's enabling legislation. No immediate boundary adjustments are identified in this general management plan. This statutory requirement may be complemented by future planning efforts that reevaluate boundary adjustments, if needed.

CHAPTER TWO:
General
Management
Direction



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CHAPTER 2: GENERAL MANAGEMENT DIRECTION

INTRODUCTION

General management planning typically happens in multiple steps. The first step for national park system units is a foundation document. Foundation documents provide basic guidance for planning and management decisions and are primarily descriptive. They articulate the unit's purpose, significance, fundamental resources and values, other important resources and values, interpretive themes, special mandates, administrative commitments, and planning and data needs.

The second step of general management planning is creating a framework of parkwide management goals. This is followed by aspirational desired conditions for each management zone in the park. This chapter outlines the three management zones for Valles Caldera National Preserve and desired conditions for each management zone. This chapter also summarizes visitor use monitoring strategies, which help park staff monitor visitor impacts on park resources.

MANAGEMENT ZONES

The National Park Service uses management zones to identify and describe resource conditions and visitor experiences to be achieved and maintained in different areas of a park. Section 2.3.1.2 of NPS *Management Policies 2006* states that each park's approved general management plan will include a map of management zones or districts that correspond to a description of the desired resource and visitor experience conditions for each area of the park (NPS 2006).

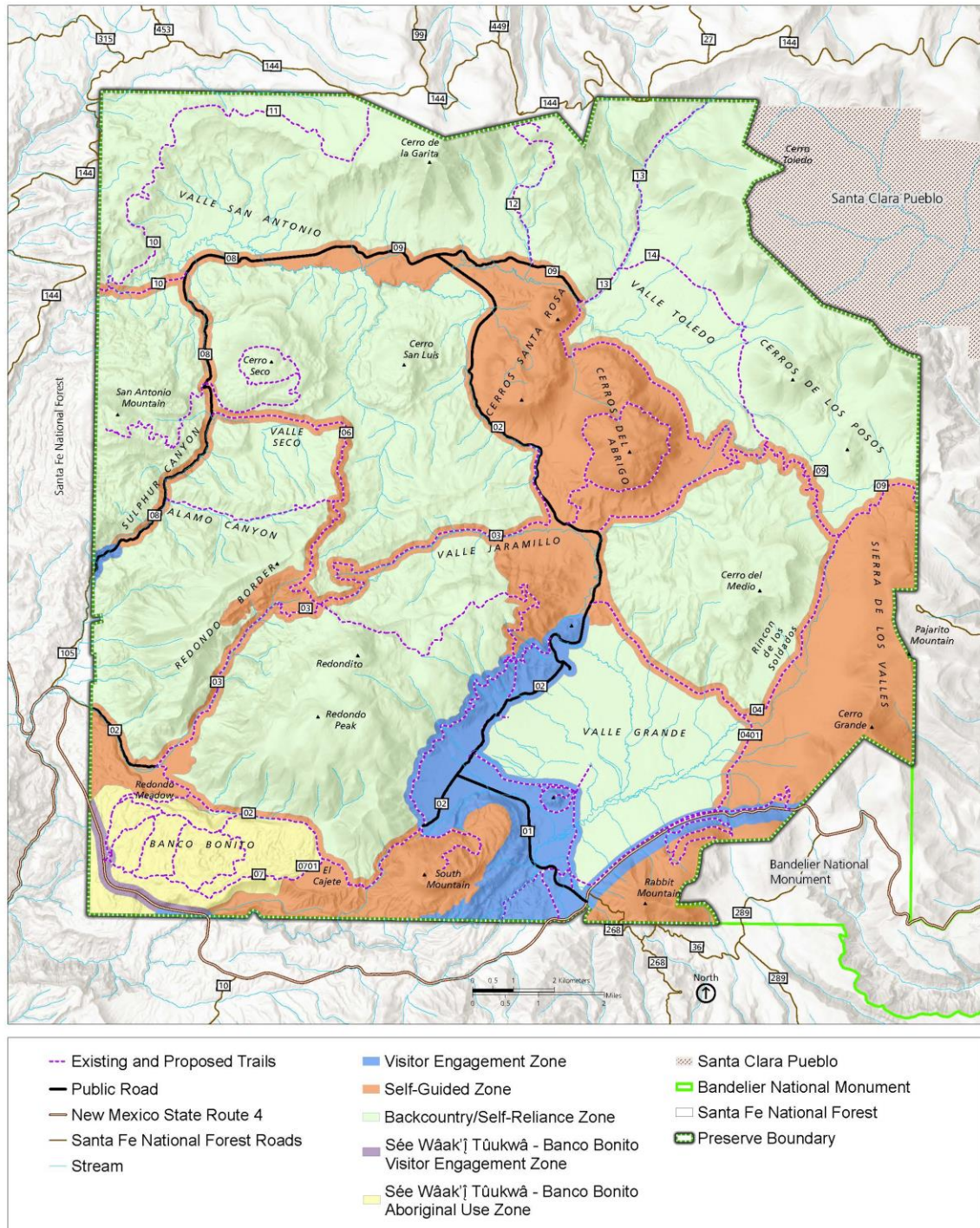
Section 2.3.1.2 also states that zoning will outline the criteria for (or describe the kind of) appropriate uses and facilities necessary to support the desired conditions. Some desired conditions may apply parkwide, but management zones will delineate the differences in intended resource conditions, visitor experiences, and management activities (NPS 2006, section 2.3.1.2).

This plan proposes three management zones outside of Banco Bonito: the visitor engagement zone, the self-guided zone, and the backcountry/self-reliance zone. Within Banco Bonito, the National Park Service and Pueblo of Jemez propose two additional management zones developed through a collaborative dialogue process consistent with the 2024 settlement agreement: the *Sée Wâak'î, Tûukwâ*—Banco Bonito visitor engagement zone and the *Sée Wâak'î, Tûukwâ*—Banco Bonito aboriginal use zone. These define specific resource conditions and visitor experiences to achieve and maintain in each area of the park. All lands in the park's legislative boundary are assigned to a management zone. Each management zone applies to different geographic locations (see descriptions below and map 2). Each zone is associated with specific management guidance or direction. It includes the types of activities and facilities that are appropriate in that management zone in general (table 1) or for specific topics (table 2).

Identifying development types and levels in a given zone does not imply the park will build these facilities. Rather, it provides guidance on types of facilities that could be appropriate in different

areas as the park evolves and becomes more established. Actions would be carried out based on funding availability and future on-the-ground conditions. They would be subject to further planning and environmental compliance, as appropriate. The management zones described in this document are consistent with and help fulfill the park's specific purpose, significance, and special mandates.

Map 2. Management Zones



Visitor Engagement Management Zone

Management Zone Summary

This zone is where most short-term visitors to the park will go. These easy-to-reach areas have higher visitor use and visitor density. Visitors are provided with opportunities to experience, appreciate, and connect with park resources in a more developed setting. Most of the development, visitor services, and facilities in the park are in this zone, and could include things like a visitor service area, amphitheater, paved roads, parking areas, full-service restrooms, picnic areas, developed campgrounds, and administrative facilities and utilities. Most public roads in this zone would be open year-round. Visitors are offered a variety of opportunities for all ability levels, including on-site interpretation and education to learn about park resources.

Geographic Extent (indicated in blue on map 2)

This zone follows the in-park road corridors of NM-4, the entrance road (VC01), the North Valle Grande Road (VC02) from South Mountain to Cerro Piñon, and Sulphur Creek Road (VC08) from the western park boundary to Sulphur Springs. The zone extends away from these road corridors in some places, encompassing the entire cabin district area up to the Redondo Foothills trail to the north, History Grove, Cerro Piñon, the South Mountain trailhead area, Cerro La Jara, and the entrance station and visitor services area near NM-4.

Self-Guided Management Zone

Management Zone Summary

In this zone, visitors will have an opportunity to venture into the park away from the main hub of activity to directly experience the sights and sounds of the natural landscape. The zone includes development and facilities that are dispersed and designed for low to moderate densities of visitors, such as trailheads, parking, well-engineered multiple use trails, occasional waysides/signage, vault toilets, picnic areas, and primitive campsites. This zone includes transportation corridors to explore the park, and most facilities would occur within these corridors. Public roads in this zone would be open seasonally. Although a degree of self-reliance and outdoor skills would be necessary, areas in this zone are not so remote that they would require a high skill level or extensive preparation.

Geographic Extent (indicated in orange on map 2)

This zone follows Redondo Creek Road (VC02) and backcountry road corridors such as Central Caldera Road (VC02) north of Cerro Piñon, Sulphur Creek Road (VC08) north of Sulphur Springs, and Valle San Antonio and Valle Toledo roads (VC09). It also encompasses large areas of the backcountry, including Cerros del Abrigo and Cerros Santa Rosa and their surrounding areas, the lands along and north of San Antonio Creek, Rabbit Mountain, the southeastern margins of the park near the Rincón de los Soldados and Sierra de los Valles, South Mountain, and upper portion of Banco Bonito.

Backcountry/Self-Reliance Management Zone

Management Zone Summary

This zone encompasses large contiguous areas of the park where natural processes, ecosystem function, and natural wildlife behavior are prioritized, and visitors can experience solitude in diverse natural landscapes with few encounters with other visitors. Areas in this zone are remote and undeveloped, requiring a higher degree of outdoor skill and self-reliance. Beyond primitive trails and minimal signage, no visitor facilities are maintained.

Geographic Extent (indicated in green on map 2)

This zone includes all areas of Valles Caldera National Preserve that are not in the visitor engagement or self-guided management zones.

***Sée Wâak’î Tûukwâ*—Banco Bonito Visitor Engagement Management Zone**

Management Zone Summary

This zone is where most short-term visitors will go when visiting Banco Bonito. This easy-to-reach area has higher visitor use and visitor density than other areas of Banco Bonito. Visitors are provided with opportunities to experience, appreciate, and connect with park resources—including Jemez Pueblo history, culture, and Hemish Traditional Knowledge—in a more developed setting with interpretive displays. Most of the development, visitor services, and facilities in Banco Bonito are in this zone and could include things like a parking area, trailheads, trails, restrooms, picnic areas, campground, and administrative facilities and utilities. The parking area in this zone may be open year-round, with highest use during summer months. The zone is managed in accordance with Jemez Pueblo’s continuing aboriginal Indian title consistent with the 2024 settlement agreement.

Geographic Extent (indicated in purple on map 2)

This zone follows the in-park road corridor of NM-4 and extends away from the road corridor near the Banco Bonito trailhead and parking area. Specific areas of development in this zone will be determined through future collaborative planning between the National Park Service and Jemez Pueblo.

***Sée Wâak’î Tûukwâ*—Banco Bonito Aboriginal Use Management Zone**

Management Zone Summary

In this zone, visitors will have an opportunity to venture into Banco Bonito away from the main hub of activity to directly experience the sights and sounds of the natural and cultural landscape and gain a better understanding of and appreciation for the cultural heritage and continued use of the area, such as the Hemish fieldhouses and associated agricultural features constructed and occupied by the Hemish people between 1500 and 1650 CE, as well as contemporary efforts to promote forest health and management, which is necessary for Jemez Pueblo’s traditional cultural uses and to support, conserve, and restore resources to traditional levels. The zone includes development and facilities that are dispersed and designed for low to moderate

densities of visitors, such as trailheads, multiple-use trails, and occasional waysides/signage. Although a degree of self-reliance and outdoor skills is necessary, areas in this zone are not so remote that they require a high skill level or extensive preparation. Visitors would be provided with educational, research, and cultural opportunities in this zone. The zone is managed in accordance with Jemez Pueblo's continuing aboriginal Indian title consistent with the 2024 settlement agreement.

Geographic Extent (indicated in yellow on map 2)

This zone applies to areas of Banco Bonito outside of the *Sée Wâak'î , Tûukwâ*—Banco Bonito visitor engagement management zone.

Table 1. Management Zones and Associated Desired Conditions: Management Zone-Wide

Desired Conditions Category	Visitor Engagement Zone	Self-Guided Zone	Backcountry/Self-Reliance Zone	Sée Wâak'î Tûukwâ—Banco Bonito Visitor Engagement Zone	Sée Wâak'î Tûukwâ—Banco Bonito Aboriginal Use Zone
Natural Resources	This zone emphasizes visitor engagement with natural resources through interpretation and education about resources and their long-term stewardship. Management allows for unavoidable impacts from infrastructure development for visitor and administrative services while preserving natural processes.	This zone balances preservation of natural landscapes with limited visitor use infrastructure. Natural processes and landscapes generally remain unaltered. Modifications for visitor use are minimal, unobtrusive, and dispersed and afford opportunities for visitors to interact with a natural setting. Some legacy human development (e.g., historic cabins) may be retained to support visitor activities and other park purposes.	This zone prioritizes conservation of natural resources. Natural systems and processes prevail. Alterations for human use are rare, and most legacy human developments are removed.	This zone emphasizes visitor engagement with natural resources through interpretation and education while highlighting the cultural significance and Hemish Traditional Knowledge of the Banco Bonito area. Management allows for unavoidable impacts from infrastructure development for visitor and administrative services while preserving natural processes.	This zone allows for conservation of natural resources in a manner that supports and restores resources to traditional levels and with deference to features of the cultural landscape and with limited visitor use infrastructure. Modifications for visitor use are minimal, unobtrusive, and dispersed and afford opportunities for visitors to interact with a natural setting.
Cultural Resources	This zone affords opportunities for visitors to understand and appreciate all periods of the park's human history. In general, cultural landscapes and their associated structures	This zone balances preservation of cultural landscapes and other cultural resources with limited visitor use infrastructure. Visitors may be directed to cultural resources selected by the park to	This zone emphasizes Indigenous ethnographic landscape character. Cultural landscapes afford visitors an opportunity to experience the Indigenous heritage of	This zone affords opportunities for visitors to understand and appreciate Indigenous use of Banco Bonito, with emphasis on Hemish history and cultural use of Banco Bonito and	This zone preserves cultural resources in a manner that restores resources to traditional levels with limited visitor use infrastructure. Visitors may be directed to cultural resources

Desired Conditions Category	Visitor Engagement Zone	Self-Guided Zone	Backcountry/Self-Reliance Zone	Sée Wâak'î Tûukwâ—Banco Bonito Visitor Engagement Zone	Sée Wâak'î Tûukwâ—Banco Bonito Aboriginal Use Zone
	and features are maintained to convey their historic character and setting. New visitor use and administrative infrastructure are acceptable, but intrusions (including visual intrusions) on historic landscapes are avoided or minimized. Historic structures may be adaptively used for visitor interpretation or administrative purposes. Select cultural resources may be interpreted for public education.	afford cultural and educational engagement without compromising resource preservation or disclosing locations of sensitive resources. Historic ranching resources may be adaptively used for visitor interpretation opportunities or administrative needs related to visitor experience or resource protection.	this high-elevation setting.	connection to Valles Caldera as of paramount importance. In general, cultural landscapes and their associated structures and features are maintained to convey and protect their character and setting. New visitor use and administrative infrastructure are acceptable, but intrusions (including visual intrusions) on cultural landscapes are avoided or minimized. Select cultural resources may be interpreted for public education.	selected by the park and Jemez Pueblo to afford cultural and educational engagement without compromising resource preservation or disclosing locations of sensitive resources.
Visitor Opportunities and Experiences	This zone affords visitor opportunities for all ages, skill levels, and abilities. Learning and recreational opportunities target those with limited time to spend at the park (1–2 hours). A high degree of visitor	This zone affords visitors geographically dispersed opportunities to discover and enjoy the park's fundamental resources and values. This zone has the highest diversity of recreational opportunities, suitable	This zone affords opportunities for exploration, solitude, and deep immersion in the park's fundamental resources and values. A higher degree of preparation, self-reliance, and outdoor skill, including	This zone serves as the primary location for visitors to Banco Bonito and highlights educational and interpretive opportunities, including opportunities to engage with Jemez	This zone affords visitors geographically dispersed opportunities to enjoy Banco Bonito's fundamental resources and values, consistent with Jemez Pueblo's rights described in the 2024 settlement agreement.

Desired Conditions Category	Visitor Engagement Zone	Self-Guided Zone	Backcountry/Self-Reliance Zone	Sée Wâak'î Tûukwâ— Banco Bonito Visitor Engagement Zone	Sée Wâak'î Tûukwâ— Banco Bonito Aboriginal Use Zone
	orientation and facilitated interpretive programming highlights the park's fundamental resources and values. This zone accommodates high levels of visitor use and density and allows for the typical suite of visitor amenities and trails, including experiences compliant with the Architectural Barriers Act Accessibility Standard (ABAAS).	for half- or full-day visits, including a trail network and facilities distributed along several vehicular corridors. Recreational opportunities are dispersed to avoid high visitor concentration in any one area. Visitors are offered a sense of adventure and independence with a moderate level of support through signs and waysides. Some preparation may be needed to explore this zone.	navigation, is required to safely explore this zone. This zone has the lowest levels of use, visitor density, and human encounters and is not suitable for high-density activities or events. Management priorities preserve the quality of natural and cultural resources.	Pueblo employees or members. Educational content, developed interpretive materials, and relevant facilities match the focus of this zone. Relevant topics like conservation and Leave No Trace principles would also be included. This zone accommodates higher levels of visitor use and density and allows for visitor amenities and trails, including experiences compliant with ABAAS.	This zone has primarily trail-based recreational opportunities, suitable for half- or full-day visits. Recreational opportunities are dispersed to avoid high visitor concentration in any one area. Visitors are offered a sense of adventure and independence with a moderate level of support through signs and waysides. Some preparation may be needed to explore this zone. Visitors may expect minimal to medium interaction with Jemez Pueblo employees and other visitors and low levels of contact with agency staff.
Degree and Character of Development	This zone accommodates a level of development that supports higher visitor use and visitor density and higher concentration of park	Development in this zone is limited and more primitive, consisting of relatively small and dispersed nodes focused on interpretation and	This zone has the lowest level of development, mostly limited to trails, fences, and installations necessary for safety, resource protection,	This zone accommodates a higher level of development that matches its role as the primary hub for the Banco Bonito area.	This zone has a low level of development, limited to trails, fences, and installations necessary for safety, cultural and natural resource protection

Desired Conditions Category	Visitor Engagement Zone	Self-Guided Zone	Backcountry/Self-Reliance Zone	Sée Wâak'î Tûukwâ— Banco Bonito Visitor Engagement Zone	Sée Wâak'î Tûukwâ— Banco Bonito Aboriginal Use Zone
	staff and operations infrastructure. Facilities harmonize with the natural and cultural character of the various settings within the zone to the extent possible. Vehicular travel is on paved or improved gravel roads, most with year-round access. Appropriate levels of parking are available for different vehicle types, including motorcoaches.	visitor experience and designed to avoid excessive clustering of people, vehicles, and/or facilities. Visitor vehicle travel is limited to designated corridors on improved or maintained gravel roads that can be accessed seasonally (spring through fall). Parking areas are small and accommodate fewer numbers of vehicles.	and promotion of ecosystem management. Legacy development is mostly removed or restored to a natural landscape.	Facilities and interpretive materials harmonize with the natural and cultural character of the various settings within the zone to the extent possible.	and monitoring, and promotion of Hemish Traditional Knowledge and ecosystem management.

Table 2. Management Zones and Associated Desired Conditions: Topic-Specific

Desired Conditions Subcategory	Visitor Engagement Zone	Self-Guided Zone	Backcountry/Self-Reliance Zone	Sée Wâak'î Tûukwâ – Banco Bonito Visitor Engagement Zone	Sée Wâak'î Tûukwâ – Banco Bonito Aboriginal Use Zone
Natural Resources— Wildlife	Natural wildlife behavior is protected, but some limited effects may occur in areas with concentrated visitor use and facilities.	Natural wildlife behavior is prioritized over visitor activities, but limited human disturbance may occur.	Natural wildlife behavior, processes, and ecosystem function predominate.	Natural wildlife behavior is protected, but some limited effects may occur in areas with concentrated visitor use and facilities.	Natural wildlife behavior, processes, and ecosystem function predominate, but limited human disturbance may occur. Tools and studies are used to monitor wildlife

Desired Conditions Subcategory	Visitor Engagement Zone	Self-Guided Zone	Backcountry/Self-Reliance Zone	Sée Wâak'î Tûukwâ – Banco Bonito Visitor Engagement Zone	Sée Wâak'î Tûukwâ – Banco Bonito Aboriginal Use Zone
					populations and behavior.
Natural Resources—Forest Structure and Character	Forests are managed for visitor safety and to achieve operational needs near developed areas, with some activities to accomplish ecological restoration goals that account for anthropogenic climate change.	Forests are managed for ecological restoration that accounts for anthropogenic climate change, with visitor safety protections occurring in some areas.	Forests are managed proactively for ecological restoration goals that account for anthropogenic climate change. Natural systems and processes prevail and may be encouraged through active management.	Forests are managed for visitor safety and to achieve operational needs near developed areas and facilities, with some activities to accomplish ecological restoration goals. Hemish Traditional Knowledge is incorporated into forest management.	Forests are managed for ecological restoration while maintaining the deep-rooted connections between forestry and Hemish traditions. This includes sound sustainable forest management and monitoring with forest restoration and cultural burning and use of fire to enhance ecosystem health and restore and sustain forest and flora/fauna structure and function. This includes preserving the relationship between cultural resources and forest health. Hemish Traditional Knowledge is incorporated into forest management.
Natural Resources—Soundscapes,	Moderate noise and anthropogenic light levels may intrude upon natural sounds	Natural views and sounds predominate, with occasional intrusions from vehicle	Natural soundscapes, natural views, and the dark night sky predominate. Natural	Moderate noise and anthropogenic light levels may intrude upon natural sounds and	Natural soundscapes, natural views, and the dark night sky predominate, with

Desired Conditions Subcategory	Visitor Engagement Zone	Self-Guided Zone	Backcountry/Self-Reliance Zone	Sée Wâakî Tûukwâ – Banco Bonito Visitor Engagement Zone	Sée Wâakî Tûukwâ – Banco Bonito Aboriginal Use Zone
Night Sky, and Views	and night skies. Artificial outdoor lighting in the park is limited to that necessary to meet basic safety requirements and is dark-sky compliant. Natural views may be affected by necessary structures.	corridors. The dark night sky is fully preserved in portions of the zone. Natural views are minimally affected.	views are mostly unaffected by anthropogenic development.	night skies. Artificial outdoor lighting in this area is limited to that necessary to meet basic safety requirements and is dark-sky compliant. Natural views may be affected by necessary structures.	occasional intrusions from visitor use along existing trails.
Cultural Resources— Cultural Landscapes and Historic Structures	Historic preservation efforts in this zone emphasize the character of 19th- and 20th-century historic landscapes and structures while allowing for some alterations required for visitor infrastructure and services or to maintain or restore natural processes. Visual intrusions within historic views are minimized to the extent possible.	Preservation of historic character is balanced with restoration of natural processes. Modifications to cultural landscapes and their associated historic structures and features are undertaken only if necessary to protect cultural resources.	The precontact-era character of the parkwide ethnographic landscape, encompassing human-made and natural features, is emphasized over historic-era character. Management strategies focus on preserving Archaic period landscapes and take into account natural processes, including the impacts of climate change on disturbance regimes and forest structure.	Indigenous cultural landscapes are preserved and prioritized as part of the educational focus of this zone. Cultural education opportunities are provided for various age groups, which may include demonstration projects such as experimental gardening, focused on understanding and incorporating Hemish Traditional Knowledge and traditional cultural farming in designated sites away from	This zone emphasizes the preservation, documentation, research, and education of precontact-era and historic properties. Modifications to cultural landscapes and their associated structures and features are undertaken only if necessary to protect cultural resources or for research or educational purposes. Uses are managed to avoid crowding, degradation, or interference with Hemish traditional

Desired Conditions Subcategory	Visitor Engagement Zone	Self-Guided Zone	Backcountry/Self-Reliance Zone	Sée Wâakî Tûukwâ – Banco Bonito Visitor Engagement Zone	Sée Wâakî Tûukwâ – Banco Bonito Aboriginal Use Zone
				documented archeological sites. Uses are managed to avoid crowding, degradation, or interference with Hemish traditional cultural uses and archeological sites within or adjacent to this zone.	cultural uses and archeological sites within or adjacent to this zone.
Cultural Resources— Archeological Resources	Archeological resources are managed for preservation, interpretive programming, and research. Unavoidable disturbance of archeological resources is limited only to those areas within or adjacent to new and existing development.	Archeological resources are managed for preservation and research. Visitors to this zone may encounter archeological resources spontaneously and without direction and will have received education about avoiding site disturbance.	Archeological resources are preserved in-situ. Alteration or manipulation of archeological resources is avoided except for research. Visitors to this zone may encounter archeological resources spontaneously and will have received education about avoiding site disturbance.	Archeological resources are managed for preservation, interpretive programming, and research. Unavoidable disturbance of archeological resources is limited only to those areas within or adjacent to new and existing development. Unless with concurrence by the park and Jemez Pueblo or to achieve desired conditions, nondestructive analysis of cultural resources will be prioritized.	Archeological resources are managed for preservation and research. This includes performing cultural clearances to preserve, document, research, and educate on precontact-era and historic properties. Visitors to this zone may encounter archeological resources spontaneously and without direction and will have received education about avoiding site disturbance.

