

Valles Caldera Trust - Stewardship Register

Proposed Upgrade to the Valle Grande Entrance to the Valles Caldera National Preserve

Environmental Assessment



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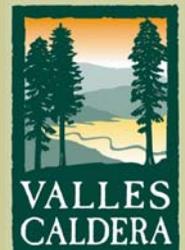
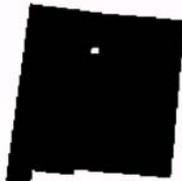
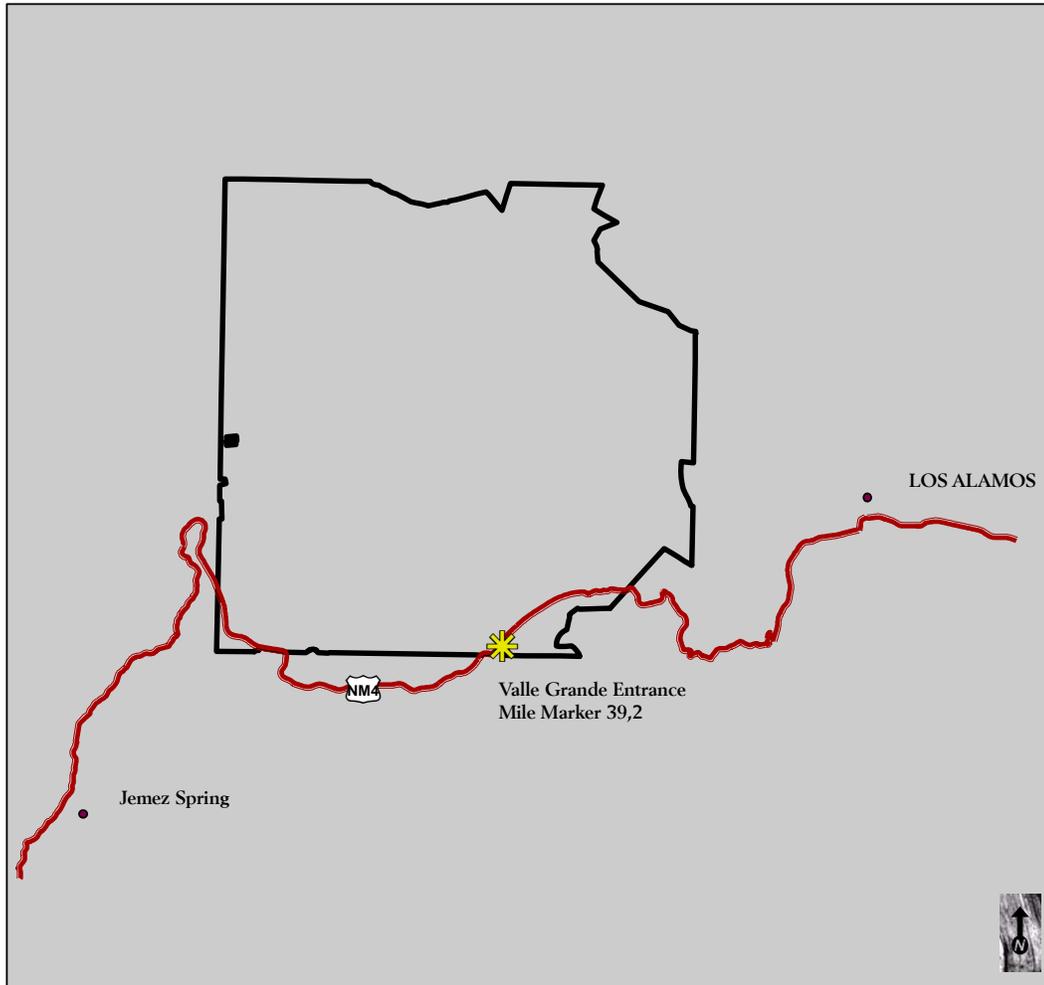


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Valle Grande Entrance Vicinity Map

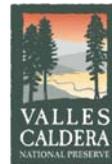
VALLES CALDERA NATIONAL PRESERVE - NEW MEXICO



