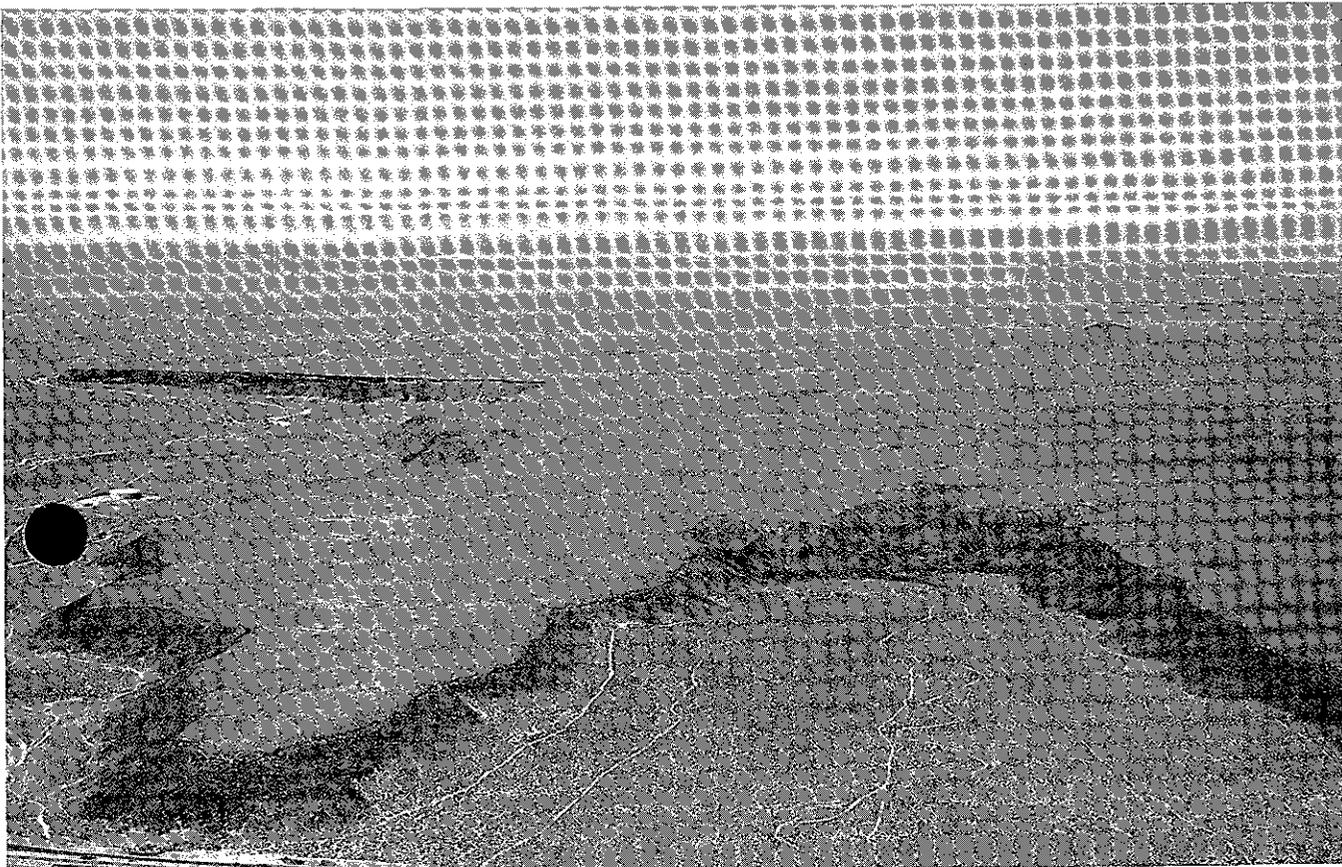


FES 96-59

Final
General Management Plan / Development Concept Plan
Environmental Impact Statement
w/ Record of Decision 2/20/97



PETROGLYPH
National Monument • New Mexico

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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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United States Department of Interior
National Park Service

RECORD OF DECISION

General Management Plan/ Development Concept Plan / Environmental
Impact Statement for Petroglyph National Monument

INTRODUCTION

Petroglyph National Monument, encompassing 7,244 acres, was established in June, 1990 as a unit of the National Park System to preserve the more than 15,000 prehistoric petroglyphs and other significant natural and cultural resources that are on the west side of Albuquerque, New Mexico. The monument is the first National Park System area specifically established to protect and interpret rock carvings and their setting.

Pursuant to the National Environmental Policy Act of 1969, Public Law 91-190, and the regulations promulgated by the Council on Environmental Quality at 40 CFR 1505.2, the Department of the Interior/National Park Service has prepared this Record of Decision on the Final General Management Plan/Development Concept Plan/Environmental Impact Statement for Petroglyph National Monument.

The purpose of the general management plan is to set forth the basic management philosophy and to provide the strategies for addressing issues and achieving management objectives. The plan will guide management decisions for the next 10 to 15 years to meet the stated purposes for the monument.

The Record of Decision is a summary of what decisions were made in the planning process, alternatives that were considered, the basis for the decision, and the mitigating measures developed to avoid or minimize environmental impacts. The Record of Decision also documents the decision to approve the final general management plan.

DECISION

The decision is for the National Park Service to implement the proposed action as described in the Final General Management Plan/Development concept Plan/Environmental Impact Statement for Petroglyph National Monument, which was issued in December 1996.

THE SELECTED ACTION

The selected action (alternative 1 in the Final Environmental Impact Statement) protects the cultural and natural resources of the monument for the benefit and enjoyment of future generations. The plan directs visitor use to specific areas and provides various ways for visitors of different ages and abilities to see and appreciate many of the monument's significant resources.

As a unit of the national park system, the National Park Service will have overall responsibility for managing the monument. The National Park Service will have operational responsibility for the Atrisco unit. The city of Albuquerque will have operational responsibility for the Boca Negra and Piedras Marcadas units. Cultural and natural resources will be managed by implementing policies and programs including interpretation and education, research, inventory, evaluation, monitoring, mitigation, and consultation with American Indian groups and Atrisco land grant heirs.

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

A new visitor center/heritage education center will be developed at Boca Negra Canyon to provide orientation and information about the monument, its significance, and how to view and enjoy the monument with respect. Three visitor contact stations and parking lots will be built at the primary petroglyph viewing areas: Piedras Marcadas and Rinconada canyons and Mesa Prieta. Visitors will be required to stay on designated trails. The National Park Service will continue to work with the city to determine the best access and location for a contact facility for the Piedras Marcadas Ruin.

Visitor use of the volcanoes will be directed to a redesigned parking area with a pedestrian trail to Black Volcano where exhibits will interpret the mesa top and volcanoes. Visitors will have the opportunity to appreciate the expansive views of the mesa top, Rio Grande valley, and Sandia Mountains. Climbing and hiking on the volcanoes, other than Black Volcano, will be prohibited to avoid further adverse impacts of visitor use.

Horseback and bicycle riding will be permitted on selected designated mesa-top trails and at three crossing points. No horses or bicycles will be allowed in petroglyph viewing areas or archeological sites anywhere in the monument. Mesa top resources and visitor experiences will be monitored to identify adverse impacts.

Neighborhood pedestrian access trails will be provided to cross the escarpment or follow along the escarpment base on a case-by-case basis in consultation with residents. These designated access points will help prevent unauthorized access and reduce erosion resulting from social or unauthorized trails. Visitors will not be directed to these access points and they will not be marked on monument brochures.

Boundary adjustments that are recommended are the addition of 10.5 acres, south of Boca Negra Canyon and north of Mojave Street, east of Unser Boulevard and the deletion of a single family residence on a 0.33 acre lot at the end of Creggs Street. Future boundary adjustments will be considered for any lands adjacent to the monument boundary that meet boundary adjustment criteria.

Impacts on cultural and natural resources, the regional economy, visitors and values held by culturally affiliated groups 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. Resources will be better protected with the implementation of a monitoring program and permit system on the mesa top.

BASIS FOR DECISION

The selected action addresses issues and management concerns related to the protection of natural and cultural resources and the provision of quality visitor experiences. The selected action supports the monument's purpose, significance, and interpretive themes. The selected action also balances the mission of the National Park Service to provide long-term resource protection while still allowing for appropriate level of visitor use and opportunities for visitor enjoyment.

The selected action will benefit resources by providing information and education about their sensitivity and significance and directing use to specific areas. Visitors who understand the significance of monument resources are less likely to inadvertently or intentionally damage monument resources.

Visitors will be required to stay on designated routes. Use will be monitored and management actions will be taken to avoid and mitigate adverse impacts.

The selected action is consistent with federal law and policy that applies to units of the national park system as well as the legislative intent of the law that established the monument.

Public use in the monument has been evaluated. Where public use will not damage monument resources and where it will further the intent of the laws applying to the monument, those uses are permitted.

The National Park Service will continue to consult with American Indian groups and Atrisco land grant heirs. If adverse impacts on natural and cultural resources or on the visitor experience result from public use, management actions will be taken to prevent further impacts.

There is public support for the selected action as well as criticism for specific elements of the selected action. The principal criticism has been regarding horse and bicycle use of the mesa top and pedestrian access along the base of the escarpment. Comments were received both in favor of expanded horse and bicycle routes and the elimination of all horse and bicycle use. There also continue to be comments both for and against the city and regionally proposed roads through the monument, Paseo del Norte and Unser Boulevard, that are beyond the scope of this plan and EIS. #

ALTERNATIVES CONSIDERED

Four alternatives including the selected alternative were analyzed in the Final Environmental Impact Statement. The selected action (alternative 1) is described above. Other alternatives considered include:

Alternative 2: This alternative 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 would be directed to a visitor center at Lava Shadows where they would have access to selected petroglyphs. A heritage education center would be built at Boca Negra Canyon. Visitors would have more opportunities to see the petroglyphs with a greater sense of solitude than in alternative 1. More areas of the monument would be reserved for research, traditional and cultural use, and occasional guided tours than in the other alternatives. Horse and bicycle use would not be permitted in this alternative except at two escarpment crossings. Overall, adverse impacts on cultural and natural resources and values held by culturally affiliated groups would be similar to and in some cases slightly less under this alternative than under alternative 1.

Alternative 3: The overall approach is to have easy access to the mesa-top views and the volcanoes as well as petroglyph concentrations below the escarpment. Visitors would be directed to a visitor/heritage education center at Rinconada Canyon. From the visitor center many visitors would drive to a new 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. This alternative would have the greatest impact on natural resources, cultural resources and values held by culturally affiliated groups.

Alternative 4: The "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. There would be parking areas and minor trail improvements in some areas. There would be no new visitor center. This alternative would have the fewest facilities. Horseback and bicycle riding would be permitted within the monument only where currently allowed. The interim visitor center at Las Imagines would become the primary visitor center, accommodating only a limited number of visitors. Archeological sites, petroglyphs, and the cultural landscape would continue to be adversely impacted by vandalism.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The selected action (alternative 1) is the environmentally preferred alternative because it provides for long term resource preservation while still allowing diverse opportunities for visitors. Of the alternatives considered, the selected alternative and alternative 2 would best protect the monument's resources, but alternative 2 would limit visitors' experience and opportunities to see and learn about the monument resources. Alternative 2 recommends fewer facilities than the preferred alternative and therefore would adversely impact less land. However, the increased visitor opportunities of alternative 1 will help to protect resources by providing better opportunities to understand and appreciate the monument's resources.

MEASURES TO MINIMIZE HARM

All practicable measures to avoid or minimize environmental impacts that could result from implementation of the selected action have been identified and incorporated into the selected action. These include, but are not limited to: preservation and treatment of cultural resources, conducting surveys, inventories and evaluations of cultural resources, revegetation of disturbed sites with native plants; baseline studies of plants and animals; documentation, consultation and compliance regarding cultural and natural resources; monitoring programs for resource impacts; and emphasis on resource protection in interpretation and education programs.

The National Park Service in cooperation with the city Open Space Division will develop and implement a permit and monitoring program on the mesa top. These programs will provide the public with general information about the monument, the need to protect archeological sites, and the need to stay on designated routes to avoid adverse impacts on cultural and natural resources. The monitoring program will involve the direct observation of public use to ensure and document compliance with regulations and the indirect resource monitoring to identify indicators of adverse natural or cultural resource impacts.

ERRATA

The Final General Management Plan/Development Concept Plan/Environmental Impact Statement includes the following errors:

Page x, first sentence under Costs should be: Development costs have been reduced from \$22.7 million to \$14.2 million, and staffing has been reduced from 57.5 (NPS) and 25 (city) to 38 (NPS) and 16 (city).

Map page 54, Proposed Action, Alternative 1: The "P" at the intersection of Calle Norteña and Homestead Circle should be removed to be consistent with the text.