Desired Conditions Subcategory	Visitor Engagement Zone	Self-Guided Zone	Backcountry/Self-Reliance Zone	Sée Wâakî Tûukwâ – Banco Bonito Visitor Engagement Zone	Sée Wâakî Tûukwâ – Banco Bonito Aboriginal Use Zone
Cultural Resources— Cultural and Tribal Connections	Interpretation and visitor education, developed in consultation with Tribes, builds an understanding of the significance of traditional Tribal practices and cultural connectivity.	Tribal access is facilitated by working with Tribal communities to identify areas in this zone that may be suitable for their cultural activities, events, and gatherings.	Opportunities for privacy for traditional cultural and customary uses by members of traditionally associated Tribal Nations may be offered.	Interpretation and visitor education, developed consistently with the 2024 settlement agreement, builds an understanding of the significance of traditional practices and cultural connectivity.	Interpretation and visitor education, developed consistently with the 2024 settlement agreement, builds an understanding of the significance of traditional practices and cultural connectivity.
Visitor Opportunities and Experiences— Interpretation, Education, and Orientation	This zone affords high levels of visitor contact with agency staff and abundant interpretive opportunities about parkwide resources and values, including orientation, educational and interpretive programming, and indoor and outdoor exhibits.	This zone affords low to moderate levels of visitor contact with agency staff and limited interpretive and orientation opportunities, mostly through wayside exhibits, trailhead signs, and self-guided programming.	This zone affords very low levels of visitor contact with agency staff and typically lacks interpretive waysides and signs. This zone is not a priority for roving staff to provide on-site orientation and education. Most interpretation, education, and orientation opportunities in this zone would be from self-guided programming.	This zone anticipates frequent visitor contact, including moderate levels of interactions with Jemez Pueblo employees and Hemish Site Stewards, and low to moderate levels of contact with agency staff.	This zone affords low to moderate levels of visitor contact with Jemez Pueblo employees and Hemish Site Stewards, and low levels of visitor contact with agency staff, and with both direct and indirect education. Indirect education includes self-guided programming that emphasizes Hemish connection to Valles Caldera and use of the area. Direct education includes guided tours on designated trails related to natural,

Desired Conditions Subcategory	Visitor Engagement Zone	Self-Guided Zone	Backcountry/Self-Reliance Zone	Sée Wâakî Tûukwâ – Banco Bonito Visitor Engagement Zone	Sée Wâakî Tûukwâ – Banco Bonito Aboriginal Use Zone
					cultural, and wildlife resources.
Visitor Opportunities and Experiences—Use Levels, Density, and Encounters	Visitors in this zone are highly likely to encounter other people. Visitors can expect a social setting.	Visitors in this zone have medium to low likelihood of encountering other people. Visitors will have opportunities to find solitude.	Visitors in this zone have low likelihood of encountering other people. Visitors will have many opportunities to find solitude.	Visitors in this zone are highly likely to encounter other people. Visitors can expect a social setting around facilities and interpretive displays.	Visitors in this zone have medium to low likelihood of encountering other people. Visitors will have opportunities to find solitude.
Visitor Opportunities and Experiences—Level of Challenge, Adventure, and Time Commitment	This zone affords the lowest level of challenge compared to other zones in the park. This zone prioritizes opportunities for those with limited time to spend at the park (1–2 hours).	This zone affords a medium level of challenge. Opportunities in this zone require at least a two-hour visit, with extended duration opportunities available.	This zone affords the highest level of challenge and requires a high degree of self-reliance. Opportunities in this zone require a minimum of four hours.	This zone affords a low level of challenge compared to other zones. This zone prioritizes opportunities for those with limited time to spend at in the area (1–2 hours).	This zone affords a medium level of challenge. Opportunities in this zone require at least a 2-hour visit, with extended duration opportunities available.
Visitor Opportunities and Experiences—Human Use Impacts	Medium to low amounts of human use impacts to resources are tolerated. Impacts are monitored and mitigated.	Low to very low amounts of human use impacts to resources are tolerated. Impacts are monitored and proactively minimized.	Very low to minimal amounts of human use impacts to resources are tolerated. Impacts are monitored and proactively halted or reversed.	Medium to low amounts of human use impacts to resources are tolerated. Impacts are monitored and mitigated.	Very low to minimal amounts of human use impacts to resources are tolerated. Impacts are monitored and proactively halted or reversed.
Visitor Opportunities and	In general, no hunting is allowed. Permits for hunting	In general, hunting is allowed. Vehicular access is allowed by	In general, hunting is allowed and is most suitable in this zone.	In general, no hunting is allowed in developed areas of this zone.	In general, hunting is allowed.

Desired Conditions Subcategory	Visitor Engagement Zone	Self-Guided Zone	Backcountry/Self-Reliance Zone	Sée Wâakî Tûukwâ – Banco Bonito Visitor Engagement Zone	Sée Wâakî Tûukwâ – Banco Bonito Aboriginal Use Zone
Experiences—Access and Appropriate Activities	in authorized areas parkwide are issued in this zone. Fishing is allowed in this zone and supported with infrastructure such as fishing platforms. Density of anglers may be high. Permits for fishing parkwide are issued in this zone. Horseback riding is allowed on designated trails. Facilities and trails may be situated to separate equestrian user from other users. Ranger-guided activities and certain outfitter-guided activities are allowed year-round. Summer activities may include viewing scenery and wildlife, picnicking, short and long pedestrian	pass along the backcountry vehicle route. Fishing is allowed in this zone and supported with limited infrastructure. Density of anglers is moderate to low. Horseback riding is allowed on designated trails. Ranger-guided activities and outfitter-guided activities are allowed year-round. Summer activities may include viewing scenery and wildlife, short and long pedestrian activities, bicycling, and camping. Winter activities may include viewing scenery and wildlife, sledding, skiing, and snowshoeing including along maintained routes.	Access is nonvehicular only. Fishing is allowed in this zone and affords opportunities for highly skilled individuals. Density of anglers is low. Horseback riding is allowed on designated trails. Advanced ranger-guided activities and outfitter-guided activities are allowed year-round. Summer activities may include viewing scenery and wildlife, short and long pedestrian activities, and bicycling, and overnight backpacking. Winter activities may include viewing scenery and wildlife, sledding, skiing, and snowshoeing on unmaintained routes.	Permits for hunting in authorized areas parkwide are issued in this zone. Horseback riding is allowed on designated trails. Ranger-guided activities and certain outfitter-guided activities are allowed year-round. Summer activities may include viewing scenery and wildlife, picnicking, short and long pedestrian activities, bicycling, and camping in designated areas. Special events may occur in this area with concurrence by the National Park Service and Jemez Pueblo. Winter activities may include viewing scenery and wildlife, nonmotorized activities in snow play areas, sledding, skiing, and snowshoeing, including	Horseback riding is allowed on designated trails. Ranger-guided activities and outfitter-guided activities are allowed year-round. Summer activities may include viewing scenery and wildlife, short and long pedestrian activities, bicycling, and camping, consistent with the 2024 settlement agreement. Special events may occur in this area with concurrence by the National Park Service and Jemez Pueblo. Winter activities may include viewing scenery and wildlife, sledding, skiing, and snowshoeing including along maintained routes. Pets are not permitted. Service animals are allowed.

Desired Conditions Subcategory	Visitor Engagement Zone	Self-Guided Zone	Backcountry/Self-Reliance Zone	Sée Wâakî Tûukwâ – Banco Bonito Visitor Engagement Zone	Sée Wâakî Tûukwâ – Banco Bonito Aboriginal Use Zone
	activities, bicycling, and camping. Winter activities may include viewing scenery and wildlife, nonmotorized activities in snow play areas, sledding, skiing, and snowshoeing, including along maintained routes. Shuttle services for visitors may be allowable. Pets may be allowed in certain areas of this zone according to published park guidance.	Shuttle services for visitors may be allowable. Pets are not permitted. Service animals are allowed.	Pets are not permitted. Service animals are allowed.	along maintained routes. Shuttle services for visitors may be allowable. Pets may be allowed in certain areas of this zone according to published park guidance. Service animals are allowed.	
Visitor Opportunities and Experiences—Types of Facilities	This zone may host a robust suite of visitor use facilities, including a visitor service area, contact stations, comfort stations, concessions, interpretive program facilities and waysides, and recreational facilities	This zone may host certain visitor use facilities including comfort stations, recreational facilities such as trailheads and fishing platforms, interpretive waysides, and campsites. Trails are maintained.	This zone may host limited visitor use facilities, including trails and signs essential for visitor safety and resource protection. There are no public roads or parking areas, and trails undergo less maintenance. This zone may host limited	This zone may feature a variety of facilities to facilitate the focus of the zone, including a visitor contact station, educational classroom structure, restrooms, interpretive trail to proximate archeology sites, trailheads, horse corral, campground,	This zone may feature limited visitor use facilities, such as trailheads, trails and signs, and interpretive waysides. This zone may host certain operational support facilities, such as scientific

Desired Conditions Subcategory	Visitor Engagement Zone	Self-Guided Zone	Backcountry/Self-Reliance Zone	Sée Wâakî Tûukwâ – Banco Bonito Visitor Engagement Zone	Sée Wâakî Tûukwâ – Banco Bonito Aboriginal Use Zone
	such as trailheads and campgrounds. Trails are mostly single-use and are hardened or paved. This zone may host a robust suite of operational support facilities, such as offices, storage areas, concessions support structures and facilities, utilities, and scientific installations (which may be made visible to serve a secondary interpretive function). Facilities may be highly visible on the landscape.	This zone may host certain operational support facilities, such as backcountry cabins, horse corrals, grazing infrastructure, and scientific installations. Facilities are visually unobtrusive to the extent possible. Scientific installations in high-use areas may be made visible and interpreted for public education.	operational support facilities such as scientific installations, radio repeaters, and fences. Facilities are visually unobtrusive to the extent possible.	and other visitor orientation-related amenities. Other educational facilities may include demonstration projects such as experimental gardening and farming and excavation and/or reconstruction of fieldhouse to show Hemish occupation during the 16th and 17th centuries. This zone may host certain operational support facilities, such as storage areas, utilities, and scientific installations (which may be made visible to serve a secondary interpretive function). Facilities may be visible on the landscape.	installations. Mobile facilities may be allowed to support stated conditions and for administrative, emergency, operational, research/educational, or traditional cultural purposes. Facilities are visually unobtrusive to the extent possible. Scientific installations in high-use areas may be made visible and interpreted for public education. Experimental gardening and farming plots may also be considered in this zone.

VISITOR USE MANAGEMENT

The National Park Service strives to provide meaningful and enjoyable visitor experiences at Valles Caldera. In order to provide these experiences, the bureau incorporates guidance from the Interagency Visitor Use Management Council (the council) to proactively plan for and adapt to visitor use in the park. This plan includes aspects of the council's Visitor Use Management Framework (<https://visitorusemanagement.nps.gov/>) to develop long-term strategies for monitoring and managing visitor use. Key elements of the framework incorporated into the plan are the identification of indicators, thresholds, and visitor capacities. These elements, combined with management strategies and actions (see chapter 3), help park managers achieve and maintain desired conditions for resources and visitor experiences (see tables 3 and 4), and ultimately, protect park resources and values.

Indicators and Thresholds

Indicators measure conditions related to visitor use, and monitoring tracks those conditions over time. Thresholds represent the minimally acceptable conditions associated with each indicator (NPS 2006, section 8.2; IVUMC 2016). Parks use the results from monitoring indicators and thresholds to determine adaptive management strategies to achieve and maintain desired conditions parkwide and in specific zones. If indicators approach their thresholds, the park would take additional actions (as described in appendix B) to protect fundamental resources and values and achieve and maintain desired conditions. The park would complete appropriate planning and compliance prior to carrying out the additional actions listed in appendix B.

This iterative practice of monitoring, implementing management strategies, and then continuing to monitor to gauge the effectiveness of those actions would allow park managers to maximize the benefits for visitors while achieving and maintaining desired conditions for resources and visitor experiences in a dynamic setting. For more information on indicators and thresholds see appendix B.

Table 3. Summary of Indicators and Thresholds

Indicator	Threshold
Change in density of artifacts at key archeological sites from baseline conditions	Density of artifacts does not increase or decrease by more than 10%
Number of parties encountered per day on trails	Backcountry/self-reliance zone: No more than five hiking parties encountered per day 85% of the time per trail Self-guided zone: No more than eight hiking parties encountered per day 85% of the time per trail
Number of vehicles in viewshed at one time	Valle San Antonio from Caldera Rim: To be determined after baseline conditions are established* Cerro Abrigo (facing south): To be determined after baseline conditions are established* Sulphur Creek Road (VC08) from atop San Antonio Mountain: To be determined after baseline conditions are established*
Percent of time during the sampling period when sounds with frequencies of 20–1,250 Hz exceed the area’s decibel threshold	History Grove: No more than 40% of daytime hours (7 a.m. to 7 p.m.) with sound levels above 40 dB (LAeq, 1s) East Fork Jemez River: No more than 40% of daytime hours (7 a.m. to 7 p.m.) with sound levels above 35 dB (LAeq, 1s)

Note: The park is working to establish thresholds for the number of vehicles in viewshed indicator in Valle San Antonio from the Caldera Rim; Cerro Abrigo (facing south); and Sulphur Creek Road (VC08) from atop the San Antonio Mountain (appendix B). When baseline conditions are known and thresholds are identified, the plan will be updated.

Visitor Capacity

Visitor capacity is the maximum amounts and types of visitor use that an area can accommodate while achieving and maintaining the desired resource conditions and visitor experiences consistent with the area’s purposes. The National Parks and Recreation Act (1978) requires units of the national park system to complete planning that includes identifying and implementing commitments for visitor carrying capacities for all areas of the unit (54 USC 100502). By identifying and managing the visitor capacities, the National Park Service can help ensure that resources are protected, and visitors have the opportunity for a range of high-quality experiences, not only today but for future generations, as directed by the National Park Service Organic Act (1916) (54 USC 100101).

Following guidance from the council, the level of analysis that occurs during visitor use management planning and visitor capacity identification is determined on a sliding scale, depending on the complexity and context of the plan. Two visitor capacity analysis areas that

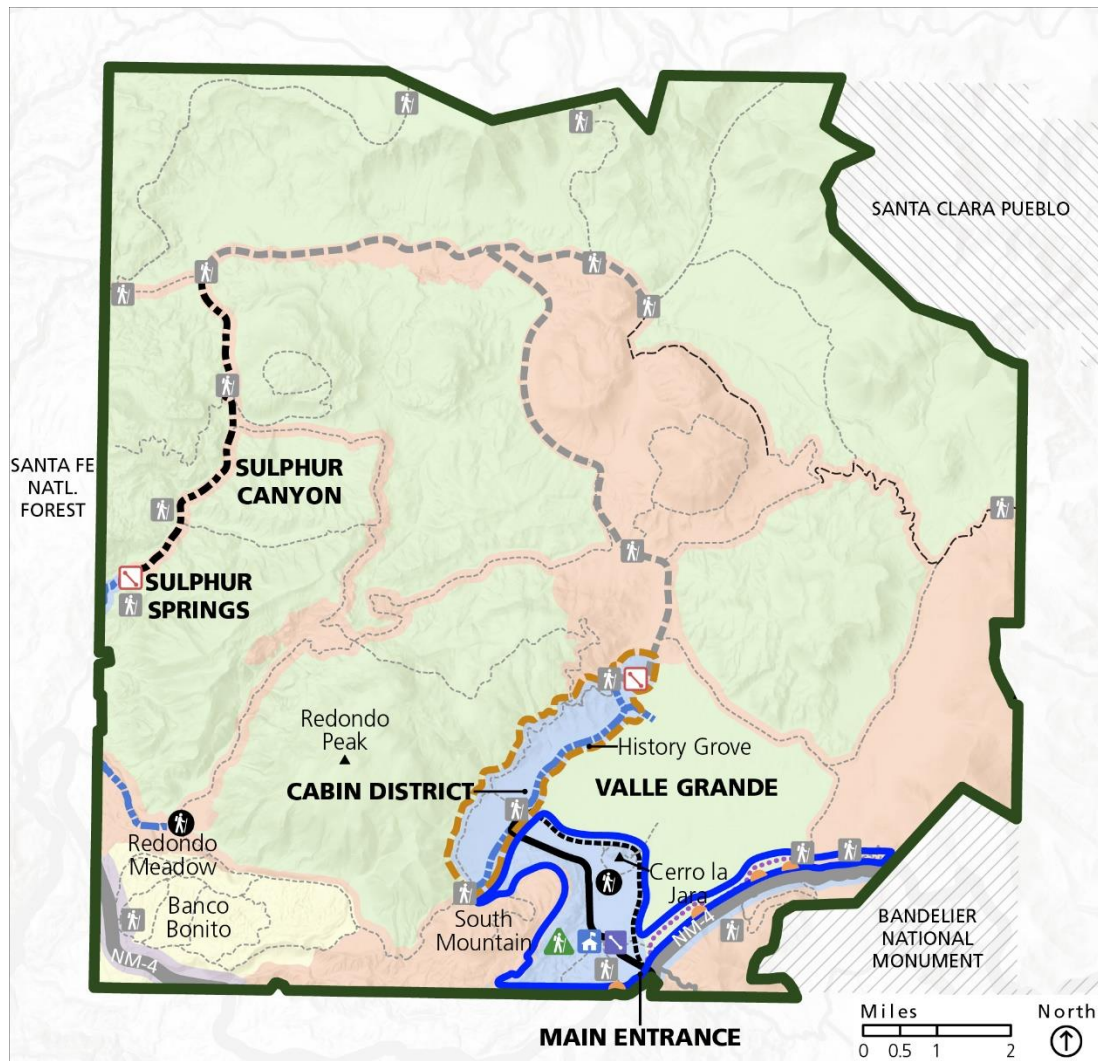
can be meaningfully evaluated given currently available information were identified during the planning process. The two areas analyzed are the South Valle Grande District and North Valle Grande District (see table 4 and map 3). Both analysis areas are part of the visitor engagement zone.

For more information on visitor capacity and the analysis areas, see appendix C.

Table 4. Summary of Analysis Areas and Proposed Visitor Capacities

Analysis Area	Proposed Visitor Capacity
South Valle Grande District	No more than 2,500 people per day
North Valle Grande District	No more than 400 people at one time

Map 3. Visitor Capacity Analysis Areas



LEGEND		
Park Boundary	Proposed Multiuse Trail (Accessible, Unpaved)	Visitor Engagement Zone
Proposed Public Road (Paved)	Proposed Visitor Service Area	Self-Guided Zone
Existing Public Road (Permit Required, Unpaved)	Existing Trailhead	Backcountry/Self-Reliance Zone
Proposed Public Road (Permit Required, Unpaved)	Formalize Existing Trailhead	Sée Wâak'î Tùukwâ - Banco Bonito Visitor Engagement Zone
Proposed Public Road (Unpaved)	Proposed Trailhead	Sée Wâak'î Tùukwâ - Banco Bonito Aboriginal Use Zone
Existing Trail	Proposed Entrance Gate	North Valle Grande District Analysis Area
Minor Trail Relocation	Proposed Backcountry Gate	South Valle Grande District Analysis Area
Proposed Boardwalk	Improve Existing Road Pulloff	

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CHAPTER THREE:
Management
Strategies and
Actions



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CHAPTER 3: MANAGEMENT STRATEGIES AND ACTIONS

INTRODUCTION

This chapter identifies management strategies and actions to achieve and maintain the desired conditions outlined in chapter 2 and resolve issues and leverage opportunities described in chapter 1. It begins with parkwide strategies, then lists those specific to the Valle Grande District. Management strategies associated with indicators, thresholds, and visitor capacities can be found in appendixes B and C.

