

SUMMARY

Final
General Management Plan / Development Concept Plan
Environmental Impact Statement



PETROGLYPH

National Monument • New Mexico



Aerial photo of Rinconada Canyon and Mesa Prieta with volcanoes and Mt. Taylor in the background by Lee B. Morgan of Eagle's Eye Photo Specialists (reprinted by permission)



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Summary

Final General Management Plan/Development Concept Plan Environmental Impact Statement

PETROGLYPH

National Monument • New Mexico

United States Department of the Interior • National Park Service
in cooperation with
City of Albuquerque • State of New Mexico • Federal Aviation Administration



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INTRODUCTION

This document is a summary of the *Final General Management Plan / Development Concept Plan / Environmental Impact Statement* for Petroglyph National Monument — hereafter referred to as the *Final Management Plan* in this document. If you have questions about issues in this document, please refer to the full document or call the monument staff at (505) 899-0205.

PURPOSE OF AND NEED FOR THE PLAN

Petroglyph National Monument is the first national park system area specifically established to protect and interpret petroglyphs and their setting for the benefit and enjoyment of present and future generations. The purpose of the *Final General Management Plan / Development Concept Plan / Environmental Impact Statement* for Petroglyph National Monument is to set forth the basic management philosophy of the monument and the overall approaches to resource management, visitor use, and facility development that would be implemented over the next 10–15 years. This *Final Management Plan* has been prepared to meet the requirements of Public Law 101-313 and the National Environmental Policy Act and its regulations. Federal laws that are generally applicable to units of the national park system also apply to the monument.

The principal lands in the monument that are developed and managed for visitor use are within the Indian Petroglyph State Park, now known as the Boca Negra Canyon unit. Other existing facilities include a small interim visitor center at Lava Shadows and a parking area near the volcanoes. The public lands within the monument have many abandoned dirt roads and trails that are used by walkers, joggers, bicycle and horseback riders, and people walking their dogs. The existing facilities do not adequately serve current or projected visitor and resource management needs and legislative mandates.

The *Final Management Plan* identifies, within the legislative parameters, reasonable use and development alternatives to ensure protection of the resources that prompted inclusion of Petroglyph National Monument into the national park system and to provide for compatible public use and enjoyment of those resources. As directed by the monument legislation, the National Park Service has taken the lead in preparing the *Final Management Plan* for the secretary of the interior in cooperation with the city of Albuquerque (hereafter referred to as the city) and the state of New Mexico (hereafter referred to as the state). Under all alternatives, the monument would be managed to preserve the cultural and natural resources for the benefit and enjoyment of current and future generations.

The *Final Management Plan* addresses the issues and concerns that were identified in meetings with concerned agencies, organizations, and individuals. The issues and concerns include partnership responsibilities, cultural and natural resource protection, the protection of the traditional and cultural sites and values of the American Indian community, the documentation of traditional uses and responses to the concerns of the heirs of the Atrisco land grant, as well as issues concerning interpretation, education, visitor circulation and access, public use of the monument, neighborhood interests, stormwater drainage and utility rights-of-way, and boundary adjustments. In addition, several issues were raised that were beyond the scope of the plan.

The final document identifies management goals, research needs and opportunities, resource and visitor use actions and programs, the functions and general locations of needed facilities, and the roles and responsibilities that will be assumed by federal, state, and city agencies; the plan also proposes boundary adjustments.

The environmental analysis in the document does not address the impacts of designation

of the monument (passage of law by Congress) in June 1990. Congressional acts are exempt from compliance with the National Environmental Policy Act.

BRIEF DESCRIPTION OF THE MONUMENT

Petroglyph National Monument, encompassing 7,244 acres, was established in June 1990 as a new unit of the national park system to preserve the more than 15,000 prehistoric and historic petroglyphs and other significant natural and cultural resources that are on the west side of Albuquerque, New Mexico (see Region, Vicinity, and Existing Conditions maps).

The major landscape feature of Albuquerque's western horizon is the west mesa, which was created by a series of volcanic eruptions and lava flows about 190,000 years ago. What remains of those eruptions are the mesa, with its five volcanic cones, and the dark, winding, 17-mile-long escarpment. The petroglyphs are symbols or figures that have been scratched, pecked, or abraded on the dark patina of the basaltic rocks of this escarpment.

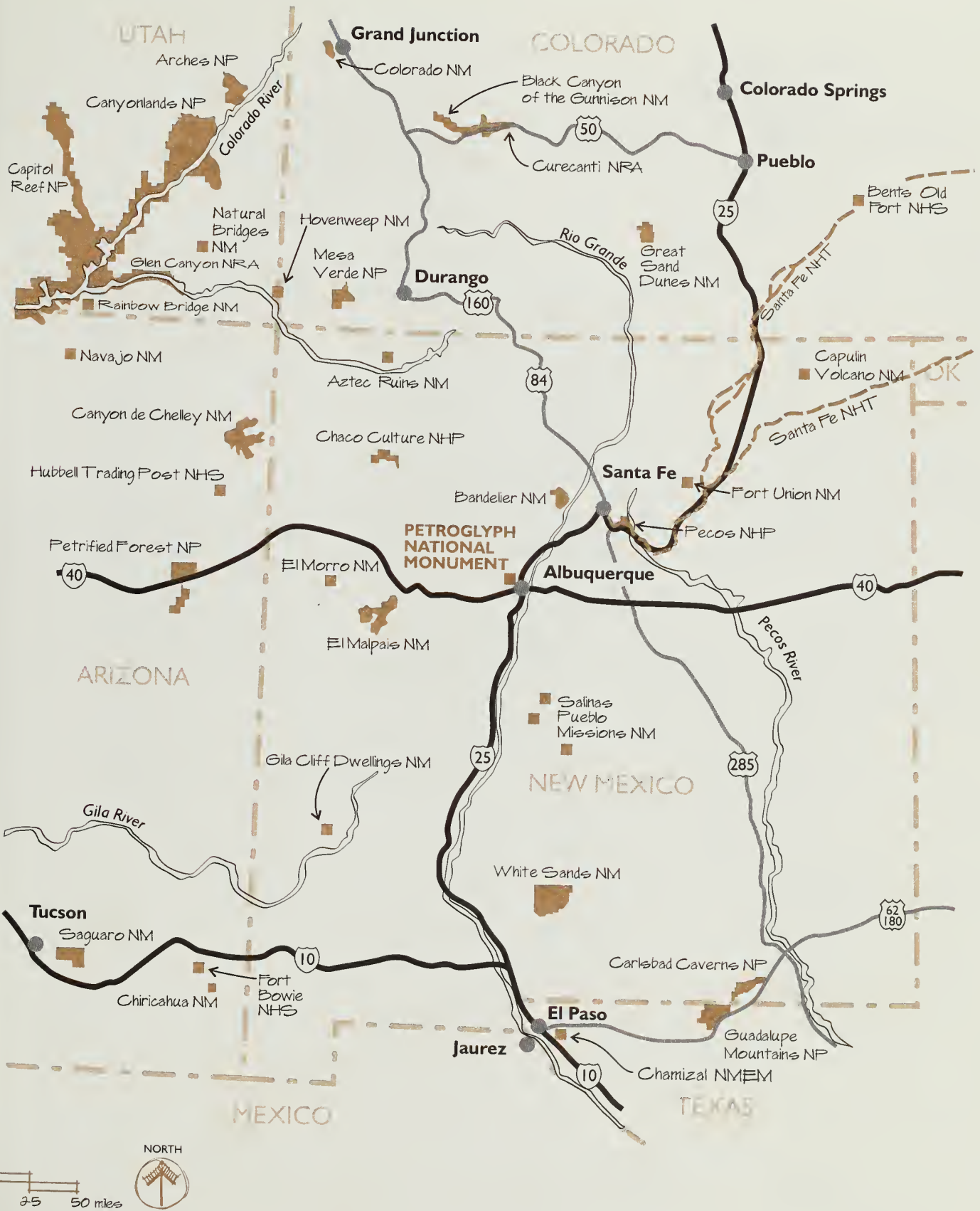
Although the petroglyphs are along the entire escarpment and along the mesa-top arroyos, four areas along the mesa escarpment have concentrations of many petroglyphs within relatively small areas — Piedras Marcadas Canyon, Boca Negra Canyon, Rinconada Canyon, and Mesa Prieta. This collection of "piedras marcadas" ("marked rocks") illustrates the rich complexity of Puebloan cultural expression. Although the images may be appreciated by non-Indians as a rich visual gallery of prehistoric artistry, they have a much deeper traditional and cultural meaning to present-day Pueblo peoples. The Indian community has said that the placement of the petroglyph images was purposeful and that their meaning and significance are inseparable from the landscape, nearby landforms, and other petroglyphs. The petroglyphs are part of the natural setting and the cultural

landscape. Researchers also consider the petroglyphs significant for their insight into past cultural history and for their potential to contribute to understanding the ideological diversity among Pueblo groups of the Southwest.

Equally important as the petroglyphs and their context, however, is the landscape of the monument. The entire west mesa landscape, including views from the mesa to the Sandia and Manzano Mountains, the volcanoes, and the other natural resources and features, is also considered of traditional and cultural value to the Pueblo people. Special knowledge of monument features, traditional and cultural sites, and petroglyphs have been passed from generation to generation for centuries. This landscape has continued as part of the cultural identity of these peoples — a place of traditional and cultural value and a place where Indian people have come to practice traditional and cultural activities. It is also a place whose timeless and natural beauty and sense of place can be appreciated and respected by others.

The primary visitor use area to see petroglyphs and to walk from the base to the top of the escarpment is at Boca Negra Canyon. This area was acquired by the city in 1973 and developed as Indian Petroglyph State Park with state and federal funds. Since establishment of the monument, the city Open Space Division and the National Park Service have jointly conducted educational programs and law enforcement at Boca Negra Canyon. There is also a small interim NPS visitor center at Lava Shadows, with a small book sales area, information desk, and public restroom. This center can accommodate about 20 people at one time.

The monument is adjacent to and partially within the city of Albuquerque. Existing and proposed residential areas, such as Las Marcadas, Shenandoah, Taylor Ranch, Santa Fe Village, and Park West, abut the eastern monument boundary and the escarpment. Vacant lands south of the monument are being planned for residential and resort

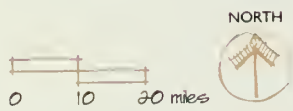
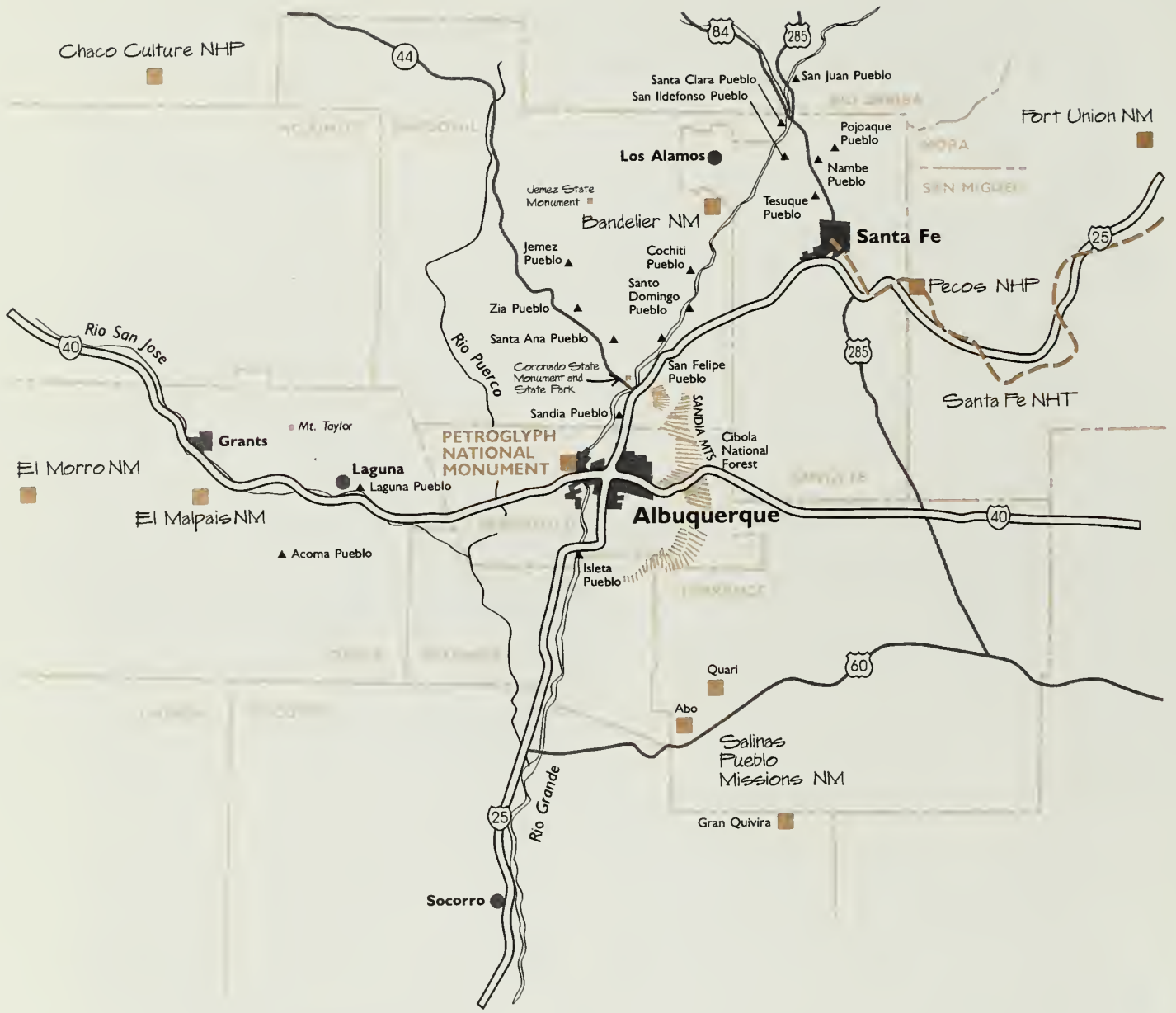