Legend

- New Mexico Towns
- NM4
- VCNP Boundary

0 1 2 4 6 8 Miles



drm-03/08/2006

1. Purpose and Need – Proposed Action

Introduction

The Valles Caldera Trust is proposing to upgrade the main entrance to the Valles Caldera National Preserve located in Sandoval County in north-central NM. The Valle Grande entrance is accessed from NM 4, near mile-marker 39. This stewardship action is being proposed to provide safe access to and from the Preserve and increase the safety for motorists traveling on NM 4 past the Valles Grande. The proposed area of disturbance (including a buffer of just under 200-feet) totals approximately 12 acres. Eight acres are managed by the Valles Caldera Trust; the remaining four acres are within the NM 4 easement, which is under the jurisdiction of the State of New Mexico Department of Transportation.

Purpose and Need

Since acquisition of the Preserve in 2000, access through the Valle Grande entrance has increased from the incidental use necessary for ranch operations and seasonal hunting; to daily use by employees, visitors, contractors, and others. The current use of the entrance is estimated at 6,000 – 7,000 vehicles annually. In addition, the general commuter and tourist traffic past the entrance continues to increase. Traffic counts conducted by the Mid-Region Council of Governments estimates current weekday traffic flow past the Valle Grande to average 1200 vehicles daily with growth through 2010 estimated to be from 2-5% annually (J.F. Sato and Associates, 2005). It is expected that the Valle Grande entrance will continue to serve as the main entrance to the Preserve at least through 2010 and the reasonably foreseeable future.

Currently the Valles Grande entrance:

- ∞ Has inadequate sight distance onto NM 4;
- ∞ Provides no lanes for acceleration and deceleration into or out of through-traffic;
- ∞ Provides inadequate space for a vehicle to stop or turn around.

The Valle Grande entrance upgrade is being proposed to provide access that meets standards established by the New Mexico Department of Transportation (NMDOT) and the American Association of State Highway and Transportation Officials (AASHTO). The upgrade of the Valle Grande entrance is also being proposed to meet the goals of the Valles Caldera Trust established in the Valles Caldera

Preservation Act of 2000, (Section 108. Resource Management, (d) Management program :) specifically:

- ∞ [Paragraph] (1) operation of the Preserve as a working ranch consistent with paragraphs 2-4;
- ∞ [Paragraph] (4) public use of and access to the Preserve for recreation;

Site distance at the Valle Grande entrance is limited to 260' to the west. This distance is insufficient for safely exiting the Preserve.



A vehicle stopped in front of the gate is not visible to a vehicle entering the Preserve from the west until that vehicle is committing to the turn.

The current elevation of the entrance in relation to the position of the guardrail does not permit a clear line of sight to the east when viewed from a low clearance vehicle.



Proposed Stewardship Action

The Valles Caldera Trust is proposing the following actions to upgrade the Valle Grande entrance. Each action is designed to meet the purpose and need and is associated with objectives and outcomes that would be meaningfully evaluated to measure the success of the project. See Figure 1-1 for a schematic of the proposed stewardship action.

Proposed Actions:

- ✓ Reduce the height of berms (approximately 1-4' vertically, 270' horizontally) to increase the sight distance due west for vehicles exiting the Preserve.
- ✓ Move the mailbox from its current position out of the line of sight, and clear zone.
- ✓ Raise the road-bed of VC01 to improve the view to the east for low clearance passenger vehicles.

Objective: Improve sight distance from the Valle Grande entrance.

Outcome: Increase sight distance from the current 260' to 870' in either direction.

Proposed Actions:

- ✓ Widen NM 4 to accommodate a 775' deceleration lane for eastbound traffic turning onto the Preserve.
- ✓ Modify the existing entrance to provide a channelized right turn onto the Preserve for westbound traffic.

Objectives: Provide for the safe acceleration into and deceleration out of through traffic and allow eastbound through traffic to continue unimpeded.

Outcome: The Valle Grande entrance would meet NMDOT criteria for deceleration and acceleration lanes on rural two-way highways (for current and expected volume through 2010).