Actions directed by general management plans or in subsequent implementation plans will be carried out over time. Funding availability, the need for additional data or regulatory compliance, and competing priorities may alter or delay many actions. For any new facility investment, NPS staff would also identify solutions to help offset future operational expenditures. Major or especially costly actions would be implemented in phases, as identified in the management strategies and activities. Some actions may not commence for 10 or more years into the future.

This plan provides conceptual guidance to NPS managers but does not specify how particular programs or projects will be carried out. Future implementation plans, consistent with the approved general management plan and Valle Grande District development concept plan, will offer more extensive details and analysis. Many projects will require additional compliance when they become feasible. Additionally, the actions below do not curtail the superintendent's authority to implement park-specific closures and public use limits through the superintendent's compendium, as stated in 36 CFR 1.5 and 1.7.

PARKWIDE AND GENERAL MANAGEMENT ACTIONS

This plan guides efforts to enhance and expand visitor services parkwide. A significant part of this is the construction of new facilities near the entrance road/NM-4 intersection (see maps 4 and 5). These new facilities will serve as the hub for visitor services and in-park administration, which had previously been the cabin district. Entrance gate and fee collection functions that had been situated at Cerro La Jara will move to the vicinity of the visitor services area, which will also feature various visitor experiences. These will include hiking, fishing access compliant with ABAAS, and four-season recreation.

The primary functions of the cabin district will shift to historic preservation, interpretation, and recreation. It will remain the gateway to the backcountry by means of a gate just beyond the district and to the north near Cerro Piñon. Select backcountry roads will be improved and maintained to ensure access by low-clearance vehicles. The park entrance road will be realigned to the west to improve scenic and historic views across Valle Grande. Select trails and other visitor use infrastructure parkwide will be improved. Under this plan, the park would take the following bulleted actions:

Visitor Use and Experience

- The park could identify, through future planning, public camping opportunities. Currently, there are no established public campgrounds, and backcountry camping is not allowed except with a hunting special use permit.
- The park could identify, through future planning, expanded public camping opportunities that are consistent with the terms of the 2024 settlement agreement with the Pueblo of Jemez. Camping at Banco Bonito is currently allowed by permit for administrative purposes (e.g., Youth Conservation Corps, fire crews, researchers) or when stipulated in special use permits.
- Proactively monitor for visitation changes due to climate change (for example, a longer visitation season) and a higher visitation level if regional temperature increases lead more visitors to seek relatively higher, cooler, recreational destinations.
- The interpretation team would coordinate with the resource stewardship team to educate the public, foster appreciation for the value of resources and resource protection, and create targeted messaging that prepares visitors using remote areas of the park to avoid unintentional resource disturbance.
- Maintain a permitting system for hunting. Hunters with a special use permit may travel only on routes designated for public vehicles.
- Maintain groomed and ungroomed routes for skiing, snowshoeing, and other winter activities as feasible.
- Plan for and design visitor amenities such as improved vehicle/school bus access, parking, restrooms, interpretive wayside exhibits, and trails and boardwalks at Sulphur Springs.
- Plan for and design visitor amenities, such as vehicle access, parking, restrooms, interpretive wayside exhibits, and a trailhead at Redondo Meadow.
- Plan for and design improved day use visitor amenities, such as vehicle access, parking, restrooms, interpretive wayside exhibits, and trailheads at Banco Bonito, consistent with the terms of the 2024 settlement agreement with the Pueblo of Jemez.

Roads

- See table 5 for a summary of changes.
- The park's road system would remain unpaved unless a new need is identified, with the exception of the entrance road (see details under "Management Actions for the Valle Grande District") and Sulphur Creek Road (VC08) from the western boundary to the Sulphur Springs parking area.
- Open public vehicular access would be allowed on

- the entrance road (VC01),
 - North Valle Grande Road (VC02) (west) to South Mountain trailhead and (east) up to the backcountry gate at Cerro Piñon,
 - Banco Bonito Road (VC07) from NM-4 to the Banco Bonito trailhead parking area (consistent with the terms of the 2024 settlement agreement with the Pueblo of Jemez),
 - Redondo Creek Road (VC02) (west) from the western boundary to the Redondo Meadow trailhead parking area,
 - and Sulphur Creek Road (VC08) from the western boundary to the Sulphur Springs parking area.
- Public vehicular access with a backcountry vehicle pass would be allowed on
 - Central Caldera Road (VC02) (east) beyond the backcountry gate,
 - Sulphur Creek Road (VC08) beyond the Sulphur Springs backcountry gate, and
 - western segments of Valle San Antonio and Valle Toledo roads (VC09), allowing pass holders to drive between the Cerro Piñon and Sulphur Springs gates.
 - Backcountry gates (beyond which visitors would need a backcountry vehicle pass) would be located at the north end of the Valle Grande near Cerro Piñon and beyond the parking area at Sulphur Springs.
 - Certain other legacy numbered routes (e.g., those with identifiers such as VC12 or VC0401) would be reserved for administrative and emergency use, at the discretion of the superintendent.
 - All types of street-legal vehicles are allowed on public roads. Visitor use of ATVs, UTVs, and snowmobiles is prohibited in the park.
 - Parking areas accommodate cars and may include parking for passenger vans, motor coaches, and vehicles hauling trailers.
 - Near-term decisions and future planning for roads and trails must consider the park's internal climate adaptation strategy and climate futures data. Predicted increases in wildfire frequency and severity and postfire flooding and erosion should be taken into account when selecting routes for roads, trails, trailheads, and emergency egress.
 - Future planning could determine the treatment (i.e., long-term reclamation, trail conversion, or retention in place) of the many miles of legacy logging roads in the park.

Backcountry Vehicle Pass System

Currently, park management of the backcountry includes a backcountry vehicle pass system with a quota of 35 vehicles per day. This vehicle pass system recently became reservable on Recreation.gov to improve administration and ease of visitor use. The vehicle quota is rarely

met. The backcountry vehicle pass system and the quota were initially established by the Valles Caldera Trust and later continued by the National Park Service on an interim basis in accordance with the park’s enabling legislation.

Under this plan, the backcountry will continue to be managed with the current vehicle pass system. Park managers will maintain a quota of no more than 35 vehicles per day in the backcountry, but may issue more vehicle passes each day to account for no-shows. Based on use data, the park will adaptively manage appropriate numbers of vehicle passes to achieve the 35 vehicle per day quota.

The vehicle pass system and quota will be used to reduce the risk of visitor injury associated with head-on collisions as the backcountry vehicle route follows unpaved, narrow, one-lane dirt roads with blind curves and little available parking or pullouts. The quota is also maintained to improve management’s ability to evacuate the area in case of emergency such as wildland fire. Finally, the system and quota are consistent with desired conditions for the self-guided and backcountry/self-reliance zones established in chapter 2, including a priority on the conservation of natural resources, an emphasis on the area’s Indigenous ethnographic landscape character, and provision of visitor “opportunities for exploration, solitude, and deep immersion in the park’s fundamental resources and values” as well as “the lowest levels of use, visitor density, and human encounters.”

The National Park Service would continue to evaluate the effectiveness of the vehicle pass system and quota for meeting desired conditions. It would do this by monitoring indicators (appendix B) and collecting other data. Consistently with the NPS planning portfolio approach, this quota could be updated through future planning. This could be an implementation-level backcountry planning process or a general management plan amendment. The park could use information about the effectiveness of the quota to determine future visitor capacity for the backcountry.

Trails

- See table 5 for a summary of changes.
- Maintain the trailheads and trails that existed in 2024 until decisions are made otherwise through this plan or future plans (see map 6).
- Consolidate the three trailheads at Cerros del Abrigo into a single trailhead.
- Designated trails outside Valle Grande District are open to pedestrian and equestrian use.
- Bicycle use is allowed on public and backcountry roads and on designated trails. The park will maintain a bicycle and e-bike route map on its website and superintendent’s compendium. The following trails currently open to biking would no longer allow this use: Northwest Rim Trail (VC10, VC11), Indios Creek Trail (VC13), North Valle Toledo Trail (VC14), South Mountain Trail, Alamo Canyon Trail, Cerro Seco Trail, and San Antonio Mountain Trail.

- A future planning effort, such as a trail management plan, could define appropriate infrastructure elements at trailheads. The park could also identify trail hubs (those servicing multiple trails), and consider connectivity to regional trails. Some existing trailheads may be consolidated.

Natural Resource Stewardship

- Implement the park's internal climate adaptation strategy for natural resource stewardship alongside recommendations from *East Jemez Landscape Futures Restoration Strategy and Climate Adaptation Plan* (Lehnert et al. 2021) and *Climate Changes and Consequences for Bandelier National Monument and Surrounding Areas* (Carlson and Gross 2019).
- Continue invasive plant treatments, forest thinning, and prescribed burns to improve or restore resource conditions and ecosystem resilience; implement the fire management plan (NPS 2024).
- Monitor site-specific wetland exclosures for effectiveness in facilitating riparian habitat restoration.
- Continue restoration efforts associated with long-term goals to mitigate impacts from abandoned energy extraction infrastructure and grazing infrastructure. These include such things as pipelines, geothermal well pads, water exploration wells, logging roads, and stock tanks.
- Consider retrofitting night lighting from administrative buildings and staff housing adjacent to Valle Grande with downturned fixtures and other appropriate facilities upgrades to preserve dark night skies.
- Continue water quality monitoring and postfire restoration improvement projects throughout the park to improve watershed function and reduce the potential for future catastrophic wildfires.
- Continue inventory and monitoring efforts for significant thermal features as outlined in the Geothermal Steam Act.
- Ecosystem management infrastructure in the backcountry (e.g., communication towers and approved scientific monitoring equipment) would be reviewed on a case-by-case basis to ensure compatibility with the park's desired conditions.
- Limit artificial outdoor lighting in the park to that necessary for basic safety requirements. The park would also abide by principles of sustainable outdoor lighting to reduce impacts to night skies. Where appropriate, artificial outdoor lighting should emit red light.
- Monitor high visitor use or visitor/park operations impact areas (e.g., equestrian trails) for resource damage and implement adaptive management measures as needed.

- New scientific installations in the backcountry/self-reliance zone would be designed such that they do not require heavy equipment or motorized vehicle access for installation, maintenance, or removal.
- Coordinate with the interpretation team on select scientific installations that may be suitable for interpretation to educate the public about science in the park.
- Conduct surveys for federally listed species with suitable habitat in the Valle Grande District to prepare for future development projects. These species would include the New Mexico meadow jumping mouse, Mexican spotted owl, and Jemez Mountains salamander.
- Conduct prescribed burns that are carefully planned and implemented to manage for healthy forest fuel loads and changing fire regimes.
- Continue using existing management practices to deter prairie dogs from developed areas and areas where infrastructure improvements would be implemented. The park would also consider future management actions to reduce zoonotic disease transfer from prairie dogs (e.g., by prohibiting pets in areas with prairie dog colonies).
- Implement seasonal visitor access restrictions as necessary in consultation with the US Fish and Wildlife Service to reduce the potential for disturbance to these species if a federally listed species is detected.
- Leave in place wherever possible live trees and dead/downed woody debris, rocks, and boulders to preserve suitable wildlife habitat.
- Continue partnerships with the State of New Mexico to monitor the water quality of ephemeral pools in the Valle Grande District.
- Continue wetland restoration projects and conduct baseline monitoring to track condition of cold-water fish populations, sediment and turbidity levels, and other water quality parameters.
- Continue to identify wetland restoration candidate areas to bank potential wetland mitigation credits for future development projects and to improve wetland function at specific sites.
- Continue restoration of native and extirpated fish and wildlife species to promote ecological health and biodiversity.

Cultural Resource Management

- Complete archeological inventories across the park that meet current survey standards, beginning with areas that are experiencing or are likely to experience resource threats or disturbances from natural processes, park operations, or visitor use.

- Complete or update baseline and treatment documents needed to inform the management of cultural resources, prioritizing those threatened by natural or human processes or of special significance to Tribal Nations.
- Develop park-specific National Register of Historic Places (NRHP) eligibility frameworks and significance standards for different site types within the park to improve the efficiency and consistency of resource significance evaluations and compliance analyses.
- Develop NRHP nominations for historic properties that have cultural landscapes, beginning with obsidian quarries, resources related to volcanic domes, and the Baca Ranch Cabin Area historic district / Baca Cabin Area cultural landscape.
- Employ passive protection measures, such as discreet signs (i.e., signs that do not reveal the presence of cultural resources) and other forms of circulation management, to direct visitors away from locations with high research and data potential or that are of special significance to Tribal Nations.
- Monitor archeological resources for signs of visitor use impacts, especially at locations with high research and data potential or higher likelihood of visitor encounters, or that are of special significance to Tribal Nations. The park would also develop an adaptive management plan to protect resources that experience unacceptable disturbance.
- Work with the natural resource program to implement, monitor, and update the park's internal climate adaptation strategy. High-severity fires, postfire flooding, and erosion particularly pose a threat to cultural resources, one that is expected to increase in the future.
- Develop an appropriate use and management plan for San Antonio Cabin and its associated historic ranching landscape, beginning with documentation and evaluation of these resources.
- Develop a cultural landscape report for Sulphur Springs that builds on existing inventory and evaluation studies and informs interpretation of the site's historical significance.
- Conduct historical and archeological research that not only supports effective management but also a robust interpretive program that increases public appreciation and support for cultural resources through all periods of significance.
- Collaborate with the interpretation team on educational content and resource protection messaging. Messaging includes education about the sensitivity and importance of archeological sites and how to avoid disturbing them when encountered (see table 1 in chapter 2 for desired conditions for archeological resources).
- Coordinate with the interpretation team on interpretive programming that involves directing visitors to select archeological sites (see chapter 2, table 1, for desired conditions for visitor engagement zone). The park would also conduct compliance on

resources proposed for interpretative programming and implement mitigations as needed.

- Establish a park-led obsidian studies program, as a part of the Jemez Mountains Research Learning Center, focused on the caldera's internationally significant (i.e., across North America) obsidian sources and prehistoric trade. The park would also work to position itself as a center of expertise and information for researchers working with tools of Valles Caldera obsidian from across the continent.
- Work collaboratively with national park system units and federal agencies in the area to enhance knowledge and management of cultural resources.
- Work to formally accession and catalog museum object collections to facilitate access by researchers and Tribal Nations.
- Develop and finalize key museum management baseline documents, starting with a scope of collections statement. The park would also develop artifact collection and artifact return standard operating procedures.

Tribal Relations and Management of Resources of Traditional Significance

- Establish, per Director's Order 71C, regular government-to-government meetings with Tribal Nations. The park would also establish relationships and ongoing, robust, informal communication with Tribal subject matter experts and other contacts. The purpose of these actions would be to enhance collaboration on resource management, education and interpretation, and other relevant matters.
- Work with Tribal Nations to identify resources of special significance, which might include resources not formally identified in an ethnographic overview and assessment,⁵ and to better understand historical and ongoing traditional uses of the park.
- Work collaboratively with Tribal Nations to enhance the long-term protection of natural and cultural resources and of traditional cultural and customary uses in a manner that is sensitive to their ancient and ongoing relationships with their ancestral lands.
- Collaborate with Tribal Nations on interpretive media and programming to incorporate tribal perspectives in educational materials related to their history, culture, and homeland.
- Document and determine best management practices and future planning needs for ethnographic landscapes and sacred sites, in consultation with Tribal Nations.

5. Ethnographic resources are formally defined as objects and places, including sites, structures, landscapes, and natural resources, with traditional cultural meaning and value to associated peoples. Research and consultation with associated people identifies and explains the places and things they find culturally meaningful.

- Invite Tribal Nations to collaborate in an obsidian studies and research learning center focused on the park's internationally significant obsidian sources (see bullet under "Cultural Resource Management" above).
- Collaborate with Tribal Nations when drafting resource management plans or guidance that addresses the enabling legislation's special mention of volcanic domes and other peaks with areas above 9,600 ft in elevation or 250 ft below the top of the dome (whichever is lower).
- Provide access to sites described in the park's enabling legislation for members of Tribal Nations for traditional cultural and customary uses.
- Upon request by a Tribal Nation, consider temporarily closing one or more specific areas of the park to general public use to protect traditional cultural and customary uses in the area by members of the Tribal Nation.
- Consistent with the terms of the 2024 settlement agreement with the Pueblo of Jemez, jointly develop a settlement agreement implementation plan for Banco Bonito.

Park Boundaries and Relationships with Adjacent Agencies

Evaluate the potential for boundary adjustments around its perimeter to improve management efficiency, resource protection, visitor access, and relationships with neighbors. A boundary study has not been funded to date, and the park would seek any future acquisition only from willing sellers or through land exchange.

MANAGEMENT ACTIONS FOR THE VALLE GRANDE DISTRICT

Under this plan, Valle Grande will remain the primary focus of the park's frontcountry experiences. It will host visitor services and an administrative hub at the NM-4/entrance road intersection (see maps 4 and 5). Functions at the visitor services area would include visitor contact and orientation, concessions, educational and interpretive programming (indoor and outdoor), limited administrative offices and storage, and access to recreation, including ABAAS-compliant opportunities.

The cabin district would give visitors frontcountry experiences that prioritize historic preservation, interpretation, and educational and recreational experiences, including those that are ABAAS-compliant. The historic structures and landscape features there would be stabilized and preserved, but few or none would be adaptively used for visitor services or administrative functions. The paved entrance road would support four-season access to these frontcountry areas. The park would take the following actions:

Visitor Use and Experience

- Establish a visitor services area in the Valle Grande District, near the NM-4 entrance of the park, along the proposed entrance road. This area would include visitor contact space, restrooms, interpretive and community space (indoor and outdoor), exhibits, accessible interpretive trail, retail space, parking lots, parking spaces for larger vehicles

and bus drop-off, limited office space for frontline staff, and other amenities. Construction of the visitor services area may occur in phases over time.

- Establish picnic areas in the Valle Grande District.
- Remove the infrastructure at the temporary entrance station at Cerro La Jara, and reestablish these functions near the new visitor services area in the vicinity of NM-4. (The Cerro La Jara trailhead and trail would remain active.)
- Design the NM-4 visitor services area as a hub for four-season recreational activities and include ABAAS opportunities.

Roads

- Pave and maintain a realigned entrance road (VC01) for four-season use along the western edge of Valle Grande, from the park entrance at NM-4 to a parking lot behind the cabin district.
- Maintain four-season vehicular access to the visitor services area and cabin district.
- Maintain the North Valle Grande Road (VC02) as a gravel road for seasonal public vehicular use.
- Improve four paved pullouts along NM-4 by adding striped parking and viewing platforms to enhance visitor experience and safety. One pullout would serve as a trailhead for the Jemez River trail north of the road. The pullouts and viewing platforms may be interconnected by a boardwalk parallel to NM-4.

Trails

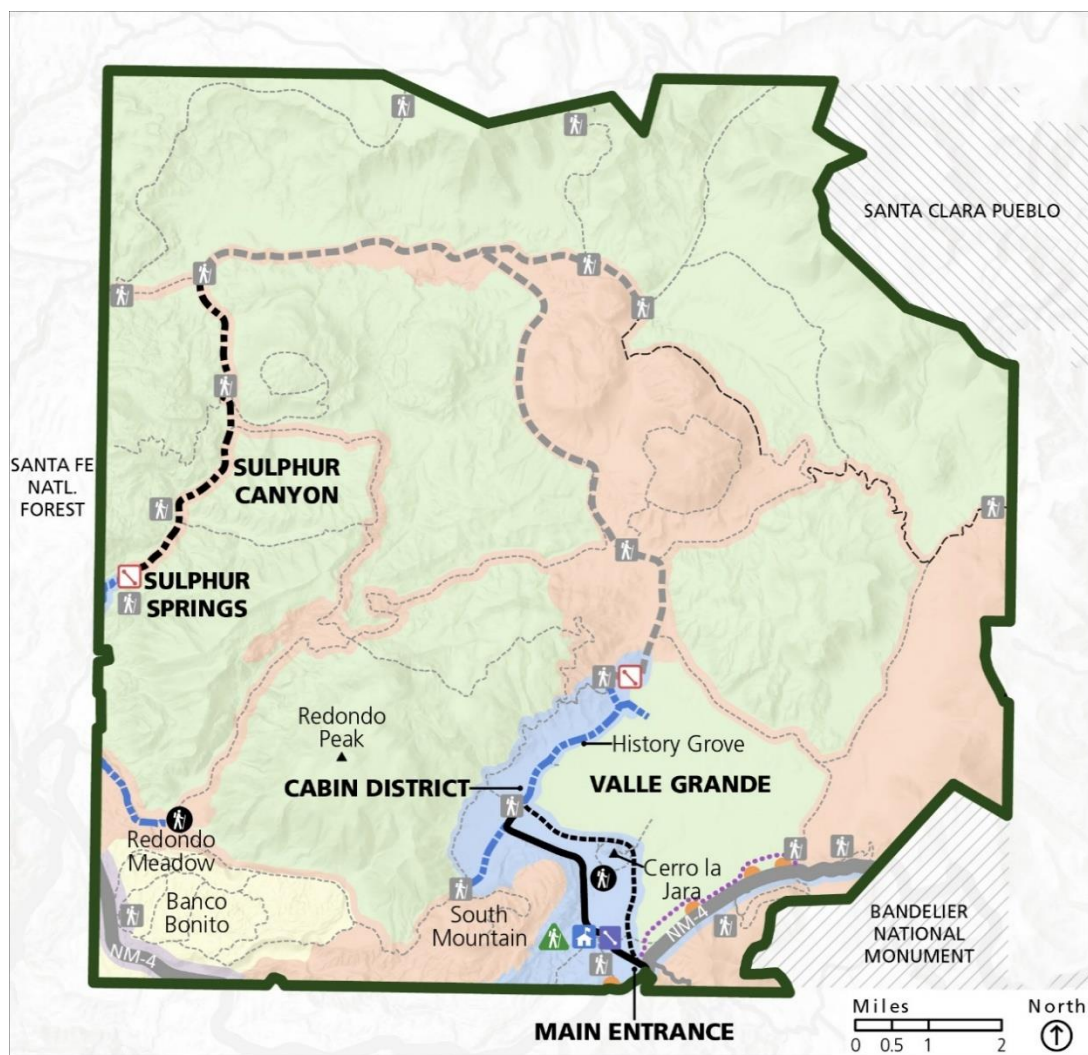
- Maintain the historic Bond-era entrance road alignment as an unpaved, accessible, multiuse trail (no public vehicle access).
- Construct trails in the NM-4 visitor services area that connect to recreational opportunities such as hiking and fishing.
- Formalize a Jemez River Trailhead, formerly the “Missing Cabin / Hidden Valley Trailhead.”
- Construct a boardwalk or natural-surface trail paralleling NM-4 where it borders Valle Grande.