Region

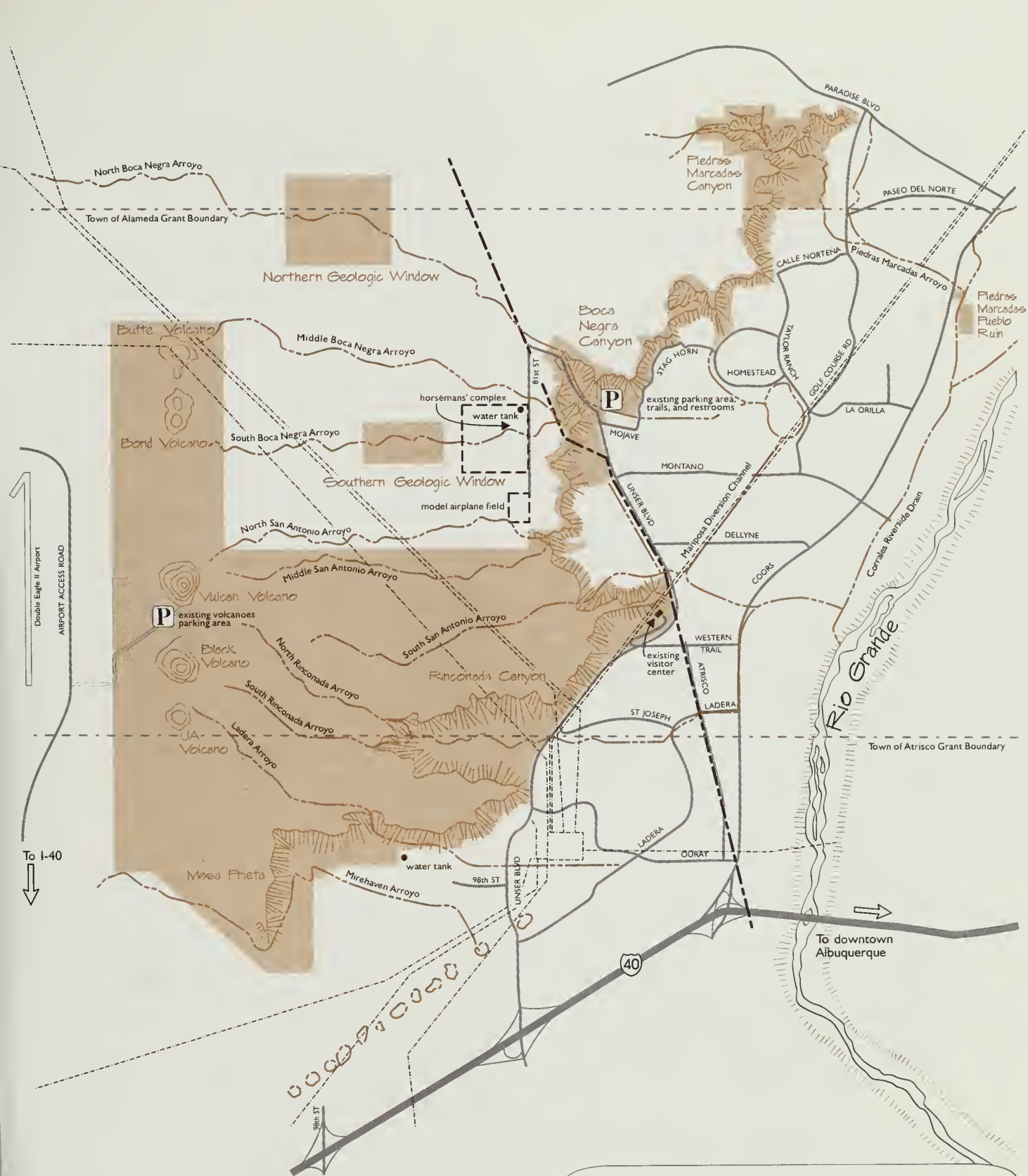
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Vicinity
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	arroyo
	utility lines
	gas line
	Petroglyph National Monument
	escarpment

Existing Conditions
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development. The Double Eagle II Airport, a general aviation airport, is west of the monument. Lands north of the monument are owned partially by the city Open Space Division and partially by the Paradise Hills residential community (see Existing Land Use map).

The monument also includes more than 300 other archeological sites (the petroglyphs are archeological sites with the same significance and values as the other more common surface and subsurface sites). Among these sites is the largest unexcavated pueblo in the middle Rio Grande valley, known as the Piedras Marcadas Pueblo ruin. The ruins are what remains of a two- to three-story pueblo that is thought to have contained 1,000 rooms. The earthen walls of the pueblo have eroded, and the site is buried and covered with vegetation. From a distance the site appears the same as the surrounding landscape.

The five volcanoes (JA, Black, Vulcan, Bond, and Butte) line the western edge of the monument and frame Albuquerque's western skyline. There are also two geologic "windows" on the mesa top; these noncontiguous portions of the monument are depressions or windows into the mesa's geologic strata along the arroyos. There are many petroglyphs in these depressions. The Pueblo community has stated that these features also have traditional and cultural significance.

The mesa provides panoramic views of Albuquerque, the Rio Grande Bosque (Spanish for forest and referring to the forested Rio Grande floodplain), and the Sandia and Manzano Mountains east of Albuquerque. West of the monument are the Rio Puerco valley and Mt. Taylor.

About 1,512 acres of lands in the monument are owned by the federal government, about

3,811 acres are owned by the city, and about 740 acres are owned by the state (see Land-ownership map). The remaining private lands (approximately 1,315 acres) will be acquired as funds are appropriated by Congress and the city and the state for land acquisition. City open space and existing and proposed city trails provide opportunities to connect with the monument.

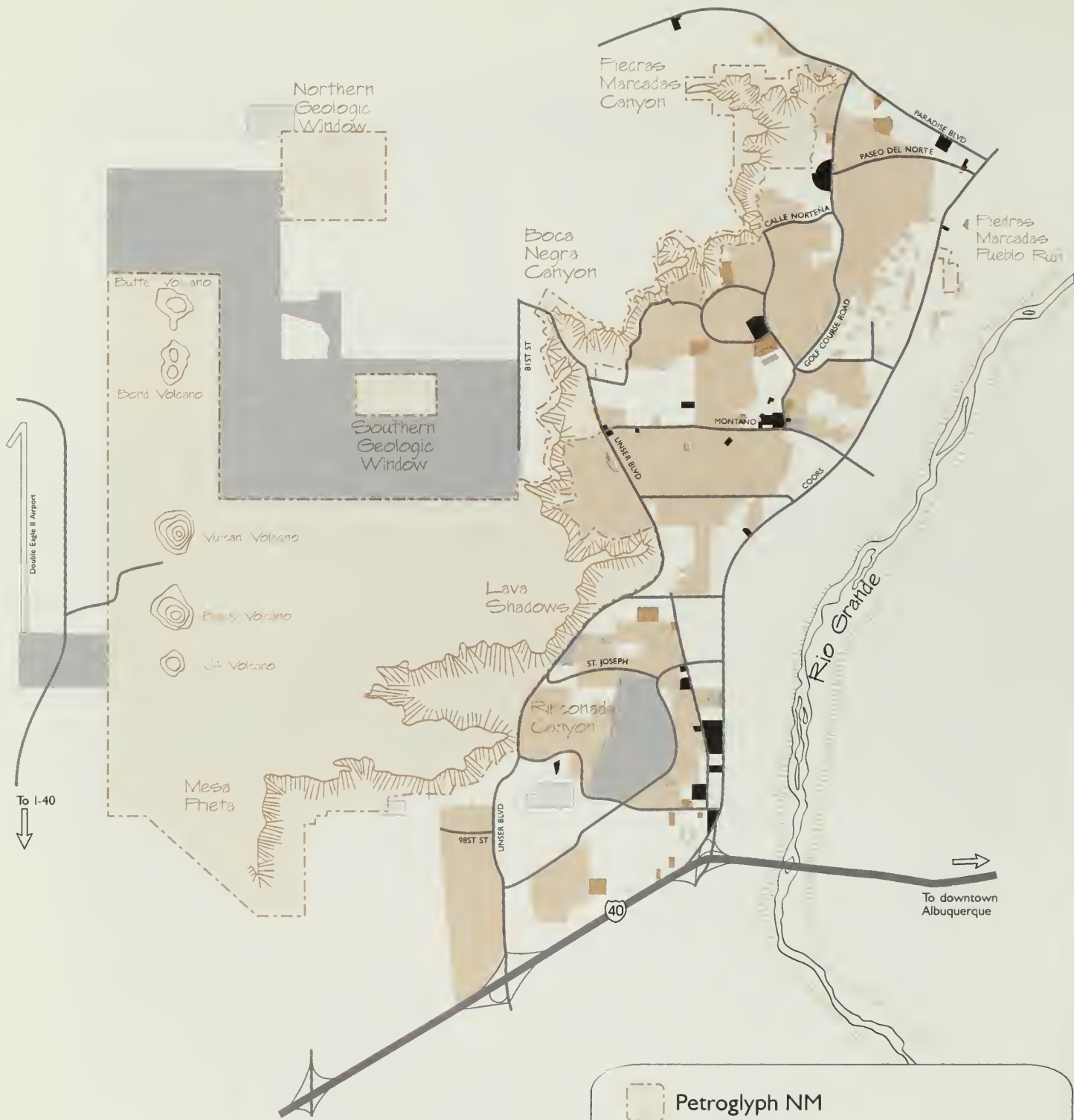
PUBLIC INVOLVEMENT AND CONSULTATION

Throughout the planning process the team preparing the *Draft* and *Final Management Plans* has met with governmental organizations, American Indian groups, Atrisco heirs, neighborhood groups, and other interested people to identify issues and exchange information. Another participant in preparing the draft and final documents is the Petroglyph National Monument Advisory Commission. As directed by monument legislation, the commission is composed of representatives from various interested entities throughout the region.

PURPOSE AND SIGNIFICANCE OF THE MONUMENT

The monument's purposes and significance were developed based on the legislation that established the monument. The monument's purposes identify why the area was designated to be part of the national park system and the significance statements identify the national importance of the monument's cultural and natural resources. Based on public comments and a close look at the legislation and the legislative history, the following purpose and significance statements were identified.

PURPOSES OF THE MONUMENT	SIGNIFICANCE OF THE MONUMENT
<ul style="list-style-type: none">• Preserve the integrity of the cultural and natural resources in the context that gives them meaning.• Provide opportunities for diverse groups to understand, appreciate, and experience the monument in ways that are compatible with the monument's significance.• Cooperate with affected American Indians and Atrisco land grant heirs in perpetuating their heritage.• Function as a focal point for the collection, analysis, and dissemination of information relating to Rio Grande style and other forms of petroglyphs and pictographs.	<ul style="list-style-type: none">• The monument contains one of the largest concentrations of petroglyphs in North America and represents an extensive record of peoples for whom we have few written records.• The monument has outstanding research potential because the petroglyphs are numerous, have retained their integrity, are an outstanding example of Rio Grande style, and are close to other associated archeological resources.• Places in the monument have traditional, cultural, and importance to American Indians and Atrisco land grant heirs.• The Piedras Marcadas Pueblo ruin is one of the largest pueblos of its time period in the Rio Grande valley.• The monument's natural and cultural landscape (escarpment, volcanic cones, and surrounding open space) and long vistas are major elements that define Albuquerque's western horizon and provide opportunities to experience contrasts with a growing urban environment.



Existing Land Use









Petroglyph National Monument

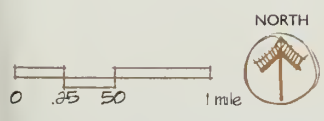
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	Petroglyph NM
	residential
	commercial
	public/institutional/church
	public recreation & open space
	utility facilities
	vacant
	escarpment



-  Piedras Marcadas unit
-  Boca Negra unit
-  Atrisco unit
-  city of Albuquerque
-  state of New Mexico
-  federal government
-  private lands
-  escarpment



Landownership
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SUMMARY OF THE ALTERNATIVES AND IMPACTS

The *General Management Plan / Development Concept Plan / Environmental Impact Statement* presents four alternatives, including a preferred alternative and proposed action, for the development, resource management, and visitor use of the monument. A summary of these alternatives and their impacts plus summary tables follow. The alternatives describe different visitor experiences and different kinds and locations for facilities under this common resource management approach. Because of the federal laws and policies that apply to managing the monument's resources, many resource management actions, including cultural landscape and archeological site values, natural resources, and various other aspects of monument management, are common to all four alternatives. The following section describes the most significant of these common actions.

SUMMARY OF ACTIONS COMMON TO ALL ALTERNATIVES

Partnership, Jurisdiction, Responsibilities

As a unit of the nation park system, the National Park Service would have overall responsibility for managing the monument. The National Park Service would have operational responsibility for the Atrisco unit. The city would have operational responsibility for the Boca Negra and piedras Marcadas units. The National Park Service and the city Open Space Division would work with city and county Land Use Planning and Permitting Divisions to ensure the coordination of review for developing adjacent lands.

Cultural and Natural Resource Management

Cultural resources would be managed by implementing various policies, programs, and strategies, including education, continuing scientific study, inventory,

evaluation, and consultation with American Indian groups and Atrisco land grant heirs.

Cultural resource management is comprised of several components including (1) inventorying, evaluating, and monitoring, (2) direct preservation, protection, maintenance, and stabilization actions, (3) protecting the cultural landscape, (4) research, (5) directing visitor use/designing and locating facilities, (6) law enforcement, and (7) educational and interpretive programs (including the heritage education program). The petroglyph research center/function would be an integral part of managing the cultural resources.

Cultural resources would be managed to provide the greatest degree of protection and preservation and to make all possible efforts to ensure that archeological resources would not be disturbed or removed. No petroglyphs would be relocated or repositioned.

Natural resource management programs and techniques would include (1) inventory and research (2) mitigation, (3) monitoring, (4) protection (5) interpretation and education, (6) administration, and (7) appropriate design of trails and facilities.

Directing Visitor Use / Designing and Locating Facilities

Visitors would be directed to sites and areas that can best accommodate use and would be discouraged or prohibited from areas where use would adversely impact or destroy sensitive natural or cultural resources. New facilities would be designed and sited to minimize direct impacts on petroglyphs and other potentially significant cultural and natural resources.

Activities in petroglyph concentration areas would be focused on opportunities for visitors to see the petroglyphs in their context and within the cultural landscape. Only the development necessary to properly guide visitors and protect resources would

be allowed. Sensitive design of new visitor facilities in petroglyph viewing areas would be of vital importance to prevent adverse impacts. Visitors would be required to stay on trails. Facility design would reflect cultural and natural values of the monument and have a common theme. Wherever possible, new roads and trails would follow existing routes to preserve the cultural landscape and prevent new disturbance of archeological and natural resources.