Page 236 - The Middle Rio Grande Council of Governments (MRGCOG) and the Urban Transportation Planning and Policy Board (UTPPB) are not local agencies. The MRGCOG is the federally designated Metropolitan Planning Organization for the Albuquerque urban area. The UTPPB is the MRGCOG's regional transportation policy board for the Albuquerque urban area. An asterisk should be placed next to the Urban Transportation Planning and Policy Board. The UTPPB letter begins on page 297.

Pages 21 and 463 - The discussion of the Unser Middle Project should state that the project is part of the Long Range Major Street Plan that is prepared by the MRGCOG and adopted by the UTPPB.

CONCLUSION

A notice of availability for the Final Environmental Impact Statement was published in the Federal Register during the week of December 20. The 30-day no action period ended on January 21, 1997.

The above factors and considerations justify the selection of the final plan, as described in the Proposed Action section of the Final Environmental Impact Statement. The Final General

Management Plan/Development Concept Plan is hereby approved. The officials responsible for implementing the selected action are the Regional Director, Intermountain Field Area, National Park Service and the Superintendent, Petroglyph National Monument.

Recommended *Walter Cordova*
Superintendent, Petroglyph National Monument

Date: 2/19/97

Approved *John E. Cook*
Regional Director, Intermountain Field Area

Date: 2/20/97

FINAL
GENERAL MANAGEMENT PLAN
DEVELOPMENT CONCEPT PLAN
ENVIRONMENTAL IMPACT STATEMENT

PETROGLYPH NATIONAL MONUMENT
Bernalillo County, New Mexico

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

Four alternatives for future management and use of the newly established Petroglyph National Monument are analyzed in this document. Development actions under all alternatives are based on establishing a strong managing agency presence to preserve the resources. The overall approach of alternative 1, the proposed action and preferred alternative, is to provide diverse opportunities for visitors of different ages and abilities to see petroglyphs within the context of the escarpment, mesa top, volcanoes, Rio Grande valley, and Sandia Mountains. Visitors would be directed to a visitor center/heritage education center at Boca Negra Canyon. Horseback and bicycle riding would be permitted on selected designated mesa-top trails and at three crossing points. No horses or bicycles would be allowed in petroglyph viewing areas or archeological sites anywhere in the monument. Mesa-top resources and visitor experiences would be monitored to identify adverse impacts. Impacts on natural and cultural resources, the regional economy, visitors, and values held by culturally affiliated groups would be minimal or, in some cases, beneficial. Mitigating measures would be developed to avoid significant adverse effects on the ferruginous hawk, which is being considered for listing by the U.S. Fish and Wildlife Service as a threatened species, and for the two rare cactus species. The overall approach of alternative 2 is 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 easy public access and use. Visitors would be directed to a visitor center in Lava Shadows where they would have access to selected petroglyphs. A heritage education center would be built at Boca Negra Canyon. Visitors would have more opportunities to see the petroglyphs with a greater sense of solitude than in alternative 1. More areas of the monument would be reserved for research, traditional and cultural use, and occasional guided tours than in the other alternatives. Horse and bicycle use would not be permitted in this alternative except at two escarpment crossings. Overall, adverse impacts on cultural and natural resources and values held by culturally affiliated groups would be similar to and in some cases slightly less under this alternative than alternative 1. As in alternative 1, mitigation measures would avoid significant impacts on the ferruginous hawk, which is being considered for listing by the U.S. Fish and Wildlife Service as a threatened species, and for the two rare cactus species. The overall approach of alternative 3 is that visitors would have easy access to the mesa-top views and the volcanoes as well as petroglyph concentrations below the escarpment. Visitors would be directed to a visitor/heritage education center in Rinconada Canyon. From the visitor center many visitors would drive to a new 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. Developing the mesa-top road would adversely impact the cultural landscape, which has significance for traditional and cultural activities. There would be adverse impacts on natural drainage patterns and on visitors and residents from increased noise levels. This alternative would directly 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. The ferruginous hawk, being considered for listing, and for the two rare cactus species would be significantly adversely impacted under this alternative. Adverse impacts on scenic resources would also be greatest under this alternative. 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 general management plan — providing a baseline for evaluating the changes and impacts that would occur under the three action alternatives. There would be parking areas and minor trail improvements in some areas. There would be no new visitor center. This alternative would have the fewest facilities. Horseback and bicycle riding would be permitted within the monument only where currently allowed. The interim visitor center at Las Imagines would become the primary visitor center, accommodating only a limited number of visitors. Archeological sites, petroglyphs, and the cultural landscape would continue to be adversely impacted by vandalism. There would be no significant adverse impacts on the ferruginous hawk or the two rare cactus species. Most of the monument's natural scenic qualities would not be disturbed by developing new facilities.

Questions about this document should be addressed to

Superintendent, Petroglyph National Monument
6001 Unser Boulevard NW
Albuquerque, NM 87120 (505) 899-0205

SUMMARY

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. This *Final General Management Plan / Development Concept Plan / Environmental Impact Statement* for the newly established monument sets forth the basic management philosophy of the monument to preserve and protect monument resources and provide for visitor use. The monument would be managed to preserve the cultural and natural resources for the benefit and enjoyment of current and future generations. Federal laws that are generally applicable to units of the national park system also apply to the monument.

This document 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 the appropriate 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 this plan.

This document presents four alternatives, including a preferred alternative and proposed action, for the development, resource management, and visitor use of the monument. The impacts of implementing the proposed action and the other three alternatives are addressed in the

"Environmental Consequences" section of the document. 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 and are described in the "Actions Common to All Alternatives" section. The alternatives describe different visitor experiences and different kinds and locations for facilities under this common resource management approach. 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 national 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 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 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.

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 audio-visual 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

SUMMARY

education programs would be a top priority for the monument.

ALTERNATIVE 1

The overall approach of alternative 1, the proposed action and National 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 where they would have opportunities to learn about the significance of the monument resources and past cultures that have lived in the region and 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 non-profit 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 outside the monument.

Petroglyph research functions would continue in existing structures. 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. 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 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.

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.

SUMMARY

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 impact 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 outstanding 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 in the monument only where currently allowed.

The existing interim visitor center at Lava Shadows would become the primary visitor center. 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 wild-life 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.

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

SUMMARY

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 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 functions 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.

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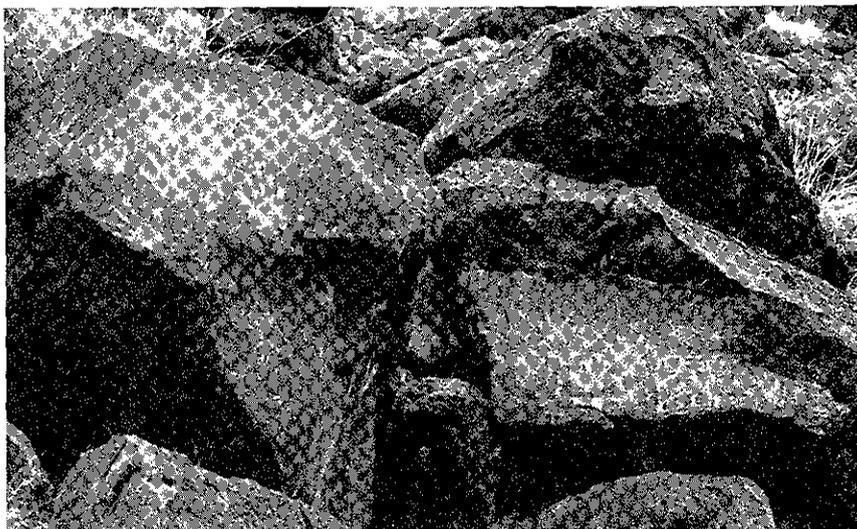
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PURPOSE AND NEED FOR THE PLAN



Mesa Prieta from Rinconada peninsula looking southwest



Petroglyphs, Piedras Marcadas Canyon



Interpretive ranger with school group

INTRODUCTION

PURPOSE OF AND NEED FOR THE PLAN

The purpose of this *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 combined plan and environmental impact statement have been prepared to meet the requirements of Public Law 101-313 (the legislation that established the monument; see appendix A) and the National Environmental Policy Act and its regulations. In addition, according to NPS management policies, all other plans for the monument would be consistent with the direction established in this lead planning document.

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.

This 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 *General Management Plan / Development Concept Plan / Environmental Impact Statement* 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).

The plan 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.

Specifically, as stated in the law establishing the monument, PL 101-313, this plan will address the following:

- the number of visitors and the types of public use that can be accommodated while protecting the monument resources
- a resource protection program
- a general interpretive program
- a plan to implement the American Indian Religious Freedom Act
- a general development plan, including proposals for a visitor center and the estimated cost thereof
- a plan for a petroglyph research center

This plan and environmental impact statement identifies significant issues and concerns facing monument managers, presents a reasonable range of management, resource protection, and development alternatives, and analyzes the effects of implementing each alternative. The plan and environmental analysis reflect

information received to date during consultation with the Indian community. The environmental analysis in this document does not address the impacts of designation (passage of law by Congress) in June 1990. Congressional acts are exempt from compliance with the National Environmental Policy Act.

Because monument managers are told that the petroglyphs and their context have traditional and cultural value to the Pueblo and the Atrisco land grant peoples, the petroglyphs must be seen as much more than visual art. Common use of the term "rock art" for petroglyphs and pictographs might minimize or trivialize this significance. Thus, other than in references to legislative mandates the term rock art will not be used in this document or in any interpretive materials developed by the monument. Pictographs are included when the term petroglyph(s) is used in this document.

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).

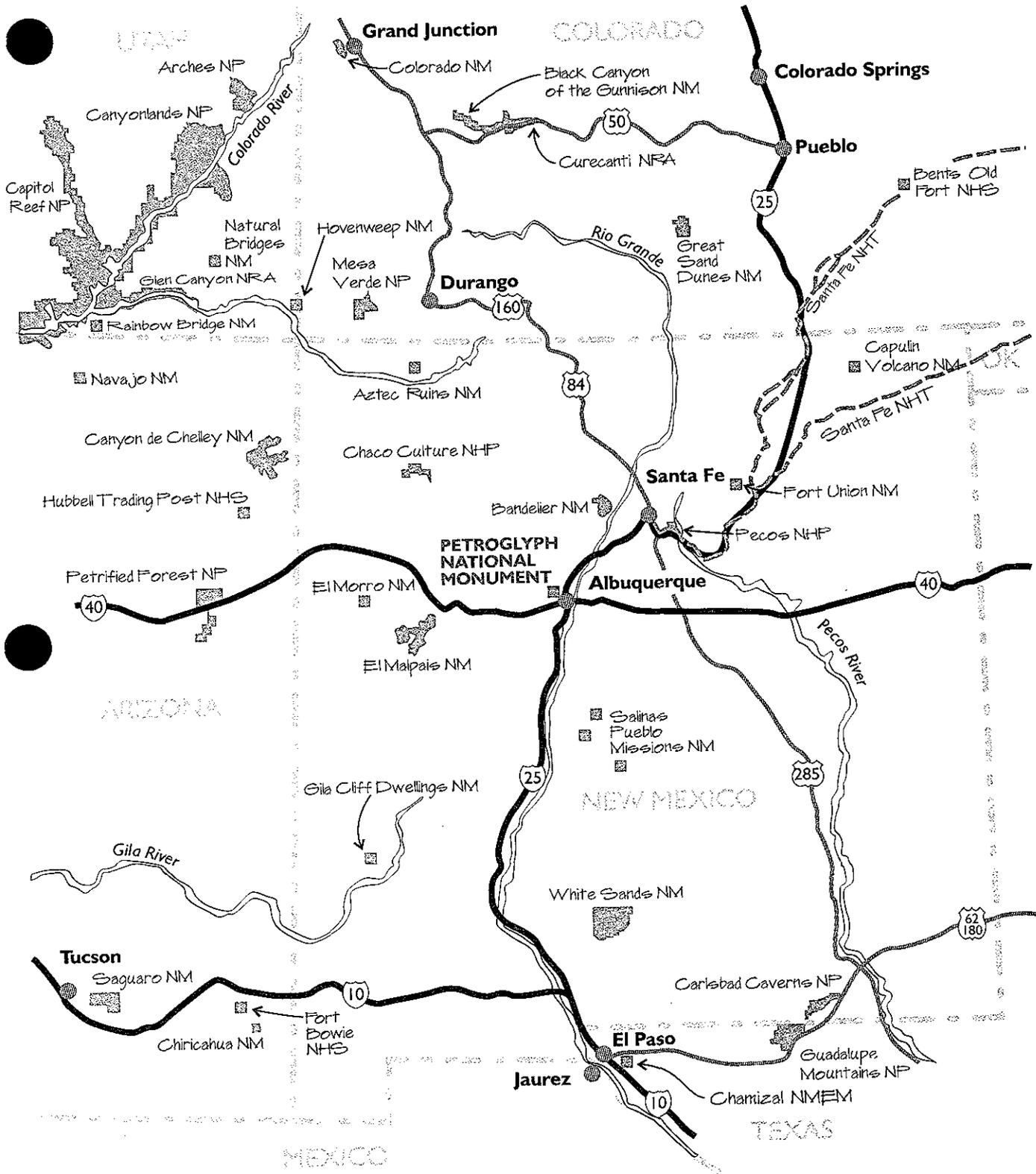
The major landscape feature of Albuquerque's western horizon is the west mesa, which was created by a series of volcanic eruptions and lava flows about 190,000 years ago. What remains of those eruptions are the mesa, with its five volcanic cones, and the dark, winding, 17-mile-long escarpment. The petroglyphs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

pecked, or abraded on the dark patina of the basaltic rocks of this escarpment.