Cultural Resource Management

- Implement the preservation guidance in the Valles Caldera National Preserve Historic Structure Report (2022) and cultural landscape report for the Baca Cabin Area cultural landscape (forthcoming). Update preservation guidance documents as needed.

- Monitor the Archaic period archeological landscape in the Valle Grande District for signs of unacceptable visitor use impacts. Develop an adaptive management plan to protect these resources.

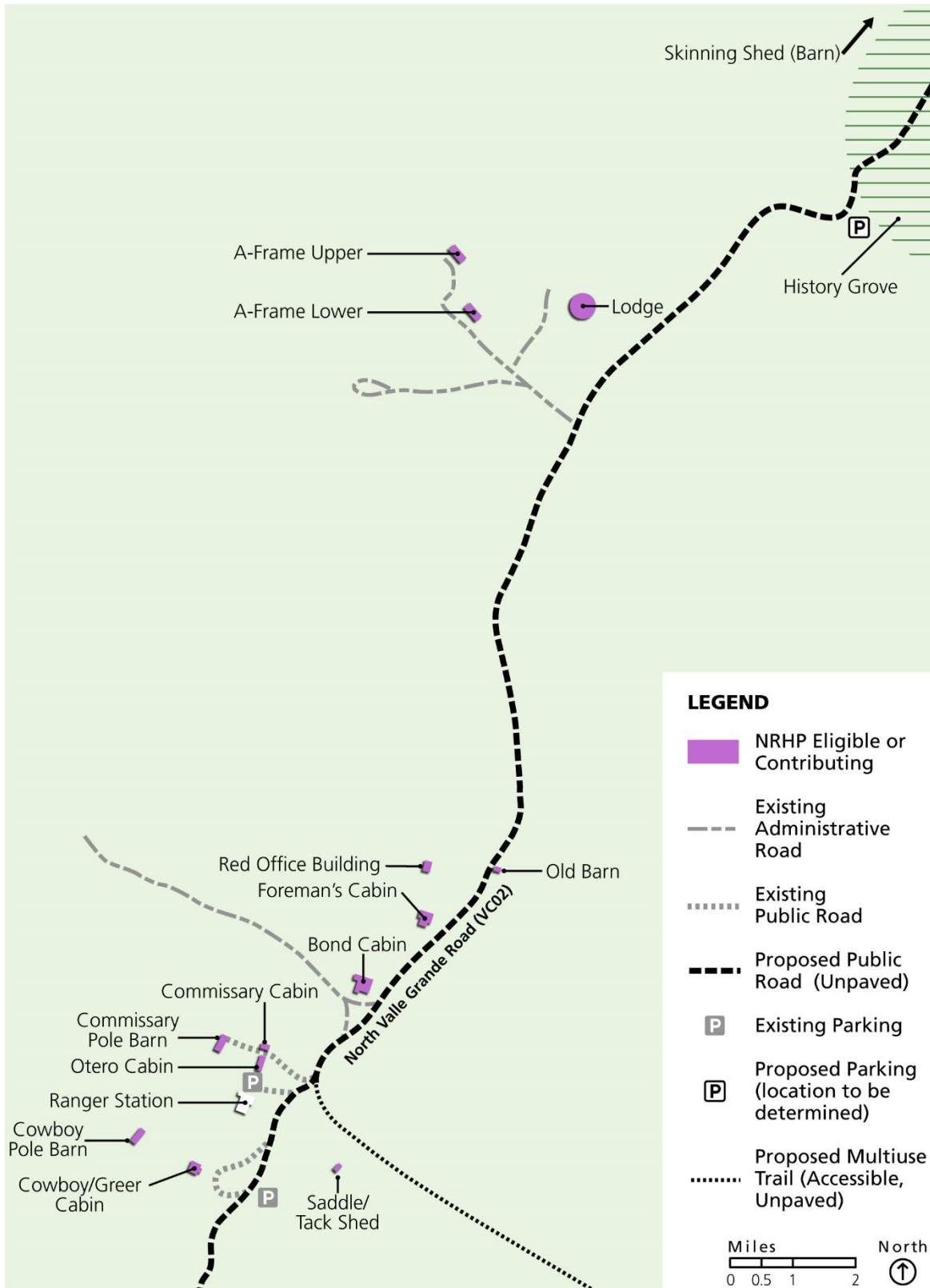
Map 4. Management Strategies



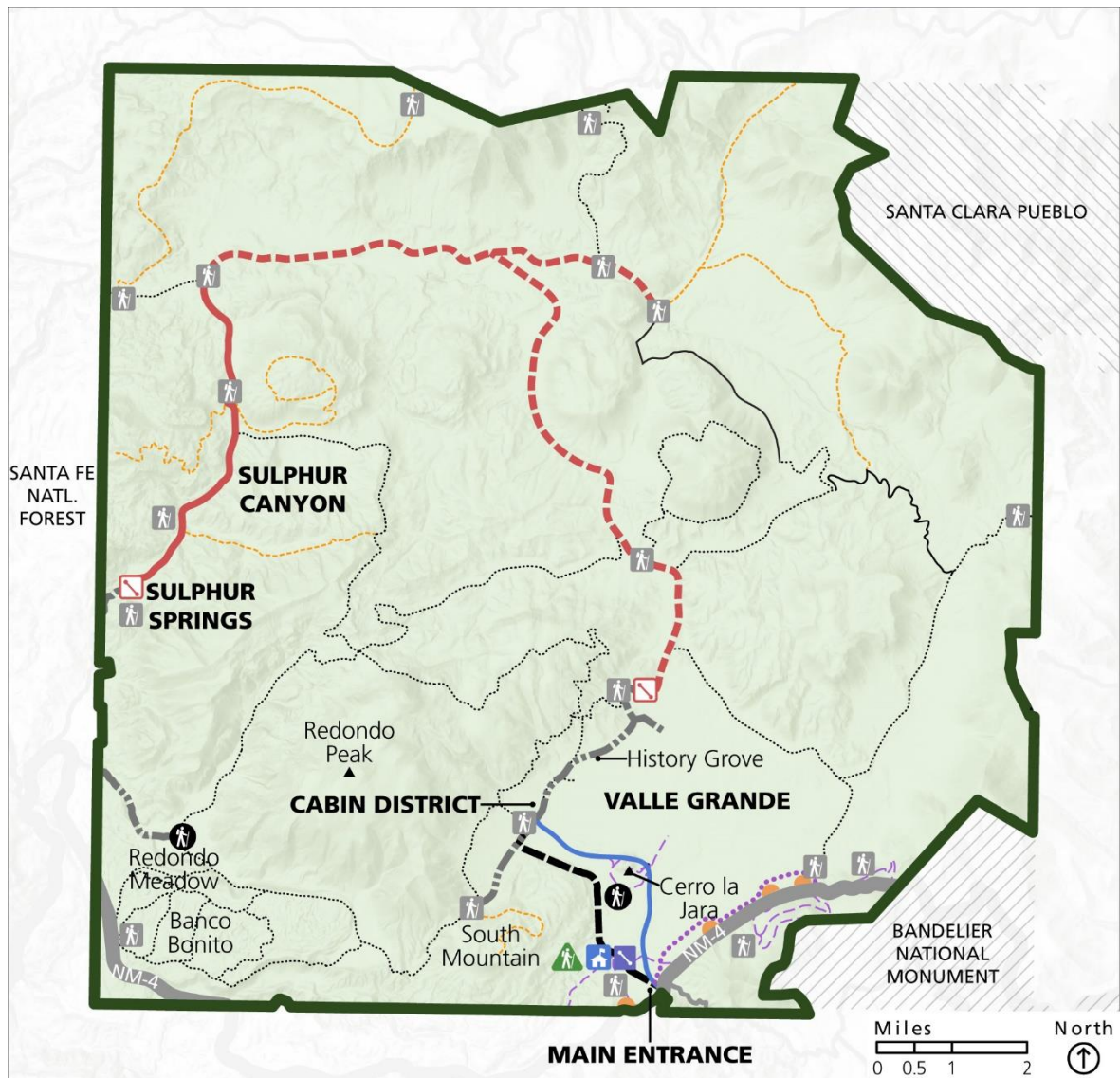
LEGEND

- | | | |
|---|---|--|
| Park Boundary | Proposed Multiuse Trail (Accessible, Unpaved) | Visitor Engagement Zone |
| Proposed Public Road (Paved) | Proposed Visitor Service Area | Self-Guided Zone |
| Existing Public Road (Permit Required, Unpaved) | Existing Trailhead | Backcountry/Self-Reliance Zone |
| Proposed Public Road (Permit Required, Unpaved) | Formalize Existing Trailhead | Sée Wāak'î Tùukwā - Banco Bonito Visitor Engagement Zone |
| Proposed Public Road (Unpaved) | Proposed Trailhead | Sée Wāak'î Tùukwā - Banco Bonito Aboriginal Use Zone |
| Existing Trail | Proposed Entrance Gate | |
| Minor Trail Relocation | Proposed Backcountry Gate | |
| Proposed Boardwalk | Improve Existing Road Pulloff | |

Map 5. Management Strategies—Cabin District



Map 6. Trail Use



LEGEND

- | | | |
|---|---|--------------------------------|
| Park Boundary | Existing Trail (Hiking/equestrian/biking) | Proposed Visitor Service Area |
| Existing Public Road (Permit Required, Unpaved) | Minor Trail Relocation (Hiking/equestrian/biking) | Existing Trailhead |
| Proposed Public Road (Permit Required, Unpaved) | Existing Trail (Hiking/equestrian) | Formalize Existing Trailhead |
| Proposed Public Road (Paved) | Existing Trail (Hiking) | Proposed Trailhead |
| Proposed Public Road (Unpaved) | Proposed Multiuse Trail (Accessible, Unpaved) | Proposed Entrance Gate |
| | Proposed Boardwalk | Proposed Backcountry Gate |
| | | Improve Existing Road Pulloffs |

Table 5. Road and Trail Use Types Under the Alternatives

Route	Current Use	Proposed Use	Change to Use Type and Access
VC01 Entrance Road	Road open year-round to all uses	Paved public road and multiuse trail	Splits into two routes—road and multiuse trail
VC02 Redondo Creek Trail	Trail: hike/bike/equestrian	Road: public road, not subject to backcountry vehicle pass system and Trail: hike/bike/equestrian	Adds public motor vehicle use west of Redondo Meadow
VC02 North Valle Grande Road	Road: open summer only (backcountry vehicle pass system)	Road: public road	No longer subject to backcountry vehicle pass system
VC02 Central Caldera Road	Road: open summer only (backcountry vehicle pass system)	Road: open summer only (backcountry vehicle pass system)	None
VC03 Redondo Creek and Jaramillo Creek trails	Trail: hike/bike/equestrian	Trail: hike/bike/equestrian	None
VC04 East Valle Grande and Rincón trails (VC0401/VC04)	Trail: hike/bike/equestrian	Trail: hike/bike/equestrian	Minor trail relocation results in reopening access to the east boundary
VC06 Valle Seco Trail	Trail: hike/bike/equestrian	Trail: hike/bike/equestrian	None
VC07 Banco Bonito Trail	Trail: hike/bike/equestrian	Trail: hike/bike/equestrian	None
VC08 Sulphur Creek Trail	Trail: hike/bike/equestrian	Public road (backcountry vehicle pass system)	Opens trail to road—expands backcountry vehicle route
VC08 Valle San Antonio Road	Road: open summer only (backcountry vehicle pass system)	Road: open summer only (backcountry vehicle pass system)	None
VC09 Valle San Antonio and Valle Toledo Roads	Road: open summer only (backcountry vehicle pass system)	Road: open summer only (backcountry vehicle pass system)	None
VC10/VC11 Northwest Rim Trail	Trail: hike/bike/equestrian	Trail: hike/equestrian	Bikes no longer allowed

Route	Current Use	Proposed Use	Change to Use Type and Access
VC12 Garita Trail	Trail: hike/bike/equestrian	Trail: hike/bike/equestrian	None
VC13 Indios Creek Trail	Trail: hike/bike/equestrian	Trail: hike/equestrian	Bikes no longer allowed
VC14 North Valle Toledo Trail	Trail: hike/bike/equestrian	Trail: hike/equestrian	Bikes no longer allowed
South Mountain Trail	Trail: hike/bike/equestrian	Trail: hike/equestrian	Bikes no longer allowed
Banco Bonito interior trails	Trail: hike/bike/equestrian	Trail: hike/bike/equestrian	None
Alamo Canyon Trail	Trail: hike/bike/equestrian	Trail: hike/equestrian	Bikes no longer allowed
Cerro Seco Trail	Trail: hike/bike/equestrian	Trail: hike/equestrian	Bikes no longer allowed
San Antonio Mountain Trail	Trail: hike/bike/equestrian	Trail: hike/equestrian	Bikes no longer allowed
Cerros Del Abrigo Trail	Trail: hike/bike/equestrian	Trail: hike/bike/equestrian	None
Redondo Foothills Trail	Trail: hike/bike/equestrian	Trail: hike/bike/equestrian	None
Rabbit Mountain Trails	Trail: hike only	Trail: hike only	None
Valle Grande Exploration Trail	Trail: hike only	Trail: hike only	None
Cerro La Jara Loop Trail	Trail: hike only	Trail: hike only	None
South Valle Grande Trail	Trail: hike only	Trail: hike only	None
Proposed boardwalk	Trail: hike only	Trail: hike only	None
Relocated South Valle Toledo Trail	Closed	Trail: hike/bike/equestrian	Connects experiences and creates many more loop opportunities



APPENDIXES

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APPENDIX A: GENERAL MANAGEMENT PLANNING BACKGROUND

RATIONALE FOR GENERAL MANAGEMENT PLANNING

The National Parks and Recreation Act of 1978 and NPS *Management Policies 2006* require each NPS unit to have a general management plan (GMP). Director's Order 2: *Park Planning* (2021) clarifies that a park's planning portfolio—comprising documents that guide management and decision-making—is central to meeting GMP statutory requirements. These requirements are as follows:

- Measures for resource preservation.
- Indications of the types and general intensities of development (visitor circulation and transportation patterns, systems, and modes), including general locations, timing of implementation, and anticipated costs.
- Identification and implementation of commitments for visitor carrying capacities.
- Indications of potential boundary modifications and their justifications.

The purpose of general management planning is to provide a clear direction for resource preservation and visitor use. This approach helps the National Park Service fulfill its mandate to preserve resources unimpaired for future generations' enjoyment, education, and inspiration. General management planning enhances the bureau's effectiveness, collaboration, and accountability through the following factors:

- It balances continuity and adaptability in decision-making by defining desired conditions for a park. This enables NPS managers and staff to adapt to changing situations while staying focused on what is most important about the park unit.
- It analyzes the unit within its surrounding ecosystem, cultural context, and community. This analysis helps NPS managers understand how the park can interact sustainably with its neighbors. Decisions made in this broader context are more likely to succeed over time.
- National park system units often attract significant tribal and public interest. Engaging all interested parties in GMP development allows NPS managers to learn about their concerns, expectations, and values while sharing information about the park's purpose, significance, and management opportunities and constraints.

The ultimate outcome of general management planning for park units is an agreement among the National Park Service, associated Tribal Nations, partners, and the public on why each area is managed as part of the national park system, what resource conditions and visitor experiences should exist, and how those conditions can best be achieved and maintained over time.

General management plans serve as long-term documents that establish and articulate a management philosophy and framework for decision making and problem solving in national park system units. Typically, these plans undergo review every 15 to 20 years.

Congress established Valles Caldera National Preserve in 2014 to protect, preserve, and restore the area's fish, wildlife, watershed, natural, scientific, scenic, geologic, historic, cultural, archeological, and recreational values. This plan, the previously published foundation document, and other plans form the park's comprehensive planning portfolio.

OTHER LAWS AND POLICIES RELATED TO NPS MANAGEMENT

This section outlines key servicewide laws and policies relevant to planning and managing the park. The park must comply with these laws and policies, regardless of this GMP planning effort. The National Park Service must adhere to laws and policies that protect environmental quality and resources, preserve cultural resources, and provide public services. Beyond the National Environmental Policy Act, there are several laws and policies related to resource management, with others relevant to public services and access:

- Clean Water Act of 1972
- Endangered Species Act of 1973
- National Historic Preservation Act of 1966, as amended
- Native American Graves Protection and Repatriation Act of 1990
- Executive Order 11988, "Floodplains Management"
- Executive Order 11990, "Protection of Wetlands"
- Americans with Disabilities Act of 1990
- Architectural Barriers Act Accessibility Standards
- Final Outdoor Developed Area Guidelines
- Rehabilitation Act of 1973
- Fair Housing Act

Some laws and policies apply specifically to national park system units. These include the 1916 Organic Act, which established the National Park Service; the General Authorities Act of 1970; the act of March 27, 1978, regarding national park system management; and the National Parks Omnibus Management Act of 1998.

The National Park Service Organic Act (16 United States Code [USC] 1) provides central management direction for all national park system units:

[P]romote and regulate the use of the Federal areas known as national parks, monuments, and reservations. . . by such means and *measure* as to conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the *wild life* therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

The General Authorities Act (16 USC 1a-1 et seq.) affirms that while each national park system unit is “distinct in character,” they are “united through their inter-related purposes and resources into one national park system as cumulative expressions of a single national heritage.” This act clarifies that the National Park Service Organic Act and other protective mandates apply equally to all system units. Amendments further state that NPS management should not “derogate...the purposes and values for which these various areas have been established.”

The National Park Service has also established policies for all units under its stewardship. NPS *Management Policies 2006* identifies and explains these policies. This general management plan and Valle Grande District development concept plan incorporate and comply with these mandates and policies.

APPENDIX B: INDICATORS AND THRESHOLDS

OVERVIEW

Monitoring is essential to track, achieve, and maintain desired conditions for resources and visitor experiences over time. The monitoring strategy for this plan is based on the principles outlined in the Interagency Visitor Use Management Council's (IVUMC) *Visitor Use Management Framework and Monitoring Guidebook*. These documents and related background materials are available on the IVUMC website: <https://visitorusemanagement.nps.gov/>. Establishing “indicators” and “thresholds” is key to carrying out the monitoring described in the Valles Caldera National Preserve general management plan:

- **Indicators** are specific, measurable resource or experiential attributes that track changes in conditions caused by visitor use so that progress toward achieving and maintaining desired conditions can be assessed.
- **Thresholds** are the minimum acceptable conditions associated with each indicator.

Together, indicators and thresholds provide park managers with a monitoring strategy to ensure that desired conditions for resources and visitor experiences are achieved and maintained over time. The interdisciplinary planning team for this GMP reviewed relevant literature and the experiences of other park units to select meaningful tools for this monitoring strategy.

The planning team considered many potential issues and related indicators to identify impacts of concern. Ultimately, the five indicators described in this section were selected due to the importance and vulnerability of the associated resources and visitor experiences. The rationale for each indicator includes a description of how it meets five criteria: importance to desired conditions, issues, and management; sensitivity to change; connection to visitor use; reasonableness or feasibility of monitoring; and reliability of measurement.

In addition to the management strategies outlined in chapter 3, the planning team identified specific strategies for each indicator. These strategies aim to prevent thresholds from being exceeded. They are or will be adaptively implemented in response to monitoring data and changes in conditions. Some of these strategies are currently in use and may benefit from increased efforts in response to changing conditions. Changes to management strategies are considered if management strategies are not effective and there is evidence that conditions are trending away from desired conditions or are approaching thresholds. The planning team also identified adaptive management strategies for each indicator, typically implemented when indicators near or reach their thresholds. Details of future and adaptive management strategies would be developed as needed to ensure the most effective approach is taken. The impacts of these future management strategies would be analyzed in future compliance as needed.

The iterative practice of monitoring, implementing management strategies, and then continuing to monitor the effectiveness of management strategies allows park managers to achieve and maintain desired conditions for resources and visitor experiences in a dynamic setting while maximizing benefits for visitors.

INDICATORS AND THRESHOLDS

Indicator 1

Indicator Topic: Archeological Site Condition

Indicator: Change in density of artifacts at key archeological sites from baseline conditions

Threshold: Density of artifacts does not increase or decrease by more than 10% from baseline conditions.

Rationale

This indicator estimates the density and potential changes in density of artifacts on the landscape at key sites identified by park archeologists. For example, baseline conditions for a site may indicate an average of 100 artifacts per square meter. If conditions were to change, an average of 90 or 110 artifacts per square meter would be the threshold. The 10% threshold is a tentative value that will be evaluated during early pilot testing to determine the variance between different observers.

This indicator is considered important to achieving the desired condition under the indicator criteria. Throughout the park, cultural sites and artifacts have been found and are associated with the ancestors of modern Tribal Nations. While multiple archeological sites have already been identified, additional sites may be located in the future. It is critical for the park to protect their cultural and historic value. These sites contribute to the character of the ethnographic landscape and archeological context of the park; they have been identified as fundamental to preserving the park's significance. They also present important subjects for research, education, and interpretive programming. Since archeological resources are nonrenewable, any impacts carry the potential to cause irreparable harm to the sites' ethnographic and historic character.

This indicator is considered to be connected to visitor use under the indicator criteria. However, park managers recognize that natural processes may obscure this connection to some extent. Visitor use can impact artifact sites through both intentional and unintentional behaviors. Intentional actions, such as theft, vandalism, destruction, or artifact piling, can affect artifact density. This is true even if these behaviors are infrequent, occur on a small scale, and are uncharacteristic of most visitors in national park settings. Theft and other visitor-caused disturbances have been documented to lead directly to the reduction of obsidian flake density and loss of artifacts in the park, while piling the flakes can increase density in some areas while decreasing it in others.

Unintentional behaviors, such as trampling, may seem benign but may contribute to cumulative impacts that compromise a site's overall integrity over time when many people visit an artifact site. Off-trail activities such as hiking, biking, and horseback riding can also contribute to archeological damage and artifact density indirectly by exacerbating erosional processes and exposing archeological resources. Changes in visitor use patterns and numbers—such as where visitors go and how many visit—can also increase the disturbance levels of artifacts.