Proposed Actions:

- ✓ Realign the entrance so that access on the north and south side of NM 4 are properly aligned.
- ✓ Set gate back so that vehicles (including RVs or 18-wheel semi-trucks) have space to stop without interfering with traffic on NM 4.

Objective: Reduce potential nuisance presented by a closed or locked gate.

Outcome: Create adequate space for vehicles needing to stop or turn at the entrance.

Proposed Actions:

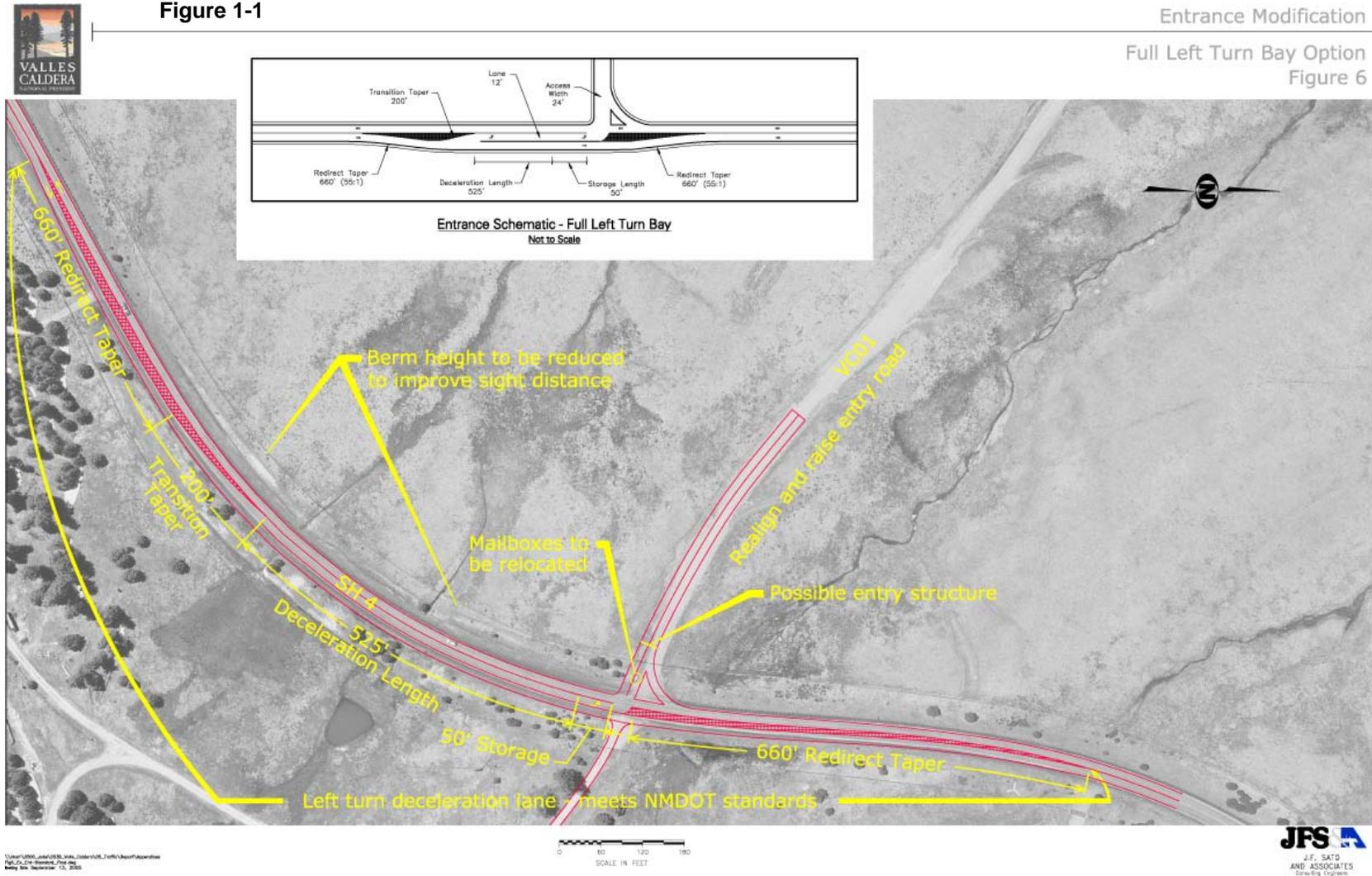
- ✓ Add a cattle guard, side-gate; and connector fence from the new gate to the existing fence line to reduce the likelihood of livestock entering NM 4.
- ✓ Work with NMDOT to place warning and informational signs on NM 4 to make motorists aware of features such as sharp curves and intersections, so that traffic entering or driving past the Preserve has adequate time to make the requisite maneuvers.
- ✓ Construct a visible entrance and appropriate signage to ensure the Valle Grande entrance and its approach are clearly delineated.