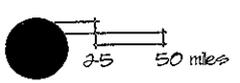
It is estimated that most of the petroglyphs were created between A.D. 1300 and A.D. 1600; others are estimated to be 2,000 to 3,000 years old, and some date from the early Spanish use of the area from the 1650s to the 20th century. Although the petroglyphs occur along the entire escarpment and along 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.

The petroglyph images include abstract and geometric designs and figures of reptiles, birds, large mammals, masked and horned serpents, as well as four-pointed stars, flute players, and other anthropomorphic figures. 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 (defined below). 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



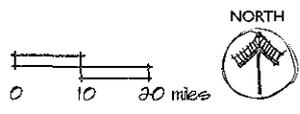
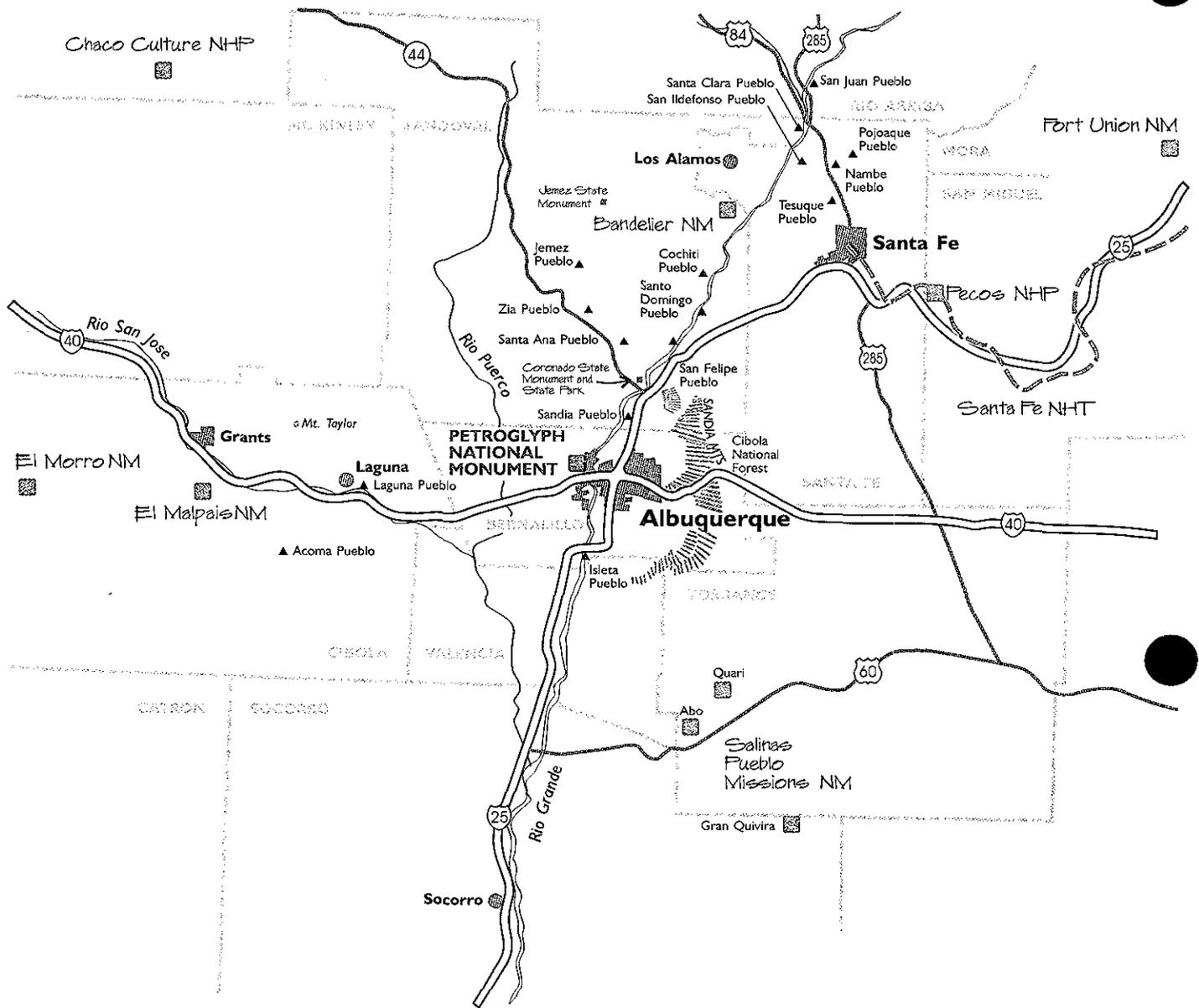
NORTH



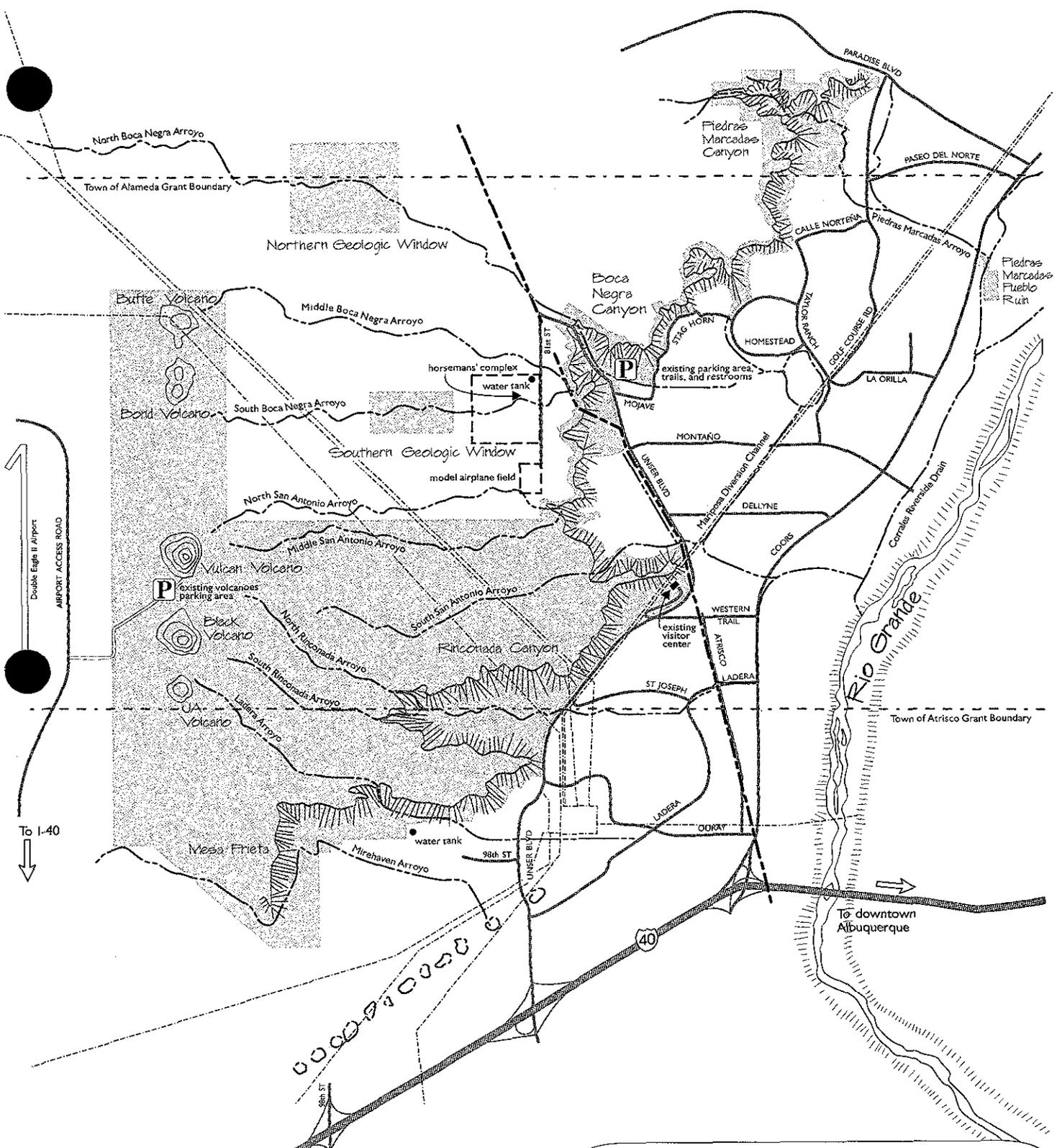
Region

Petroglyph National Monument

United States Department of the Interior
National Park Service
DSC • November 1996 • 354 • 20,003A



Vicinity
Petroglyph National Monument
 United States Department of the Interior
 National Park Service
 DSC • November 1996 • 354 • 20.004A



Existing Conditions
Petroglyph National Monument
 United States Department of the Interior
 National Park Service
 DSC • November 1996 • 354 • 20,009A

	arroyo
	utility lines
	gas line
	Petroglyph National Monument
	escarpment

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 a 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.

Existing development within the monument includes a residence that has been converted to an interim visitor center at Lava Shadows. It has a small book sales area, information desk, one public restroom, and office space for five interpretive rangers. The visitor center can accommodate up to 20 visitors at one time. Another building in the vicinity (formerly used as three small apartments) was converted to office space for the chief ranger and two law enforcement rangers. Adjacent to the interim visitor center is a recently acquired residence. Various options for its use are being considered. The current NPS staff includes 13 full-time employees and two seasonal employees.

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.

An entrance station at Boca Negra Canyon is used by the city's Open Space Division