Artifact density is sufficiently connected to visitor use to meet the indicator criteria, but natural processes like erosion, bioturbation, wildlife movements, and flooding can also affect density. In

general, while acknowledging these forces do have their effects, park managers believe the overall density of artifacts does not vary greatly from year to year. Additionally, park archeologists have established protocols to account for the impacts of natural processes on archeological sites. These include vertical measurement of the ground level to monitor soil deposition or erosion, observation of animal prints, and GPS photo points. These measures provide context for the monitoring data, enabling distinctions between natural processes and visitor use impacts.

The archeological sites and artifacts in the park are considered highly sensitive to changes from visitor use. While there is no acceptable amount of theft, piling, or vandalism of archeological resources, this indicator and its associated monitoring strategy offer transparency regarding the extent and severity of this resource concern.

This indicator is believed to be reasonable and feasible to monitor under the indicator criteria. Park staff have experience with this type of monitoring and anticipate that, once a routine is established, one person could complete the monitoring in a few days each year that it occurs. To ensure feasibility, the number of monitoring sites is kept to a minimum, providing sufficient data to draw meaningful conclusions.

This indicator is also believed to be reliable under the indicator criteria. Although park staff acknowledge some variance in observations due to human error, standardized protocols and direction are expected to keep this variance below 10%. Therefore, reaching the threshold would indicate a true change in resource condition. This assumption will be tested during the pilot test for this indicator.

Monitoring Strategy

To effectively monitor artifact density, park staff will monitor density at a diverse sample of sites around the park along with visitor use data that may include backcountry vehicle passes, trail counters, road counters, game cameras, and other visitor data sources. This approach will provide a holistic understanding of how visitor use affects artifact density. The park will monitor a minimum of five sites, with one or more designated sample plots in each site. These plots could include “study” and “control” plots if site factors indicate that one portion is more vulnerable to visitor impacts than another.

Plot sizes would be determined based on the size of the entire site, level of sensitivity to visitor traffic, amount and level of exposed artifacts and resources, and site complexities. Monitoring sites will be distributed throughout the frontcountry and backcountry. Potential sites may include Obsidian Valley, Cerro La Jara, the cabin district, Cerro del Medio. Sites will be monitored every 2 to 5 years, and park staff will determine the frequency at which each site is monitored based on visitor use levels near the site. In the first year, park staff will establish baseline conditions for the monitoring sites and may change or update these sites as necessary.

To prevent monitoring of this indicator from attracting visitors, park staff would ensure that plots are not easily identifiable (i.e., no flags, strings, or stakes left behind). Any monitoring objects left at the site would be camouflaged, and study teams would take steps to avoid leaving footprints or other signs. Specific methods for monitoring each site can be found in the *Valles Caldera National Preserve Cultural Resources Program Field Procedures* (NPS 2017).

Management Strategies

- Revegetate bare ground near social trails close to artifact sites.
- Install erosion and water control features near artifact sites to encourage vegetative ground cover and mitigate erosion effects.
- Plate trails with fill and/or logs.
- Designate specific trails as guided access only, led by park staff.
- Add physical barriers or walkways to keep visitors on designated trails.
- Increase staff presence at sensitive resource sites.
- Enhance education on the website and other digital media, as well as during orientation and discovery hikes, about Leave No Trace principles and the impacts of moving or collecting artifacts.
- Require all backcountry visitors to review information on Leave No Trace principles before joining a discovery hike or obtaining a permit. This could be done through mixed media (e.g., online video or brochures sent by mail).

Adaptive Management Strategies

- Manage group size in the backcountry.
- Reroute trails away from sensitive artifact sites.
- Consider scientific recovery and curation of high-value surface artifacts on an annual basis.
- Increase emphasis on orientation and education about Leave No Trace principles, the impacts to the resources and history from moving or collecting artifacts, and the responsibility of each visitor to protect cultural resources in the backcountry.
- Temporarily close specific sites or areas to visitor use, allowing resource specialists to examine the area and analyze impacts. Document any collected artifacts, then disperse them.
- Temporarily suspend guided hikes in areas with sensitive resources until stabilization and recovery efforts are successful. Over time, assess when the area or site may be reopened to visitation.

Indicator 2

Indicator Topic: Trail-Based Experience Quality

Indicator: Number of parties encountered per day on trails

Threshold:

- Backcountry/self-reliance zone: No more than 5 hiking parties encountered per day, 85% of the time per trail.
- Self-guided zone: No more than 8 hiking parties encountered per day, 85% of the time per trail.

Rationale

This indicator measures visitors' opportunities to experience desired conditions on trails in the self-guided and backcountry/self-reliance zones. Desired conditions for the backcountry/self-reliance zone describe a place where "visitors can experience solitude in diverse natural landscapes with few encounters with other visitors." In contrast, the self-guided zone is characterized by "low to moderate densities of visitors," providing opportunities to "directly experience the sights and sounds of the natural landscape." Solitude refers to the state of being alone or remote from the sights and sounds of others. This indicator monitors whether these desired conditions for visitor experience are being achieved in both zones.

The encounter rate is the number of times trail users meet, pass, or are passed by others along the trail. Although it counts the number of other groups encountered, it effectively measures the presence of long breaks between encounters. During these breaks, visitors can enjoy solitude and nature's sounds and sights. This indicator can also serve as a proxy for user conflicts. As the Self-Guided trails may be either single use or multiuse, park managers want to monitor whether user conflicts arise on multiuse trails. An increase in encounters on these trails may lead to more user conflicts.

This indicator is known to be reliable and sensitive to change based on experiences in other park units. For low- or medium-volume trails, encounter rates are a common and appropriate indicator of visitor experience. To monitor this indicator effectively, park staff should consider the number of trails and the frequency of monitoring.

To identify the thresholds, park managers reviewed established thresholds for national park system units with similar desired conditions. The desired conditions for the backcountry/self-reliance zone emphasize opportunities for "exploration, solitude, and deep immersion." Acceptable encounter rates for "low use" trails vary widely across the national park system due to diverse contexts. Given the desired conditions for this zone, park managers examined areas with some of the lowest encounter rates, where "deep immersion" is most likely. Some of these encounter rates are shown in table 6.

Table 6. Encounter Rate Thresholds at Comparable National Parks

Park Area	Encounter Rate
Arches National Park wilderness	4 groups per day
Yosemite National Park backcountry/wilderness	1 group per day
Denali National Park and Preserve backcountry medium-use areas	2 groups per day
Sequoia and Kings Canyon National Park low-use wilderness trails	6 people per hour
Black Canyon of the Gunnison National Park inner canyon	5–15 people per day
Saguaro National Park primitive area	7 groups per day
John Day Fossil Beds National Park primitive zone	3 groups per day
Shenandoah National Park primitive backcountry/wilderness and nonwilderness	3 groups per day

Given these comparable areas, park managers identified a threshold of five groups encountered per day in the backcountry/self-reliance zone. This zone has the lowest density of visitor use, while the self-guided zone allows for slightly higher densities. This relationship and the need to preserve opportunities for a “sense of adventure and independence” while avoiding high visitor concentrations in the self-guided zone led to the identification of eight groups encountered per day as an appropriate threshold.

This indicator is likely to inform park managers whether desired conditions are being achieved. It will also inform management activities, including the management of use levels delivered to different areas of the park. These factors highlight the importance and utility of this indicator.

Monitoring Strategy

To ensure a manageable monitoring load for this indicator, park staff will focus encounter rate monitoring in the Cerros del Abrigo, Redondo Foothills, Valle Jaramillo/Valle Seco, and Sulphur Canyon areas of the park. Other areas may be monitored as needed if visitor use changes in the future. The park’s trail crew, law enforcement, and volunteers will support the monitoring effort, and university partners may also be involved. The park’s chief of resources will compile and analyze the collected data. Park staff will select a group of trails for monitoring every three years, and those trails will be monitored for one season.

Management Strategies

- Encourage visitors to use lower-use trails within the park.
- Provide information online and through social media about other trails and visitor opportunities within the park.
- Collect information from visitors regarding their expectations and desired trail experiences.

- Provide trails data (distance, difficulty, trailhead location, etc.) to communicate trail alternatives to visitors.
- Restrict overflow parking on road shoulders at trailheads.

Adaptive Management Strategies

- Add physical barriers or trail modifications to encourage visitors to stay on designated trails.
- Identify new viewpoint areas along existing trails.
- Designate specific trails or trail segments as one-way.
- Create additional turnaround points to allow visitors to return to the trailhead via a new route or designated cutoff.
- Modify parking availability at specific locations.
- Offer ranger-guided programs on specific trails for groups.
- Manage transportation facilities and services (e.g., redesign trailhead parking or restrict commercially guided hikes).
- Require parties of more than 12 to obtain a special use permit.

Indicator 3

Indicator Topic: Vehicles Per Viewshed

Indicator: Number of vehicles in viewshed at one time

Thresholds: Thresholds for this indicator will be based on the location of each viewshed:

- **Valle San Antonio from Caldera Rim:** to be determined after baseline conditions are established
- **Cerro Abrigo (facing south):** to be determined after baseline conditions are established
- **Sulphur Creek Road (VC08) from atop San Antonio Mountain:** to be determined after baseline conditions are established

Rationale

This indicator provides park staff with an opportunity to understand the relationship between backcountry vehicle use levels and visitor experience. It would assist the park in protecting the desired visitor experience, which includes opportunities for solitude, low-use levels, and immersion in the park's fundamental resources and values. By operationalizing this indicator, the park has an opportunity to protect the remote and undeveloped character of the backcountry/self-reliance zone. The goal of this indicator is to maintain low traffic levels and high-quality visitor experiences while providing useful inputs to inform visitor capacities.

High use levels, especially high levels of motorized vehicle use, can degrade visitor experiences by detracting from the remote and undeveloped nature of an area. Currently, and in the past, motorized vehicle use in the backcountry has been low. Visitors generally find this experience desirable, and maintaining it aligns with the desired conditions for the backcountry/self-reliance zone.

It is important to note that this indicator does not consider bicycles, equestrian users, groups on foot, or other nonmotorized means of transportation. Instead, it focuses solely on maintaining low levels of motorized vehicle use. This is because vehicles are more visually disruptive than people, horses, bicycles, and other nonmotorized forms of transport. They are noisier, kick up dust, move at higher speeds, and can be seen from long distances. Even their presence signals human technology, disturbing the natural landscape. Measuring this indicator helps promote solitude and may minimize conflicts by addressing vehicle crowding along the road.

This indicator is intended to be applied to the general experience of traveling the road throughout the park's backcountry and does not address incident-related congestion, such as wildlife jams. The park would continue to manage incident-based congestion through separate strategies. This indicator may also enhance visitor safety by allowing park staff to monitor congestion levels on backcountry roads. Many roads in the park were not designed for public use, making two-way traffic difficult in some areas. There is also potential for private vehicles to damage roads and vegetation if they go off-road or are used too frequently.

The threshold associated with this indicator aims to protect the visitor experience and would apply to all areas of the road in the backcountry/self-reliance zone. Desired conditions state that this zone is not suitable for high-density activities or events. Desired conditions also state that visitors can expect to encounter only a limited number of other visitors or staff, but solitude is not guaranteed at all times. The thresholds that will eventually be set should allow opportunities for visitors to be immersed in the park's resources but still allow flexibility for multiple parties to move about the zone and provide high-quality experiences for multiple parties at once. Through ongoing monitoring, park staff will be able to gather valuable data that informs visitor capacities for the backcountry and thus identify reasonable visitor capacities in future planning efforts that not only maintain desired conditions but also balance various uses in the backcountry.

Monitoring Strategy

The number of motorized vehicles per viewshed observed along the road corridor will provide insight into vehicle density in the backcountry and how many vehicles visitors see as they navigate the park. This indicator will be valuable for maintaining quality visitor experiences. Although park managers believe current vehicle use meets desired conditions, more data are needed for informed management decisions. The park will need to establish baseline conditions for this indicator before identifying a threshold.

Park staff will spend one to two seasons collecting data and assessing whether conditions are meeting desired conditions. Once sufficient data are collected, park leadership will analyze the information and identify thresholds for the three locations that fall within the acceptable range of vehicles in the viewshed. This baseline data collection will also help park staff better define what is included in the viewshed.

After establishing baseline conditions, data would be collected periodically to ensure that the threshold is not exceeded. The park will use timed photographs and observational data at various points in the backcountry/self-reliance zone. Each photograph or in-person observation would count as one data point. Data collection will occur at least three times per year, varying the time of day and the specific location along the road. Park staff may also collect data on days when backcountry vehicle passes sell out.

Management Strategies

- Develop and implement a public information effort about the desired conditions for the park, the actions the National Park Service is taking to achieve those conditions, and how visitors can best experience the park. This information could be distributed through direct visitor contact, park publications, wayside exhibits, maps, social media, websites, and park partners. The goal would be to encourage visitors to self-disperse to approved sites or to visit during lower-use periods of the day or season.
- Use technology to provide real-time information on visitor use levels to visitors before and during their visits.
- Provide information on lower-use visitor destinations in the backcountry road corridor and encourage hikers to take specific routes during peak use times.
- Increase the availability of maps and signs about various destinations inside and outside the park.

Indicator 4

Indicator Topic: Soundscapes

Indicator: Percent of time during the sampling period when sounds with a frequency of 20–1,250 Hz exceed the area’s decibel threshold

Thresholds:

- History Grove: No more than 40% of daytime hours (7 a.m.–7 p.m.) with sound levels above 40 dB (LAeq, 1s)
- East Fork Jemez River: No more than 40% of daytime hours (7 a.m.–7 p.m.) with sound levels above 35 dB (LAeq, 1s)

Rationale

For this indicator, natural sounds are defined as all nonanthropogenic sounds, such as those produced by animals (biophony), wind, and water (geophony), as well as natural quiet. “Noise” refers to unwanted, human-created sounds that disturb or disrupt the desired acoustic conditions. This includes sounds generated by humans (e.g., voices, bear bells, or music) and machines (e.g., automobiles, aircraft, and construction noises).

This indicator would be used in History Grove, located in the visitor engagement zone. Soundscape desired conditions in this zone state that “natural sights and sounds are present but

may be interspersed with moderate noise.” The visitor engagement zone is characterized by opportunities for “interpretive opportunities; including informational exhibits indoors and outdoors,” and “diverse programming.” Visitors should expect a “high likelihood for encounters with people” and a “social setting.” Finally, the desired conditions state that although there is “some tolerance for impacts” caused by humans, “active monitoring and regular maintenance” will be used to manage these impacts. This indicator monitors the immersive quality of visitor experiences, the ability to experience natural ambient sound, and the degree of freedom from human noise disturbances.

Natural soundscapes have both a human experience and an ecological component. Visitors may seek places to enjoy time away from the sounds of development, while birds and other wildlife can be affected by the prevalence of anthropogenic noises (e.g., predator-prey relationships). For example, the cabin district area has a unique and remarkable soundscape that provides ecologically significant conditions for wildlife and a visitor experience that sharply contrasts with the commercially developed landscapes of urban and suburban communities.

This indicator focuses on the human experience of sound while also considering the ecological impacts of noise. It primarily measures human perception of noise disturbances. The indicator is focused on sounds in the frequency band of 20–1,250 Hz, as this range typically encompasses the sounds produced by humans (i.e., anthropogenic noise), while excluding high-frequency sounds like rustling leaves. The park is concerned with acoustic environments above 35 dB along the East Fork of the Jemez River, as this is the approximate level at which visitors begin to lose their perception of wilderness sounds and environments (McKenna et al. 2016).

The park’s acoustic monitoring report found that the median natural ambient sound level within History Grove is 34.5 dB (Job 2020). Managing to 40 dB in the History Grove allows the park to manage to natural sounds and maintain desired conditions while still providing flexibility in this frontcountry, nonwilderness area. This threshold is also useful as it is the sound level at which wildlife begin to change behavior or indicate disturbance (Shannon et al. 2016). The monitoring location on the East Fork Jemez River reflects the lower threshold and more sensitive nature of the backcountry soundscape.

This indicator focuses on typical daytime hours when the park is open to visitors and when monitoring sites are most likely to exceed the established threshold due to anthropogenic noise. It is critical for park staff to consider noise impacts on the natural settings and wildlife in the frontcountry.

The desired conditions for natural soundscapes acknowledge that there may be moderate levels of noise that interrupt the natural soundscape. Generally, the tolerance for frequent noise interruptions decreases as one moves away from the visitor engagement zone into the self-guided and backcountry/self-reliance zones. The selected threshold reflects this higher tolerance in more developed zones and considers fluctuations in visitor levels throughout the day.

Additionally, the acoustic monitoring report found that History Grove detected sounds of 20–1,250 Hz for an average of 38.4% of the sampling period from 7 a.m. to 7 p.m. (Job 2020). The park finds these sound levels acceptable and could withstand a 5% increase (to approximately 44%) while still meeting desired conditions. To remain well within desired conditions, park staff

identified a threshold of 40% of the time, allowing for swift management actions to address any soundscape issues. These fluctuations are typically temporary and result from varying visitation levels throughout the day.

Visitors should expect and accept a greater level of anthropogenic noise in frontcountry areas than in more remote areas of the park. This indicator may need to be adjusted and reconfigured as the frontcountry area potentially develops and if overnight use is ever considered within the park. Considerations may include updating the mean ambient noise level for the monitoring site given new visitation patterns, additional and different monitoring sites, and updated baseline conditions for monitoring sites.

Monitoring

Monitoring of this indicator would take place in History Grove at a location similar to those in the acoustic monitoring report. The park will need to gather baseline data and identify a specific location on the East Fork Jemez River. Monitoring will occur from 7:00 a.m. to 7:00 p.m. every day during the summer season. These hours align with the park's operating schedule, plus a two-hour buffer on each end. This will maintain a meaningful indicator if park hours expand in the future. The park anticipates that visitation will grow during the lifespan of this plan, and annual monitoring will enable informed decisions regarding visitor use management strategies and wildlife considerations.

This monitoring will occur annually for the first three to five years. The frequency may decrease in the future as more data are collected (e.g., once every two to three years). Data will be processed using automated acoustic monitoring software. They may be analyzed through a focused condition assessment, with help from the NPS Natural Sounds and Night Skies Division whenever appropriate. The park would work with the division to identify the best methods for conducting monitoring approximately every five years and may request technical assistance.

Management Strategies

- Continue to provide education and outreach to visitors about natural sounds.
- Continue to determine ways to stop using noisy operational equipment when the public is present or limit its duration, timing, or frequency of operation.
- Consider relocating interpretive programming sites in the cabin district.
- Temporarily move exhibits indoors during busy hours.
- Explore an alternative schedule (e.g., increasing the time between programs) for activities that cause visitors to gather and make noise.
- Consider identifying and designating key areas as “quiet zones” through signs and interpretation. Encourage visitors to be quiet enough to hear natural sounds in these areas. Promote respectful behavior, such as avoiding shouting, loud conversations, or other excessive noise.

- Add information to the park's website and other outlets about the importance of the natural soundscape.

Adaptive Management Strategies

- Replace NPS operational equipment with quieter alternatives when available.
- Identify human-made sounds that can be reduced or eliminated through mitigation measures.
- Facilitate and encourage quieter winter recreational activities.

OTHER RELATED MONITORING

Water Quality: Nitrate Levels in Stream Water and Groundwater

Monitoring water quality is essential for informing park staff about various functions and responsibilities. It helps with ecosystem degradation, environmental health, wetland restoration, and public health. Water quality is generally good within the park. However, staff recognize that much of the area is still recovering from a century of logging and various wildfires.

Multiple metrics exist for measuring water quality. But the levels of nutrients (nitrogen, nitrate, nitrite, and phosphorus), the presence of *E. coli*, and total petroleum hydrocarbons are most closely associated with humans. Therefore, these metrics are valuable tools for determining visitor use patterns. Nitrate levels may increase in the water for various reasons, including manure from trespassing cattle and fecal matter from visitors, horses, and other domestic animals.

Maintaining good water quality is also essential for potential new park infrastructure. The park currently has no system for potable water outside of filling water tanks. By understanding water quality, park staff can make more informed decisions about resources and visitor use related to the rivers and streams in the park. Water quality checks would be performed both upstream and downstream of the septic system to provide a baseline comparison. The park may also check water quality at existing points along the river or at any other problem spots identified by staff. As of 2023, the park was documenting water quality trends through a series of eight water quality monitors and 22 water quality gauging stations.

Park staff are committed to monitoring water quality, especially nitrates, because maintaining high water quality is essential for both wilderness and wild and scenic river designations. Although neither designation currently exists in the park, staff are interested in pursuing these designations in the future. Additionally, the state of New Mexico has designated segments of the East Fork Jemez River, San Antonio Creek, and Redondo Creek as outstanding national resource waters. This state designation aligns with the park's commitment to managing eligible rivers and creeks to maintain the values that qualify them for inclusion in the national wild and scenic rivers system. Despite lacking these designations, maintaining these standards means that natural resources are cared for based on outstanding qualities, contributing to a positive visitor experience.

Potential Monitoring and Management Strategies

- Define baseline conditions based on monitoring done from 2005 to 2023 (or any future point). Data exist for nitrate, phosphorus, and other nutrients from grab sampling conducted between 2005 and 2014. A baseline can be defined for total nitrogen, nitrate plus nitrite, and total phosphorus.
- Define trigger points for contamination based on EPA guidelines.
- Define a future visitor use management monitoring network and alter the current data collection network to better define visitor use management objectives and monitoring.

Wildlife Impacts: Amount of Garter Snake and Prairie Dog Roadkill Observed Over a Season

Park management is concerned that increased vehicle traffic in the park may lead to impacts to wildlife, including vehicle-wildlife collisions. Two species of particular concern are prairie dogs and garter snakes, though other wildlife like squirrels and chipmunks may also be affected, especially if roads are rerouted. The prairie dog population is a concern due to their limited breeding window; every mortality reduces the total population. Although it is unlikely that vehicle collisions would threaten the overall population, the Gunnison prairie dog is a state species of concern. They are particularly vulnerable and sensitive to changes in visitor use and traffic levels because they have not evolved with cars and do not know to avoid them.