Objective: Enhance general safety

Outcome: The travel corridor in the vicinity of the Valle Grande entrance will meet NMDOT standards for safety.

The current Valle Grande entrance is not well delineated through structure or signage. The poor delineation in combination with the limited site distance on approach cause many visitors to miss the entrance or make last minute turning decisions.





Description

The footprint identified as the proposed project area is just under 12-acres with eight acres being on the Preserve and just under four acres on the NM 4 easement, under the jurisdiction of the State of New Mexico, Department of Transportation. This footprint includes a buffer of just under 200-feet surrounding the projected area of disturbance.

Currently, the Preserve entrance road VC01 (Valles Caldera open road leading to the historic ranch district) intersects NM 4, at mile marker 39.2. It is located along a sweeping curve providing eastbound motorists with a panoptic view of the Valle Grande. For many, this vista defines the Valles Caldera National Preserve. This section of the highway has horizontal curves and limited sight distance. There is a residential driveway at a slight offset from VC01, and there are currently no acceleration or deceleration lanes at this intersection. An estimated 1200 vehicles travel this portion of NM 4 on any given weekday.

The elevation at the entrance is nearly 8800 feet. The project area is characterized by Cosey and Jaramillo soils which are deep, well drained with moderate permeability. Arizona fescue, bluegrasses, Thurber fescue, mountain muhley, western wheatgrasses and sedges characterize the potential natural plant community. Western yarrow and dandelion may also be present (USDA 2000).

Both sheep and cattle have historically grazed the Valle Grande while the Preserve was a private ranch and cattle still graze seasonally on the Preserve under federal management. Large herds of elk are often seen on the landscape although the traffic, steep berms, and proximity to NM 4 limit the animal's occurrence within the footprint of the proposed action. Archaeological evidence indicates use by hunter-gathers dating back thousands of years. A scatter of obsidian flakes resulting from ancient tool making has been located within the footprint of the proposed action. Surveys and testing have not revealed historic properties requiring protection within the proposed project area.

New Mexico 4 reveals panoptic views for those traveling past the Valle Grande. This photo, taken from the east side of the Valle Grande, captures the sun setting on a late summer evening.



Performance Requirements

Performance requirements are the limitations placed on the implementation of a stewardship action necessary for compliance with applicable laws, regulations, standards, mitigating measures, or generally accepted practices.

Applicable Laws

- ⌘ The Valles Caldera Preservation Act of 2000 - Authorizes the acquisition and management of the Valles Caldera National Preserve.
- ⌘ The National Environmental Policy Act of 1969 as amended – NEPA, established a national policy for the environment.
- ⌘ The Endangered Species Act of 1973 - Provides for the protection and conservation of threatened and endangered animal and plant species.
- ⌘ The National Historic Preservation Act - Establishes a requirement for the consideration of potential impacts to historic properties.
- ⌘ The Migratory Bird Treaty Act - Implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Under the Act, taking, killing or possessing migratory birds is unlawful.
- ⌘ Executive Order 13186 -- Responsibilities of Federal Agencies To Protect Migratory Birds , January 10, 2001
- ⌘ The Clean Air Act of 1990 - Defines the National Ambient Air Quality Standards (NAAQS).
- ⌘ Clean Water Act of 1977 - Establishes the basic structure for regulating discharges of pollutants into the waters of the United States.