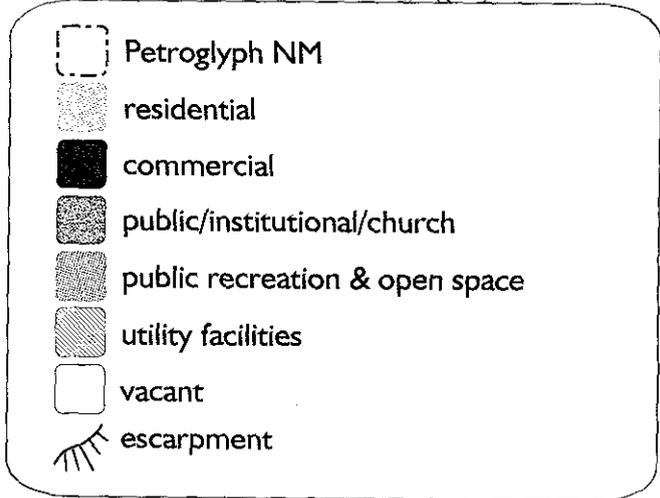
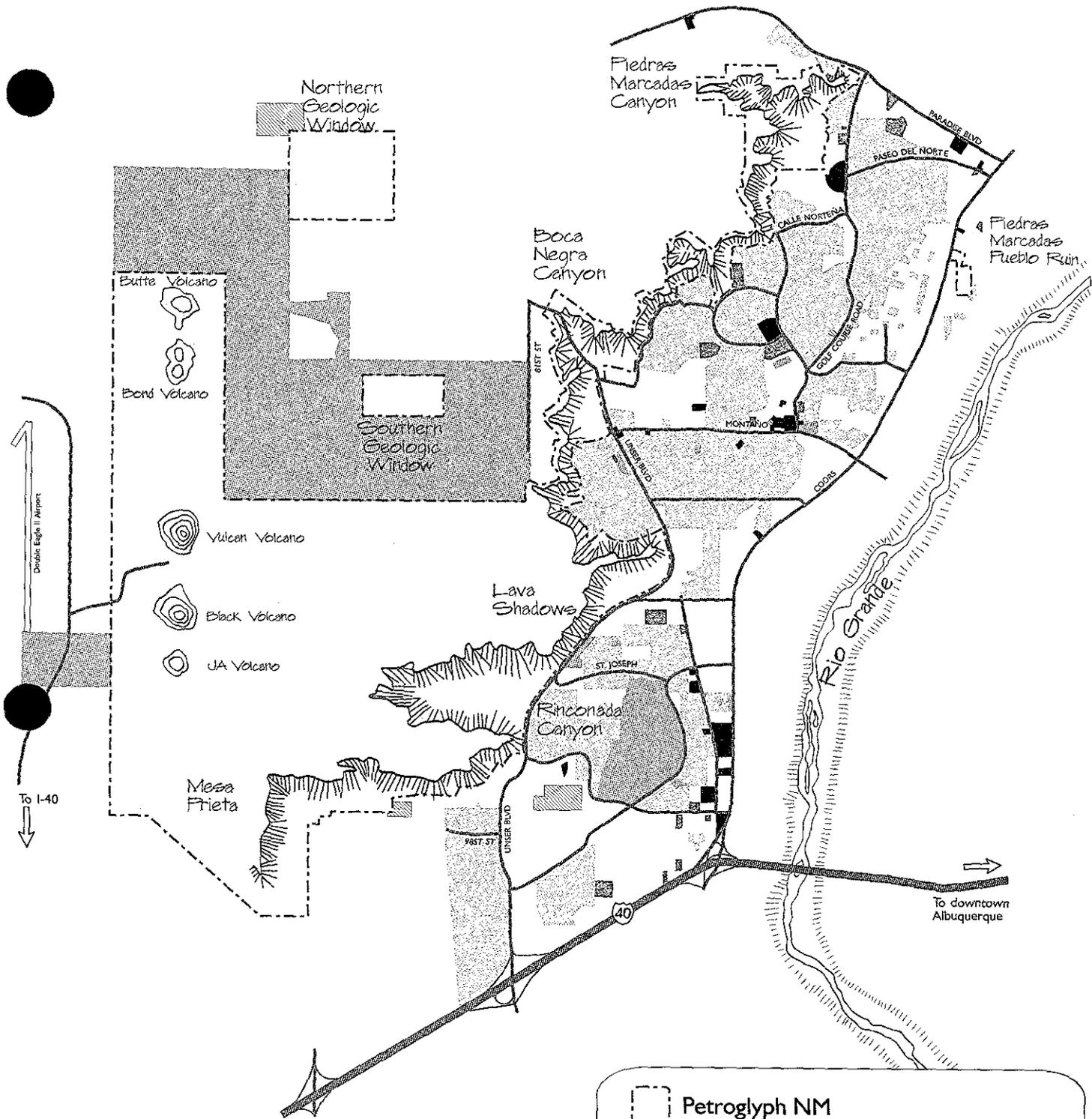
for visitor contact and fee collection. There are three paved trails that provide easy access to several petroglyph concentrations and the mesa top.

There are two other structures on land that has been acquired south of Boca Negra Canyon. These buildings are being used for NPS administrative offices and maintenance work area.

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 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 appears to be eligible for listing on the National Register of Historic Places as a cultural landscape. A cultural landscape is defined as a geographic area, including both cultural and natural resources, associated with an event, activity, or person or exhibiting other cultural or aesthetic values. Further documentation will be prepared to re-nominate the monument to the National Register of Historic Places as resource inventories and analyses are completed.

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



Existing Land Use
Petroglyph National Monument
 United States Department of the Interior
 National Park Service
 DSC • November 1996 • 354 • 20,013A

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. This pueblo complex appears to have been inhabited for about 300 years (ca. A.D. 1300 to A.D. 1600). The occupants of this pueblo may have been responsible for many of the petroglyphs in the Piedras Marcadas Canyon and other areas along the escarpment.

The five volcanoes (JA, Black, Vulcan, Bond, and Butte) line the western edge of the monument and frame Albuquerque's western skyline. Pueblo groups feel that the volcanoes are connected visually and by traditions to both the escarpment petroglyphs and the Sandia Mountains. They recognize a traditional and cultural relationship among the volcanoes, the rocks, the mountains, and the medicinal plants.

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, and these areas also offer opportunities for visitors to be isolated from the Albuquerque urban environment. The Pueblo community has stated that these features also have traditional and cultural significance.

The vegetation and wildlife in the monument are typical of central New Mexico. However, there are microhabitats along the escarpment that retain warmth and moisture and provide shelter for a greater variety of species than the surrounding terrain. These microclimates support some plant species that are typically found farther south. Their

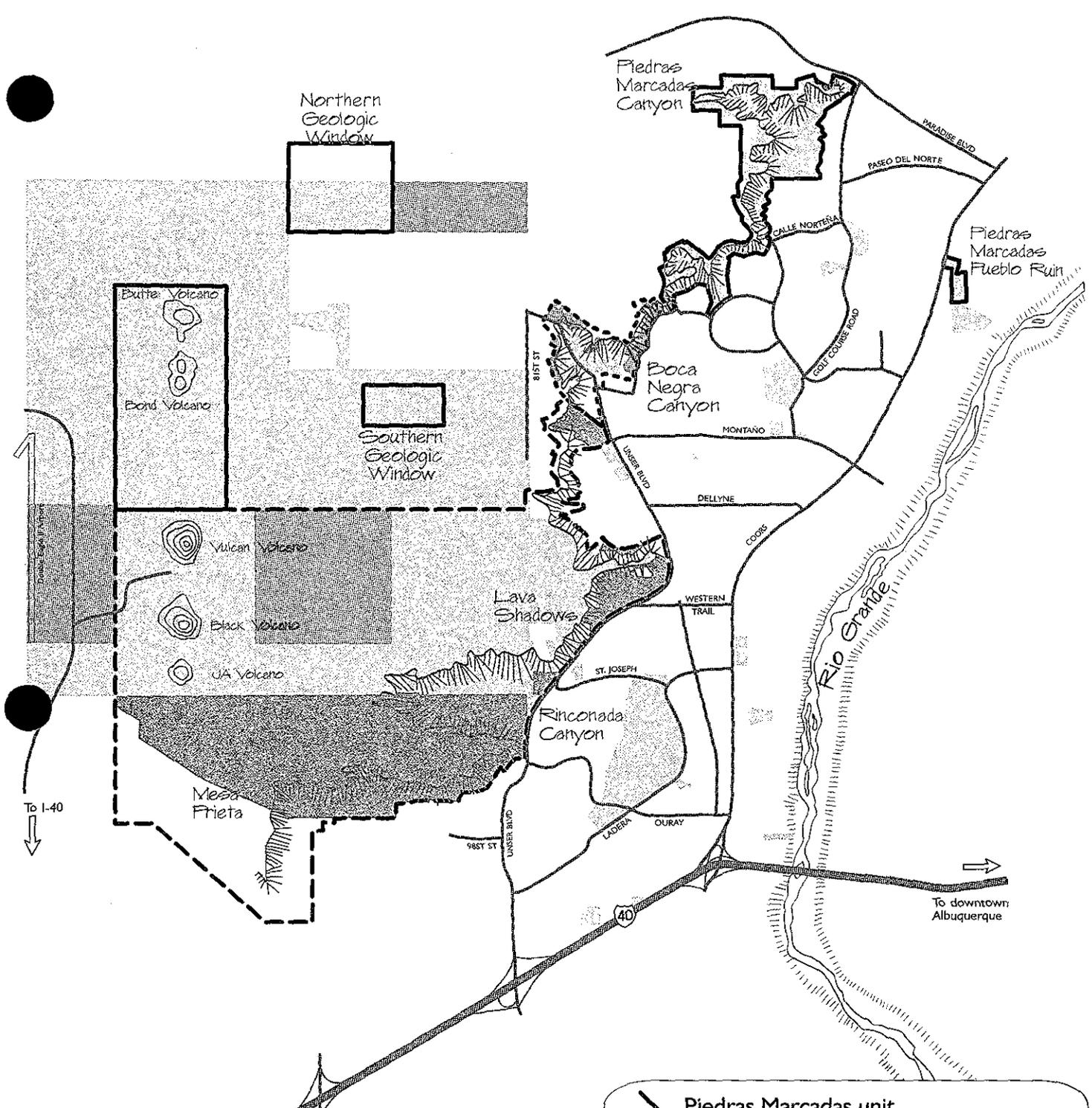
presence in the monument represents the northernmost extreme for these species.

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.

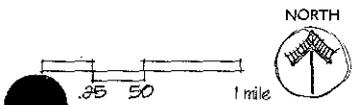
About 1,517 acres of lands in the monument are owned by the federal government, about 3,811 acres are owned by the city, and about 740 acres are owned by the state (see Landownership map). The remaining private lands (approximately 1,315 acres) will be acquired as funds are appropriated by Congress and the city and the state for land acquisition. City open space and existing and proposed city trails provide opportunities to connect with the monument and former mesa-top roads and trails (see Existing and Proposed City Trails and Monument Roads and Trails maps).

BACKGROUND AND LEGISLATIVE DIRECTION

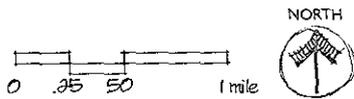
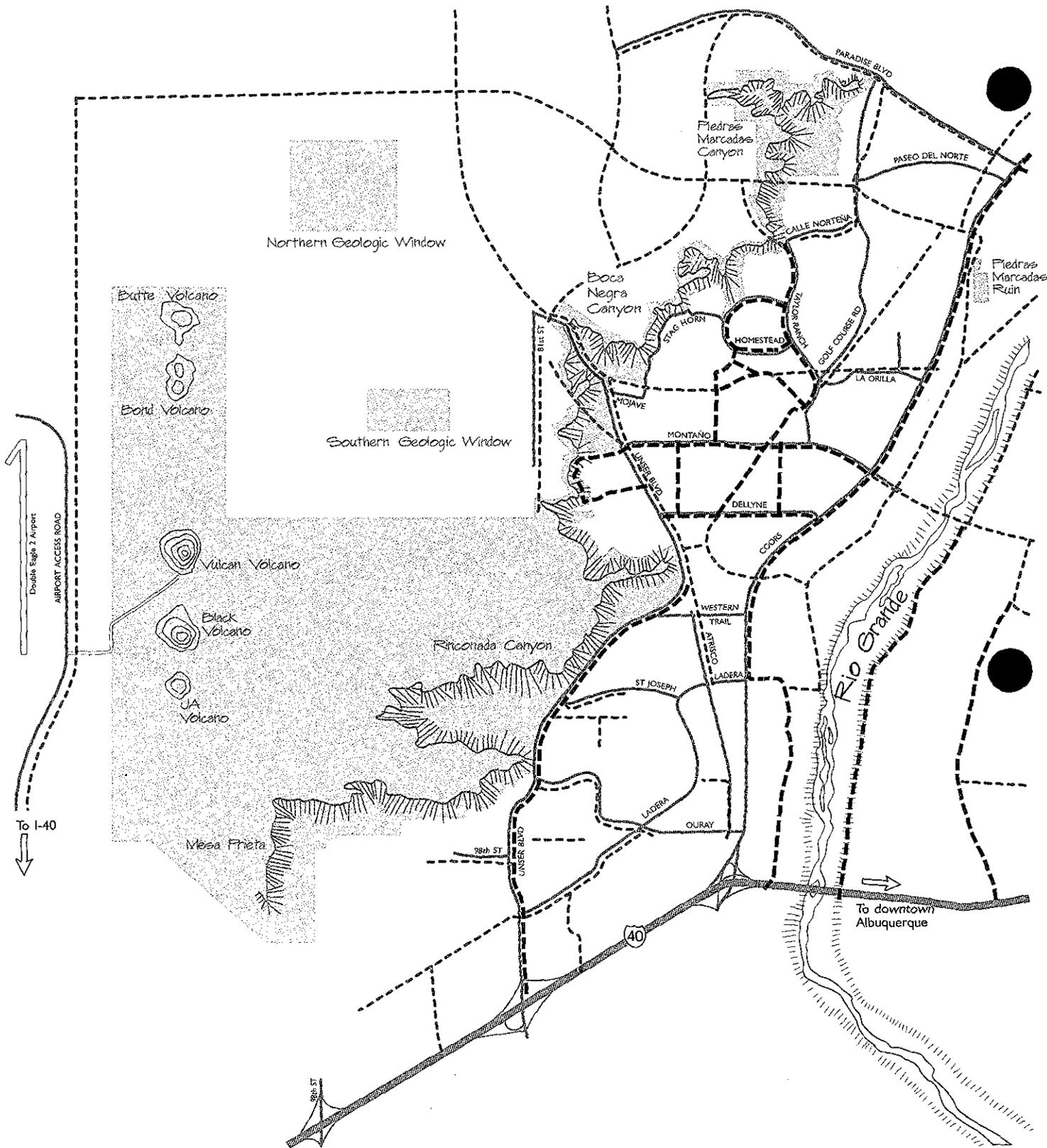
A 1986 survey of the west mesa petroglyphs, done by Matthew Schmader and John Hays, led to the national register nomination of the Las Imagines Archeological District in 1986. During the late 1980s, citizen groups approached Congress and requested federal assistance in protecting the area's values. The National Park Service completed a *New Area Report, Study of Alternatives, Albuquerque West Mesa Petroglyph Study* in 1988 that identified three alternative management approaches and boundary configurations for the west mesa. Congress responded by passing Public Law 101-313 on June 27, 1990, creating Petroglyph National Monument — the first national park system area specifically established to protect and