Prairie dog and garter snake carcasses do not remain on roads for long, as they are quickly consumed by scavengers. It is likely that park managers see only a small proportion of the overall level of roadkill, leading to uncertainty about how many animals are actually killed on park roadways. Changes in the observed amount of roadkill could be more related to observational methods or scavenger activity. Preventing roadkill is important for achieving desired conditions that prioritize natural wildlife behavior over visitor activities, while allowing for some constrained human disturbance in the self-guided zone.

Potential Monitoring and Management Strategies

- Consider installing box culverts for prairie dogs.
- Reduce speed limits in sensitive habitats.
- Post signs to remind visitors to look out for small wildlife.

Trail Conditions: Extent of Trail Widening, New Social Trails, and Vegetation Trampling

The park would monitor trails for social trailing, braiding, increasing width, increasing incision, muddiness, and other concerns. This qualitative monitoring could inform the park about potential trail issues related to the park's environment and local visitor use patterns. For example, many of the park's trails, both current and planned, were once logging roads and are typically much wider than other wilderness-style trails. This may deter visitors from creating social trails. Given the unique nature of the trail system at Valles Caldera National Preserve, park staff will need to monitor how visitor use affects trail quality and experiences based on

specific factors in the park. The prevalence of certain issues in specific areas may help staff understand how visitor use impacts trails and aid in developing a future indicator in a trail management plan.

Potential Monitoring and Management Strategies

- Use interpretive programming in the visitor engagement zone to educate and encourage visitors to stay on designated trails.
- Provide Leave No Trace education when issuing backcountry permits to visitors.
- Address trail drainage, vegetation overgrowth, and fallen tree concerns with trail crews and volunteers as they arise to limit trail widening.
- Use trail edges or a natural trail border and camouflage social trails to reduce oversized trails to acceptable widths.
- Investigate further planning opportunities, including a trail management plan.

APPENDIX C: VISITOR CAPACITY

VISITOR CAPACITY OVERVIEW

This appendix provides information about visitor capacity identification as it relates to the Interagency Visitor Use Management Council's (IVUMC) Visitor Use Management (VUM) Framework. Visitor use management is the proactive and adaptive process of planning for and managing the characteristics of visitor use and its physical and social setting. This process uses various strategies and tools to sustain desired resource conditions and visitor experiences (IVUMC, 2016). Within this framework, desired conditions, indicators and thresholds, and management strategies have been developed as part of this general management and development concept plan.

Another component of the VUM framework is the development of visitor capacities. The IVUMC defines visitor capacity as the maximum amounts and types of visitor use that an area can accommodate while achieving and maintaining the desired resource conditions and visitor experiences consistent with the purposes for which the area was established. By managing the amounts and types of use, the National Park Service can help ensure that resources are protected and that visitors have the opportunity for a range of meaningful experiences. Identifying visitor capacity is also directed by legal mandates requiring the National Park Service to identify and implement commitments for visitor capacities for all areas of a park unit per the National Parks and Recreation Act of 1978 (IVUMC 2016, 2019).

Following guidance from the Interagency Visitor Use Management Council, the level of analysis during visitor use management planning and visitor capacity identification is determined on a sliding scale. This scale depends on the complexity and context of the plan. The sliding scale ensures that the investment of time, money, and other resources for identifying visitor capacity is commensurate with the complexity of the project and the consequences of the decision. It focuses on four criteria: issue uncertainty, impact risk, stakeholder involvement, and level of controversy/potential for litigation (IVUMC 2016). Future monitoring of use levels and indicators will inform the National Park Service if use levels are nearing visitor capacities.

The visitor capacities will inform management strategies for all parts of the project area. Management strategies are identified to prevent visitor capacities from being exceeded and are adaptively implemented in response to monitoring data and changes in conditions. The visitor capacities for both analysis areas below also include adaptive management strategies. Changes to management strategies will be considered if strategies are ineffective and evidence shows that conditions are trending away from desired conditions or are approaching the identified visitor capacity for that analysis area. Details of future and adaptive management strategies would be developed as needed to ensure the most effective approach is implemented. The impacts of these future management strategies would be analyzed in future compliance as necessary.

For the two analysis areas identified by the project team, an overview of the setting and relevant existing direction and knowledge, such as visitor use issues and current use levels, is described. The limiting attributes that most constrain use are then identified, followed by the visitor capacity.

This section of the plan outlines the considerations and process used to identify visitor capacities. This analysis uses the best available information to make the decision for current management of visitor use. Should there be meaningful changes, such as those outlined below, the park may reevaluate and update the visitor capacity. The criteria that may warrant reevaluation or updates to management strategies include

- evidence that thresholds are being approached,
- evidence that park conditions are trending away from desired conditions,
- meaningful new knowledge or understanding of the relationship between visitor use and impacts on resources or visitor experiences, and
- changes to the desired conditions.

PROCESS FOR IDENTIFYING VISITOR CAPACITIES

The planning team identified visitor capacities using best practices, data, and input from resource experts. The approach for developing visitor capacities followed established best practices. For more information, visit <https://visitorusemanagement.nps.gov/VUM/Framework>. The interdisciplinary planning team followed a recommended process to identify visitor capacity:

1. Determine the analysis areas
2. Review existing direction and knowledge
3. Identify the limiting attribute
4. Identify visitor capacity

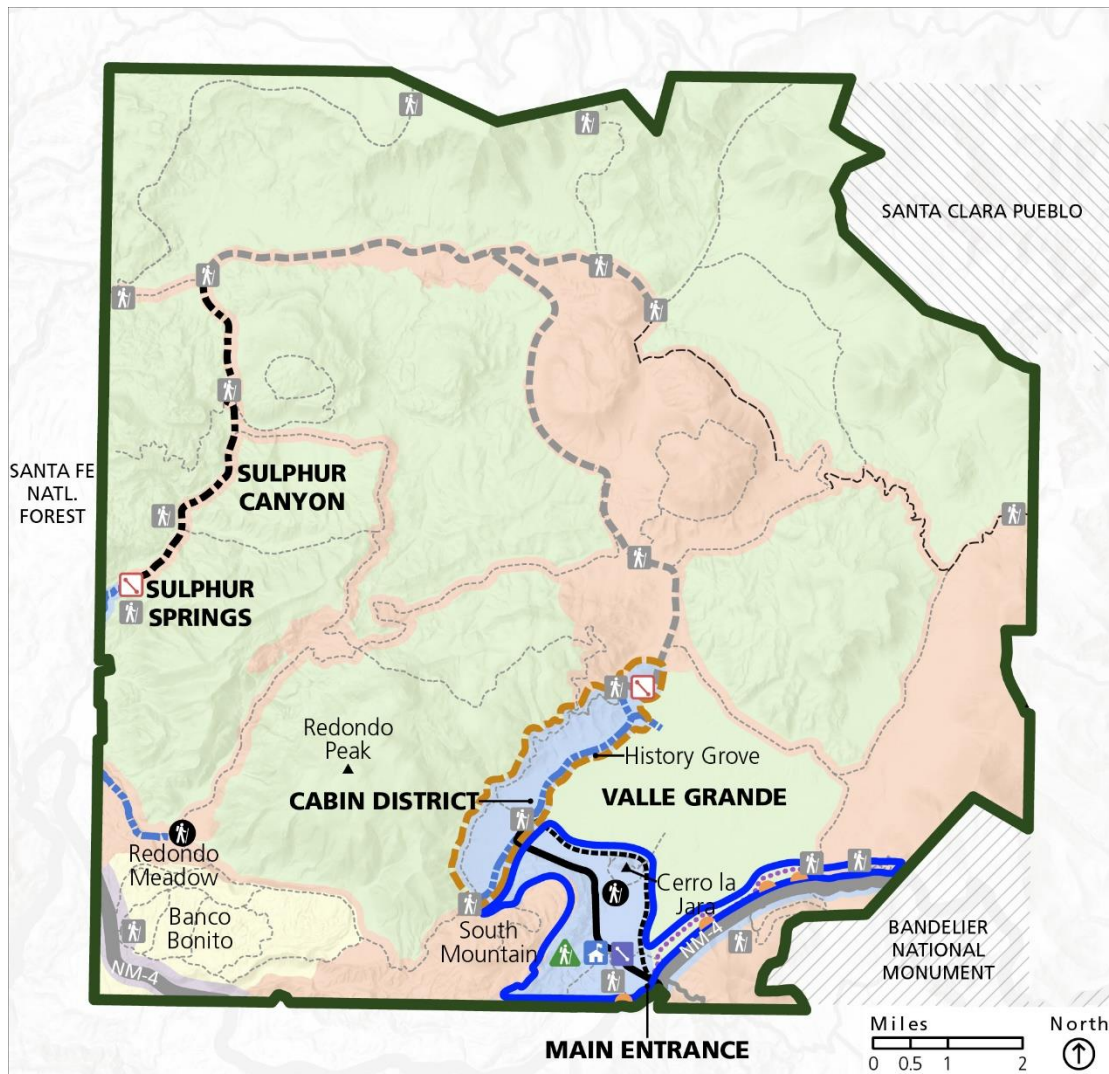
The team considered all potential attributes that would constrain each area's ability to accommodate use and determined which were most meaningful for guiding the analysis. The results of this process are described below.

Determine the Analysis Areas

Analysis areas are the areas where visitor capacities can be meaningfully identified and managed given the relationship of current or anticipated use patterns to desired conditions. For these locations, a detailed analysis has been conducted to identify the appropriate level of use. For each analysis area, an overview of the setting, relevant indicators, visitor use issues, current use levels, and visitor capacity identifications are described. This guideline involves identifying where the visitor capacity will be implemented. Two geographic analysis areas (shown on map 7) were identified that can be meaningfully evaluated given sufficient information as part of this planning process:

- Analysis Area 1: South Valle Grande District
- Analysis Area 2: North Valle Grande District

Map 7. Visitor Capacity Analysis Areas



LEGEND

	Park Boundary		Proposed Multiuse Trail (Accessible, Unpaved)		Visitor Engagement Zone
	Proposed Public Road (Paved)		Proposed Visitor Service Area		Self-Guided Zone
	Existing Public Road (Permit Required, Unpaved)		Existing Trailhead		Backcountry/Self-Reliance Zone
	Proposed Public Road (Permit Required, Unpaved)		Formalize Existing Trailhead		Sée Wāak'î Tùukwā - Banco Bonito Visitor Engagement Zone
	Proposed Public Road (Unpaved)		Proposed Trailhead		Sée Wāak'î Tùukwā - Banco Bonito Aboriginal Use Zone
	Existing Trail		Proposed Entrance Gate		North Valle Grande District Analysis Area
	Minor Trail Relocation		Proposed Backcountry Gate		South Valle Grande District Analysis Area
	Proposed Boardwalk		Improve Existing Road Pulloff		

Backcountry Vehicle Pass System

As described in chapter 3, park management of the backcountry includes a vehicle pass system with a quota of 35 vehicles per day. Under this plan, the backcountry will continue to be managed with the vehicle pass system as it currently operates. Park managers will maintain a quota of no more than 35 vehicles per day in the backcountry. Although this plan includes managing the number of vehicles per day in the backcountry, visitor capacities for areas in the backcountry/self-reliance zone and other areas of the park have not yet been identified.

The backcountry vehicle pass system and quota could be updated through future planning. This would be consistent with the NPS planning portfolio approach and may include an implementation-level backcountry planning process or an amendment to this plan. Information about the effectiveness of the quota could also inform future visitor capacity identification for the backcountry.

Review Existing Direction and Knowledge

A review of existing direction and knowledge includes applicable laws and policies, prior planning and guidance, existing conditions, monitoring data, and current management strategies. This review also considers relevant desired conditions for both resources and visitor experiences in the analysis areas.

To determine the appropriate amount of use for each analysis area, planning team members reviewed visitor use issues and data for current conditions compared to desired conditions. Over the last four years, annual visitation to the park has averaged 75,000 people. Data from 2020 are excluded from this analysis due to impacts from the COVID-19 pandemic. Although there has been some variation in monthly visitation patterns from year to year, September and October are typically the busiest months. They have had an average monthly visitation of around 10,000 over the last three years. During these months, average daily visitation is 327 people per day. Overall, these use levels are low, with few significant visitor use issues tied directly to current use levels. However, data on visitor use patterns are limited. The data needs outlined in this plan will assist in further refining visitor capacities as part of future planning.

Identify the Limiting Attribute

This guideline requires the identification of the attribute(s) that most constrains the analysis area's ability to accommodate visitor use. Given that use areas can experience a variety of challenges regarding visitor use, there can be more than one limiting attribute. The limiting attributes vary across the analysis areas and are described below under each analysis area.

Limiting attributes for this plan were based on possible issues that might occur, however, current use levels are not presenting significant issues. Additional monitoring will identify if there are other limiting attributes that might be influential to how the National Park Service manages use levels. For example, a limiting attribute not identified in this planning process could be the discovery of a rare plant or impacts to a cultural site due to sudden changes in visitor use levels and patterns.

Identify Visitor Capacity and Implementation Strategies

This guideline involves identifying visitor capacities and the strategies to manage within these capacities. To identify visitor capacities, the outputs from the previous three steps were reviewed. They helped the team understand current conditions and identify the maximum levels of visitor use that will maintain and achieve desired conditions for the South Valle Grande District and the North Valle Grande District. Capacity identification varies by analysis area. A range of management strategies that will be most effective in implementing visitor capacities is outlined below.

Overall, the additional opportunities outlined in the plan are expected to support growth in visitation that aligns with desired conditions. Currently, visitor use data to directly inform visitor capacities are limited. With further monitoring and data collection, along with anticipated growth in visitation, the park will evaluate and refine visitor capacities as part of future planning.

IDENTIFICATION OF VISITOR CAPACITY AND IMPLEMENTATION COMMITMENTS BY ANALYSIS AREA

Visitor capacity considers the amount and types of visitor use, including the timing and distribution of activities and behaviors as they relate to desired conditions. It also takes into account management objectives, desired conditions, and other management actions for an area. The following section presents the analysis for each area, using the process described above. The outcome is the identification of a visitor capacity for each analysis area and associated strategies for implementing that capacity.

Analysis Area 1: South Valle Grande

Area Description: South Valle Grande District

The first analysis area includes various structures, administrative and visitor areas, and limited amenities. This area currently attracts the majority of visitors to the park. It comprises the entire visitor engagement zone east and south of the VC02 road, which divides the visitor engagement zone just south of the cabin district. This area includes the VC01 entrance road (the outcomes of this analysis were the same pre- and post-realignment), the existing road corridor along NM-4, and the pullouts along the NM-4 road corridor adjacent to the Valle Grande. NM-4 itself is not included because the park does not have jurisdiction over the road. Several trailheads exist in this area, but they are not part of the analysis area.

This area is where visitors are most likely to interact with park staff for orientation and educational opportunities. It also provides a social experience with other visitors. The main entrance of the park is located here, and this is where most visitors begin their experience of Valles Caldera National Preserve. It sits in the southern part of the park, where backcountry visitors enter and pick up permits before continuing their journey.

Existing Direction and Knowledge

As this is the main visitor services area, park staff estimate that most visitors pass through this it. Common existing activities include photography, bird watching, hiking, equestrian use, biking, picnicking, and interpretive programming. These uses may increase if park visitation levels rise.

Potential future uses in this area include indoor and outdoor visitor contact areas, restrooms, and exhibits. This area serves as a hub for various visitor experiences, including hiking, ABAAS-compliant fishing access, and four-season recreation.

Park staff estimate that the busiest times are from 10:00 a.m. to 3:00 p.m., with most visitors spending approximately 30 to 90 minutes during their visit. This figure does not include visitors who obtain a vehicle pass for the backcountry or those who hike or bike into the park from other access points. Weekends and holidays typically see higher use levels, but crowding and congestion are rare. Park staff observations identify this analysis area as the busiest part of the park. Currently, on weekdays, visitors can usually expect a relatively uncrowded experience.

There are some key desired conditions for the visitor engagement zone that inform capacity determinations for this analysis area:

- Easy-to-reach areas with higher visitor use and density than other parts of the park;
- Opportunities for visitors to experience, appreciate, and connect with park resources in a more developed setting;
- Infrastructure that accommodates higher visitor use and density for both visitors and employees while harmonizing with the natural and cultural character of the various settings within the zone.

Concerns related to visitor use in this analysis area include safety issues, congestion, and impacts on the visitor experience. This area experiences vehicle queuing at the entrance station and traffic safety concerns, as traffic can spill onto NM-4. This typically occurs a few times per year during special events, which can attract approximately 1,000 visitors. These vehicle queues and traffic congestion increase the risk of collisions, especially when vehicles travel at high speeds. Although these situations are infrequent, the potential for risks and accidents is high, and park staff must prioritize visitor safety during peak visitation.

Informal pullouts within the park boundary along NM-4 are used by visitors to cross the highway on foot for different views, posing safety concerns. Additionally, an influx of cars can lead to congestion in existing parking areas, making it difficult for visitors to find adequate parking. This congestion can negatively impact the visitor experience when individuals cannot observe a particular viewpoint or enjoy specific experiences due to crowding or parking issues.

Currently, temporary parking lots are used for special events, but staff will need to find alternative locations under the management actions in this plan. New locations have not yet been identified, but park staff would prioritize previously disturbed areas to minimize resource impacts and avoid areas near archeological sites, wetlands, habitats for threatened and endangered species, and other sensitive resources. The use of future temporary parking lots would be analyzed for environmental compliance as needed.

There are both cultural and natural resource concerns in the area. Increases in visitor use could contribute to natural resource issues. This analysis area is adjacent to wetlands and riparian areas, and increased use may harm these areas due to excess litter and vehicles parking or driving in unauthorized areas.

From a cultural resource perspective, issues exist around theft of irreplaceable resources. For example, a number of lithic sites exist within the analysis area, but they are unmarked and not easy to find. It is possible that an increase in visitor use could accelerate erosion and force these sites to shift; with current visitor use levels, these resources are less sensitive to damage. The road realignment may impact cultural resources like archeological sites. The new route is likely to place visitors in closer proximity to known sensitive sites, which may not increase impacts if the presence of those sites is not disclosed and if measures are taken to deter or redirect foot traffic.

The proposal to convert the existing entrance road into a multiuse path could bring visitors out of their vehicles and closer to sensitive sites. This situation could be a concern but can be managed if the locations of resources are protected. These issues already exist in the park and may continue in this relatively small analysis area. This risk affects the ability of park staff to achieve desired conditions. To address this, the park has created an indicator related to the density of obsidian flakes at key sites based on baseline conditions. This will help determine whether flake density is impacted by visitor use.

Limiting Attributes

Several limiting attributes exist, including protecting visitor safety, providing a meaningful visitor experience, safeguarding sensitive riparian areas, and preserving the abundance of lithic sites scattered throughout the analysis area. As described above, various issues are associated with possible visitor safety concerns and related impacts on visitor experiences, particularly with increasing use. These issues can hinder visitors' ability to move around the area with ease and spontaneity. They can also affect visitors' ability to fully experience and connect with the park's resources.

The principal concern related to the adjacent riparian areas is the protection of sensitive species. Although these areas are not technically within this analysis area, visitors can easily wander into them, creating natural resource and wildlife concerns. These riparian areas serve as habitat for the New Mexico meadow jumping mouse, a federally endangered species. Additionally, there may be suitable habitat for the Jemez Mountains salamander along NM-4 near the Rabbit Mountain trailhead.

In terms of cultural resources, lithic sites are a concern because the area contains many small artifacts that visitors may potentially remove. These nonrenewable resources are irreplaceable and play a vital role in preserving and telling the history of the area. The removal of these artifacts has the potential to damage fundamental park resources.

Capacity Identification

Based on the review of existing direction and knowledge, desired conditions, and limiting attributes, NPS staff identified a visitor capacity of 2,500 people per day within Analysis Area 1: South Valle Grande District. This capacity would allow for an increase from current use levels. Given the limiting attributes and the absence of current impacts to those resources at current use levels, park managers believe that both current and increased levels of use can be accommodated. This identified capacity not only supports potential growth in overall visitation

but also provides decision-making flexibility for park managers while maintaining desired conditions if visitation patterns change.

This plan also includes strategies to support and manage additional use to maintain and achieve desired conditions. The planning team anticipates that this level of use would align with desired conditions. However, careful monitoring of the identified indicators (see Appendix B) will be necessary as use patterns change over time. This may reveal a limiting attribute not evident at the current relatively low use levels.

Visitor Capacity: No more than 2,500 people per day

Adaptive Implementation Strategies

- Provide pop-up interpretive services and information in additional areas.
- Further improve wayfinding and orientation throughout the Valle Grande District.
- Seasonally close pullouts and areas near sensitive species and habitats.
- Add more information to the park website about visitor use opportunities in this area (e.g., trails and programs).
- Temporarily reassign staff to key areas during peak visitation in busy seasons.

Analysis Area 2: North Valle Grande District

Area Description

This analysis area consists of the remainder of the visitor engagement zone in the Valle Grande District. It encompasses the area adjacent to and including the North Valle Grande Road (VC02) and extends from South Mountain to the backcountry gate on the northern end. This area features visitor attractions such as the cabin district and History Grove. It serves as the gateway to the park's backcountry and is typically less busy than the South Valle Grande District. Park staff believe the North Valle Grande District will continue to have lower visitation levels, although certain visitor activities are likely to persist. Typical uses are hiking, biking, picnicking, and interpretive programs. Winter activities may include snowshoeing and cross-country skiing. Currently, this area has seasonal employee housing.

Existing Direction and Knowledge

This area receives less visitation than the South Valle Grande District for several reasons. It is located farther into the park, and visitors must take a dirt road to access it. Similarly to the South Valle Grande District, desired conditions for this area consist of a social setting with a high likelihood of encounters with other people. Specific desired conditions that inform capacity for this analysis area state that the historic setting of key cultural properties and adjacent landscapes should be retained. Some alterations may be needed for visitor infrastructure and services or to maintain or restore natural processes. Natural wildlife behavior should be protected, though some limited effects may occur in areas with concentrated visitor use and facilities. Natural sights and sounds should be present but may be interspersed with moderate noise and anthropogenic light levels.

One primary issue related to visitor use in this area is perceived crowding, particularly with an increase in visitation. This area cannot and is not planned to accommodate concentrated visitation compared to the South Valle Grande District. The goal here is to retain the characteristics of a remote outpost and the historic character of the area. Although crowding and visitor conflict are not currently issues, park staff are concerned they could become problematic if visitation increases substantially.