Law Enforcement

Law enforcement would be used to ensure compliance with monument regulations. Rangers would actively patrol the monument, with special attention to petroglyph and archeological sites.

American Indian Relationships, American Indian Religious Freedom Act, and Traditional Uses

All public lands within the monument would be managed to comply with the American Indian Religious Freedom Act and related NPS policies. In carrying out this mandate, all monument programs would reflect informed awareness, sensitivity, and serious concern for the traditional and cultural activities and values of American Indians who have ancestral ties to the monument. Monument managers would work with Pueblo groups to minimize interference with traditional and cultural activities, consistent with the American Indian Religious Freedom Act.

The National Park Service would involve American Indians in current and future interpretive programs. This involvement could range from developing the programs to reviewing materials to presenting programs.

Throughout and after the planning for this *Final Management Plan*, the National Park Service and city representatives would continue to consult with American Indian groups regarding visitor use, archeological

research, interpretive programs, and resource management for the monument.

Atrisco Land Grant Heirs

The National Park Service would continue to work and consult with the Atrisco land grant heirs to determine and document the nature and extent of any such traditional uses and how to maintain opportunities for such uses to continue. Consultation with Atrisco land grant heirs would help avoid impacts on potential traditional use sites, provide for the continuance of potential traditional activities, and help develop culturally sensitive interpretive programs.

Stormwater Management

The National Park Service, the city, and the Albuquerque Metropolitan Arroyo Flood Control Authority would continue to work together to study stormwater flows, the characteristics of the drainage basins that affect the monument, and alternative management approaches to ensure that stormwater coming into the monument would not derogate the values and purposes for which the monument was established. The flood control authority, the city's Hydrology Division, and Bernalillo County would use their authorities to regulate development and drainage improvements upstream of the monument.

Stormwater flows and effects on monument resources would be monitored, and control measures would be reviewed on a regular basis. Drainage plans that allow for the incremental addition or subtraction of upstream structures to/from the system would be evaluated individually.

Interpretation and the Visitor Experience

Interpretation is an educational activity that is designed to stimulate curiosity, convey messages to the visiting public, and help the public understand, enjoy, appreciate, and

protect the resources. Interpretation includes telling visitors what there is to see and how to get there as well as determining what visitors should learn about the monument and how they would best learn that information — through media such as an audiovisual program, a wayside exhibit (an outside interpretive panel), a self-guiding brochure, a guided tour, or some other means. Interpretation is also an important means of protecting resources. The more visitors know about how special the resources are, the more inclined they are to respect and take care of those resources.

Under all alternatives, monument visitors would be directed to the visitor center or visitor contact facility to get basic orientation, interpretation, safety, and resource protection information before seeing the petroglyphs. Under all alternatives, visitors would have diverse opportunities to see the petroglyphs and other monument resources.

Visitors could only see the petroglyphs by pedestrian trails, and not all petroglyphs would be accessible to the public. Horses, bicycles, and dog walking would not be allowed near petroglyph viewing areas in the canyons below the escarpment.

A major component of the interpretive message would be to convey present-day American Indians' connection to the petroglyphs and the landscape to visitors. This message would include information that has been developed with the American Indian community about past and present cultures to give visitors enough information and experience to appreciate and respect the monument resources. Various communication techniques would encourage maximum visitor cooperation in resource protection. Important messages, including primary interpretive themes and resource protection concerns, would be repeated/reinforced in several ways and at several points during a visit. Heritage education programs would be a top priority for the monument.

ALTERNATIVE 1

The overall approach of alternative 1, the proposed action and Park Service's preferred alternative, would be to provide various ways for visitors of different ages and abilities to see and appreciate many of the monument's significant resources. Resource preservation would be accomplished by establishing a strong managing agency presence and public education programs.

Visitors would be directed to a visitor center/heritage education center at Boca Negra Canyon (see Alternative 1 map) where they would have opportunities to learn about the significance of the monument resources and past cultures of the region; they would also have easy access to many and varied petroglyph viewing areas and other portions of the monument. This alternative focuses visitors on seeing the petroglyphs within the context of the escarpment, mesa top, volcanoes, Rio Grande valley, and the Sandia Mountains. The National Park Service and the city would work to develop partnerships with other public institutions, private industry, and nonprofit organizations to assist in funding and operating the center.

Horseback and bicycle riding would only be permitted on designated mesa-top trails. No horseback or bicycle riding would be permitted in petroglyph viewing areas below the escarpment. There would be three escarpment crossings. Horse and bicycle use on the mesa top would require permits. Mesa-top resources and visitor experiences would be monitored to identify adverse impacts and to identify needs for management actions.

There would be a city-owned and city-managed visitor contact and heritage education facility outside the monument south of the Piedras Marcadas Pueblo ruin. The National Park Service would cooperate with the city and others in developing and operating the proposed facility or a facility at some other location.

Although in this alternative the center would not be in a new facility, the petroglyph

research center functions would be in existing facilities. Other options would be considered if these facilities prove to be inadequate.

A 10.5-acre boundary adjustment would be made to include lands south of Boca Negra Canyon and north of Mojave (five lots on Mojave east of Unser Boulevard) to protect views from the visitor center, provide additional lands for visitor service facilities, and prevent incompatible development that would adversely affect visitor use.

Most impacts on the cultural and natural resources and other impact topics would be minimal or, in some cases, beneficial. New structures would impact the cultural landscape. There could be adverse impacts on values held by culturally affiliated groups from the intrusion of bicycles and horses into lands that are important to those groups. Mitigating measures would be developed to avoid significant adverse impacts on the ferruginous hawk, which is being considered for listing by the U.S. Fish and Wildlife Service as a threatened species. Without these mitigating measures, the ferruginous hawk would be significantly adversely affected. The destruction of potential habitat of two rare cactus species could incrementally contribute to their overall decline.

ALTERNATIVE 2

The overall approach of alternative 2 would be to preserve the greatest portion of the monument and adjacent lands in as natural a condition as possible, with the fewest intrusions from development and fewer opportunities for public access and use. Visitors would be directed to a visitor center at Lava Shadows that would have the same programs as in the proposed action (see Alternative 2 map). Visitors would have access to selected petroglyphs in the Lava Shadows area and would walk about a mile or drive to other petroglyph concentrations.

A heritage education center would be built at Boca Negra Canyon. Because of the more

difficult access to Rinconada Canyon, fewer visitors would go there and there would be more opportunities to see petroglyphs with a sense of solitude. The petroglyph research center would be offsite, and a city-owned and city-managed visitor contact facility would be developed outside monument lands south of the Piedras Marcadas Pueblo ruin.

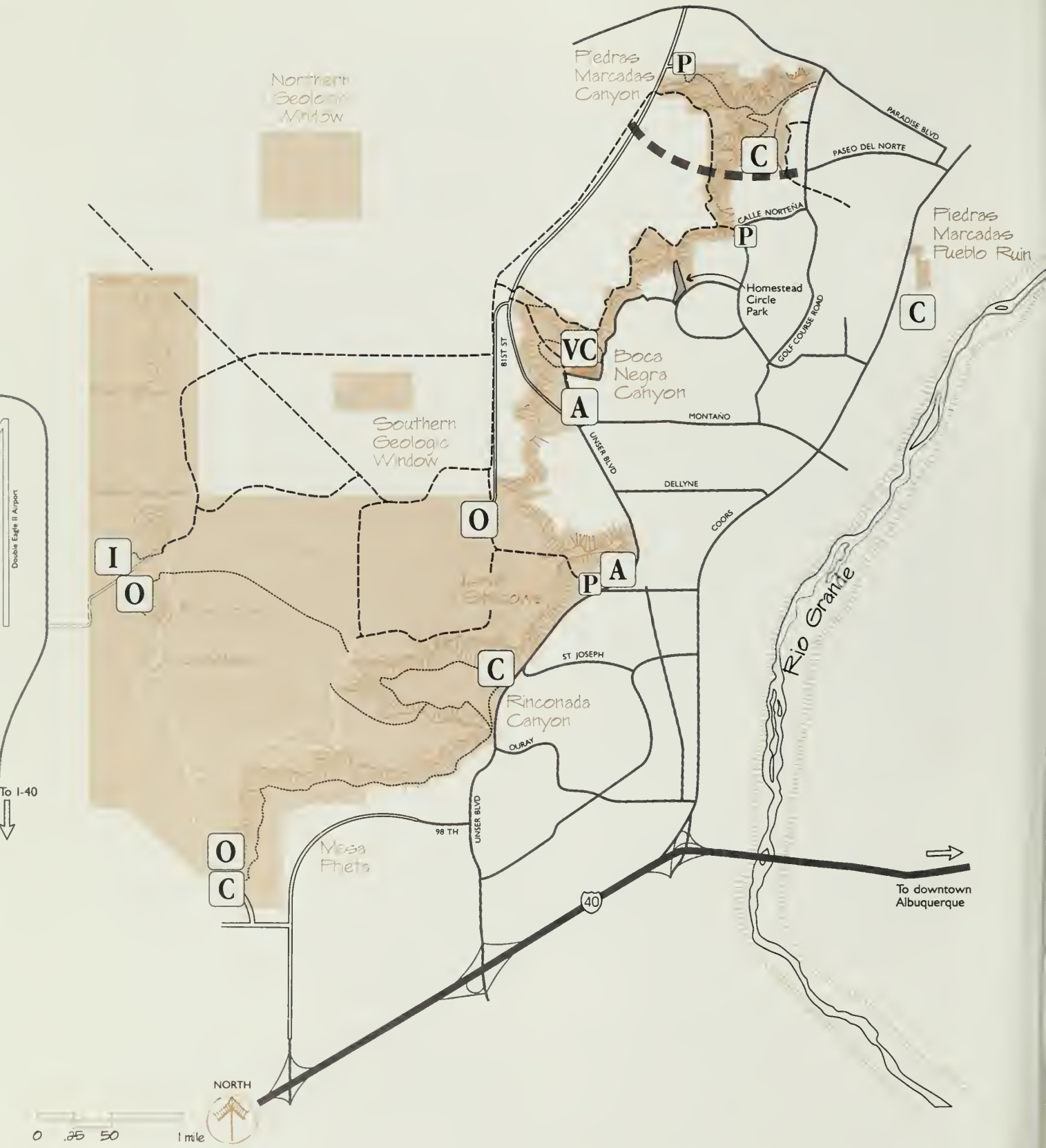
The volcanoes area, along with the geologic windows, would be reserved for research, American Indian traditional use, and occasional guided tours.

Horse and bicycle use would not be permitted in this alternative except at two escarpment crossings.

This alternative would include a 129-acre boundary addition of the mesa-top lands between 81st Street and the monument boundary to provide for the improvement of 81st Street and a new trailhead, parking, and viewing and picnic area at the south end of 81st Street. This land is part of the cultural landscape and a visual and physical extension of monument and open space lands. This addition would provide substantial opportunities for visitors to enjoy the views relatively unimpaired by proposed development.

Also under this alternative it is recommended that a private/public partnership be established to protect about 475 acres west of the monument, east of the proposed Unser Boulevard, and north of Boca Negra Canyon. Portions of this area would be managed and protected by nonfederal methods for open space and recreational uses, and other portions of the area could take the form of a planned community.

Overall, impacts on cultural and natural resources and values held by culturally affiliated groups would be similar to and in some cases slightly more positive under this alternative than alternative 1 because there would be fewer facilities and these facilities would be in previously disturbed areas. The impacts on the ferruginous hawk and the potential habitat of two rare cactus species



Proposed Action
Alternative I
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Proposed Action Alternative I



Boca Negra Canyon

- visitor center
- heritage education facility

Piedras Marcadas Canyon

- visitor contact facility

Piedras Marcadas Pueblo Ruin

- visitor contact facility
(outside monument on city land)

Rinconada Canyon

- visitor contact facility

Mesa Prieta

- visitor contact facility
- trailhead

South of Boca Negra Canyon

- staff offices and maintenance in existing structures

Lava Shadows

- trailhead and parking
- continued use of existing structures
 - interim visitor center
 - staff offices

Volcanoes

- visitor information kiosk
- overlook

Geologic Windows

- no development
- occasional guided tours
















81st Street

- overlook and parking

Homestead Circle Park

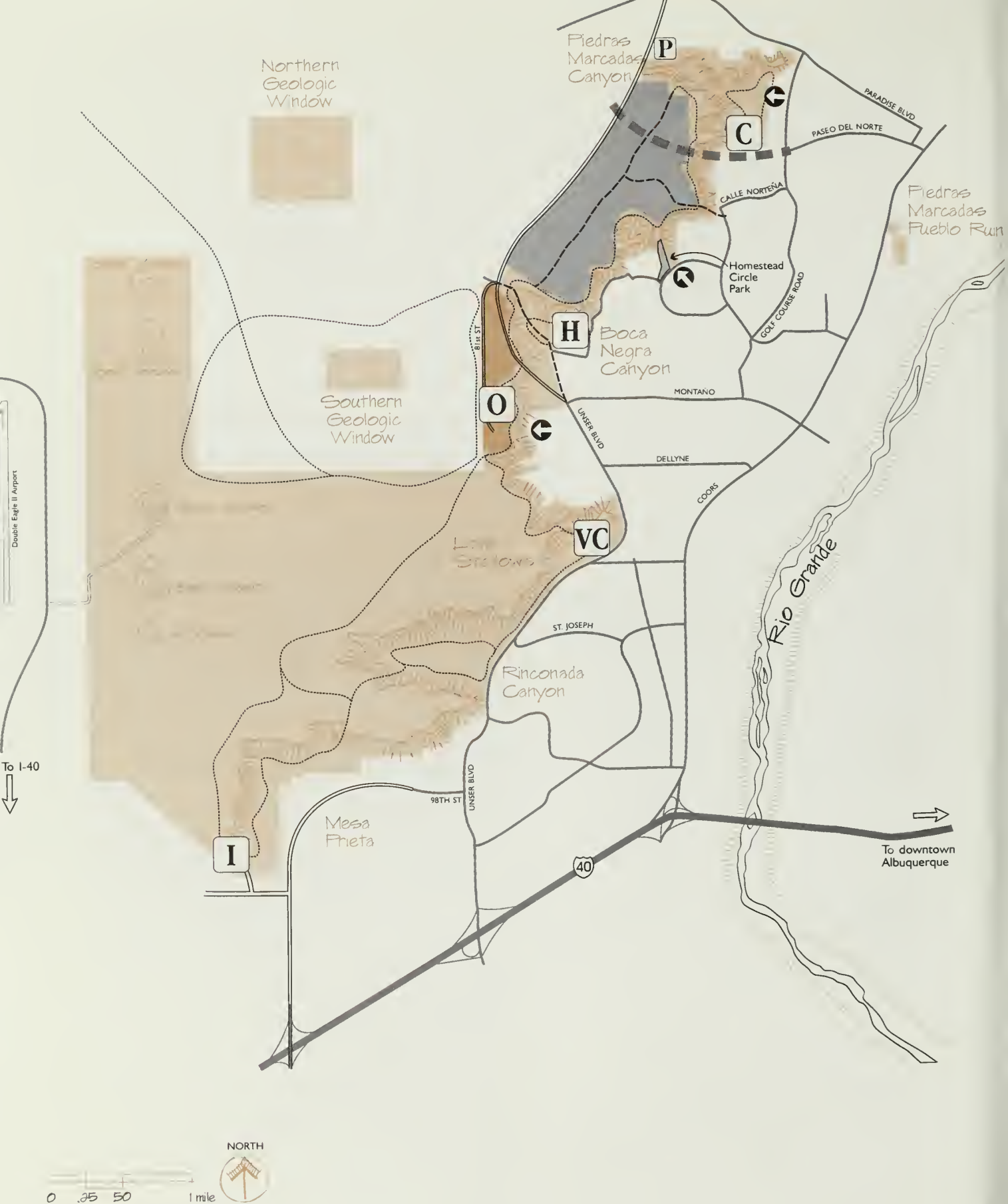
- pedestrian trail and seating area



-  visitor center
-  visitor contact facility
-  visitor information kiosk
-  administrative facility
-  overlook
-  parking area
-  neighborhood access*
-  Petroglyph National Monument
-  escarpment
-  foot trail
-  multiuse trail
-  multiuse trail - possible future use
-  boundary addition
-  Paseo Del Norte study corridor
-  proposed paved road