Regulations and Procedures

- ⌘ The NEPA Procedures of the Trust, Federal Register, July 17 2003 – Established to guide comprehensive management of the Preserve and achieve the purposes of NEPA.
- ⌘ Rule 18.31.6 NMAC, State Highway Access Management Requirements
- ⌘ The Valles Caldera Trust Cultural Resource Compliance Process – Established to implement the National Historic Preservation Act on the Preserve.
- ⌘ The Valles Caldera Trust Master Plan for Interpretation – Established to provide guidance regarding thematic style, image, and architectural aesthetics.

Standards, mitigating measures, or generally accepted practices specific to the proposed stewardship action

Soil and Hydrology

- ∞ Silt fences would stabilize exposed soil while allowing native grasses to re-establish. (other methods may be recommended and incorporated in the final engineering design).
- ∞ Covering exposed soil with wood chips from nearby thinning projects would reduce the exposure of soil to erosive elements and help retain moisture further encouraging the establishment of native seed.
- ∞ The inoculation of disturbed soils with a mycorrhizae fungi product would enhance the nutrient availability for native grasses and shrubs.
- ∞ The final design for engineering will be approved by the NMDOT.

Visuals

- ∞ Material removed from berms would be transported off site.
- ∞ Berms would be sculpted to blend with adjacent landscape.
- ∞ New ancillary features (fences, entrance gate, etc.) would be constructed in the ranch style of the Preserve to enhance and support Preserve themes, messages, and stories.
- ∞ The Trust would work with the NMDOT and stakeholders along the scenic byway to reduce the redundancy of signage and the placement and design of non-regulatory signage.

Cultural

- ∞ Avoid lithic site within the project area until additional fieldwork, documentation, and consultation has been completed.
- ∞ Site boundaries would be clearly marked.
- ∞ An archaeologist engaged by the Trust would participate in pre-work meetings.
- ∞ An archaeologist engaged by the Trust would periodically inspect operations to ensure the effectiveness of treatment recommendations.

Safety

- ⊗ A traffic control plan, approved by the NMDOT, would be provided and implemented.
- ⊗ A dust abatement plan, approved by NMED and NMDOT, would be provided and implemented.

Recreation

- ⊗ The Trust would inform visitors and contractors of the potential inconvenience that would be expected to occur during construction.

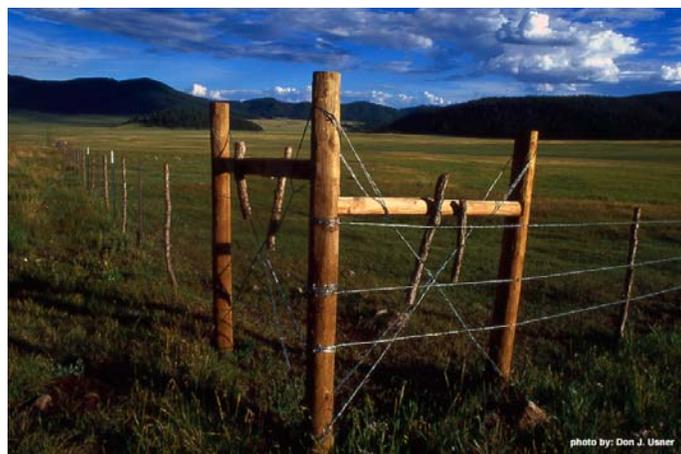
Noxious Weeds (Non-native, invasive plants)

- ⊗ In lieu of seeding, the Trust would create conditions to encourage natural seeding from on site vegetation (see performance requirements for soil and hydrology)
- ⊗ The contractor would be required to provide and implement a plan to prevent noxious weeds from establishing as a result of the proposed action.
- ⊗ The project area would be included in the Trust's annual inventory for noxious weeds.

Wildlife

- ⊗ New fencing would be “wildlife friendly” using smooth wire on the top and bottom strands.

Wildlife friendly fences have smooth wire on the top and bottom strands. These smooth wires are less likely to injure animals, such as elk, which jump the fences. Smaller animals such as coyotes or calf elk that go under or through lower strands are also protected.