Natural resource concerns related to visitor use in this area are negative human-wildlife interactions, the introduction of invasive plant species, and erosion. Cheatgrass, knapweed, and star thistle are invasive species of concern. Visitors may intentionally or unintentionally feed wild animals, affecting their habitat, fitness, and overall health. An increase in visitation may also introduce other invasive plant species. These may outcompete native vegetation and alter the ecosystem. More visitors and their vehicles may cause erosion if they park or drive in unauthorized areas.

Park staff have identified two potential issues for natural resources as visitation increases. This analysis area is considered potential habitat for the Mexican spotted owl, although none have been observed in the area. Increased visitation may disturb the habitat or prevent owls from using it. Additionally, this area contains old-growth ponderosa pines, which may be damaged by visitors as use increases. Although these issues are possible, park staff believe they can be mitigated through the identified management strategies.

Cultural resource concerns are mainly artifact theft and damage to historic cabins. Similarly to the South Valle Grande District, there are lithic sites here, and visitors may remove sensitive artifacts from these sites. Visitors may also intentionally or unintentionally damage the historic cabins in this area as visitation increases.

Limiting Attributes

The most limiting attributes of this area are the fundamental resource of the historic setting of the cabin district and the protection of wildlife and natural vegetation. Supporting meaningful visitor experiences could become a limiting attribute in the future if use increases. The structures in the cabin district are eligible for the National Register of Historic Places, and preserving them is essential for this eligibility. Maintaining the integrity of the cabin district is critical for preserving the area's history and providing quality visitor experiences. The conditions of the cabins and their contributing elements vary, but staff aim to maintain their current conditions to ensure meaningful experiences and effective resource protection. Increased use in this area could lead to crowding, conflicts, and impacts on natural soundscapes. Visitor-wildlife interactions may rise, and the area may lose more lithic resources.

Capacity Identification

Based on the review of existing direction and knowledge, desired conditions, and limiting attributes, NPS staff identified a visitor capacity of 400 people at one time in Analysis Area 2: North Valle Grande District. This capacity would allow for an increase from current use. This capacity utilizes the metric of people at one time because visitors to the South Valle Grande District do not necessarily visit the North Valle Grande District. Visitors also tend to spend less time in this area. By aiming for a specific number of visitors at one time, park staff can better

maintain the integrity of the cabin district. This capacity metric allows for more use over a broader period. Given the limiting attributes and the absence of current impacts at current use levels, park managers believe this level of use can be accommodated.

This plan also includes strategies to improve management of use levels, patterns, and visitor behaviors to maintain and achieve desired conditions, particularly for sensitive natural and cultural resources. This level of use is anticipated to align with desired conditions. However, careful monitoring of the identified indicators (see Appendix B) will be necessary as use patterns change over time. This monitoring may reveal a limiting attribute that is not evident at the current relatively low use levels.

Visitor Capacity: No more than 400 people at one time

Adaptive Implementation Strategies

- Encourage dispersed use in the North Valle Grande District.
- Improve wayfinding and orientation throughout the North Valle Grande District.
- Add information to the park website about visitor use opportunities in this area (e.g., trails or programs).
- Temporarily reassign staff to key areas during peak visitation in busy seasons.

APPENDIX D: REFERENCES

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APPENDIX E: 2024 SETTLEMENT AGREEMENT WITH JEMEZ PUEBLO

SETTLEMENT AGREEMENT
in *Pueblo of Jemez v. United States*,
U.S. District Court (D.N.M.) Case No. 1:12-cv-00800
U.S. Court of Appeals for the Tenth Circuit Nos. 13-2181, 20-2145

This Settlement Agreement (“Agreement”) is made as of October 16, 2024 (“Execution Date”) between the Pueblo of Jemez (“Jemez”) and the United States (collectively, “Parties,” each of which may be referred to individually as “Party”).

WHEREAS, on July 20, 2012, Jemez sued the United States in the United States District Court for the District of New Mexico in a suit captioned *Pueblo of Jemez v. United States*, Case No. 1:12-cv-00800.

WHEREAS, on September 24, 2013, the district court entered judgment dismissing Jemez’s suit for lack of jurisdiction for reasons stated in an unreported decision. 2013 WL 11325229.

WHEREAS, on June 26, 2015, the United States Court of Appeals for the Tenth Circuit reversed the district court’s judgment and remanded the suit for further proceedings in an opinion reported at 790 F.3d 1143.

WHEREAS, on August 30, 2019, following a bench trial, the district court issued a Sealed Memorandum Opinion, Findings of Fact, Conclusions of Law, and Order, ECF No. 398, and entered Final Judgment, ECF No. 399. *See Pueblo of Jemez v. United States*, 430 F.Supp.3d 943 (D.N.M. 2019) (redacted public version).

WHEREAS, on August 17, 2020, the district court ruled on Jemez’s Motion for Reconsideration in its Sealed Memorandum Opinion and Order, ECF No. 458, granting the motion in part but making no change in the 2019 Final Judgment. *See Pueblo of Jemez v. United States*, 483 F.Supp.3d 1024 (D.N.M. 2020) (redacted public version).

WHEREAS, on March 22, 2023, the Tenth Circuit issued an Opinion and Judgment that “conclude[d] that the Jemez Pueblo has continuing aboriginal title to Banco Bonito” and as a result “reverse[d] in part the denial of the Jemez Pueblo’s motion for reconsideration” on that issue, but “affirm[ed] as to all other issues raised.” *Pueblo of Jemez v. United States*, 63 F.4th 881, 899 (10th Cir. 2023) (“*Jemez II*”). The Tenth Circuit entered Judgment that same day, directing that “[t]he case is remanded to the United States District Court for the District of New Mexico for further proceedings in accordance with the opinion of this court.”

WHEREAS, the Tenth Circuit extended the deadline for rehearing petitions and withheld its mandate to allow Jemez and the United States to engage in settlement discussions.

WHEREAS, the Parties engaged in settlement discussions under the auspices of the Tenth Circuit Mediation Office, during which discussions both Parties have been represented by counsel.

WHEREAS, Banco Bonito is of great cultural significance to Jemez, which desires that the natural character of the area continues to be preserved and the Pueblo's use be protected.

WHEREAS, the Parties have negotiated a settlement that they consider to be a just, fair, adequate, and equitable resolution of the dispute at issue in this litigation, and that is not intended by the Parties to impair any existing rights of other tribes or pueblos.

WHEREAS, nothing in this Agreement constitutes an admission of liability by any Party or an admission of any fact relevant to the pending litigation.

WHEREAS, the Parties, intending to be bound by this Agreement, agree as follows:

I. DEFINITIONS

These definitions apply for purposes of this Agreement only and do not constitute admissions by either Party of fact or law, and in particular do not necessarily reflect the Parties' understanding of the holdings and judgment of the district court or Tenth Circuit in this matter.

- A. "Administrative Actions" means activities deemed necessary by the National Park Service to respond to emergency situations and to conduct routine land management activities including but not limited to forest salvage, boundary management, fence maintenance, resource monitoring, abatement and prevention of disease, insect, infestation, fire or natural disaster.
- B. "Banco Bonito" means that part of a geographical landform located in the southwestern corner of the Valles Caldera that lies within the Valles Caldera National Preserve, as depicted on the map attached hereto as Exhibit A, which the parties agree will be further defined by agreed upon GPS coordinates.
- C. "Culturally Associated Tribes" means tribes or pueblos that have exercised cultural or religious practices, or maintained cultural or religious sites, within the Preserve at any time prior to the Execution Date of this Agreement.
- D. "Indian tribe" has the meaning given in 25 U.S.C. § 5304(e).
- E. "Jemez" or "Pueblo" means the Pueblo of Jemez.
- F. "NPS" means the National Park Service, a bureau of the United States Department of the Interior.
- G. "Parties" means both Jemez and the United States, and "Party" may refer to either Jemez or the United States.

- H. “Preserve” means the Valles Caldera National Preserve as defined in the Preserve Act and any property within the exterior boundaries of the Preserve acquired by the United States after enactment of the Preserve Act.
- I. “Preserve Act” means Section 3043 of the National Defense Authorization Act for Fiscal Year 2015, Pub. L. No. 113-291, 128 Stat. 3792–3798 (Dec. 19, 2014), codified at 16 U.S.C. § 698v-11.
- J. “Secretary” means the Secretary of the Interior.

II. RIGHTS IN BANCO BONITO AND THE PRESERVE

- A. Banco Bonito shall remain part of the Preserve. Subject to the Preserve Act and other applicable statutes and regulations, the Secretary, acting through the NPS, shall continue to manage Banco Bonito, while meeting the obligation to recognize Jemez’s rights set forth in this Agreement.
- B. To the extent consistent with the Preserve Act and other applicable statutes and regulations, Jemez has the right to occupy and use Banco Bonito for traditional cultural or religious purposes without obtaining NPS authorization. These rights comprise:
 - 1. the use, hunting, or gathering of animals, plants, wood, water, and other natural resources for a noncommercial purpose;
 - 2. the gathering of wild or native foods, materials for paints and medicines and other resources traditionally gathered for ceremonial or religious purposes;
 - 3. visiting sacred trails and places and conducting traditional religious practices; and
 - 4. all other rights provided in the Preserve Act that do not require NPS authorization.
- C. Notwithstanding Paragraph B, federal authorization may be required for Jemez to access Banco Bonito across other federal lands, and for any activities outside of Banco Bonito.
- D. Jemez and other tribes and pueblos (including but not limited to Culturally Associated Tribes) retain existing rights to access and use Banco Bonito consistent with the Preserve Act; other applicable statutes and regulations; the policies of NPS and other federal agencies; and the terms of this Agreement.
- E. The general public retains existing rights to access Banco Bonito consistent with the Preserve Act; other applicable statutes and regulations; the policies of NPS and other federal agencies; and the terms of this Agreement.
- F. This Agreement shall not be interpreted in a manner that impairs any existing rights of a non-Party. In particular, nothing in this Agreement shall affect the right-of-way for State Route 4 across and into Banco Bonito.

- G. Consistent with NPS's ongoing efforts to develop a management plan for the Preserve, and subject to the Preserve Act and other applicable statutes and regulations, NPS agrees with respect to Banco Bonito to:
1. amend the Preserve's "Foundation Document" to recognize that the NPS manages lands to which the Tenth Circuit has ruled that Jemez holds aboriginal title and that such lands contain cultural and natural resources of significance and value to Jemez and its members;
 2. incorporate into the General Management Plan process Jemez's rights as described in this Agreement;
 3. unless otherwise explicitly agreed to by Jemez, NPS will not proceed with any not yet implemented, proposals, programs and activities for Banco Bonito (except Administrative Actions), such as proposals to construct a campground, a hiking trail along the rim of the Valles Caldera that would cross Banco Bonito, bike trails, or any additional hiking trails;
 4. acknowledge that programs, services, functions and activities, or portions thereof, administered by NPS for Banco Bonito have special geographic, historical, and cultural significance to Jemez pursuant to section 403 of the Indian Self Determination and Education Act (ISDEAA); consider Jemez's rights as described in this Agreement when exercising NPS's discretion to enter into annual funding agreements under Title IV of ISDEAA for activities in Banco Bonito; and consult with Jemez if any other tribe proposes to enter annual funding agreements with the NPS in Banco Bonito under Title IV of ISDEAA;
 5. consult and coordinate with Jemez before engaging in any archeological or ethnographic work on Banco Bonito;
 6. close, in accordance with 16 U.S.C. § 698v-11(b)(11)(B)(ii), any part of Banco Bonito to public access temporarily upon the request of Jemez so that Jemez can engage in traditional and cultural practices in Banco Bonito without oversight by the United States or interruption by non-Pueblo members; provided that, if the proposed closure "is of a nature, magnitude and duration that will result in a significant alteration in the public use pattern of the park area, adversely affect the park's natural, aesthetic, scenic or cultural values, require a long-term or significant modification in the resource management objectives of the unit, or is of a highly controversial nature," the NPS cannot implement a closure absent rulemaking pursuant to 36 C.F.R. § 1.5(b); and
 7. not authorize commercial timber production, commercial mining or mineral production, or other commercial or industrial development on Banco Bonito.

- H. Consistent with NPS's ongoing efforts to develop a management plan for the Preserve, NPS agrees with respect to those parts of the Preserve other than Banco Bonito to:
1. amend the Preserve's "Foundation Document" to recognize centrality of pueblo and tribal issues;
 2. engage in renewed direct government-to-government consultation with all interested tribes on the Preserve's General Management Plan; and
 3. engage in consultation to establish a Tribal Commission through a General Agreement which will establish procedures and guidelines for consultation with all Culturally Associated Tribes on Preserve management decisions affecting tribes.
- I. Nothing in this Agreement affects access or activities on National Forest System lands.
- J. This Agreement does not affect criminal jurisdiction, civil regulatory jurisdiction, or civil adjudicatory jurisdiction in the Preserve. No part of the Preserve is deemed Indian Country under 18 U.S.C. § 1151.

III. WAIVERS AND RELEASES OF CLAIMS

- A. Subject to Jemez's rights as recognized in this Agreement and any subsequent legislation, Jemez disclaims, relinquishes, waives and releases all present and future claims against the United States that relate to Jemez's aboriginal title or to any other title or property interest to Banco Bonito. The foregoing does not apply to any title or property interest that Jemez first acquires after the Execution Date of this Agreement.
- B. Subject to Jemez's rights as recognized in this Agreement and any subsequent legislation, Jemez disclaims, relinquishes, waives and releases all present and future claims against the United States that relate to aboriginal title or to any other title or property interest to all lands exterior to Banco Bonito but within the exterior boundaries of the Preserve, and to certain lands in sections 23 & 24, Township 18 North, Range 2 East, New Mexico Principal Meridian acquired or to be acquired by the NPS as depicted on the maps attached as Exhibit B. The foregoing does not apply to any title or property interest that Jemez first acquires after the Execution Date of this Agreement.
- C. Jemez agrees that 60 days before bringing any action to establish or protect aboriginal title to any other lands title to which is in the United States, Jemez will first consult with the United States, including all relevant federal agencies; and, if the parties agree, mediate resolution of those rights.
- D. Nothing in this Agreement shall be interpreted as a disclaimer, relinquishment, waiver, or release by Jemez of any claims not specified in this Part.

IV. PARTIES' ATTORNEYS' FEES AND COSTS

Each Party shall be responsible for its own attorneys' fees and costs, as well as any other fees and costs, related to this case.

V. SURRENDER OF RIGHTS TO FURTHER LITIGATION

As consideration for this Agreement, the Parties agree to waive all rights they have, whether known or unknown, to further review by the Tenth Circuit or the Supreme Court of *Jemez I* and *Jemez II*, and to further proceedings in the district court on remand from *Jemez II*.

VI. JUDICIAL REVIEW

Nothing in this Agreement affects any rights Jemez may have under the Administrative Procedure Act, 5 U.S.C. § 701 *et seq.*, to challenge federal actions related to management of the Preserve. Judicial review of such federal actions shall be based upon the administrative record and subject to the applicable standard of review set forth in 5 U.S.C. § 706.

VII. DISPUTE RESOLUTION

When there is a conflict between Jemez and the United States (including NPS) regarding the management of Banco Bonito or any other conflict involving the interpretation or asserted breach of this Agreement, the following process for dispute resolution shall control:

- A. The Party identifying the conflict shall notify the other Party in writing addressed to the Governor of Jemez or the Superintendent or designee, specifying the nature of the dispute.
- B. Before any Party seeks judicial relief, the Parties shall attempt to resolve the dispute for a period of at least 60 days after notice has been given as provided in Paragraph A. The Parties may jointly request the assistance of a neutral third party to assist in resolving the dispute without litigation.

VIII. EFFECTIVE DATE

- A. The Parties agree to file a joint motion in the Tenth Circuit asking that court to amend its March 22, 2023, judgment to direct the district court to enter the Stipulated Amended Final Judgment attached hereto as Exhibit C. The joint motion will attach a copy of this Agreement as an exhibit and request that, if the Tenth Circuit grants the precise relief requested, the Tenth Circuit then issue its mandate remanding the case to the United States District Court for the District of New Mexico for entry of the Stipulated Amended Final Judgment.
- B. The Parties will work together in good faith to file the motion referenced in Part VIII.A within 30 days of the Execution Date of the Agreement.

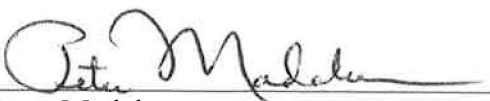
- C. This Agreement shall not be effective unless and until the district court enters the Stipulated Amended Final Judgment attached hereto as Exhibit C or as otherwise agreed to by the parties.

IX. OTHER PROVISIONS

- A. No provision in this Agreement shall be interpreted as or constitute a commitment or requirement that Federal Defendants obligate or pay funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341, or any other law or regulation.
- B. This Agreement shall not affect Jemez's opportunity to seek funding under Title IV of the ISDEAA or other applicable laws.
- C. This Agreement is a compromise to avoid further litigation only. This Agreement does not represent an admission by any Party as to any fact, claim, or defense relating to any issue in this litigation. This Agreement has no precedential value and shall not be used as evidence of any precedent in any litigation.
- D. This Agreement represents the entirety of the commitments between the Parties with regard to the settlement of the pending litigation.
- E. No modification of this Agreement shall be valid unless expressly consented to in writing by all the Parties.
- F. This Agreement shall apply to and be binding upon the Parties, their members, officers, agents, delegates, and assigns. The undersigned representatives of the Parties certify that they are fully authorized by the party or parties whom they represent to enter into the terms and conditions of this Agreement and to legally bind the Parties to it.
- G. If any legislation respecting the Preserve is enacted, that statute will control to the extent there is inconsistency between the statute's terms and the terms of this Agreement.
- H. If any provision of this Agreement shall be declared invalid by a court or superseded by a statute, the remaining provisions shall be considered severable and shall not be affected thereby.

Agreed and entered into on October 16, 2024:

PUEBLO OF JEMEZ:



Peter Madalena
Governor of the Pueblo of Jemez

UNITED STATES OF AMERICA:

A handwritten signature in blue ink, appearing to read "Todd Kim", written over a horizontal line.

Todd S. Kim
Assistant Attorney General
Environment and Natural Resources Division
United States Department of Justice

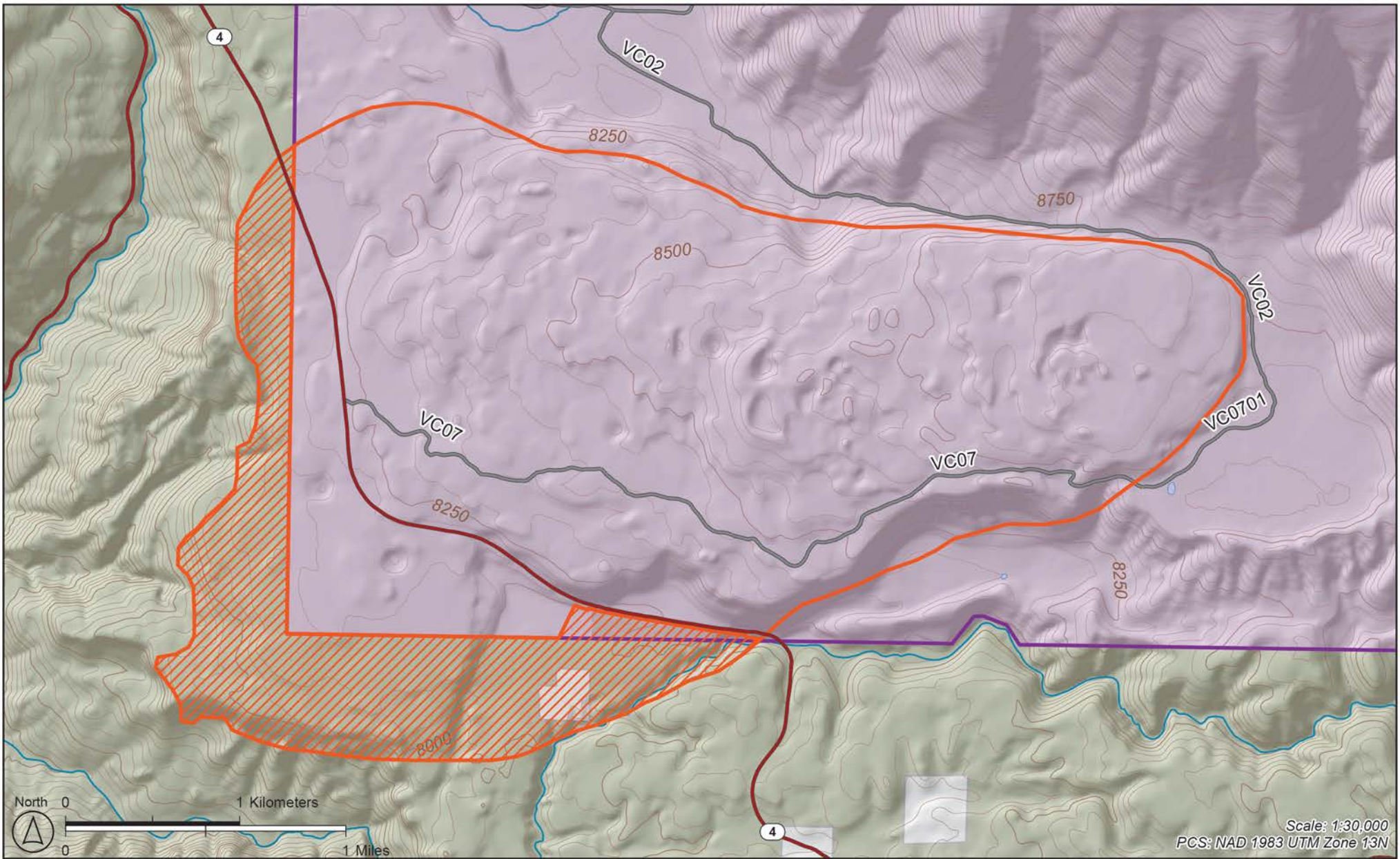
A handwritten signature in blue ink, appearing to read "Debra Haaland", written over a horizontal line.

Debra A. Haaland
Secretary
United States Department of the Interior

A handwritten signature in blue ink, appearing to read "Robert T. Anderson", written over a horizontal line.