* to be determined on a site specific basis in consultation with neighborhoods and homeowners





Alternative 2
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Alternative 2



Lava Shadows

- visitor center

Piedras Marcadas Canyon

- visitor contact facility

Piedras Marcadas Pueblo Ruin

- visitor contact facility

Mesa Prieta

- visitor information kiosk

Boca Negra Canyon

- heritage education facility

Rinconada Canyon

- foot trail

Petroglyph Research Center

- leased space outside monument

Volcanoes

- limited use; parking
- occasional guided tours

Geologic Windows

- no development; limited use
- occasional guided tours

81st Street

- improved road
- views, picnic area, and parking

Homestead Circle Park

- restored to natural conditions

A Administration would be in leased space offsite.



- VC** visitor center
- C** visitor contact facility
- I** visitor information kiosk
- A** administrative facility
- H** heritage education center
- R** petroglyph research center
- O** overlook
- P** parking area
- neighborhood access
- Petroglyph National Monument
- escarpment
- foot trail
- multiuse trail
- boundary addition
- nonfederal protected land
- Paseo Del Norte study corridor
- proposed paved road



would be the same as in alternative 1 but less severe. As in alternative 1, mitigation measures would be required to avoid significant adverse impacts.

ALTERNATIVE 3

The overall approach of alternative 3 would be to provide the easiest and greatest amount of access to areas with many petroglyphs and to the scenic mesa-top vistas. Visitors would be directed to a visitor center/heritage education center in Rinconada Canyon where many petroglyphs could be seen without visual intrusions from adjacent residential development (see Alternative 3 map).

Interpretive programs would include similar information as in the other alternatives about the petroglyphs, their context, and past cultures. There would be more emphasis on the mesa-top scenic views under this alternative. From the visitor center, many visitors would drive to a 10-mile, mesa-top loop road that would provide easy access to the mesa-top views and the volcanoes.

Parking and trails would be developed at the volcanoes and geologic windows areas. Horse and bicycle use would be provided at three escarpment crossings. A new petroglyph research center would be built just north of Piedras Marcadas Canyon, and there would be a city-owned and city-managed visitor contact facility outside monument lands south of the Piedras Marcadas Pueblo ruin.

Developing the mesa-top road and facilities in Rinconada Canyon would adversely affect the cultural landscape and its significance to the Pueblo community. This alternative would negatively impact more archeological sites, would result in more negative cumulative impacts on cultural resources and values held by culturally affiliated groups, and would require more costly programs to mitigate than the other alternatives. Visitor facilities would provide easy access to primary resources and allow all visitors to appreciate one of the monument's outstand-

ing petroglyph concentrations in Rinconada Canyon. The facilities would also establish a greater management presence and protection for cultural resources; however, there could be negative impacts, including relic hunting and vandalism, because of the easier access.

The ferruginous hawk would probably be eliminated from the area as a breeding species, and this would be a significant adverse impact. The development on potential habitat for the two rare cactus would be a significant adverse effect. Other wildlife populations would also decrease.

With the construction of the mesa-top road, natural drainage patterns would be disturbed and noise levels would be greater than in the other alternatives. Monument biodiversity would also be more adversely impacted under this alternative because of species displacement from monument and adjacent development. Adverse impacts on the monument's scenic resources would also be greater under this alternative.

ALTERNATIVE 4

Alternative 4, a "no-action" alternative, describes the conditions that would exist at the monument without a change in current management direction or an approved management plan — providing a baseline for evaluating the changes and impacts that would occur under the three action alternatives. Under this alternative some provisions would be made for increases in visitor use — e.g., parking areas and trails. A separate heritage education center would not be constructed; monument staff would continue to give guided tours to school groups and bring interpretive programs to the classrooms. This alternative would have the fewest facilities. Horseback and bicycle riding would be permitted within the monument only where currently allowed.

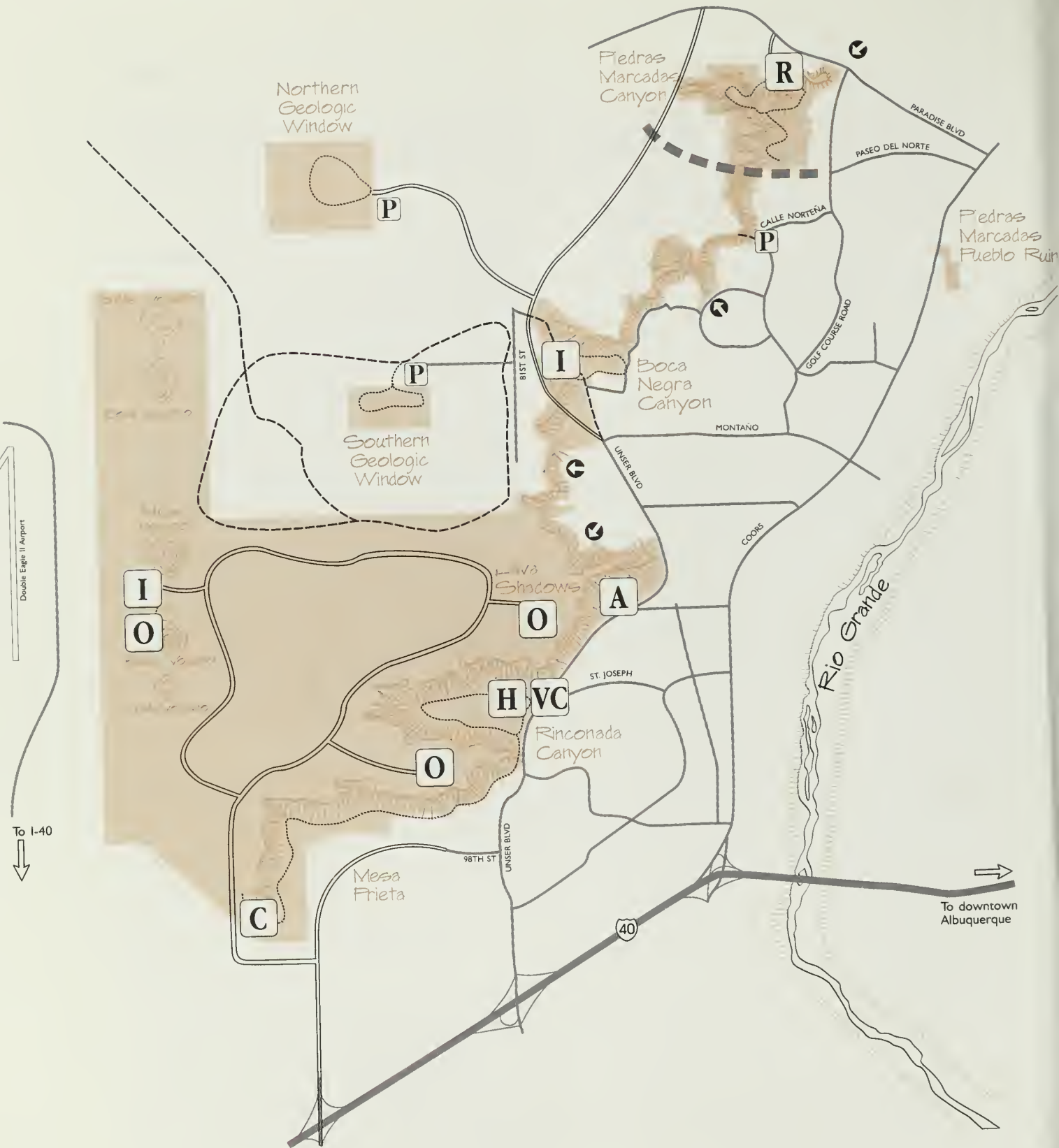
The existing interim visitor center at Lava Shadows would become the primary visitor center (see Alternative 4 map). Some modifications would be made by the city at Boca Negra Canyon, such as improved parking

area and restrooms, trails, and shade structure. There would be two new small parking areas, one each near Rinconada and Piedras Marcadas Canyons, and some improvements to existing trails in these canyons. Mesa Prieta would be accessible only by pedestrian trails. The research center functions would be carried out by existing staff in existing facilities within the existing budget. The Piedras Marcadas Pueblo ruin would be closed except for specially arranged tours.

There would be adverse impacts on archeological sites, petroglyphs, and the cultural landscape because of the resource deterioration and vandalism that could occur due to lack of adequate funding, opportunities to educate the public, and programs to protect

these resources. The meaning and viability of the Pueblo peoples' traditions and culture could diminish.

There would not be significant adverse impacts on the ferruginous hawk or the potential rare cactus species habitat. Without permits to regulate visitor use, there could be negative impacts on other wildlife species. Biodiversity might decrease because of species displacement on lands adjacent to the monument. Most of the monument's natural scenic qualities would not be disturbed by the development of new facilities. There would be less economic benefits to the local and regional economy. Visitors would have fewer opportunities to appreciate monument resources than in the other alternatives.



Alternative 3
Petroglyph National Monument
 United States Department of the Interior
 National Park Service
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Alternative 3



Rinconada Canyon

- visitor center/heritage education facility
- improved trails

Piedras Marcadas Pueblo Ruin

- visitor contact facility

Mesa Prieta

- visitor contact/entrance station

Piedras Marcadas Canyon

- petroglyph research center

Boca Negra Canyon

- visitor information kiosk
- improved trails/shade structure/parking

Lava Shadows

- administration facility

Volcanoes

- visitor information
- overlook and parking

Geologic Windows

- improved trails
- parking

Homestead Circle Park

- traditional park



- VC** visitor center
- C** visitor contact facility
- I** visitor information kiosk
- A** administrative facility
- H** heritage education center
- R** petroglyph research center
- O** overlook
- neighborhood access
- Petroglyph National Monument
- escarpment
- foot trail
- multiuse trail
- Paseo Del Norte study corridor
- proposed paved road





Alternative 4
Petroglyph National Monument
 United States Department of the Interior
 National Park Service
 DSC • November 1996 • 354 • 20.008A

Alternative 4



Lava Shadows

- visitor center in existing structure

Boca Negra Canyon

- continuing heritage education functions
- improved trails/shade structure

Rinconada Canyon

- parking and trail

Piedras Marcadas Canyon

- parking and trail

Mesa Prieta

- foot trail

Petroglyph Research Center

- functions in existing structures

Piedras Marcadas Pueblo Ruin

- limited tours

Volcanoes

- occasional guided tours
- existing parking

Administration

- located in existing structures at Lava Shadows and south of Boca Negra Canyon

Geologic Windows

- no development or tours

Homestead Circle Park

- no development or revegetation



- VC** visitor center
- C** visitor contact facility
- I** visitor information kiosk
- A** administrative facility
- R** petroglyph research center
- O** overlook
- P** parking area
- neighborhood access
- Petroglyph National Monument
- escarpment
- foot trail
- multiuse trail
- Paseo Del Norte study corridor
- proposed paved road



TABLE 1. SUMMARY OF ALTERNATIVES

Note: Actions common to all alternatives are not represented in this table.

	Alternative 1 — Proposed Action	Alternative 2	Alternative 3	Alternative 4 — No Action
Overall	<p>Would provide various ways for visitors to see and appreciate many monument resources. Easy access to petroglyphs from new visitor center, and easy access to various petroglyph viewing areas. Focus on seeing the petroglyphs in context of the escarpment, mesa top, volcanoes, and surrounding mountains. Pedestrian, horse, and bicycle use permitted on selected designated mesa-top trails.</p>	<p>Would preserve the greatest portion of the monument and adjacent lands in as natural a condition as possible with the fewest intrusions from development and fewer opportunities for public access and use. Visitors could see some petroglyphs near visitor center and walk to other areas where there were more petroglyph concentrations. In Rinconada Canyon visitors could see petroglyphs in more solitude. Relatively easy access to petroglyphs at Boca Negra and Piedras Marcadas Canyons and Mesa Prieta. No horse or bicycle use permitted (except at escarpment crossings). Pedestrian use only in most parts of monument.</p>	<p>Would provide easy access to area with many petroglyphs, especially with the visitor center at Rinconada Canyon, and to mesa-top vistas and the volcanoes via paved loop road.</p>	<p>Would continue existing use while providing for some increase in visitor use (i.e., parking areas and trails). Staff would continue current program and guided tours at Boca Negra Canyon. This alternative would have fewest facilities and most areas open to multiple uses (horses and bicycles). Horseback riding and bicycling would be permitted only where currently allowed. No neighborhood access trails would be built.</p>
Visitor Center	<p>At Boca Negra with heritage education function.</p>	<p>New center at Lava Shadows area.</p>	<p>New visitor/heritage education center at Rinconada Canyon.</p>	<p>Use of existing interim visitor center at Lava Shadows.</p>
Boca Negra Canyon	<p>See above; expand and redesign trail system.</p>	<p>Construct heritage education center; expand and redesign trail system, parking, and shade structure.</p>	<p>Would continue as a primary petroglyph viewing area; restrooms and expanded/redesigned trails; unstaffed visitor information kiosk.</p>	<p>Continue existing use/heritage education program with improvements to parking area and shade structure and minor trail improvements.</p>
Piedras Marcadas Canyon	<p>Small parking area with visitor contact facility and exhibits, restrooms, and trail to inner canyon.</p>	<p>Same as alternative 1 plus small parking area/trail access in northwestern part of canyon.</p>	<p>Petroglyph research center constructed on mesa top north of canyon, accessed from Paradise Boulevard; two pedestrian trails into inner canyon trail (used by permit).</p>	<p>Small parking area on mesa top at northwest part of canyon; soft-surfaced pedestrian trail into canyon.</p>

TABLE 1. SUMMARY OF ALTERNATIVES (CONT.)