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



Landownership
Petroglyph National Monument
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 National Park Service
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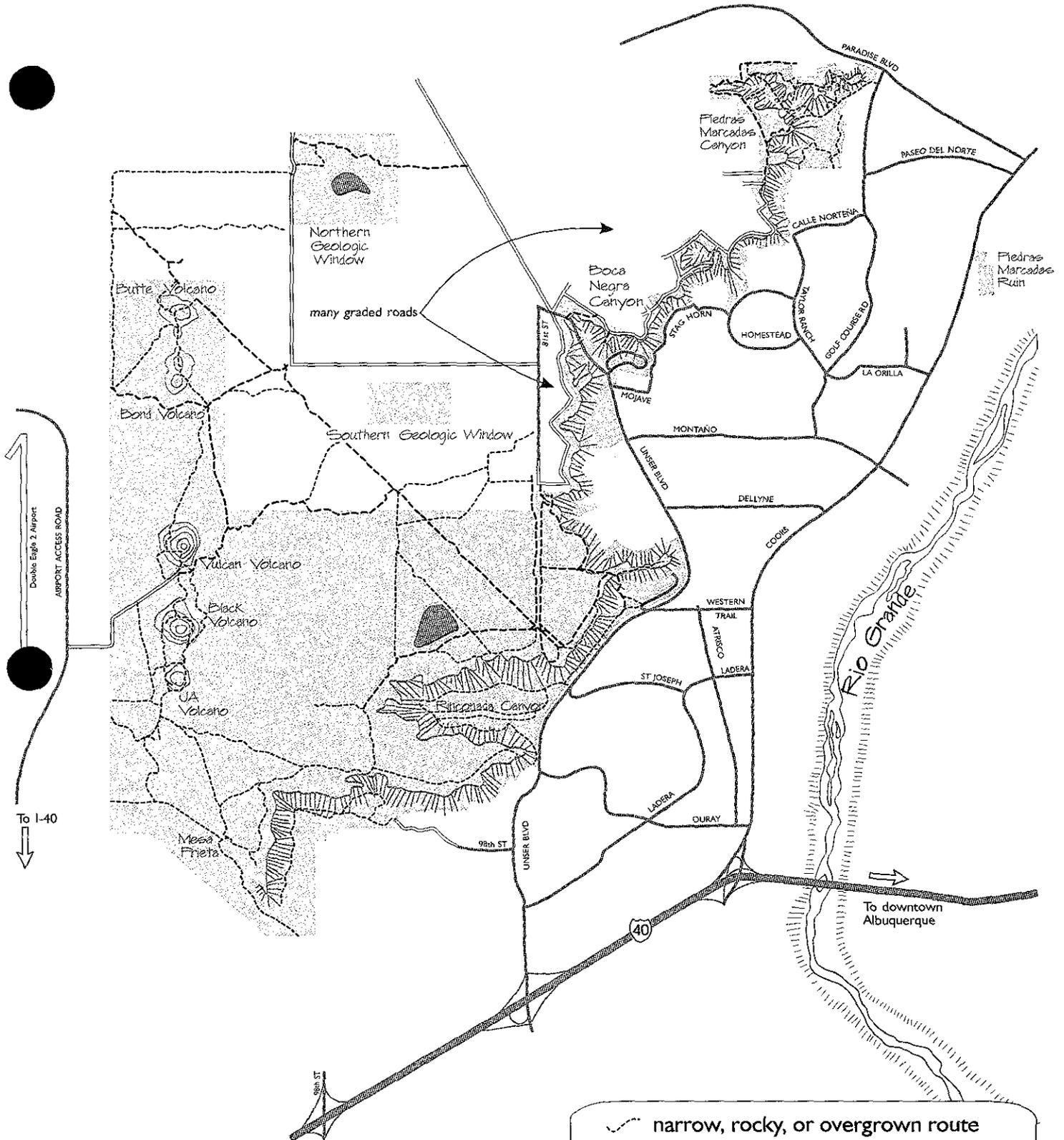


- existing city trail and bicycle routes
- proposed city trail and bicycle routes
- Petroglyph National Monument
- escarpment

Existing and Proposed City Trails

Petroglyph National Monument

United States Department of the Interior
 National Park Service
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Monument Roads and Trails

Petroglyph National Monument
 United States Department of the Interior
 National Park Service
 DSC • November 1996 • 354 • 20,021A

-  narrow, rocky, or overgrown route
-  unmaintained dirt road
-  graded road
-  abandoned motocross area
-  Petroglyph National Monument
-  escarpment

interpret rock carvings and their setting and to

preserve, for the benefit and enjoyment of present and future generations . . . the nationally significant West Mesa Escarpment, the Las Imagines National Archeological District, a portion of the Atrisco Land Grant, and other significant natural and cultural resources, and to facilitate research activities associated with the resources.

The monument established by Congress consisted of approximately 5,280 acres and is generally known as the Atrisco unit. With the signing of a binding agreement in March 1992 by the city, the state, and the National Park Service, the monument was expanded to 7,160 acres — to include the 215-acre Boca Negra unit and the 1,179-acre Piedras Marcadas unit.

Pursuant to Public Law 101-313 and after consultation with the Petroglyph National Monument Advisory Commission (see below), 95 acres of land in two other boundary addition areas — commonly known as the northern addition and the Lava Shadows addition — were authorized for acquisition and incorporation into the national monument. These additions, a total of 84 acres, were made in June 1994.

As are many recent additions to the national park system, Petroglyph National Monument was envisioned by Congress to be a partnership where lands would continue to be owned not only by the federal government but also by the city and the state. The partners are working together to develop plans, collect data, maintain existing facilities, determine the roles and responsibilities of each partner, and manage natural and cultural resources.

Public Law 101-313 states that

- federal laws that are generally applicable to units of the national park system shall apply to the monument
- the National Park Service may participate in land use and transportation planning for lands adjacent to the monument
- the secretary of the interior shall prepare a general management plan in cooperation with the city and the state

This legislation also authorizes the establishment of the Petroglyph National Monument Advisory Commission to advise the secretary of the interior on the management and development of the monument and on the preparation of the general management plan. The 11-member commission is made up of nominees who are appointed by the secretary for five-year terms. The commission has met on several occasions over the past two years.

In addition, the legislation directs the National Park Service to conduct research on other Rio Grande style petroglyphs on federal lands in New Mexico and, through cooperative agreements with state and private landowners, on nonfederal lands.

GENERAL MANAGEMENT PLANNING — THE PROCESS

The general management process consists of the following steps: establishing a planning team, involving and consulting with American Indian groups and Atrisco heirs, developing purpose and significance statements, identifying the issues and collecting data, developing management objectives and interpretive themes, and generating and evaluating the alternatives.

Establishing a Planning Team

The first step in the planning process was establishing an intergovernmental core

planning team to coordinate and prepare the *General Management Plan / Development Concept Plan / Environmental Impact Statement*. Because of the partnership nature of Petroglyph National Monument, the general management plan is being prepared by a core team that includes representatives from four city agencies, two state agencies, the American Indian Pueblo community, the Federal Aviation Administration, and the National Park Service. The core team has met throughout the planning process to develop and refine statements of purpose, to identify the significant resources of and the objectives for the monument, to develop alternatives for visitor use and management, and to assess the impacts of implementing each of the alternatives.

To ensure participation from the many governmental agencies that are concerned with the monument, an agency coordinating team was established. The coordinating team includes representatives with expertise in various disciplines from city, county, state, and federal agencies as well as American Indian governments. The coordinating team advises the core team regarding past, ongoing, and proposed projects and programs that have an effect on the monument as well as providing input on various aspects of the plan preparation.

Public Involvement and Consultation

Throughout the planning process the team 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 *General Management Plan* 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. The National Park Service keeps the advisory commission informed of their planning activities and regularly consults with the advisory commission. The advisory commission has taken a very active interest in planning for the monument and met regularly with the Park Service to review alternatives and make recommendations regarding other alternatives.

The planning team has also involved, consulted, and informed the Pueblo Indian communities of the planning process and issues that could affect lands that are significant to them. The initial step was to conduct a rapid ethnographic assessment (Evans et al. 1993) to initiate contacts with American Indian groups to determine which groups wanted to be involved with the monument planning process, what their concerns were about monument planning, and what would be the best way for them to participate in the planning process.

Based on the results of the ethnographic assessment, American Indian representatives were invited to participate in core team meetings. Monument staff and planning team members have both short- and long-term interests in meeting with American Indian representatives and in understanding their interests. The short-term interests are addressed in this plan; the long-term interests include continuing involvement in the management of cultural resources, the interpretive program, and research.

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. Purpose and significance statements, which are basic to all assumptions about the monument and the ways it should be managed and developed, are important to planning and management because they help define the management priorities for the monument.

Based on public comments and a close look at the legislation and the legislative history, the core team identified the following purpose and significance statements below.

Identifying the Issues and Collecting Data

The issues are presented in later "Planning Issues and Concerns" section, and the data that has been collected, or that is still needed, is presented throughout the entire document and in the appendixes.

Developing Management Objectives and Interpretive Themes

Management objectives were developed and are included in appendix B. The interpretive themes are presented under "Interpretation and the Visitor Experience" in the "Actions Common to All Alternatives" section.

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.

Generating and Evaluating Alternatives

The alternative development process is the combination of the above factors and the direction provided by legislation, the issues and opportunities identified through scoping, the overall concepts for visitor use and resource management, and the continuing refinement through consultation with various interest groups and agency staff. This process is described in greater detail in the "Introduction" to the alternatives, the "Environmental Consequences," the "Consultation and Coordination" sections of this document as well as in appendix C.

Final Document Preparation

The *Draft Management Plan / Environmental Impact Statement* was reviewed by the public during a 90-day public comment period that included public meetings. Comments on the *Draft General Management Plan / Environmental Impact Statement* were analyzed, and appropriate revisions have been made in the *Final General Management Plan / Environmental Impact Statement*. A record of decision will be issued not less than 30 days after the release of this document. Various elements of the proposed action and other alternatives might be modified or interchanged in the record of decision.

PLANNING ISSUES AND CONCERNS

Several planning issues and concerns, which are addressed in this document, were identified in meetings with concerned agencies, organizations, and individuals (for additional information, see the "Consultation and Coordination" section). These issues and concerns are summarized below.

PARTNERSHIP JURISDICTION, ROLES, AND RESPONSIBILITIES

Petroglyph National Monument was legislated in June 1990 by Congress as a monument that would function as a partnership between the National Park Service, the city of Albuquerque, and the state of New Mexico. Three units were identified — the Atrisco unit in which the lands are owned by the federal government, the Boca Negra unit in which lands are owned by the state and city, and the Piedras Marcadas unit in which lands are owned by the city. However, the legislation, section 105 (e), was also clear in stating that federal laws generally applicable to units of the national park system apply to all lands within the monument. Lands within the monument will continue to be owned by the city, state, and the federal government and managed by the National Park Service and the city Open Space Division. The issue is how to best define the roles and responsibilities of the agencies.

PETROGLYPH PROTECTION AND MANAGEMENT

Petroglyphs are vulnerable to intentional and unintentional destruction. Unintentional vandalism may be caused by touching, rubbing, or highlighting the petroglyphs with chalk or other materials. Petroglyphs are vulnerable to oils from

human hands and people climbing on them (which erodes the patina). Intentional vandalism on monument lands includes removing the rocks and/or chiseling, spray painting, scratching, and shooting guns, which deface the rocks and/or the patina of the rocks along the escarpment, including the rocks without petroglyphs. Removing significant associated features, such as nearby plants and other rocks or boulders, may adversely affect the qualities that give the petroglyphs traditional and cultural meaning for the Pueblo people. One issue for monument managers is how to prevent resource damage and still allow people to enjoy the monument. Another issue is how to restore areas that have already been vandalized.

The legislation establishing the monument directs that a plan be prepared for a petroglyph research center. The issue is determining the purpose, size of development, management, and location for this center and how to conduct the research without adversely affecting Pueblo and indigenous communities.