2. Alternatives

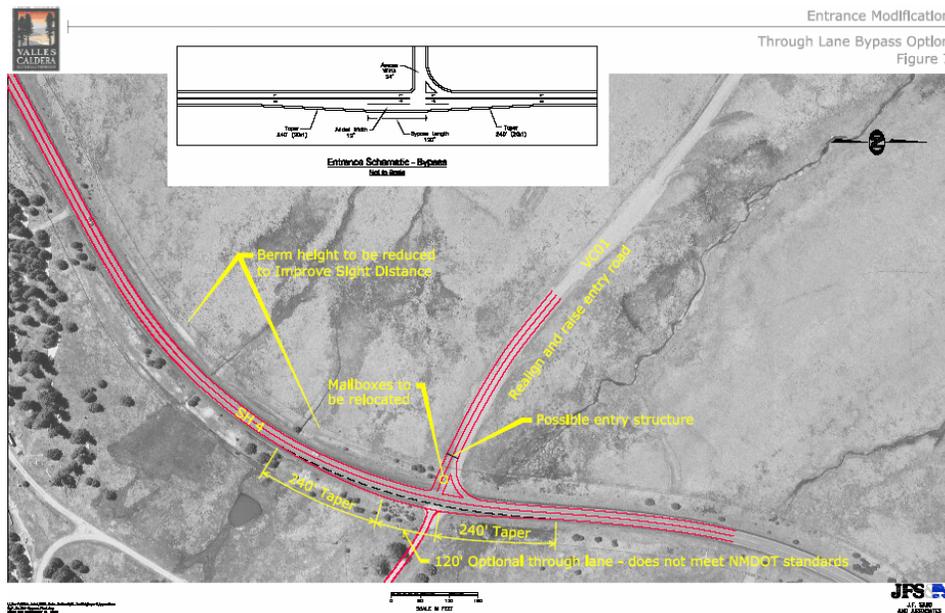
The National Environmental Policy Act requires agencies to consider alternative actions to any proposal which involves unresolved conflicts concerning uses of available resources. While smaller projects, which are narrow in scope, often do not cause such conflicts; responsible officials have found the consideration of alternative actions to be valuable in decision making.

Alternatives Eliminated from Detailed Analysis

Create a passing lane for eastbound through-traffic in lieu of a deceleration lane for traffic turning onto the Preserve. (see figure 2-1)

This alternative had a lower cost and somewhat smaller footprint and therefore bore careful consideration. It was brought forward to the design phase and then eliminated from consideration based on the completed traffic analysis. Traffic volume estimates from the present through 2010 indicated that this option would not meet with standards established by the NMDOT and the AASHTO.

Figure 2-1



Consider an alternative entrance to the Preserve or, postpone the upgrade until a comprehensive plan for transportation and access has been completed.

This alternative recognized the potential risk with investing funds in an entrance without a long-term plan for transportation or facilities. This stewardship action is being proposed to meet the needs of the Trust and provide for the safety of the public for the reasonably foreseeable future. Postponing this upgrade would not meet the purpose and need for action.

Construct acceleration lanes for vehicles exiting the Preserve and re-entering traffic on NM 4.

The projection of traffic operations through the year 2010 and the lack of prevalent accidents did not indicate a need for an acceleration lane in either direction. The increased line of sight would meet NMDOT standards for allowing traffic to re-enter NM 4 under projected traffic volumes.

Alternatives Considered in a Detailed Analysis

No Action

This alternative would result in no implementing decision

The Proposed Stewardship Action

See Chapter 1, Proposed Stewardship Action and Figure 1-1

3. Environmental Consequences

Issues

The National Environmental Policy Act directs agencies to focus documentation on issues which are truly significant to the action in question. No significant issues were identified during the scoping or analysis process. Performance requirements were developed to address concerns. These requirements are identified in Chapter 1.

In lieu of significant issues, the analysis of environmental consequences focused on a determination of significance.

3.1 Environmental Consequences

This chapter summarizes the effects to the natural and human environment expected to occur as a result of either taking no action or implementing the proposed action. A discussion of the affected environment is provided where applicable.