	Alternative 1 — Proposed Action	Alternative 2	Alternative 3	Alternative 4 — No Action
Rinconada Canyon	Small parking area and visitor contact facility with restrooms; canyon accessible only by pedestrian trails (initial part of trail accessible to those with disabilities).	Outer canyon access only via 1-mile hard-surfaced trail from Lava Shadows and soft-surfaced trails from Mesa Prieta and the mesa top; inner canyon access via soft-surfaced trails; permit system for inner canyon.	Visitor/heritage education center and hard-surfaced trails.	Small parking area with soft-surfaced pedestrian trail into canyon.
Mesa Prieta	Small parking area, visitor contact facility, overlook, and trailhead.	New small parking area, restrooms, and visitor information kiosk. Hard-surfaced pedestrian trail to nearby petroglyphs, and soft-surfaced pedestrian trail to mesa top and trail below escarpment.	Pedestrian trail along base of escarpment; staffed visitor contact facility, parking, and trailhead at southern end (entrance to mesa-top loop road).	No new facilities or orientation; accessible by pedestrian trail from mesa top or from parking area in northern part of Rinconada Canyon; visitor use discouraged.
Piedras Marcadas Pueblo Ruin	Interpretive trail. Prepare ruins management plan. City-owned and managed visitor contact facility outside monument lands.	Same as alternative 1.	Same as alternative 1.	Closed to public except for specially arranged guided tours. No visitor facilities.
Area South of Boca Negra Canyon	Administrative and petroglyph research functions in existing structures.	Remove existing structures and reclaim.	Same as alternative 2.	Some administration in existing structures.
Lava Shadows	Provide parking area and trailhead and connections to other trails. Expand and improve existing structures and parking as needed.	New visitor center. Visitors could go a short distance to see a few petroglyphs along escarpment base on accessible trails. Trailhead would provide pedestrian access to rest of monument. Remove existing structures when no longer needed.	Existing interim visitor center would be removed, and a new administrative structure would be built.	Current interim visitor center would become primary visitor center.
Volcanoes area	Redesigned parking area, unstaffed visitor information kiosk, restrooms, picnic area, trail to Black Volcano overlook and exhibit area; limited use of other volcanoes; no hiking or climbing.	No public access except for Pueblo Indian traditional and cultural activities, approved research projects, and occasional guided tours; gated entrance	Same as alternative 1, but access would be from east (loop road); reclaim existing road.	Existing use would continue. Parking area open dawn to dusk; no interpretation except for occasional guided tours.
Abandoned surface mines	Mining sites would be reclaimed.	Same as alternative 1.	Same as alternative 1.	No reclamation

TABLE 1. SUMMARY OF ALTERNATIVES (CONT.)

	Alternative 1 — Proposed Action	Alternative 2	Alternative 3	Alternative 4 — No Action
Geologic windows	Only Pueblo Indian activities, approved research projects, and guided tours permitted; no facilities	Same as alternative 1.	Parking areas and pedestrian trails developed for visitor use; access by existing roads.	Use discouraged; no information provided to public
Petroglyph research center	See area south of Boca Negra Canyon	In leased space near Indian Pueblo Cultural Center or University of New Mexico	At Piedras Marcadas Canyon (described above)	Functions carried out by existing monument and NPS regional office staff in existing facilities and within allocated budget
Trails and roads	Pedestrian and multiuse trails (on existing routes) on mesa top; overlook and exhibit panels at extension of 81st Street. Escarpment crossings at Lava Shadows, Boca Negra, and Calle Norteña (and maybe near Paseo del Norte corridor). Designate neighborhood access points, with cooperation from residents; reclaim other social trails. Permits required for most monument multiuse trails on mesa top and possibly for Piedras Marcadas and Rinconada Canyons. Impacts on resources monitored and mitigated if necessary.	1.3-mile road extended east from 81st Street, with trailhead, overlook and exhibit panels, small parking area, pulloffs with views, and picnic areas; several pedestrian trails on mesa top, one trail going the length of the escarpment; multiuse trail on nonfederal protected area; pedestrian trails in canyons and at Mesa Prieta; multiuse trails at escarpment crossings at Boca Negra and Calle Norteña; fewer designated neighborhood access points; permits for Rinconada and Piedras Marcadas Canyons.	Ten-mile paved loop road on mesa top, with picnic areas and overlooks; multiuse trails on mesa top in open space lands and between Boca Negra and Piedras Marcadas Canyons; escarpment crossings at Boca Negra and Calle Norteña, and if necessary at Paseo del Norte; neighborhood access in three areas; permits required for Piedras Marcadas Canyon.	No facilities, new trails, or interpretive exhibits; multiuse trails on existing dirt roads north of Atrisco grant line; pedestrian trails in other parts of monument; escarpment crossings at Boca Negra, Lava Shadows, and Calle Norteña; neighborhood access in three areas. No permit system.
475-acre nonfederal protected area	N/A	Recommended nonfederal protection to encourage use as open space and recreational uses and some form of planned community.	N/A	N/A
Other sites	City development of Homestead Circle park facilities for passive neighborhood use; reclaim disturbed area at Calle Norteña/Taylor Ranch Road area.	Homestead Circle park reclaimed to natural conditions by city; Calle Norteña/Taylor Ranch Road area reclaimed.	Homestead Circle park developed as typical neighborhood park by city; small parking area at Calle Norteña/Taylor Ranch Road area.	No development at Homestead Circle park; no action at Calle Norteña/Taylor Ranch Road area.
Boundary additions not common to all alternatives	Five lots (10.5 acres) on Mojave Street south of Boca Negra Canyon	129 acres of mesa-top lands between 81st Street and the monument boundary.	None	None

TABLE 1. SUMMARY OF ALTERNATIVES (CONT.)

	Alternative 1 — Proposed Action	Alternative 2	Alternative 3	Alternative 4 — No Action
Staffing	38 additional FTEs, NPS 16 additional FTEs, city	Same as alternative 1; slightly different assignments	Generally the same as alternative 1 with one less interpretive ranger and five additional staff.	Generally the same as alternative 1, but with 13 less staff and one person (instead of five) staffing research center.
Development Costs	\$14.2 million	\$16.2 million	\$28.9 million	\$1.4 million
Operations Costs NPS City	\$2.5 million \$810,000	\$3.3 million \$900,000	\$3.4 million \$1.4 million	\$2.9 million \$274,500

TABLE 2. SUMMARY OF THE IMPACTS OF THE ALTERNATIVES

TOPIC	ALTERNATIVE 1 — PROPOSED ACTION	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
<p>CULTURAL RESOURCE IMPACTS</p>	<p>No petroglyphs would be moved or directly affected by construction. Developing trails and viewing areas and requiring visitors to stay on trails would have a positive effect on petroglyphs and their context by providing established viewing areas and by removing trails that wind through and between petroglyph concentrations or that are too close to the features and allow visitors to touch or scratch the petroglyphs.</p> <p>Focusing visitor use in areas that previously had no visitor facilities could result in some increased risk of damage to cultural resources. Monitoring resource conditions and responding to potential threats would reduce impacts on petroglyphs and other sites from increased visitation and minimize most of the potential impacts that could occur over time and gradually diminish the integrity and scientific value of these cultural resources.</p> <p>Establishing an increased presence (including frequent patrols), directing and controlling visitor use through such measures as constructing new trails and rehabilitating existing trails, enforcing regulations, and expanding visitor education programs would help protect the cultural resources.</p> <p>During construction, dust, fumes from vehicles, noise, and large equipment would temporarily diminish the visual qualities of the cultural landscape and increase site-specific noise levels. Constructing buildings, trails, utility lines, access roads, support facilities for various areas of development, and reclamation and revegetation work would have the potential to impact known and unknown archeological and ethnographic resources and the cultural landscape. Precautions would be taken to avoid unknown possibly adverse effects of construction-related compaction and vibration on cultural resources.</p> <p>The identification and evaluation of cultural resources and appropriate siting and design (with compatible materials) of facilities and trails would help reduce the impacts of development, minimize visual impacts on these resources and the landscape, and avoid direct impacts on sites during construction as well as later indirect impacts on significant sites. Early participation by the state historic preservation office and the Advisory Council on Historic Preservation in scoping and design of new facilities would help prevent negative impacts from development.</p> <p>Visitor facilities would intrude on the cultural landscape, but sensitive siting and design would minimize negative impacts. If it were impossible to avoid sites during construction, further mitigative measures would be developed before final design and ground disturbance, in consultation with appropriate agencies and entities. Provisions for protecting previously unknown sites encountered during construction would be included in construction documents, and an archeologist would monitor ground-disturbing activities.</p> <p>There would be a positive effect of trail redesign at Boca Negra Canyon. Some increased risk for damage or vandalism in four main canyons because of increased visitor use would occur. All efforts would be made to prevent vandalism. Petroglyph research function would promote research and public education and appreciation, which would help prevent adverse impacts.</p> <p>Designating trails for horseback and bicycle riding and requiring riders to obtain permits and stay on established routes would help protect sites from illegal collecting and disturbance.</p> <p>Eliminating use on all but Black Volcano would have a beneficial effect on resources in that area.</p>	<p>Most impacts would be the same as alternative 1.</p> <p>Impacts on the cultural landscape and archeological sites would be minimal because development is generally focussed in previously disturbed areas.</p> <p>Limiting visitor access to the volcanoes area would have a positive impact on that area's cultural landscape and resources.</p> <p>Overall, impacts on petroglyphs would be similar to alternative 1, but the impacts would be in different areas for each alternative because of the different location of visitor use facilities. Because facilities would not be located in Mesa Prieta or Rinconada Canyon, there would be fewer impacts on the cultural landscape.</p>	<p>Most impacts would be the same as alternative 1.</p> <p>There would be negative effects on cultural resources. The location of major facilities in primary resource areas would provide easy access to important resources; however, negative indirect impacts on petroglyphs could occur.</p> <p>This alternative would directly impact more archeological sites and would require more costly programs to mitigate than any of the other alternatives.</p> <p>The presence of the research center in Piedras Marcadas Canyon would help reduce vandalism and collecting in that area and promote public education.</p> <p>Increased numbers and mobility of visitors on the mesa top and elsewhere would increase risks for relic hunting and vandalism. Multiuse trails in the northern section would increase the possibility of damage to archeological resources.</p> <p>The mesa-top road and the visitor center in Rinconada would have more impacts on the cultural landscape than the other alternatives. There would also be a greater risk for long-term loss of cultural resources under this alternative.</p>	<p>Negative impacts on resources, including increased risk to petroglyphs, would result from the lack of adequate funding, staff, and facilities and the limited interpretive and resource protection programs.</p> <p>The limited petroglyph research center function would promote research and education and conservation of the petroglyphs, but these gains would be less effective than in the other alternatives.</p> <p>Fewer direct negative impacts on archeological sites from construction would be anticipated than in the other alternatives. Because of the minimal monitoring and regulation on the many existing horseback riding and bicycle trails, there would be greater potential for damage to archeological resources.</p> <p>This alternative would have the fewest negative effects on the cultural landscape resulting from visitor facility developments, but there could be adverse effects from less directed and managed visitor use.</p>

TABLE 2. SUMMARY OF THE IMPACTS OF THE ALTERNATIVES (CONT.)