ARCHEOLOGY

Another issue for monument managers is how to protect the monument's 300+ archeological sites from intentional and inadvertent destruction by monument visitors. The risk of destroying archeological sites increases as visitor use increases and as adjacent development continues near the monument boundary. Another concern is archeological sites that are threatened by erosion.

CULTURAL LANDSCAPE

A cultural landscape overview was conducted by the National Park Service to gather information about past use of the monument lands and to identify features that define the cultural landscape. Actions proposed in this plan and the alternatives would have different impacts on the cultural landscape. The issue is how best to preserve significant cultural landscape features while also providing for visitor use.

THE AMERICAN INDIAN COMMUNITY AND ETHNOGRAPHIC RESOURCES

The American Indian Pueblo community has ancestral ties to lands that include the monument, and the monument holds traditional and cultural value for the Pueblo people. The issue is how to comply with the American Indian Religious Freedom Act — to protect the resources and provide reasonable access for these people to use traditional and cultural sites in the monument for traditional and cultural activities and keep visitors from adversely affecting these activities — while minimizing conflicts with monument visitors and without adversely affecting monument resources or visitors' experiences.

The National Environmental Policy Act, NPS *Management Policies*, and NPS *Cultural Resources Management Guidelines* (NPS-28) also require consultation with Indian groups in planning and management activities that affect them. A related issue is how to ensure such consultation.

An equally important issue is how to learn more about the past use of monument lands while respecting the wishes of the American Indian Pueblo community. The Pueblo community may view any archeo-

logical investigation as desecration rather than scientific inquiry, and some artifacts may have special traditional and cultural significance.

HEIRS OF THE ATRISCO LAND GRANT

The heirs of the Atrisco land grant also claim ancestral ties to lands that include the monument. The management concern is how to document traditional use and where to provide for use by the heirs of portions of the monument without adversely affecting monument resources or visitors' experiences.

NATURAL RESOURCES

The canyons, exposed basalt, wildlife, vegetation, mesa top, arroyos, and other natural features in the monument are all part of the natural environment in which the petroglyphs were carved. In addition, habitat has been identified that may support a federal proposed and a state-listed rare plant species. The monument also provides habitat for many bird species, two of which are proposed for federal listing. Portions of the monument have been disturbed by illegal dumping, offroad vehicle use, and cinder mining. Proposed development and visitor activity could affect soils, air quality, biological diversity, and threatened and endangered species habitat. The issues are how to protect and reclaim these resources.

SCENIC RESOURCES

Views throughout the monument of nearby and distant landforms as well as views of the monument from many locations in the Albuquerque area are important monument and area resources. The protection of these views and vistas to and from the

distinctive landforms of the monument, including the volcanoes, mesa, escarpment, and the various canyon features, is critical to interpreting the significance of the monument. Views are being affected by adjacent development and could be adversely affected by monument facilities. The concern is how to protect the integrity of these views as much as possible while providing access to appreciate them.

INTERPRETATION

One question most visitors ask is what the petroglyphs literally mean. The challenge for the monument staff is to convey the significance and importance of the petroglyphs even though we do not know their literal meaning. They are associated with cultural and traditional practices within the Pueblo community, practices that are private and have been kept that way for centuries. As special and traditional to the Pueblo community, these resources are worthy of being protected and treated with respect, just as most people respect churches, synagogues, cemeteries, battlefields, etc. The issue is how to convey this to monument visitors.

Interpreting the monument story requires sensitivity to contemporary Pueblo cultures and the Atrisco land grant heirs. Reproducing images of petroglyphs for interpretive media must be done carefully and only with prior consultation to avoid inappropriate use of traditional and cultural symbols. One of the primary challenges faced by monument managers is how to convey an appreciation, understanding, and sense of respect for the petroglyphs and their context.

At the same time, being a part of the growing Albuquerque metropolitan area provides many opportunities for heritage education. The issue is how best to take advantage of these opportunities and

develop programs that reach out to the community.

HERITAGE EDUCATION

There are extensive heritage education program opportunities at the monument because of its location within the Albuquerque metropolitan area. Educational programs can play an integral role in protecting monument resources as well as expanding the understanding of past and present cultures. The issue is how to design and integrate education programs with monument and community resources.

VISITOR CIRCULATION AND ACCESS

Another concern is how to provide visitor access to the petroglyphs and other areas of interest without having adverse effects on sensitive archeological and ethnographic resources. Access, including access for visitors with disabilities, should avoid sensitive resources and intrusion on other visitors' experiences. Circulation issues include how to get visitors to the monument efficiently.

Some people want to have vehicle access to the mesa top for the experience and views. The issues are should this access be provided, and if so, what is the best way to do that without adverse affects on the monument resources.

PUBLIC USES

In the past, the monument has been used for shooting, bicycling, hiking, horseback riding, walking dogs, rock-climbing, offroad vehicle use, picnicking, grazing cattle, and hiking. Local visitors have been able to visit and enjoy the monument in relative solitude and without restrictions on these activities. With the creation of the

monument and the acquisition of private lands, increasing visitation necessitates facilities, parking areas, established trails, and less solitude. A few of these past activities were restricted or prohibited upon the creation of the monument. Other uses have not been addressed until this planning process began. As lands around the monument become increasingly developed, the monument is becoming more attractive for various public uses; many people, including adjacent residents, have expressed strong desires for these uses to continue. Some of these past uses may conflict with the needs for resource preservation and providing experiences for monument visitors. The issue is how to provide for use without adversely affecting resources and visitor experiences.

NEIGHBORHOOD INTERESTS

Residents from adjacent neighborhoods have concerns about monument visitors creating traffic congestion and parking problems in their neighborhoods. They do not want visitors directed into their neighborhoods to gain access to the monument. Residents along the boundary want trail access into the monument and have created informal social trails to the top of and along the escarpment. Creating these trails increases the risk of damage to archeological sites and natural resources. The issue is how to direct visitors to the monument without creating such problems and, if neighborhood trail access is appropriate, how best to provide that access while protecting monument resources.

STORMWATER DRAINAGE AND EROSION AND UTILITY RIGHTS-OF-WAY

Monument managers are concerned about preventing adverse effects of stormwater drainage and erosion on monument

resources and on nearby residents who have homes below the escarpment. During rainstorms, water tends to pour off the escarpment edge, causing erosion and sedimentation downstream. The Albuquerque Public Works Department, the Albuquerque Metropolitan Arroyo Flood Control Authority, and the development community have also expressed concern about how to carry stormwater from proposed development on the mesa top to existing drainage structures that carry stormwater to the Rio Grande.

The development community has stated that they did not intend for the monument to adversely impact further western development, which could include requests for utility rights-of-way across monument lands. Specific locations of utility crossings have not yet been identified by the city or other interested parties.

The issue is how and where to locate facilities on the west mesa, including structures for drainage and methods for preventing stormwater erosion, without adversely affecting monument resources — even if additional costs are involved.

BOUNDARY ADJUSTMENTS

Several areas have been considered as adjustments to the existing monument boundary. The issue is evaluating these areas, in accord with NPS policies and law, to determine the suitability and feasibility of these boundary adjustments.

ISSUES BEYOND THE SCOPE OF THIS GENERAL MANAGEMENT PLAN

Unser Middle Project — Unser Boulevard Continuation and Paseo del Norte

The city has proposed the development of the Unser Boulevard middle project, which

includes Unser Boulevard (a four-lane major arterial parkway) and Paseo Del Norte (a four- to six-lane major arterial) — both of which would go through the monument. The project includes (1) continuing Unser from Dellyne north to Paradise Boulevard (with an escarpment crossing south of Boca Negra Canyon in an existing disturbed area), (2) constructing Paseo del Norte from Unser east to Golf Course Road, and (3) developing a recreational trail and utility corridor in Boca Negra Canyon (the former Unser right-of-way), including the removal of the existing paved road in Boca Negra Canyon. This project is the subject of the 1992 *Final Environmental Impact Statement* (Leedshill-Herkenhoff 1992), which created considerable controversy. As of this writing, construction has not yet begun.

The purpose of new roadway construction for the Unser Boulevard and Paseo del Norte corridors is to provide improved transportation service on the west side of Albuquerque, to relieve existing and future traffic congestion on Coors Boulevard and other area arterials, and to distribute traffic in the most efficient manner to adequately serve east-west travel across the Rio Grande. Paseo del Norte is intended to be a freeway-type road that would serve the Double Eagle II Airport and complement the city road network. Paseo del Norte is initially planned to be four lanes, with the potential for future widening to six lanes.

The monument's establishing legislation states that federal laws generally applicable to units of the national park system shall apply to the monument. The continuation of Unser Boulevard would be consistent with protecting monument resources and purpose. The National Park Service has the authority to permit the construction of roads in national monuments when they serve a park purpose. The city's construction of the Unser extension, which goes around Boca Negra

Canyon, would serve a monument purpose by reducing the noise and visual impacts that the current two-lane road now causes at Boca Negra Canyon. The cumulative impacts of this proposed road corridor has been considered in this document.

The existing Unser alignment through Boca Negra Canyon would be replaced, by the city, with a multiuse trail that does not allow motorized vehicles and connects with proposed city trails and the relocated gas lines and a utility corridor (including a stormwater conduit). The recreational trail and utility corridor in Boca Negra Canyon would be confined to the area disturbed by the existing roadway. The Unser alignment through the monument would also be through an existing disturbed area that does not have any archeological sites. Both Unser Boulevard and the Boca Negra Canyon facilities must be designed to minimize impacts on monument resources. Further environmental and cultural resource compliance would be required.

However, under the federal laws that apply to the monument, there is no legal authority to allow Paseo Del Norte to cross the monument. The National Park Service, the state historic preservation officer, the state attorney general, and numerous other national and local groups have stated that (1) monument resources would be significantly impacted, (2) there is not a monument or visitor-related purpose for such a 50-mph freeway-type road, and (3) there are other prudent and feasible alternatives that would meet the transportation needs of the city without extraordinary costs and disruption and that are feasible from a design and engineering standpoint.

In addition, a number of American Indian groups have gone on record as opposing the Paseo del Norte project because of the impacts on lands that have traditional and cultural values. The Paseo del Norte road

corridor is still under consideration by the city, and unresolved issues about the road remain. Therefore, the road alignment is shown on monument alternative planning maps as the Paseo del Norte study corridor.

The establishment of the monument by Congress and the signing of the binding agreement resulted in the problems with the Paseo del Norte road corridor — not any actions recommended in this management plan.

Unser Boulevard and Paseo del Norte are discussed in greater detail in appendix D.

Federal and City Policies

Concerns have been expressed regarding potential conflicts with city and federal policies. The Park Service and the city are working together to resolve these conflicts. These conflicts resulted from the passage of the monument legislation in 1990 and not by any recommendations in this general management plan. Where local laws and policies conflict with federal laws, federal laws take precedence.

The monument legislation is generally consistent with the *Albuquerque/Bernalillo County Comprehensive Plan* (City of Albuquerque 1988), the *Northwest Mesa Area Plan* (City of Albuquerque 1980a) and the *Northwest Mesa Escarpment Plan* (City of Albuquerque 1987). However there are differences of opinion regarding how to address the interpretation and implementation of some city policies such as the *Long Range Major Street Plan* (Middle Rio Grande Council of Governments 1993), which identifies Paseo del Norte with an alignment through the monument. It is beyond the scope of this plan to resolve conflicts between the *Long Range Major Street Plan* and federal law and policy.

Double Eagle II General Aviation Airport

The 4,700-acre Double Eagle II Airport, owned and operated by the Albuquerque Aviation Department, is immediately west of the monument. Built in 1983 as a general aviation reliever airport, the two runways and fixed-based operations primarily serve small general aviation aircraft. Ground access to the airport is via a two-lane road known as the haul road, airport access road, or Paseo del Volcan; however, the city has recently built a two-lane interim access road off of Paradise Boulevard that extends 5 miles to the airport's northern boundary. The Federal Aviation Administration has completed an environmental assessment for a proposed airport access road that would connect the airport to the city-built access road to the north.

The city began updating the master plan for the Double Eagle II Airport (Herkenhoff & Associates, Inc. 1980) in 1990. The purpose of this master plan update is to evaluate aviation-related opportunities and reassess airport development plans. The draft *Double Eagle II Master Plan Update* (Greiner Engineering, Inc. 1991) proposed significant expansion of airport facilities, including constructing two additional runways and lengthening an existing runway. Individual projects would be phased and developed on a demand-driven basis. The draft report states that the number of aircraft operations (takeoffs and landings) in 1990 was 51,100. Of the three forecast scenarios in the draft plan for 2010, the highest forecast is 311,350 operations, a sixfold increase in operations. The National Park Service has stated that an increase of this magnitude must be thoroughly evaluated and may have significant adverse impacts on the ability of visitors to appreciate the monument. The cumulative effects of individual airport improvements should be addressed in an environmental document.