Effects are measured by context (the spatial or temporal extent of the effect) and intensity (the magnitude of the effect). Effects may be beneficial or adverse and may be direct, indirect, or cumulative. A summary of the context and intensity of the effects is presented followed by a supporting narrative. The spatial extent of an effect is described in a narrative statement. The temporal extent of the effect is defined by three categories of duration:

Short-term: 0-3 Years

Mid-term: 3-10 Years

Long-term: 10+ years

The intensity of the effect is defined by four levels of magnitude (intensity is influenced by context):

Negligible:	No change would occur or the magnitude of change would not be measurable.
Minor:	Changes would be measurable but would not alter the structure, composition, or function of the resource and would be limited in context.
Moderate:	Changes would be measurable and may somewhat influence the structure, composition, or function of the resource but would be limited in context.
Major:	Changes would be measurable, would alter the structure, composition or function of the resource and may be extensive in context.

3.1.1 Effects to Flora

Affected Environment

Two distinct grassland plant associations dominate the planning area; upper and lower montane grasslands. (NHNM November 2004).

The upper and lower montane grasslands primarily contain associations of Arizona, Thurber’s fescue, Parry’s danthonia, Kentucky bluegrass, pine dropseed, Letterman’s needlegrass and prairie junegrass. There are no known threatened or endangered plant species in the VCNP (Valles Caldera Trust 2002).

No Action

Narration: There would be no effect to the flora.

The Proposed Stewardship Action

Summary:

Effect	Context	Intensity
Direct	Mid-term, limited to the planning area	Moderate

Narration:

Reducing the height of the berms will temporarily eliminate vegetative cover from just under an acre of grassland. Performance requirements described in Chapter 1 are anticipated to encourage natural vegetation to initiate within one year and cover to return within 3-5 years depending on climatic conditions.

Approximately two to three acres would be permanently affected by the widening of NM 4 and proposed modifications to the entrance.

These effects will be localized, limited to the footprint of the proposed project area.

3.1.2 Effects to Fauna

Affected Environment

The planning area is within the Valle Grande which contains habitat for the diverse faunal population of the Preserve. No threatened or endangered species reside in the planning area. There are no Important Bird Areas (IBA) identified in the Preserve. There are no associations or important links between the project area and the closest known IBA’s (Valles Caldera Trust 2002a).

No Action

Narration: There would be no effect to fauna or faunal habitat.

The Proposed Action

Summary:

Effect	Context	Intensity
Indirect	Limited to the planning area	Minor

Narration:

The changes in the structure, composition, and distribution of plants would be reflected in changes in habitat. Changes would be limited to the project area and would not directly affect the availability, suitability, or use of habitat for any species.

3.1.3 Effects to Soil Resources

No Action

Narration:

There would be no effect.

Proposed Action

Summary:

Effect	Context	Intensity
Direct	Localized within the planning area	Moderate

Narrative:

The primary effect to soils would be from the removal of approximately 3050 cubic yards of soil from the three berms (see figure 1-1).

Performance requirements designed to stabilize soil and encourage revegetation will serve to limit these effects to the proposed project footprint.

3.1.4 Air Quality

Affected Environment

The proposed action is within the Middle Rio Grande Airshed in Sandoval County, New Mexico. This is an attainment area, considered having air quality as good as or better than the National Ambient Air Quality Standards. These standards are set to protect human health and general welfare.

No Action

Narration:

There would be no effect.

Proposed Action

Summary:

Effect	Context	Intensity
Direct	Localized within the planning area	Minor – Short Term

Narrative:

There may be a minor effect to air quality during construction operations. Performance requirements described under “Public Safety” will mitigate potential negative impacts to air quality and visibility.

3.1.5 Cultural Resources

Affected Environment

The Valle Grande was used primarily for hunting. Evidence of tool making is ubiquitous within the Valle Grande. This is due to its proximity to rich obsidian quarries. One site comprised of lithic materials has been located within the footprint of the proposed project; no historic features requiring protection have been identified (Valles Caldera Trust, 2005).

No Action:

Narrative

There would be no effect to cultural resources.

Proposed Action

Summary:

Effect	Context	Intensity
No Effect	N/A	N/A

Narrative:

Inventories and stratified sampling have not located any historic properties within the proposed footprint of disturbance. A lithic scatter within the proposed footprint of disturbance will be marked and avoided by operations unless further testing indicates that no protection is required.