Robert T. Anderson
Solicitor
United States Department of the Interior

EXHIBIT A



Valles Caldera National Preserve

Banco Bonito Geographical Landform



Banco Bonito Geographical Landform

- Subject to settlement agreement (3,008.1 ac)
- Not subject to settlement agreement (705.5 ac)

- New Mexico State Route 4
- Administrative Road

- Perennial Stream
- Pond
- National Park Service
- US Forest Service
- Private

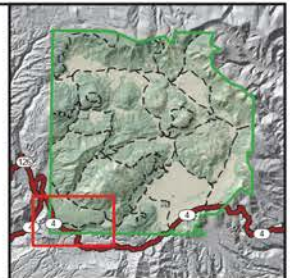
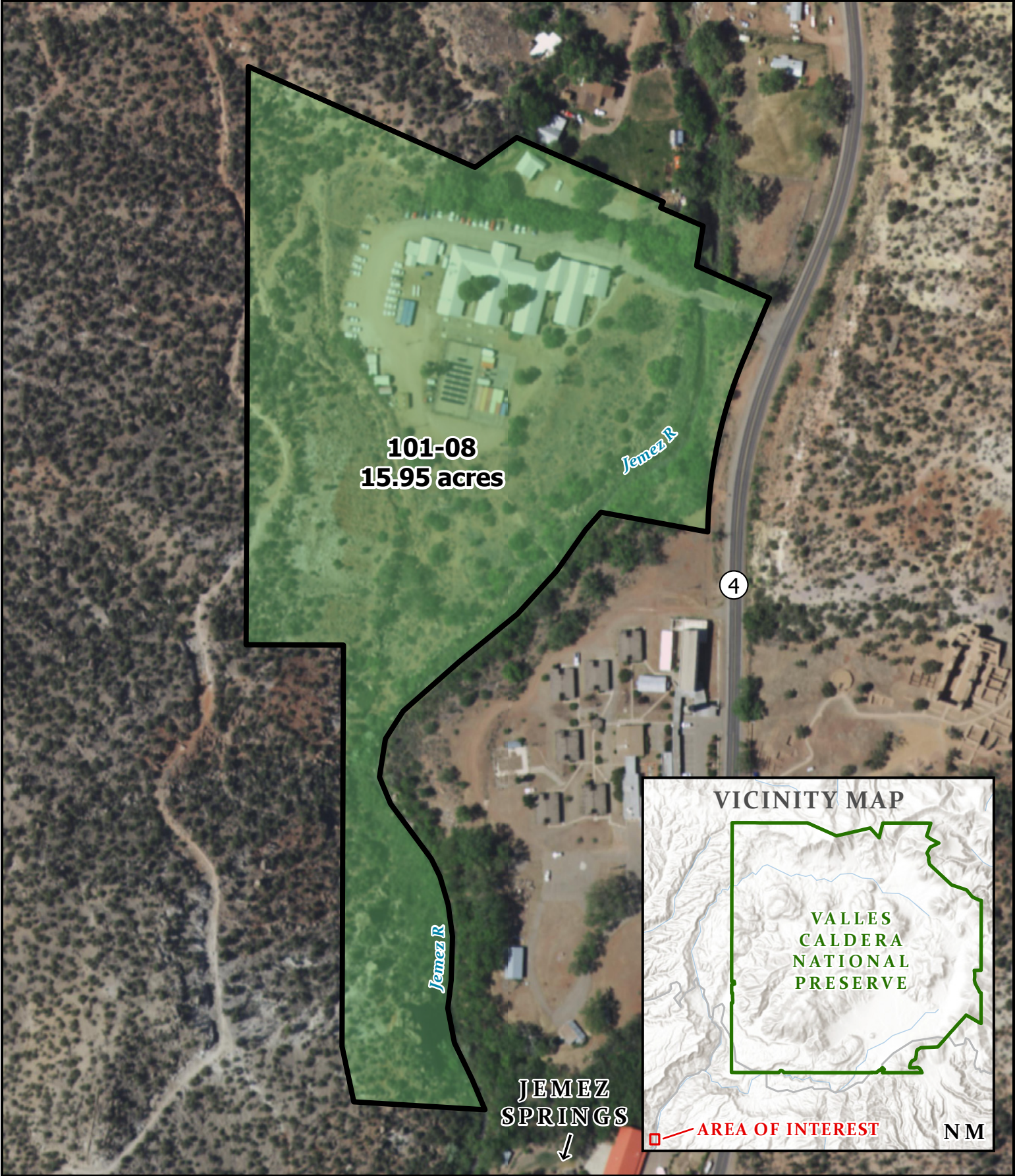


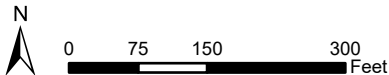
EXHIBIT B

VALLES CALDERA NATIONAL PRESERVE
Tract 101-08

INTERIOR REGIONS 6, 7, & 8
National Park Service
U.S. Department of the Interior



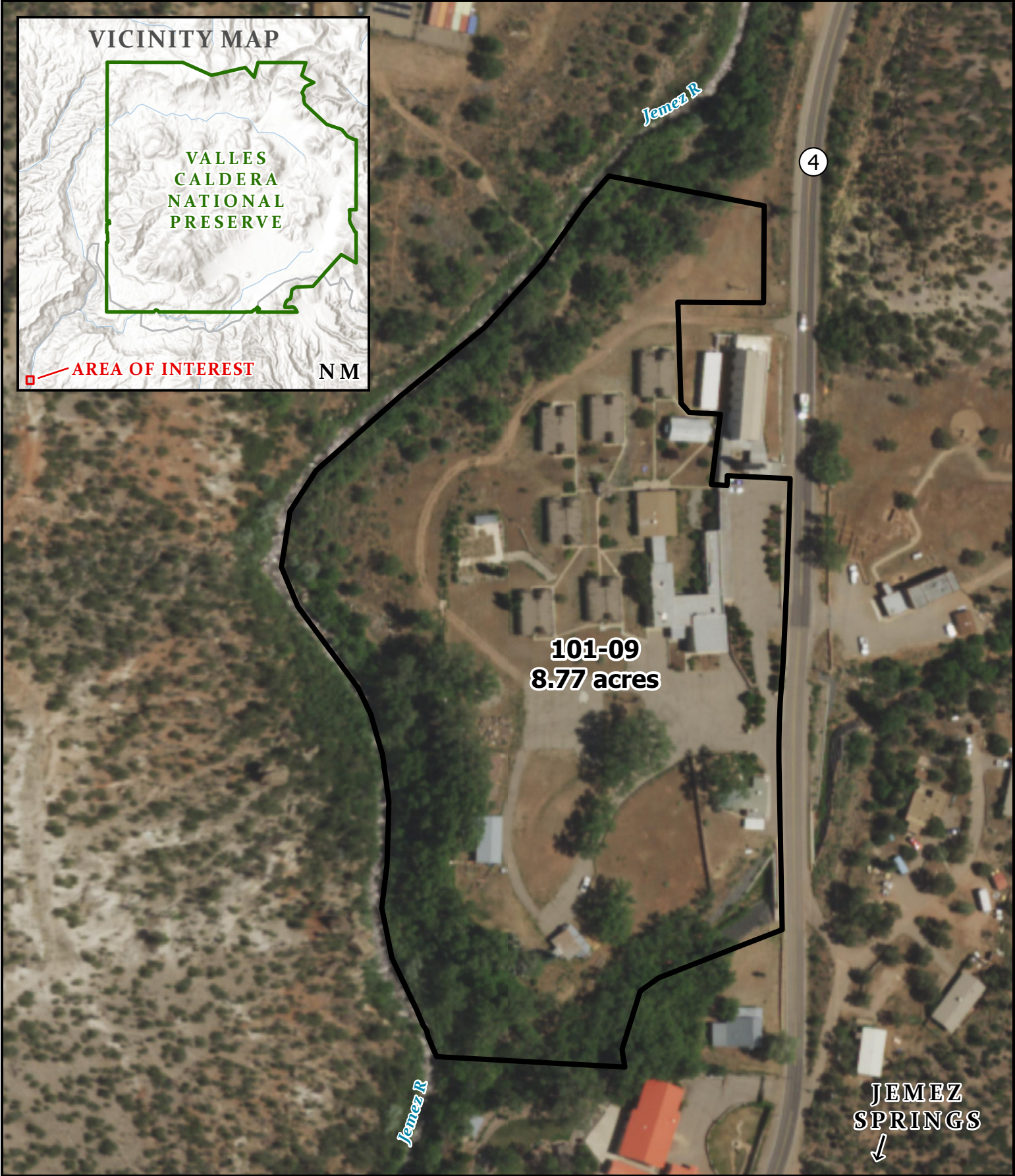
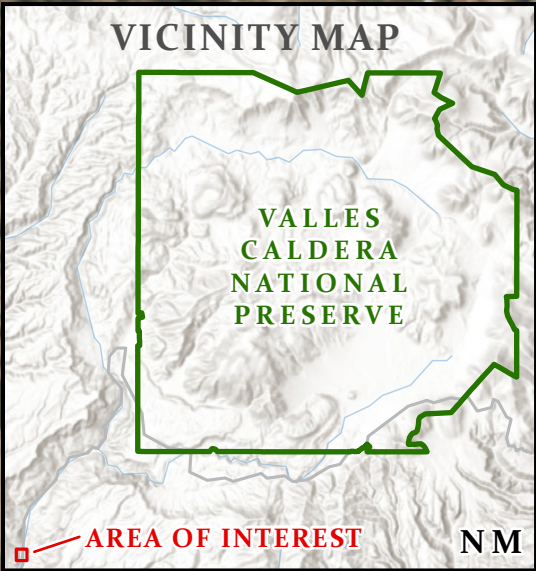
- Legend
- NPS Legislative Boundary
 - Tract of Interest



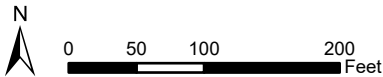
Date: 3/25/2024
Property ownership data shown is compiled from deeds, plats, surveys, and other source data. This is not a surveying quality drawing and should be used for general scaling purposes only.
Coordinate System: NAD 1983 (2011) State Plane New Mexico Central

VALLES CALDERA NATIONAL PRESERVE
Tract 101-09: Acquisition Option 2

INTERIOR REGIONS 6, 7, & 8
National Park Service
U.S. Department of the Interior



- Legend
- NPS Legislative Boundary
 - Tract for Acquisition



Date: 12/7/2023
Property ownership data shown is compiled from deeds, plats, surveys, and other source data. This is not a surveying quality drawing and should be used for general scaling purposes only.
Coordinate System: NAD 1983 (2011) State Plane New Mexico Central

**APPENDIX F: 2024 BANCO BONITO BOUNDARY AGREEMENT WITH
JEMEZ PUEBLO**

**BANCO BONITO BOUNDARY GPS COORDINATES AGREEMENT
BETWEEN
THE U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE,
VALLES CALDERA NATIONAL PRESERVE
AND
PUEBLO OF JEMEZ**

This Banco Bonito Boundary GPS Coordinates Agreement (“Boundary Agreement”) is entered into on December 20, 2024 between the Pueblo of Jemez (“Jemez”) and the United States Department of Interior, National Park Service (“NPS”), Valles Caldera National Preserve (collectively, “Parties”).

WHEREAS, Jemez and the United States entered into a Settlement Agreement on October 16, 2024 (“Settlement Agreement”) to settle litigation in *Pueblo of Jemez v. United States*, United States District Court for the District of New Mexico Case No. 1:12-cv-00800, United States Court of Appeals for the Tenth Circuit Nos. 13-2181, 20-2145.

WHEREAS, on November 26, 2024, the United States District Court for the District of New Mexico entered a Stipulated Amended Final Judgment dismissing the litigation and effectuating the Settlement Agreement.

WHEREAS, the Settlement Agreement defines Banco Bonito as “that part of a geological landform in the southwestern corner of the Valles Caldera that lies within the Valles Caldera National Preserve[.]”

WHEREAS, the Settlement Agreement provides that Banco Bonito remains part of the Preserve.

WHEREAS, the Settlement Agreement provides that NPS has the obligation to recognize Jemez’s rights to Banco Bonito as set forth in the Settlement Agreement.

WHEREAS, under the Settlement Agreement, Jemez and the United States agreed that Banco Bonito “will be further defined by agreed upon GPS coordinates.”

WHEREAS, the Parties conferred and agreed upon GPS coordinates that further define the geographical landform of Banco Bonito.

I. BOUNDARY AGREEMENT

- A. The Parties agree that the Banco Bonito boundary shall be defined by the GPS coordinates contained within the GIS shapefile entitled, “122024 BancoBonitoSettlementArea.gdb.zip,” with last edited date of December 17, 2024, attached here as Exhibit A.
- B. The Parties further agree that the map attached hereto as Exhibit B depicts the agreed-upon GPS coordinates.

II. OTHER PROVISIONS

- A. No provision of this Boundary Agreement shall be interpreted as or constitute a commitment or requirement that NPS obligate or pay funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341, or any other law or regulation.
- B. Nothing in this Boundary Agreement shall be interpreted to impair, abrogate, limit, or interfere with any provision of the Settlement Agreement, including the rights and obligations of Jemez or the United States.
- C. Nothing in this Boundary Agreement shall be construed to waive, expand, or limit the sovereign immunity of Jemez or of the United States.
- D. This Boundary Agreement shall apply to and be binding upon the Parties, their members, officers, agents, delegates, and assigns. The undersigned representatives of the Parties certify they are fully authorized by the party whom they represent to enter into the terms and conditions of this Agreement and to legally bind the Parties to it.
- E. If any legislation respecting the Preserve is enacted, that statute will control to the extent there is inconsistency between the statute's terms and the terms of this Boundary Agreement.
- F. This Boundary Agreement shall become effective upon execution by the Parties and may be amended only by the mutual written agreement of the Parties in the same manner as the Boundary Agreement is executed.

PUEBLO OF JEMEZ:



Peter Madalena, Governor

12/20/24

Date

NATIONAL PARK SERVICE, VALLES CALDERA NATIONAL PRESERVE:



Jorge Silva-Bañuelos, Superintendent



Digitally signed by JORGE SILVA-BANUELOS

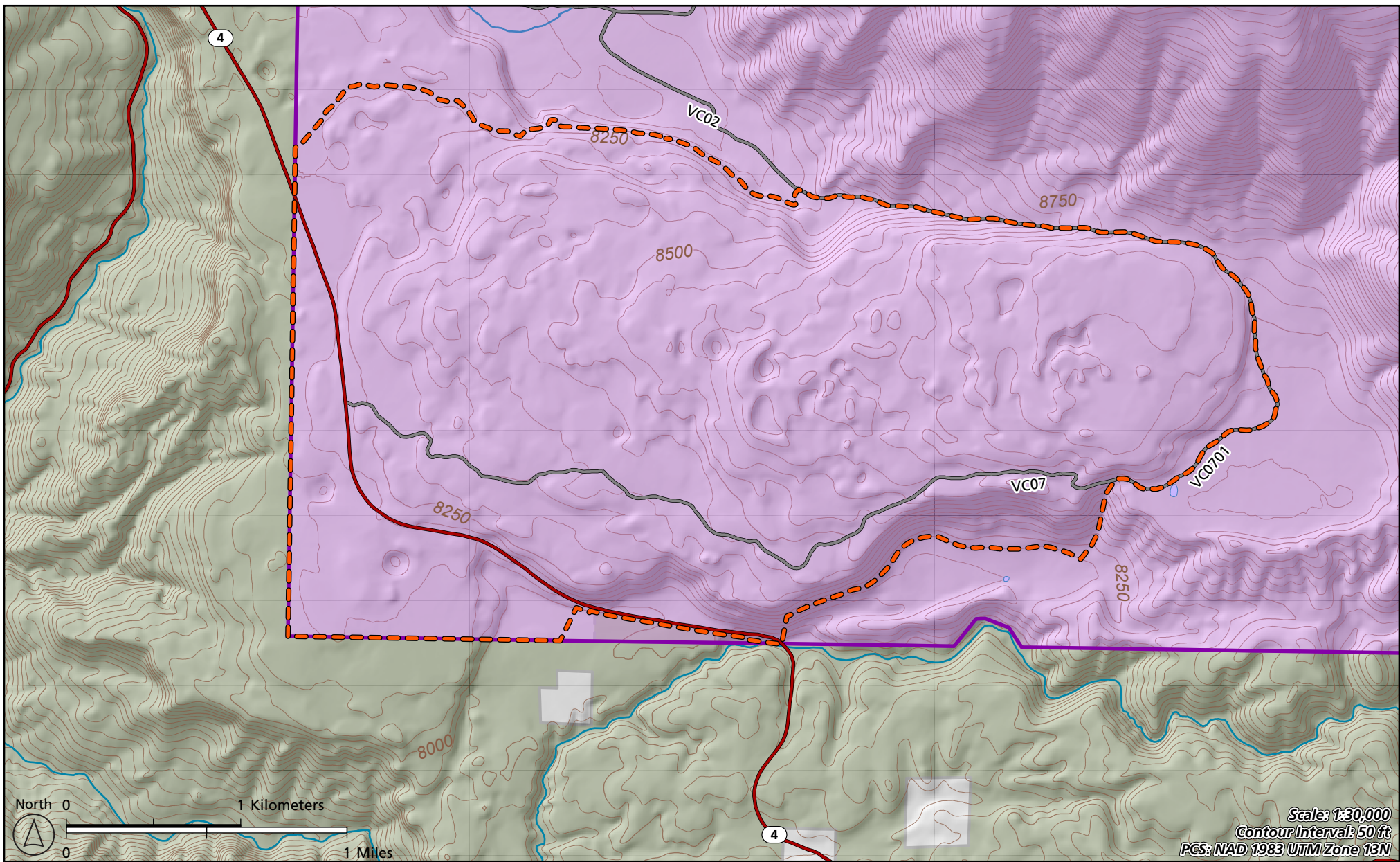
Date: 2024.12.20 13:52:20 -07'00'

Date

EXHIBIT A

C:\122024 BancoBonitoSettlementArea.gdb.zip

EXHIBIT B



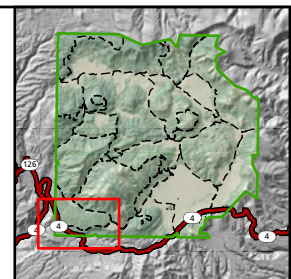
Valles Caldera National Preserve

Banco Bonito Geographical Landform



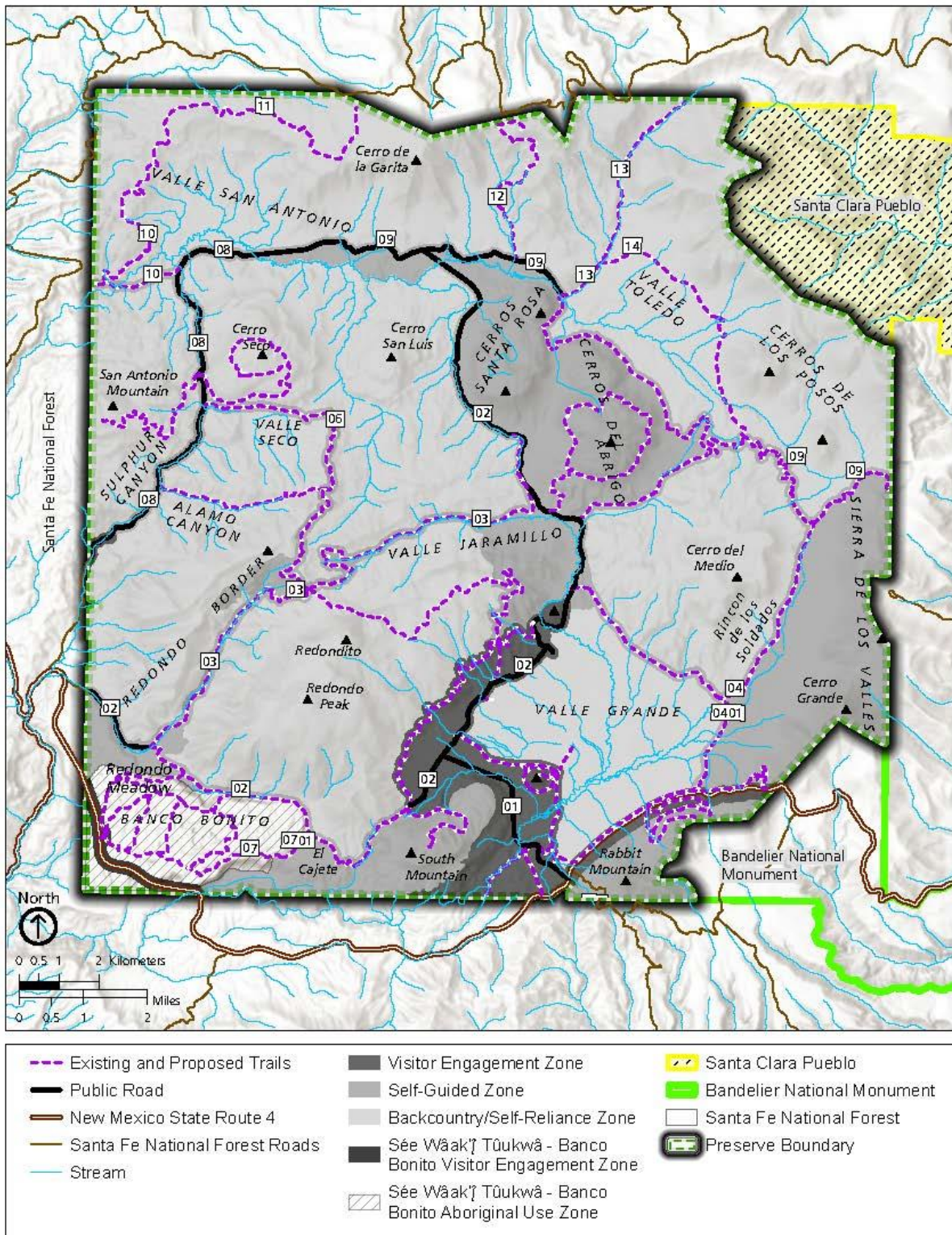
- Banco Bonito - Settlement Area
- New Mexico State Route 4
- Administrative Road

- Perennial Stream
- Pond
- National Park Service
- US Forest Service
- Private

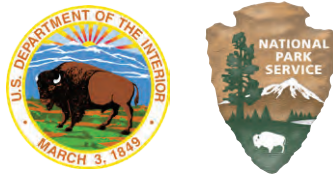


APPENDIX G: MAP(S) IN GRAYSCALE FOR ACCESSIBILITY

Map 8. Management Zones in Grayscale for Accessibility



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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



**Valles Caldera National Preserve | General Management Plan and
Valle Grande District Development Concept Plan | May 2026**