Landownership

Approximately 1,315 acres of the monument, yet to be acquired, remain in private ownership. The National Park Service and the city will continue to acquire lands as provided for in the *Land Protection Plan* (National Park Service and City of Albuquerque 1991). As stated in the *Land Protection Plan*, lands currently owned by the city within the Atrisco unit will be transferred to the federal government. The transfer of these lands will be subject to future discussions and a memorandum of understanding between the Park Service and the city.

Also, the *Land Protection Plan* addresses the state trust lands within the Atrisco unit. According to the state constitution and related statutes, the state land office must receive fair market value for these lands. Because land owned by the state or local governments can only be acquired by the federal government through donation or exchange, the National Park Service will look to other federal agencies to exchange lands elsewhere in New Mexico for the state trust lands in the Atrisco unit. Because landownership, priority of acquisition, and interests in lands required to be in public ownership to meet the objectives of the monument legislation have been defined in the *Land Protection Plan*, it is unnecessary to cover these topics in this management plan.

The *Land Protection Plan* also states that the federal government will acquire subsurface ownership prior to or at the same time that surface ownership is acquired.

SUMMARY OF RELATED PLANS AND PROJECTS

Several planning documents have been developed by the National Park Service, the city, Bernalillo County, the Albu-

querque Metropolitan Arroyo Flood Control Authority, and private developers. Many of these have a direct relationship to the general management plan. The most relevant policy-setting documents are described below; other related plans are described in appendix E.

Albuquerque/Bernalillo County Comprehensive Plan (City of Albuquerque 1988) — This is the overriding document governing planning activities within the urban area, and this plan provides a framework for other plans. The comprehensive plan recommends that new development west of the escarpment take the form of physically distinct yet politically integrated communities connected by high-volume traffic corridors.

Northwest Mesa Area Plan (amended through 1987, City of Albuquerque 1980a) — The plan covers a 207-square-mile area of the west mesa that includes the monument. The escarpment, volcanic cones, Rio Puerco escarpment, and the Rio Grande and Rio Puerco valleys are identified as areas to be protected. Large-scale mixed-use development is anticipated. This plan called for defining geographical boundaries for major public open space and developing buffer areas for development adjacent to major open space lands. The plan recommended considering a continuous pedestrian trail system.

Northwest Mesa Escarpment Plan (City of Albuquerque 1987) — This plan establishes concepts for developing and conserving the volcanic escarpment and immediately adjacent lands. Four resource areas are established for different degrees of conservation: (1) escarpment face — no development, (2) conservation area — preserving open space, (3) impact area — enhancement of the visual character adjacent to the escarpment, and (4) view area — regulating affected views from a distance. The plan provides for

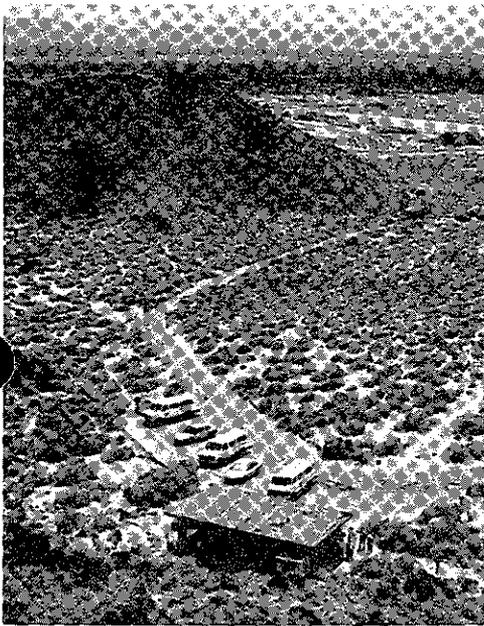
establishing a design overlay zone to address such concerns as height, lighting, color requirements, and building on a slope. The plan calls for the concentration of utilities and roads to minimize damage to the escarpment, prescribes the preservation of the petroglyphs and other archeological sites, and identifies areas to be avoided by roads.

Land Protection Plan, Petroglyph National Monument (National Park Service and City of Albuquerque 1991) — The National Park Service, the city, and the state have prepared a land protection plan completed in October 1991. A summary of land status is under "Landownership" in the "Issues Beyond the Scope of this General Management Plan" section.

PROPOSED ACTION AND ALTERNATIVES



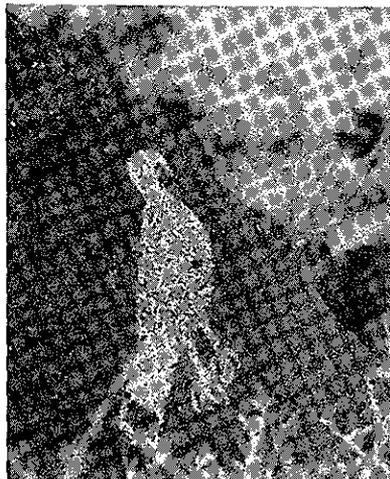
Santa Fe Village



Boca Negra Canyon, visitor facilities



Boca Negra Canyon, developed trail



Petroglyph, Atrisco Unit

INTRODUCTION

With the aforementioned purpose and significance and management objectives in mind, four different alternatives — alternative 1 (the proposed action) alternative 2, alternative 3, and alternative 4 — for development at and use of the monument for the next 10–15 years are presented in this document. These alternatives describe different visitor experiences and different kinds and locations for facilities. Alternative 4, a no-action alternative, generally describes existing management trends. Current visitor use patterns would continue without developing major visitor facilities or programs.

This alternative provides the reader with a basis for comparing the other alternatives. The impacts of implementing each of these alternatives are presented in the "Environmental Consequences" section.

All alternatives have a common resource management approach because of resource management laws and policies that apply to various aspects of all national park system areas, including cultural landscape and archeological site values, natural resources, and various other aspects of monument management. The following section describes those common actions.

ACTIONS COMMON TO ALL ALTERNATIVES

PARTNERSHIP JURISDICTION, ROLES, AND RESPONSIBILITIES

From its legislative conception, Petroglyph National Monument has been viewed as a partnership park — a park in which both the National Park Service and the city Open Space Division would have a substantial day-to-day management role. The third partner, the state, has always been envisioned as having a role in land acquisition but a limited responsibility in land management.

It is assumed that the Open Space Division would continue to be the lead agency representing the city. Their organization supports operations throughout the city's open space network. As a unit of the national park system the NPS would have overall responsibility for management of 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.

Each agency would have a monument manager. Together they would be responsible for working out specific agreements to ensure the smooth and orderly flow of monument operations and management. The Park Service and the Open Space Division would continue their close working relationship through shared responsibilities and cross-training of staff.

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.

As previously stated, federal laws that generally apply to units of the national

park system shall apply to the monument. If there are differing interpretations of the application of federal laws, the NPS Intermountain Field Area Field Director (the secretary of the interior's designated representative to manage the monument) would determine the proper interpretation of federal law and policy.

Although the National Park Service has staff to manage Petroglyph National Monument, additional staff, as outlined in the later staffing sections, would be needed to manage and operate the monument under any of the alternatives. The city Open Space Division would also require additional staff and equipment to fulfill their responsibilities for monument management. The National Park Service and the city would develop formal agreements with American Indians and the Atrisco heirs concerning management and development issues.

CULTURAL 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.

An important concept to apply to managing the monument is "presence." Presence is a management approach that demonstrates to visitors the significance of a site through subtle actions, such as directing and encouraging visitor compliance through interpretive signs, trail design, and low barriers, and more obvious measures, such as installing boundary fences and identification signs, putting

visitor contact facilities at entry points, and stationing rangers near fragile, irreplaceable resources. Other approaches would be sensitive design, operation, and maintenance of facilities, which would demonstrate care and concern to the visitor. Interpretive programs and materials, law enforcement patrols, and regular maintenance all give messages to visitors that they should treat the area with respect.

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. No petroglyphs would be relocated or repositioned.

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. Monument managers would determine the optimum combination of the above elements and make modifications to address ongoing and changing visitor use patterns and resource management needs. Protection by directing visitor use/designing and locating facilities (5 above), law enforcement (6 above), and educational and interpretive programs (7 above) are also described in detail in their own respective sections and in each alternative because they encompass more than the cultural resources; the other components (1, 2, 3, and 4 above) are discussed below.

Inventorying, Evaluating, and Monitoring

To manage effectively, managers must know what cultural resources are present within the monument and the integrity and significance of those resources. The first step in preserving and protecting cultural resources is inventory, followed by the evaluation of resource significance. Past and recent surveys of monument resources have identified the major cultural resources, including cultural landscapes, petroglyphs, and other archeological sites. Further inventories, including resource conditions, need to be conducted to ensure consistent coverage, techniques, and documentation. Following evaluation, any significant resources/qualified properties would be nominated to the National Register of Historic Places (or previously drafted nominations might be revised). Consultation with traditionally associated American Indian and Atrisco groups would occur before nomination of ethnographic resources.

A damage assessment survey is needed to document existing damage to sites and petroglyphs and identify areas vulnerable to vandalism, overuse, or damage from natural processes. This base data would be used to assess changes in resource condition. This information, and future information, would allow managers to further identify potential resource threats and respond effectively to minimize impacts of human use and natural processes upon resources. Some resource threats (e.g., vandalism to petroglyphs) are currently known, but the extent and sources of damage are not fully documented. The damage assessment survey would provide this information. Other actions are proposed in this plan to address these threats.

Because cultural resources are nonrenewable resources, any degree of degradation is considered unacceptable. However, it is

clear that change would occur through time and that some resource deterioration is inevitable. The monument staff would develop criteria for impact assessment and define unacceptable levels of change and key indicators of potential damage before adverse impacts occur — in consultation with the state historic preservation office and the Advisory Council on Historic Preservation. Such indicators would trigger remedial action by monument managers.

Direct Preservation, Protection, Maintenance, and Stabilization Actions

Conserving Petroglyphs. Extensive research would be required to conserve the petroglyphs. Where petroglyphs and rock surfaces have been vandalized by scratching, gunshots, or paint, a monitoring program and restoration plan would be prepared in consultation with recognized conservators and the Pueblo Indian community. The restoration plan would address priorities for graffiti removal and damage treatment and techniques that should be used. Priority considerations would be the visibility and extent of the vandalized surface, the proximity to other petroglyphs and to visitor use areas, and the likelihood that the vandalized surfaces would encourage additional vandalism. Two 1993 studies could serve as the initial basis for the monitoring and preservation plan: *Survey of Vandalized Sites* (McIntyre 1993) and *Assessment of Potential Conservation Methods to Remove Painted Graffiti* (Dean 1993).

Archeological Sites. Additional site-specific investigations would provide archeological and historical data as needed. The Pueblo community would be consulted before development and other monument activities and programs that could adversely affect sites. If consultation or site monitoring indicates damage is occurring from human activities or natural

processes, appropriate protective measures would be initiated promptly. The integration of natural and cultural resource management plans (e.g., fire management, vegetation management, and ruins stabilization) would ensure consistency in the treatment of resources.

For any ground-disturbing activities (including new construction, regrading, filling, reclamation, or removing structures), care would be taken to avoid sites and prevent damage to archeological or ethnographic resources. At the earliest possible stage of a proposed project (during project scoping or no later than development of the task directive), the state historic preservation office and the Advisory Council on Historic Preservation would be invited to participate in the development of conceptual and/or site-specific designs to ensure the best possible resource avoidance and preservation strategies.

Where impacts on resources cannot be avoided (e.g., site location constraints, vandalism, or erosion), appropriate investigations, documentation, and mitigation would be conducted to recover scientific data and mitigate effects.

Mitigation strategies might include collecting diagnostic artifacts, stabilizing surface features, recovering data, and monitoring construction activities. Mitigating measures would be developed in consultation with the state historic preservation office, the Pueblo community, Atrisco heirs, and the Advisory Council on Historic Preservation.

Resource damage from natural processes would be mitigated by data recovery or management actions. Erosion control or other mitigating measures would be used where natural processes threaten sites, especially on the volcanoes and along the escarpment.

Piedras Marcadas Pueblo Ruin. Further study of the Piedras Marcadas Pueblo ruin would be done to evaluate specific stabilization and management approaches. This study would address the management of the ruin, including different approaches to the research and interpretive potential of the site. Inventory and analysis of surface materials would be especially important to prevent further loss of information through unauthorized collection or inadvertent soil disturbance. The Pueblo community would be full participants in this study, which would be conducted in compliance with federal and state laws and policies. Only noninvasive techniques would be used to conduct archeological research and obtain information about the ruin until the completion of such a plan. The site would be completely fenced and routinely patrolled. The visually intrusive nonhistoric ranger residence would be removed when adequate protection is ensured.