Should significant artifacts be discovered during operations, the Valles Caldera Trust will avoid impacting any artifacts until consultation is complete.

3.1.6 Socio-economic impacts

Affected Environment

The Valle Grande entrance is not located within any city or village limits.

No Action:

Narrative

There would be no effect to local, regional or other socio-economic conditions.

Proposed Action

Narrative:

There would be no effect to local, regional or other socio-economic conditions.

The Valle Grande entrance upgrade is being proposed to support ongoing activities and traffic levels, and those that are reasonably foreseeable. The proposed action is not expected to directly or indirectly increase traffic, area use, or create any changes in local or

regional activities. Any socio, economic or environmental effects will not be disproportionate to any individual or population.

3.2 Public Health and Safety

Affected Environment:

The main entrance to the Preserve turns off NM 4 near mile marker 39. As a result of various programs since the Preserve became Federal land, traffic has increased markedly in and out of the Preserve. The safety of employees and visitors entering and exiting the Preserve has since become a concern because of the substandard design of the entrance.

No Action

Summary:

Effect	Context	Intensity
Direct/Indirect	Mid to long-term	Moderate

Narration:

If no action is taken to bring the Valle Grande Entrance up to standards identified by NMDOT and AASHTO, the current level of localized hazard would remain and would be expected to increase over time.

Proposed Action:

Summary:

Effect	Context	Intensity
Direct	Short term	Minor
Direct	Mid to long-term	Moderate

Narration:

Those wishing to access the Preserve through the Valle Grande entrance and motorists traveling past the entrance will be temporarily affected by the nuisance of construction activities. The effects could include delays, and encounters with dust and debris.

Following the completion of construction activities, safety will be increased for those wishing to access the Preserve through the Valle Grande entrance and motorists traveling past the entrance. The benefit of the proposed action will increase over time as traffic is projected to increase. These

benefits will be limited to those accessing or driving by the Valle Grande entrance.

3.3 Unique Characteristics of the Geographic Area

No Action

Narration:

There would be no effect

Proposed Action:

Summary:

Effect	Context	Intensity
Direct	Short term	Minor
Direct	Mid to long-term	Minor to Moderate

The work would occur on or adjacent to the easement of NM 4. The juxtaposition with the highway reduces the impact or contrast with human activities. Changes to the over all look and character of the corridor would be minor and lessen over time.

The changes to the topography of the berms would be long-term. Those changes would be easily visible in the short-term becoming less visible mid-term as re-vegetation took place on the newly sculpted berms. The effect would be negligible in the long-term. The berms would remain as features on the landscape just at a slightly lower elevation.

3.4 The level of controversy regarding the effects to the quality of the human environment.

Improving sight distance and providing additional lanes for turning are typical actions to occur within or adjacent to highway easements.

3.5 The degree of uncertainty or unique or unknown risks

Minor highway construction projects are common throughout the local, regional, and national level.

3.6 The degree of precedence established by the proposed action.

The project design is consistent with existing national and local standards and design for intersections on rural two-lane highways and proposes no precedence.

3.7 Whether the action is related to other actions in a manner that may create cumulative significant effects.

At this time the Trust does not have a long term plan for facilities or access. During future comprehensive planning, this action would be considered with any proposed action to determine the potential for cumulative effects. This action is proposed to meet short and mid-term needs based on current and reasonable expected levels of use.

3.8 Adverse effects to features eligible for listing in the National register of Historic Places or significant scientific or cultural resources.

No adverse effects are anticipated. See Environmental Consequences, 3.5 Cultural Resources.

3.9 The degree the proposed action may affect threatened or endangered species or its habitat.

A Biological Assessment completed for the proposed action found there would be No Effect to threatened or endangered species or their habitat.

3.10 Whether the action threatens a violation of federal, state, or local laws or requirements imposed for the protection of the environment.

A review of applicable laws, policies and procedures was completed for this project (see performance requirements). No violation with applicable federal, state or local laws would occur as a result of the proposed action.

Reference:

J.F. Sato and Associates, Valles Caldera National Preserve Final Traffic and Roadway Analysis Report for the Preserve Main Entrance and Proposed Wildlife Viewing Area, August 29, 2005.

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