TOPIC	ALTERNATIVE 1 — PROPOSED ACTION	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
Cumulative Impacts on Cultural Resources	<p>Over time, vandalism, illegal collecting, and inadvertent damage to petroglyphs and other archeological sites reduce the number and quality of sites, which would result in a cumulative impact on the sites and database. Various efforts and programs would minimize but not eliminate these impacts. With development, visitor use and maintenance activities, erosion, etc., some diagnostic artifacts and features would not be preserved for future analytic techniques. Monument development combined with adjacent development would adversely affect the cultural landscape.</p> <p>There would be cumulative impacts from NPS actions combined with the city's extension of Unser Boulevard and there might be impacts from the city's development of the recreational trail and utility corridor. Impacts would be mitigated by minimizing rights-of-way and disturbed areas and using appropriate construction techniques and design materials.</p>	Impacts would be similar to those described for alternative 1.	<p>The extent and type of visitor use and facilities provided for in this alternative would result in more adverse cumulative impacts than under any other alternative.</p> <p>The cumulative impacts of the city's Unser Boulevard extension and the recreational trail and utility corridor in Boca Negra Canyon would be the same as described for alternative 1.</p>	Over time, lack of staff and adequate funding and facilities to guide visitor use would contribute to loss of resources from vandalism, unauthorized collection, erosion of informal trails, theft of artifacts, and destruction of context by unmanaged horse and bicycle use. The cultural landscape and its values might also deteriorate because use would be less directed or managed than in the other alternatives. These lost resource values would be gradual but incremental and cumulative when combined with resource losses on other federal, state, and private lands. The cumulative impacts of the city's Unser Boulevard extension and the recreational trail and utility corridor would be the same as described for alternative 1.
IMPACTS ON VALUES HELD BY CULTURALLY AFFILIATED GROUPS	<p>Consultation with the American Indian Pueblo community and the heirs of the Atrisco land grant would help ensure that the location and construction of new facilities and the reclamation of informal trails or previous development would (1) avoid areas of significance to these groups, (2) be compatible with the cultural landscape and traditional practices, and (3) not affect the viability of resources traditionally gathered by these groups. Some positive impacts would result.</p> <p>Impacts from increased visitation on traditional and cultural activities are unknown, but special provisions such as temporary closures would provide privacy to conduct traditional and cultural activities. Consultation with culturally affiliated groups and training monument staff would ensure that interpretive media and programs present a culturally sensitive and accurate picture of traditional and cultural values, which would help reduce negative impacts on cultures affiliated with the monument.</p> <p>There might be positive impacts on these groups by limiting public access to the volcanoes area.</p> <p>Developing Piedras Marcadas Pueblo ruin only after special study and consultation with concerned Pueblos would avoid impacts related to intrusion on traditional and cultural areas and archeological sites.</p> <p>There could be adverse impacts from the intrusion of bicycles and horses into lands that are important to the Pueblo community.</p> <p>Cumulative Impacts: There would be a cumulative impact if special traditional and cultural sites or features were destroyed or desecrated by vandals, or if practitioners were disturbed by construction or visitors. The city's construction of Unser Boulevard through the monument would adversely impact these groups and their ability to maintain their connections to the monument.</p>	<p>Same as alternative 1.</p> <p>Developing Piedras Marcadas Pueblo ruin only after special study and consultation with concerned Pueblos would avoid impacts related to intrusion on traditional and cultural areas and archeological sites.</p> <p>There might be positive impacts on these groups by limiting public access to the volcanoes area.</p> <p>Cumulative Impacts: The cumulative impacts on values held by these groups under this alternative would be similar but less than described for alternative 1. Because fewer visitors would have access to the volcanoes area and there would be no bicycle or horse use in the monument, there would be fewer long-term impacts on resources that are sensitive to culturally affiliated groups. Privacy for traditional and cultural activities might be easier to achieve, contributing to the continuation of traditional activities in the future.</p>	<p>Same as alternative 1.</p> <p>There would be negative impacts because of the development proposed in this alternative, especially on the mesa top.</p> <p>Developing Piedras Marcadas Pueblo ruin only after special study and consultation with concerned Pueblos would avoid impacts related to intrusion on traditional and cultural areas and archeological sites.</p> <p>Cumulative Impacts: The development of mesa-top roads and trails and intensified public use of this area would limit the areas that might be suitable for Pueblo groups to practice their traditional and cultural activities. The city's construction of Unser Boulevard through the monument would adversely impact these groups and their ability to maintain their connections to the monument.</p>	<p>There might be positive impacts on values held by these groups by participating in consultation regarding site protection and interpretation.</p> <p>Values held by these groups might be negatively impacted by uncontrolled visitor use and more potential for vandalism.</p> <p>There would be less opportunity for visitor education and therefore increased risk of negative impacts on the traditional and cultural values held by these groups.</p> <p>Cumulative Impacts: If petroglyphs or archeological sites, features, and objects are destroyed or desecrated by vandals, or practitioners are not able to use a special area for traditional and cultural activities, those activities might not be continued. The city's construction of Unser Boulevard through the monument would adversely impact these groups and their ability to maintain their connection to the monument. Impacts from facility development would be less severe than in alternative 1; however, impacts from unrestricted horse and bicycle use would continue.</p>
IMPACTS ON FEDERAL AND STATE THREATENED AND ENDANGERED SPECIES	<p>Eagles and whooping cranes (federally listed species) migrating through the monument would not be affected. The black-footed ferret, also listed, would not be adversely impacted. The millipede (<i>Toltecopus chihuensis</i>), a category 2 species, would not be adversely affected by NPS actions.</p> <p>Cumulative Impacts: Cumulative impacts on the millipede (<i>Toltecopus chihuensis</i>) might result when city actions for constructing Unser Boulevard are considered in combination with NPS actions. Site-specific surveys before facility development and before construction would mitigate such impacts.</p>	Same as alternative 1.	Same as alternative 1.	Same as alternative 1.

TABLE 2. SUMMARY OF THE IMPACTS OF THE ALTERNATIVES (CONT.)

TOPIC	ALTERNATIVE 1 -- PROPOSED ACTION	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
Plants	<p>About 3 acres of potential rare cactus habitat, (less than 0.1% of the total available habitat) would be adversely impacted by development and visitor use. This would not be significant in terms of the habitat available in the monument.</p> <p>Cumulative Impact: Development actions under this alternative could incrementally contribute to the overall decline of the two rare cactus species. Cumulative impacts would not be anticipated because of the city's construction of Unser Boulevard and the recreational trail and utility corridor.</p>	<p>About 7.5 acres of potential rare cactus habitat would be adversely impacted by development and visitor use. This would not be a significant impact. There would be fewer people on the mesa top than in the other alternatives and thus less disturbance to this habitat.</p> <p>Cumulative Impacts: Development actions could incrementally increase the amount and severity of potential impacts on these cacti and could contribute to the decline of these species. Cumulative impacts would not be anticipated because of the city's construction of Unser Boulevard and the recreational trail and utility corridor.</p>	<p>About 50 acres of potential rare cactus habitat could be adversely impacted by development, and visitor use; this would be a significant adverse impact.</p> <p>Cumulative Impacts: The destruction of potential habitat for these cacti could contribute to the overall decline of the species. Cumulative impacts would not be anticipated because of the city's construction of Unser Boulevard and the recreation trail and utility corridor.</p>	<p>About 8.5 acres of potential rare cactus habitat would be adversely impacted by development and visitor use. This would not be significant.</p> <p>Cumulative Impacts: Development actions under this alternative could contribute to the extinction of the two cactus species. Cumulative impacts would not be anticipated because of the city's construction of Unser Boulevard and the recreation trail and utility corridor.</p>
Birds	<p>Without mitigation, the ferruginous hawk would be significantly adversely affected by development and use. Mitigation measures would avoid significant adverse effects on the ferruginous hawk.</p> <p>Cumulative Impacts: Without mitigation, facility development along with development of lands outside the monument and the city's construction of Unser Boulevard could incrementally increase the amount and severity of the impacts on the ferruginous hawk and could contribute to its elimination as a breeding species in this area. With mitigation, there would be no significant adverse cumulative impacts on the ferruginous hawk.</p>	<p>Managing monument lands for pedestrian use only along with the 2,200 acres of open space lands north of the monument might have less adverse impacts on the ferruginous hawk than in alternative 1. Development of previously closed areas would likely adversely affect the hawk.</p> <p>Cumulative Impacts: Developing certain sites, combined with adjacent residential development and the city's construction of Unser Boulevard, might disturb the ferruginous hawk and could contribute to the species' overall decline. With mitigation, there would be no significant adverse cumulative impacts on the ferruginous hawk.</p>	<p>Development would have a significant adverse affect on the ferruginous hawk. It would be eliminated from the area as a breeding species.</p> <p>Cumulative Impacts: Developing certain sites, combined with adjacent residential development and the city's construction of Unser Boulevard would eliminate the hawk from the area and would contribute to the overall decline of the ferruginous hawk nationwide. With mitigation, there would be no significant adverse cumulative impacts on the ferruginous hawk.</p>	<p>Development would not adversely affect the ferruginous hawk. Development actions would not contribute to the nationwide decline of this species.</p> <p>Cumulative Impacts: Overall, cumulative impacts would be similar to alternative 1, but they would be slightly less due to the limited facility development in this alternative. With mitigation, there would be no significant adverse cumulative impacts on the ferruginous hawk.</p>
IMPACTS ON WILDLIFE OTHER THAN LISTED SPECIES	<p>Birds and Other Wildlife No significant impacts on birds and other wildlife would be anticipated from developing facilities and visitor activity on 34 acres in the monument. Some wildlife populations would be adversely affected due to trails, people, horses, and bicycles on the mesa top.</p> <p>Cumulative Impact: About 34 acres of monument facility development and visitor activity combined with the city's construction of Unser Boulevard and adjacent development would cumulatively impact birds and other wildlife species by destroying habitat and creating a barrier to movement by some wildlife.</p>	<p>Birds and Other Wildlife No significant impacts on birds and other wildlife would be anticipated from developing facilities and trails on 23 acres. Protecting 129 acres of wildlife habitat would be a beneficial impact for all species, as would the revegetation of 50 acres of disturbed lands.</p> <p>Cumulative Impacts: Impacts would be similar to those described in alternative 1 plus the additional protection of 475 acres adjacent to the monument and the 129 acres in the boundary adjustment would help avoid significant adverse cumulative impacts on birds and other wildlife.</p>	<p>Birds and Other Wildlife About 78 acres of wildlife habitat would be impacted under this alternative. Adverse impacts on birds and other wildlife would be significant under this alternative.</p> <p>Cumulative Impacts: Monument development combined with adjacent development and the city's construction of Unser Boulevard would cumulatively impact birds and other wildlife species by destroying habitat. The cumulative impacts would be greatest under this alternative.</p>	<p>Birds and Other Wildlife No direct significant adverse impacts on birds and other wildlife would occur as a result of implementing the no-action alternative.</p> <p>Cumulative Impacts: Over time, increased visitor use of the monument without the use of permits and resource monitoring would adversely impact birds and other wildlife species. Other cumulative impacts would be similar to alternative 1 but slightly less due to limited facility development in this alternative.</p>
IMPACTS ON NATURAL DRAINAGE PATTERNS AND FEATURES	<p>Surface runoff would increase from construction on 21 acres for parking, facilities, and trails. Reclaiming 30-35 acres of roads and trails on the mesa top and 15 acres of disturbed flatlands would help eliminate existing gullies and prevent further gullying and erosion.</p> <p>Cumulative Impacts: NPS actions considered in combination with development on adjacent lands and the city's construction of Unser Boulevard would impact natural drainage patterns and features. There would be adverse impacts within the new Unser alignment and positive impacts from extending the Unser alignment and providing management of stormwater flows so that monument resources would not be adversely affected.</p>	<p>Stormwater flows in the monument would increase from hardening and compacting 13 acres for parking areas, facilities, and trails. Reclaiming 40 acres of roads and trails on the mesa top would help prevent further gullying and erosion of soils, eliminate existing gullies, and help prevent new gullies from forming.</p> <p>Cumulative Impacts: Cumulative impacts would be similar to alternative 1.</p>	<p>Stormwater flows in the monument would increase from constructing 78 acres of parking areas, roads, trails, and facilities. Reclaiming about 50 acres of disturbed land and establishing designated trails to gain access to the mesa would decrease gullying activity and erosion.</p> <p>The increased development and stormwater flow from the monument means that storms would have more serious impacts on the monument's natural drainage patterns and features than under the other alternatives.</p> <p>Cumulative Impacts: Cumulative impacts of the city's extension of Unser would be similar to alternative 1 but greater because of the extent of monument road construction in this alternative.</p>	<p>Current erosion and gullying activity would continue on the mesa top and along the escarpment. Stormwater drainage from the monument would increase but not significantly.</p> <p>Cumulative Impacts: Cumulative impacts would be the same as alternative 1 but slightly less due to limited facility development in this alternative.</p>

TABLE 2. SUMMARY OF THE IMPACTS OF THE ALTERNATIVES (CONT.)

TOPIC	ALTERNATIVE 1 — PROPOSED ACTION	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
<p>IMPACTS ON BIODIVERSITY</p>	<p>Developing about 21 acres plus 13 acres of habitat disturbed by visitor activities would not result in a significant impact. Reclaiming disturbed areas would replace lost habitat.</p> <p>Cumulative Impacts: Development might adversely affect wildlife populations and biodiversity, although there would be some cumulative benefits from reclaiming habitat. With the high rate of development occurring adjacent to the monument, less habitat would remain for these populations. The construction of Unser by the city might adversely impact biodiversity by eliminating habitat, increasing noise levels, and preventing some wildlife movement. The monument is likely to become an isolated island of habitat that over time would have a significant adverse impact on biodiversity.</p>	<p>Development of about 23 acres would not likely be a significant adverse impact on biodiversity; reclaiming about 50 acres of disturbed land would contribute to increased biodiversity. This represents less development and impact than under the proposed action.</p> <p>Cumulative Impacts: Nonfederal protection of 475 acres and addition of 129 acres to the monument boundary would have a beneficial cumulative impact on biodiversity in the monument area. The impacts of constructing Unser would be the same as described in alternative 1. The monument is likely to become an isolated island of habitat that over time would have a significant adverse impact on biodiversity.</p>	<p>Developing about 78 acres in the monument would be a significant adverse impact on biodiversity. This would be mitigated by the reclamation of about 50 acres of disturbed land.</p> <p>Cumulative Impacts: The combination of species displacement that would occur because of monument development and adjacent land development would result in a cumulative adverse impact on biodiversity. However, there would be some cumulative benefits of helping reestablish habitat. The impacts of constructing Unser would be the same as described in alternative 1. The monument is likely to become an isolated island of habitat that over time would have a significant adverse impact on biodiversity.</p>	<p>No significant adverse impacts on biodiversity would be expected as a result of implementing the no-action alternative. This alternative would have the least beneficial effects on biodiversity.</p> <p>Cumulative Impacts: Due to the high rate of development occurring adjacent to the monument and the city's construction of Unser Boulevard, less habitat would remain for wildlife species, thus displacing them onto monument lands and associated open space lands. The monument is likely to become an isolated island of habitat that over time would have a significant adverse impact on biodiversity.</p>
<p>IMPACTS ON SOILS</p>	<p>Development on about 21 acres would adversely impact soils (and thus plant and wildlife) and the mesa ecosystem. Reclaiming about 50 acres of other disturbed lands would offset this impact. Impacts would not be significant.</p> <p>Cumulative Impacts: Facility development combined with adjacent development including the city's construction of Unser Boulevard would cumulatively adversely impact soils.</p>	<p>Development on 23 acres of soils would adversely impact soils and the mesa ecosystem. Less impact on soils would occur under this alternative than under alternative 1, and the impacts would not be significant. Reclaiming about 50 acres of other disturbed lands would have beneficial impacts.</p> <p>Cumulative Impacts: The cumulative impacts would be similar to alternative 1. The nonfederal protected area land and the 129 acres added through the boundary adjustment would be a positive impact.</p>	<p>Development on about 78 acres of soils would result in an adverse impact on soils and the mesa ecosystem. Reclaiming about 50 acres of disturbed land would be a beneficial impact by stabilizing soils that were subject to erosion.</p> <p>Cumulative Impacts: These impacts would be the same as alternative 1 but more so because there would be more monument development in this alternative.</p>	<p>Visitor use and development on about 22 acres of soils within the monument would not result in an adverse impact on soils and the mesa ecosystem. Impacts from off-trail use could result in a significant impact. This alternative would have the least beneficial impacts on soils because only a small portion of disturbed and compacted soils would be reclaimed.</p> <p>Cumulative Impacts: Cumulative impacts would be similar to alternative 1 but slightly less with the limited facility development proposed in this alternative.</p>
<p>IMPACTS ON SCENIC RESOURCES</p>	<p>This alternative would preserve much of the monument in its natural state. New facilities would have adverse impacts on the natural and cultural environment at selected areas.</p> <p>Cumulative Impacts: Preserving large areas in the monument in its existing state and combining monument reclamation programs with local efforts to preserve the existing scenic resources would produce beneficial visual impacts. The visitor facilities would contribute a minor increase to the overall adverse visual impact of suburban development of the area. Development adjacent to the monument and the city's construction of Unser Boulevard through the monument would adversely affect scenic quality and views from the monument.</p>	<p>The proposals of this alternative would not result in significant adverse impacts on the visual quality of the monument. Adjacent development would adversely impact the views from the monument.</p> <p>Cumulative Impacts: The cumulative beneficial impacts of preservation and reclamation would be the same as in alternative 1. Plus, compatible development of the adjacent 475 acres, preservation of open space, and the 129 acres from the boundary addition would have positive impacts on the monument's scenic qualities.</p>	<p>The visual quality of the monument would be permanently changed and adversely impacted by development.</p> <p>Cumulative Impacts: Development under this alternative would contribute to the increasing suburban development of the west mesa area and prevent the preservation of expansive or important natural views. Proposed actions in this alternative combined with adjacent development and the city's construction of Unser Boulevard would have the similar cumulative impacts to those in alternative 1 but they would be greater because of the extent of the monument road.</p>	<p>No significant adverse impacts would result from the proposals of this alternative. Adjacent development would adversely affect the scenic quality of views from the monument.</p> <p>Cumulative Impacts: Significant portions of the monument would be preserved in its natural scenic quality, contributing to local efforts to preserve the natural areas of the west mesa. This would result in beneficial, long-term visual improvements for the community. Adjacent development and the city's construction of Unser Boulevard would adversely affect scenic resources and views, but less so because fewer monument facilities would be developed.</p>
<p>IMPACTS ON THE LOCAL AND REGIONAL ECONOMY</p>	<p>Monument establishment and development would continue to provide positive economic benefits for the Albuquerque area. Although the direct economic benefits might be relatively small in relation to the entire economy of the region, they are significant. Even more significant might be the unquantifiable positive benefits that accrue to the region due to the monument's existence and development and the quality of life values it provides and protects.</p> <p>Cumulative Impacts: Positive economic benefits would accrue to the local economy. The city's construction of Unser Boulevard and the recreational trail and utility corridor would benefit the local economy; however, design and construction costs would increase because of needs to minimize impacts on monument resources.</p>	<p>The analysis provided for alternative 1 also applies to alternative 2. It is likely that this alternative would result in less economic benefits than alternative 1. Differences in positive economic impacts between alternatives would be expected, but these cannot be quantified.</p> <p>There would be a net savings to city taxpayers if the 81st Street area were added to the boundary and acquired by the city and the Park Service.</p> <p>Cumulative Impacts: Cumulative impacts would be the same as for the proposed action. The 129-acre boundary addition and the nonfederal protected area would also have long-term positive impacts on the local and regional economy.</p>	<p>The analysis provided for alternative 1 also applies for alternative 3. The monument would be developed, but in a somewhat different manner. Differences in positive economic impacts between alternatives would be expected, but these cannot be quantified.</p> <p>Cumulative Impacts: Same as alternative 1.</p>	<p>The direct economic benefits would remain relatively small in relation to the entire economy of the region.</p> <p>Cumulative Impacts: Although the monument is an addition to the many attractions found in the Albuquerque area, it would not become as important a visitor attraction. Therefore it would be less likely to provide an increase in the economic base for the local and regional economy. The impacts of the city's construction of Unser Boulevard would be the same as alternative 1.</p>

TABLE 2. SUMMARY OF THE IMPACTS OF THE ALTERNATIVES (CONT.)

TOPIC	ALTERNATIVE 1 — PROPOSED ACTION	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
<p>IMPACTS ON NATIONAL VISITORS</p>	<p>Visitor experience would be improved by preserving the escarpment in its natural state and restricting development within the monument.</p> <p>Cumulative Impacts: Over time a more positive experience for visitors, schoolchildren, and other organized groups would be provided as a result of this alternative. Resources would be better protected, and visitors could gain a greater understanding and appreciation for the purposes for which the monument was set aside. The city's construction of Unser Boulevard and recreational trail in Boca Negra Canyon would benefit visitors by facilitating vehicular, bicycle, horse, and pedestrian access to the mesa and by eliminating vehicular traffic in Boca Negra Canyon. There would be adverse impacts on national visitors because of the visual intrusion, increased noise levels, and the barrier of a four-lane highway. Creative design and material use would minimize these impacts.</p>	<p>This alternative would provide a different experience of the monument than under the other alternatives. There would likely be fewer total visitors to the entire monument because of the more difficult access. Lava Shadows and Boca Negra Canyon would be more crowded and congested than in the proposed action, making it more difficult to convey the significance of monument resources.</p> <p>Cumulative Impacts: The 475-acre nonfederal protected area and the 129-acre boundary addition would benefit national as well as local visitors by creating a compatible open space area adjacent to the monument. This compatible management area would help visitors appreciate the cultural landscape of the monument. Other cumulative impacts would be the same as alternative 1.</p>	<p>It is likely that the relatively high level of development and resulting visitor use would be inconsistent with Pueblo Indian and Atrisco land grant heirs views of the monument. Thus it would be expected that there would be no support or participation from these groups in managing and interpreting the monument. Opportunities to interpret these cultures' views would be lost, and that would be an adverse affect on visitors.</p> <p>Cumulative Impacts: More visitors would have easy access to primary monument resources such as Rinconada Canyon and the mesa top. The only place for visitors who have come to the monument in the past for a sense of solitude would be Piedras Marcadas Canyon or to more remote federal lands in other portions of the state. Impacts of the city's construction of Unser Boulevard and the recreational trail would be the same as alternative 1.</p>	<p>Implementing this alternative would provide visitors with a less-than-adequate experience and result in an adverse affect.</p> <p>Cumulative Impacts: The impacts of the city's construction of Unser Boulevard and the recreational trail would be the same as described in alternative 1.</p>
<p>IMPACTS ON LOCAL VISITORS AND ADJACENT LANDOWNERS</p>	<p>There would be generally beneficial effects on the local visitors and adjacent landowners because of greater protection of monument resources and accommodation of uses that the Albuquerque public desires. There would be impacts on adjacent landowners because of federal laws requiring no degradation of monument resources and because of the additional time for consultation, design, construction standards, and compliance with regulations.</p> <p>Cumulative Impacts: The city's construction of Unser Boulevard and the recreational trail and utility corridor would benefit local visitors and adjacent landowners by facilitating access and allowing enjoyment of monument resources. There would be adverse impacts from visual and noise intrusions from traffic on Unser. Creative design and material use would minimize these impacts.</p>	<p>This alternative would generally have a beneficial effect on the local visitor and adjacent landowners. More limited access would be provided to the monument than under alternative 1. Some residents would be adversely impacted by the restriction of bicycles and horses, closing informal access points, and closing the volcanoes area.</p> <p>Cumulative Impacts: The cumulative impacts would be the same as described in alternative 1.</p>	<p>This alternative would have a beneficial effect on the local visitor by providing greater separation of national and local visitor traffic and providing areas that would be more likely visited by local visitors.</p> <p>Higher visitation levels could increase the values of nearby commercial properties. Other impacts would be the same as alternative 1. The primary visitor use areas at Rinconada Canyon and the mesa top would reduce the number of vehicles north of Rinconada Canyon on Unser Boulevard and have a beneficial impact on local residents and adjacent landowners.</p> <p>Cumulative Impacts: The cumulative impacts would be the similar to those described in alternative 1 but greater because of the extent of monument facilities.</p>	<p>This alternative would create a monument area primarily for local users and thus would have a beneficial impact on those users. Heritage education would continue to be a small component of the entire education program for the monument.</p> <p>Cumulative Impacts: The cumulative impacts would be the same as described in alternative 1.</p>
<p>IMPACTS ON ENERGY CONSUMPTION</p>	<p>Incorporating and promoting energy conservation in the planning and design of the monument facilities would mitigate most of the adverse impacts of increased energy consumption.</p> <p>Cumulative Impacts: Monument facilities would contribute to increasing demand for energy in the area. Energy conservation measures would mitigate much of the adverse energy consumption impacts.</p>	<p>Same as alternative 1.</p>	<p>The new roads and facilities would result in adverse impacts on energy consumption.</p> <p>Cumulative Impacts: Impacts would be similar to those in alternative 1. The vehicular use and construction of the mesa-top road would contribute to increasing demands for energy in the area as surrounding suburban development continues to grow. Energy conservation measures would mitigate much of the adverse energy consumption impacts.</p>	<p>No adverse energy consumption impacts would result from implementing this alternative.</p>
<p>IMPACTS OF MONUMENT USE AND ACTIVITIES ON EXISTING NOISE LEVELS</p>	<p>Noise from monument development and operations would not have a significant impact.</p> <p>Cumulative Impacts: Noise from proposed adjacent development near Mesa Prieta, Boca Negra and Piedras Marcadas Canyons, the Piedras Marcadas Pueblo ruin, and the volcanoes would also adversely affect the monument. Combined noise levels from the construction and use of Unser Boulevard, expansion of the Double Eagle II Airport, the proposed Paseo del Volcan, and proposed adjacent development, could cumulatively and significantly increase noise levels in the monument. Mitigation measures regarding the airport, Unser, and Paseo del Volcan would be developed with the Federal Aviation Administration, the state, and the city.</p>	<p>Impacts would be similar to alternative 1. Some areas would have more noise than alternative 1 and some would have less.</p> <p>Cumulative Impacts: Same as alternative 1.</p>	<p>Developing and operating monument facilities would have a significant adverse impact on noise levels.</p> <p>Cumulative Impacts: Same as alternative 1.</p>	<p>Noise from monument development and operations would not have a significant impact.</p> <p>Cumulative Impacts: Same as alternative 1.</p>

TABLE 2. SUMMARY OF THE IMPACTS OF THE ALTERNATIVES (CONT.)

TOPIC	ALTERNATIVE 1 — PROPOSED ACTION	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
IMPACTS ON AIR QUALITY	<p>Overall, the effects on air quality would be minor. No state or federal air quality standards would be exceeded. The emissions generated within the monument would not exceed de minimus levels. Temporary adverse impacts might occur during construction from dust, but they would not be significant.</p> <p>Cumulative Impacts: Particulate matter from constructing proposed monument facilities combined with adjacent construction, including Unser Boulevard, Double Eagle II Airport, and Paseo del Volcan, would have temporary adverse impacts on air quality. The use of the airport and adjacent roads and development would increase emissions.</p>	Same as alternative 1.	Same as alternative 1.	<p>No adverse impact on air quality would occur as a result of implementing the no-action alternative. The emissions generated by visitors and staff would not exceed de minimus levels. Temporary adverse impacts from dust might occur during construction activity.</p> <p>Cumulative Impacts: Same as alternative 1.</p>
UNAVOIDABLE ADVERSE IMPACTS	<p>Facility development and provision of a quality visitor experience would increase visitation and change the nature of the experience from what exists today. This might be perceived to be an adverse impact on the monument resources by some groups and individuals. Adjacent residents would no longer be able to access the monument from social trails of their own design. This might be perceived by some adjacent landowners and local residents to be an adverse impact on their ability to enjoy the monument resources.</p> <p>A total of 34 acres of biotic communities, wildlife and wildlife habitat, soils, and associated biodiversity would be adversely impacted by developing visitor facilities, visitor activity, and constructing Unser Boulevard.</p> <p>Several archeological sites could be negatively affected by construction, unauthorized visitor use, and vandalism. There would also be impacts on the integrity and character of the cultural landscape resources and on the scenic qualities of the cultural landscape.</p>	Under the National Environmental Policy Act, evaluation of these impacts is not required.		
RELATIONSHIP BETWEEN SHORT-TERM USE OF THE ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY	<p>Constructing visitor facilities and visitor use would cause a long-term decrease of natural biological productivity on 34 acres. Although these changes are reversible in the long term and the natural biological productivity could return to the area, it would be unlikely in the foreseeable future, and the extent of adjacent development makes it even less likely. The monument has likely already experienced changes in productivity due to the extent and type of development occurring adjacent to the west mesa.</p>	Under the National Environmental Policy Act, evaluation of these impacts is not required.		
IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES	<p>Although all archeological sites would be avoided where possible, or disturbance would be mitigated through the recovery of cultural information and significant artifacts, some losses of archeological objects and cultural information would be likely due to vandalism, illegal collecting, or construction activities. These losses would be irretrievable.</p> <p>Habitat for the <i>Palafoxia papyracanthus</i> and <i>Mammillaria wrightii</i> would be adversely affected by visitor activity and development. The ferruginous hawk could be eliminated as a breeding species in this area. If all these species continue to decline elsewhere to the point of extinction, this loss would be irretrievable and at least partially attributable to implementing the proposed action.</p> <p>Although most developed areas could be reclaimed over time, the use of land and financial resources to implement the proposed action would, in the practical sense, be an irretrievable commitment of resources.</p>	Under the National Environmental Policy Act, evaluation of these impacts is not required.		

SUMMARY OF COMMENTS ON THE DRAFT GENERAL MANAGEMENT PLAN / ENVIRONMENTAL IMPACT STATEMENT

This section summarizes the comments received during the public comment period from August 7, 1995, to November 6, 1995, during the public meeting held on October 19, 1995, and at the Petroglyph National Monument Advisory Commission meeting of October 20, 1995.

The National Park Service distributed more than 600 copies of the *Draft General Management Plan / Environmental Impact Statement* and 500 copies of the *Executive Summary* of that plan to state and federal agencies, local governments, interested organizations, individuals, and public libraries. The availability of the draft plan was announced in local media and was listed in the *Federal Register* on July 31, 1995.

The National Park Service received more than 298 written comments and several hours of oral testimony during the public review period for the draft plan. These included letters from three federal agencies, one state agency, and two local agencies, including eight different departments or divisions within the city of Albuquerque. Letters were received from 23 organizations including environmental groups, neighborhood associations, and business interests. Written comments were also received from nearly 270 individuals, including a petition letter with 95 signatures, many of which expressed a preference for a particular alternative or components of a particular alternative.

FEDERAL AGENCY COMMENTS

Environmental Protection Agency

The U. S. Environmental Protection Agency commented with a letter that classified the draft environmental impact statement and the proposed action as "LO," i.e., the agency has "lack of objections."

U.S. Fish & Wildlife Service

The U.S. Fish and Wildlife Service's comment on the draft environmental impact statement was that the National Park's Service's finding of "no effect" on threatened or endangered species is correct.

Federal Aviation Administration

FAA comments were that the National Park Service should consider established flight tracks for Double Eagle II airport when siting visitor facilities. There is no room for latitude on use of the airport haul road for access to the volcanoes. The National Park Service has not met the intent of the National Environmental Policy Act and should consider the effects of its actions on others as well as the monument. Impacts do not address Paseo del Norte.

STATE AGENCY COMMENTS

New Mexico State Highway and Transportation Department

The Aviation Division did not comment on any specific items in the plan but did make comments regarding the survival of both Double Eagle II Airport and Petroglyph National Monument. It remains the position of the Aviation Division that the monument should not and will not survive at the expense of the inevitable development of the west mesa.

LOCAL AGENCY COMMENTS

City of Albuquerque Comments

The city favors horse/bicycle use on the mesa top and maintains that Paseo del Norte and drainage and utility issues must be

addressed, that the determination that Paseo del Norte does not serve a park purpose and that Unser Boulevard does is an arbitrary decision lacking meaningful analysis, that another multiuse escarpment crossing is needed at the north end in the Paseo del Norte alignment, and that the impacts of not allowing for Paseo del Norte and other transportation are not addressed.

The city also commented that the National Park Service should not preclude storm drainage improvements in the monument, that fee collection should not be ruled out by the plan, that no new properties should be acquired until current ones are purchased, and that Double Eagle II airport should not be considered beyond the scope of the general management plan.

The city further contends that the heritage education center should be kept at the visitor center or be combined with the Bosque Education center near the pueblo ruin, that Mesa Prieta should have an access road to the mesa top for an overlook, that the air quality impacts are not properly documented, and that the summary of related plans and projects should include the Unser Middle project and the donation of city-owned land within the Atrisco unit.

The city opposes boundary additions and disagrees with staffing and facilities needs, contending that the National Park Service has overestimated needs. The city also states that funds for developing a Piedras Marcadas Pueblo ruin contact station should be included in the plan.

Middle Rio Grande Council of Governments

Comments from the council were that (1) the draft environmental impact statement does not comply with NEPA responsibility of the implementing agency to address issues that may result from congressional action, (2) that the draft plan did not address the impacts of Paseo del Norte on the local community, (3)

that conflicts with local plans are not adequately addressed, and (4) that drainage, utility, and transportation issues were not adequately addressed.

INDIVIDUAL COMMENTS

In Favor of Alternative 2 or a Modified Alternative 2

Comments were received from individuals who expressed a preference for alternative 2 or a modified version of alternative 2, calling for a visitor center at Boca Negra, access at staffed points only, and no mesa-top multi-use trails.

In Favor of Multiuse Trails

Comments were received from individuals who were in favor of alternative 1 with specific preference for multiuse trails on the mesa top.

Opposition to Paseo del Norte

Letters were received from individuals who did not comment on the plan but were strongly opposed to the extension of Paseo Del Norte through the monument.

In Favor of Paseo del Norte

Letters were received from individuals who were in favor of Paseo Del Norte extension through the monument.

Other Comments From Individuals

Many comments were made in support of preserving and the need for protecting the traditional, cultural, and natural values of the monument. Several individuals submitted comments expressing support or opposition to various components of each of the alternatives. Comments were also

received opposing the expenditure of funds for developing new facilities. Comments were received that suggest the plan should implement more staffing to protect the monument. One comment was received on the value of archaeoastronomy and that it should be part of the plan. Several individuals did not comment on the plan itself but rather commented on Albuquerque's growth patterns and traffic concerns.

OTHER COMMENTS

- Having the regional director resolve conflicts in interpreting federal law and policy is a conflict of interest.
- Drainage and utility easements should be addressed.
- The impacts of creating the monument should be addressed.
- A legislative environmental impact statement should have been done.
- Neighborhood parking and access would result in traffic congestion and impacts on air quality.
- Some people oppose neighborhood access points.
- Generalized statements about traffic increases are not acceptable; actual estimates should be given, per hour, per day, and per year.
- The impacts on energy consumption are not adequately addressed (visitors' travels to and from the visitor center).
- No alternative should include acquisition of more land. Boundary adjustments to include more land are unrealistic.
- The impacts of jogging and dog walking have not been addressed.
- The environmental impact statement fails to adequately address the impacts of horse and bicycle use and the difficulties of management.
- The document is in violation of the National Environmental Policy Act by failing to address a full range of alternatives.
- There is no statutory basis for alternative 1 in the language of the law creating the monument. There is too much recreation and development. Components of alternative 1

are inconsistent with Congress' management directives and would derogate resources.

- The costs of implementing the plan are too high and unrealistic to think it will be done.
- The National Park Service has overestimated staffing and facility needs.
- The National Park Service is in violation of addressing carrying capacity because it is not in phase I of implementing the plan.
- Fee collection should not be ruled out.
- The impact on Double Eagle II Airport access and utility rights-of-way through the monument have not been addressed.

SUMMARY OF COMMENTS BY ISSUES

Comments Related to Paseo del Norte

- Paseo del Norte should be addressed in the plan.
- Federal laws that prohibit the extension of Paseo through the monument should be listed.
- The decision that Unser serves a park purpose and Paseo does not is arbitrary and lacks meaningful analysis.
- Impacts on local residences and adjacent landowners are not adequately addressed.
- The impacts on traffic and air quality are not adequately addressed.
- The impacts for allowing Unser without Paseo are not addressed.
- Some people feel that the visitor center should be placed on the mesa top. This would create a park purpose for Paseo, alleviating traffic and air pollution. Some people reject NPS reasons for not placing visitor center on the mesa top.

Comments Related to Local Plans and Projects

- The plan does not adequately address conflicts with local plans and projects.
- Related plans and projects should include the Unser Middle project and the donation of city-owned land in the Atrisco unit.
- The Double Eagle II Airport and should not be dismissed as beyond the scope.

- The plan should fully address the Westside Action Council's proposal and list the impacts of this plan rather than summarily dismissing it.
- The *Westside Strategic Plan* should be included as a related plan.

Comments Related to American Indian Rights

- The draft environmental impact statement fails to address cumulative impacts on Pueblo religious uses and fails to analyze the differing impacts of the four alternatives on Pueblo worship.
- Alternative 1 results in conflicts with American Indian concerns.
- None of the alternatives incorporate all aspects of the Native American Religious Freedom Act.

Comments Related to Facilities

- The heritage education function should stay at the visitor center.
- A mesa-top access road and overlook should be provided at Mesa Prieta.
- A multiuse escarpment crossing is needed at north end.

Summary of Comment Regarding Proposed Modified Alternative 2

- The visitor center and self-guided trails should be at Boca Negra.
- The current administrative headquarters should be used.
- Piedras Marcadas should have a hardened, self-guided trail from the contact station.
- At Lava Shadows, the ranger station, interim visitor center, and Cohen property should be used for the heritage education center and petroglyph research center. There should be parking and a trailhead for Rinconada Canyon, and no overlook at Lava Shadows.
- At Rinconada Canyon there should be no parking or contact station, only guided tours.

- Actions at Mesa Prieta should be the same as described in alternative 2.
- At the Volcanoes, there should be an information kiosk and overlook.
- There should be no multiuse trails.
- There should be a controlled, guided access via permit and no neighborhood access.

SUMMARY OF MOTIONS AT ADVISORY COMMISSION MEETING OF OCTOBER 20, 1995

1. Motion: No mesa-top multiuse trails except for two escarpment crossings (Lava Shadows and Boca Negra Canyon) would be allowed provided there is consultation and concurrence from the American Indian community and the Atrisco heirs. Passed: 8 to 2
2. Motion: The National Park Service should work with affected parties to optimize recreational use opportunities on the periphery of the monument. Passed: 9 in favor, 1 abstained
3. Motion: The commission opposes unmanned access points and urges the National Park Service to work with the Native American community and neighborhoods to develop volunteer programs that can allow neighborhood, nonmotorized, access that protects the neighborhoods and the monument's resources. Passed: none opposed.
4. Motion: The permanent heritage education facility should be sited at Lava Shadows. Failed: 6 to 4
5. Motion: The National Park Service should remove the heritage education center from the Mesa Prieta location and site the heritage education facility at a location in a less obtrusive and culturally sensitive area. Passed unanimously
6. Motion: Alternative 1 should be modified to reflect that the visitor contact facilities at Piedras Marcadas, Rinconada

Canyon, and a proposed visitor contact facility at Mesa Prieta be staffed. Passed unanimously.

7. Motion: The Park Service should amend alternative 1 to reflect a visitor contact center at Mesa Prieta and that the siting be done in such a way as to take into consideration the cultural impact aspects of it. Passed unanimously.

8. Motion: We move to instruct the National Park Service eliminate 1 the overlook and parking option in Mesa Prieta in alternative 1. Tie vote; the motion does not pass.

9. Motion: We recommend to the secretary of the interior alternative 1, excluding Paseo del Norte, of the general management plan, as modified by this commission. Passed unanimously.

10. Motion: Resolved that the National Park Service, the mayor of Albuquerque, Native American representatives, and other interested parties negotiate a solution to the Paseo del Norte problem in a timely manner. Passes 6 to 3

SUMMARY OF CHANGES TO THE DRAFT PROPOSED ALTERNATIVE

MULTIUSE TRAILS

The draft plan included 18.5 miles of 8-foot wide stabilized, gravel, improved trails on the mesa top on existing routes. The estimated project cost was \$1,759,300. The intent of these trails was to have well-defined, improved trails suitable for family use. In response to public comment concerning mesa-top development and costs, the draft plan has been revised to continue multiuse of 11 miles of trails, on existing routes, and eliminate the improved surface of the trails.

If it is demonstrated that multiuse trail use does not have an adverse affect on monument resources or visitor experiences, possible future horse and bicycle trail use of 5 miles in the southern portion of the mesa top could be permitted. These 5 miles would be available for pedestrian use pending any decisions to provide for multiuse.

The trails would be signed and clearly delineated, and other dirt roads and trails would be closed and reclaimed to the natural landscape.

Trail use would be managed to meet changing needs and conditions related to the amount of use, traditional and cultural uses and sites, archaeological sites, endangered species, vegetation, soil, and wildlife.

The National Park Service would continue to review the location of multiuse trails with American Indians. The National Park Service has invited the American Indian community to walk the existing routes and participate in locating the multiuse trail routes.

One multiuse trail relocation would be to move about 1 mile of multiuse trail at Piedras Marcadas Canyon from the Paseo alignment north to the City Open Space Division parking lot — from inside to just outside the monument boundary.

HERITAGE EDUCATION CENTER

The draft plan recommended a heritage education center south of Rinconada Canyon between Mesa Prieta and Unser Boulevard, near the existing water tank. The estimated project cost was \$2,899,300.

The likelihood of funding for this facility is remote within the 15-year time frame for this plan. The draft plan recommendation has been revised to eliminate the facility and associated development costs.

The heritage education function would continue to be a high priority and would be included in interpretive programs. The National Park Service could cooperate with the city and share the functions of a proposed facility outside the monument boundary.

MESA PRIETA VISITOR CONTACT FACILITY AND ACCESS

A visitor contact facility at the southern tip of the monument has been added to the final plan. The contact facility would provide for increased resource protection. Protection would be accomplished through NPS presence, education, and information. The National Park Service would continue to work with Westland Development Corporation to identify mutually agreeable access from the south.

NEIGHBORHOOD ACCESS

The draft plan recommends neighborhood pedestrian access trails at several locations. These access points were intended to address erosion problems caused by the many social trails along the escarpment. Designated and improved access points would help prevent resource degradation. In response to public comments, neighborhood access points were

removed from the alternative 1 map. However, the National Park Service would retain the flexibility to work with residents to designate neighborhood access points. These access points would require neighborhood support and participation. Location and designation of access points would be phased in as monument managers and neighborhoods agree on management.

FEE COLLECTION

The City Open Space Division charges an entrance/parking fee at the Boca Negra unit. The draft plan determined that the monument does not lend itself to establishing a fee collection program.

The National Park Service received no comments supporting this determination. The city and the National Parks and Conservation Association support fee collection. Therefore, the final plan has been revised to enable the National Park Service and the city to work together to establish a fee structure that would work for all areas and uses within the monument.

CALLE NORTEÑA PARKING LOT

The draft plan included a small parking area at Calle Norteña. The location is in a city-owned/managed portion of the monument. Based on public comment and lack of

support, the parking area has been removed from the proposed action.

PETROGLYPH RESEARCH CENTER FUNCTION AND ADMINISTRATION AND MAINTENANCE FACILITIES

The draft plan recommended the development of new research center and administration and maintenance facilities at a cost of \$4,052,700. It is not anticipated that funds would be available for these facilities within the projected 15-year implementation period for this plan. The plan has been revised to use or improve existing structures for the center's function or, if necessary, lease facilities outside of the monument.

COSTS

Development costs have been reduced from \$3.3 million to \$14.2 million, and staffing has been reduced from 57.5 (NPS) and 25 (city) to 38 (NPS) and 16 (city). These reductions are a response to the intent of the draft plan to anticipate the long-range development and staffing needs for the monument. The draft plan has been revised to recognize the limited availability of development funds and unlikely prospects for major increases in operating funds and staffing. The final plan presents a more realistic development program and staffing increases for the next 10 to 15 years.

THE NEXT STEP

After the publication and distribution of this *Final General Management Plan / Development Concept Plan / Environmental Impact Statement* there will be a 30-day no-action period. Following the no-action period, a record of decision will be issued. The record of decision may be the same as the proposed action in the plan or there may be modifications.

Comments on or questions about this document should be addressed to

Superintendent, Petroglyph National Monument
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Albuquerque, NM 87120
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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 historical 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.

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