Although excavation could be considered in the future, it would be preceded by the completion of a ruins management plan and concurrence from the Pueblo community, the Advisory Council on Historic Preservation, and the state historic preservation office. Further investigations and interpretive programs would be consistent with the ruins management plan.

Excavation is not recommended at this time because (1) of strong concerns by the Pueblo community, (2) further studies need to be done, (3) it is contrary to NPS policy (see 1988 NPS *Management Policies* (V:1-2)), (4) an excavated pueblo is already available for public viewing and interpretation in the Albuquerque area, (5) there is potential that burial sites would be disturbed, and (6) the purpose of national parks and monuments is to preserve resources, and opening the site would disturb and destroy materials and information and expose vulnerable features and

artifacts to weathering and degradation (see appendix F for further explanation).

Museum Objects. Museum objects and natural and cultural resource collections, study collections, archeological materials, records of petroglyphs and sites, and other archival materials are included among the other monument resources to be preserved and protected. A scope of collections statement would be prepared to define the purpose, extent, and uses of monument collections and to provide a consistent approach among the partners to manage archeological artifacts, museum objects, records of petroglyphs, and natural resources specimens. A collections storage plan would be developed and could be part of or accompany a future collections management plan to identify acceptable options for management and care of these resources.

Monument managers would establish a prompt and effective notification system to contact and consult with concerned American Indian groups should burials associated with these groups be found (as is consistent with NPS *Management Policies* 5:13 and as required by the Native American Graves and Repatriation Act (NAGPRA) and its implementing regulations [43 CFR 10]). A NAGPRA implementation plan, which would include strategies to ensure discussions with Pueblo Indians regarding archeological investigations and inadvertent discoveries, would be developed. Monument managers would deal with discoveries of sensitive resources on a case-by-case basis, with an informed awareness of tribal concerns and following procedures outlined in NPS 28 *Cultural Resource Management Guideline* and the Native American Graves Protection and Repatriation Act. For a discussion of ongoing consultation with American Indian and other culturally affiliated groups, see later "American Religious Freedom Act and Traditional Uses"

sections under "Actions Common to All Alternatives" and the "Consultation and Coordination" section.

Ethnographic Resources. To prevent harm to traditional and cultural use sites or intrusion upon traditional and cultural practices, the monument staff would work with Pueblo peoples to provide privacy for observing traditional and cultural activities. This could be accomplished by restricting visitor activities in selected portions of the monument or temporarily closing an area/areas. Monument managers would honor the wishes of American Indians regarding traditional and cultural activities, consistent with the American Indian Religious Freedom Act.

Monument managers would ensure that proper care and respect are given to any traditional and cultural sites, objects, and burials, and that consultation with concerned local Pueblo Indians would precede archeological investigations. The identification of significant cultural resources would be followed by protective measures.

Monument staff would protect information provided by Pueblo people and Atrisco heirs and keep such information in confidence. Information would be shared with the public only with permission (NPS *Management Policies* 5:13).

Fencing. Fencing and identifying the monument boundary would help protect resources from vandalism or misuse. All public lands in the monument would be fenced with an unobtrusive, high-tensile, smooth wire fence. This fence is already in use in numerous areas of the monument to identify the monument boundary and prevent motorized vehicle access (see *Interim Fencing Plan for Petroglyph National Monument* [City of Albuquerque Open Space Division and National Park Service 1991]). As needed, more restrictive fencing and other protection measures would be

used to protect critical cultural resources and prevent unauthorized access.

Protecting the Cultural Landscape

Within the boundaries of the monument there are several distinct cultural landscapes that represent significant changes in both land use and management over the last several thousand years. A preliminary study of these resources identified several landscapes with potential significance for the National Register of Historic Places.

Components of the cultural landscape include views and vistas, natural features such as the volcanoes, special features including the petroglyphs, stone sheep corrals and holding pens, archeological sites, and vegetation patterns. All are cultural resources and would continue to be protected from disrespectful use and degradation and treated in a manner that shows respect for American Indian beliefs and previous uses of the land. More detailed information about the monument's cultural landscapes is in appendix G and the *Petroglyph National Monument Cultural Landscape Overview* (National Park Service 1994a). Several recommended studies relating to the cultural landscape are listed in appendix H.

Adverse impacts on the cultural landscape would be minimized by proper siting and design of new facilities to avoid intrusion on the landscape, disturbance of archeological resources, or adverse effects on ethnographic values. Reclamation programs would be coordinated with cultural landscape management to ensure the protection of character-defining landscape features.

Research

Petroglyph Research Center. Research would be an important part of the cultural

resources management program at the monument. In the establishing legislation, Congress made provisions for research relating to the petroglyphs.

To provide for research relating to Rio Grande style rock art, undertake comprehensive evaluations of petroglyphs, . . . prepare interpretive programs that are sensitive to the concerns of the Indian and Hispanic peoples, and relate monument resources to other styles and forms of rock art, . . . the National Park Service . . . in cooperation with the University of New Mexico, other educational institutions, foundations, Indian tribes, and private entities shall establish a Rock Art Research Center.

This petroglyph research center would function as a focal point for the systematic and scholarly collection, analysis, study of conservation techniques, and dissemination of information relating to Rio Grande style petroglyphs and other petroglyph and pictograph forms within the region. The center would provide leadership, direction, and assistance for a broad interdisciplinary program of research, including ethnographic studies, petroglyph dating and comparative studies of petroglyph forms and styles, protection, resource management, conservation techniques, interpretive and educational approaches, and the integration of petroglyph research with other archeological research, sites, and cultural landscapes.

Center research, archives, and library materials would primarily be directed toward monument petroglyphs and archeological sites and petroglyphs managed by other units of the national park system within the region. The National Park Service is also authorized to undertake research and assist in managing, protecting, and interpreting Rio Grande style petroglyph sites through cooperative

agreements with (1) other agencies on public lands, (2) willing landowners, and (3) entities who own other lands.

Research done at the center would include (1) a list and map of various locations of Rio Grande style petroglyphs, (2) the ownership of the petroglyph sites and the condition of the resources, and (3) the protection options and types of technical assistance needed for the protection and care of these resources. The Park Service is also authorized to expend appropriated funds for research, site protection, and interpretive programs for sites not within the monument.

Center research data and information would be integrated into monument resource management and interpretive and educational programs and materials. The center would develop cooperative agreements with the University of New Mexico and other universities to encourage and stimulate interdisciplinary petroglyph-related research. The center would function as a clearinghouse for petroglyph related information that has been collected in the past as well as facilitate the communication of ongoing, state-of-the art research and journal publications.

The center would also house a research library of relevant books, periodical articles, papers, and reports as well as archival storage for slides and records of petroglyph sites. Research center archives and library materials would focus on monument-related resources, techniques, and methods; however, selected materials on similar sites throughout the world would also be included.

American Indian and Atrisco land grant heirs' involvement in the center would be essential not only to the ethnographic component of petroglyph research but also in developing information to be used in producing educational and interpretive

materials. Some information collected through research may be sensitive to Pueblo peoples, and this information would not be shared with other researchers or the public.

The center staff would develop a research plan with priorities, costs, and strategy for accomplishing and using this plan to seek funding. This plan would allow for unexpected research projects. The following are examples of research projects that the center could facilitate and support:

- gathering more data on Rio Grande style — e.g., consensus on what constitutes the style, its geographic extent (regardless of land status), quantitative data, and ethnographic and archeological perspectives
- gathering more information on the non-Pueblo IV period monument petroglyphs
- dating the petroglyphs
- analyzing the connection between the archeological record and modern Pueblo peoples (ethnographic and ethnohistoric research)
- investigating, evaluating, and documenting site-specific protection, preservation, and management methods
- systems of reporting damage to petroglyphs
- integrating principles developed in other fields of conservation into petroglyph research and conservation
- proper documentation and life of archival materials (photos, videotapes, etc.)
- petroglyph recording techniques and approaches
- developing software and database and networking techniques that are applicable to petroglyphs
- developing and testing established and new conservation techniques, including techniques for removing or disguising the effects of vandalism

The center would take an active role in

- communicating and coordinating with site managers, researchers, educators, and American Indians
- researching current visitor patterns and alternative visitor management techniques
- developing and testing site and resource damage monitoring programs
- having American Indian authorities comment on the significance of the petroglyphs — and how to use or not use this information appropriately
- developing and using monitoring systems to detect unauthorized access
- establishing outreach to existing organizations (such as the American Rock Art Research Association and the American Institute for Conservation of Artistic Historic Works)
- establishing a private cooperating association for additional funding to support research mission, public education and involvement, and publication
- developing and evaluating educational materials, programs, and curricula for a variety of levels and target audiences

Research center staff would provide support for and coordinate and facilitate independent research being carried out by others.

Generally, visitors would not be directed to the research center; information about on-going research would be provided in the visitor center or through interpretive programs/materials. Researchers would give occasional talks to demonstrate active areas of research.

Other Research, Studies, and Plans.

Other independent research projects would be guided through research design, which reflects monument management needs. Research would be coordinated with the petroglyph research center. Wherever

possible, future cultural and natural resource inventories and research efforts would take advantage of a broad range of professional disciplines and to clarify the associations between natural and cultural resources in the cultural landscape. Various plans and studies would be implemented to guide the study, treatment, interpretation, use, preservation, and management of the monument's cultural resources. These are itemized in appendix H.

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. For more information, see discussions of interpretive and educational programs and law enforcement in later sections and throughout the management plan.

New facilities would be designed and sited to minimize direct impacts on petroglyphs and other potentially significant cultural and natural resources. It is especially important to avoid intrusion on the unobstructed views of the Sandia Mountains and the Rio Grande Valley.

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. Picnic tables, restrooms, trash receptacles, etc., would be kept away from petroglyphs. Such separation of activity areas from petroglyph areas would focus visitors on the images and their context, which would help increase appreciation and respect for these resources. Horseback riding, bicycling, and dog

walking would be prohibited from petroglyph concentration areas.

Sensitive design of new visitor facilities in petroglyph viewing areas would be of vital importance to prevent adverse impacts. Archeological survey data would be used to site new facilities away from significant resources and avoid adverse impacts. Wherever possible, parking areas would be screened or physically separated from petroglyph viewing areas to diminish noise, exhaust fumes, and visual intrusions. Care would be taken to prevent visual and physical separation of petroglyphs from associated sites and landscape context.

Visitors would be required to stay on designated and improved trails. Off-trail climbing or hiking on the escarpment would not be permitted to prevent resource damage. Trails, perhaps with widened sections, and viewing areas would be designed to allow visitors to clearly see the petroglyphs while staying an appropriate distance away from the petroglyphs to prevent touching. Low subtle barriers or walls would be used in areas of visitor use; more obvious barriers or walls would be used in areas with more visitor use. Because trails might disturb relationships between petroglyph panels, to the greatest extent possible trails would not be designed between or through petroglyph concentrations.

Access from neighborhoods to the monument would be allowed only at designated points along the escarpment to protect monument resources. Dogs on leashes would be allowed only in designated areas.

In Albuquerque and most of the Southwest, flash floods are common occurrences. Visitors would be warned to stay out of all arroyos and drainage ditches in the monument.

Guided tours would be one method for visitors to gain appreciation for the petroglyphs while ensuring protection. Other approaches to be implemented would be to

- station a ranger near petroglyph concentrations to provide interpretation and protection
- use interpretive and resource protection messages on wayside exhibits (outside panels), trail brochures, and other interpretive media to support protection efforts
- issue permits to provide opportunities for solitude, communicate the importance of staying on designated trails, have a record of visitors using portions of the monument, and if necessary, control visitor numbers

Facility design would reflect cultural and natural values of the monument and have a common theme (see appendix I) that would be repeated in all developed areas to link the overall visual image of the monument. Monument facilities (roads, trails, and other facilities), would be designed to direct the visitor's attention toward the monument's landscape, resources, and deeply rooted cultural heritage and away from the intrusive urban development encroaching upon the area. The goal is to encourage this attention with design consistency and visual quality that communicate a sense of place, including a reflection of natural landscape patterns in developed areas and minimal disturbance to ecological and cultural resources during design, construction, and maintenance.

Facility development would incorporate energy conservation measures such as timers and sensors for lighting, high efficiency insulation, passive solar heating, fresh air ventilation, using locally available materials, and maximum use of daylight. New designs should also be functional and

include opportunities for flexible future use of facilities.

The development of designated trails in petroglyph viewing areas, across the escarpment, and on the mesa top would reduce impacts of multiple informal, social, trails by directing visitors on designated routes. Sites adjacent to trails would be protected by requiring visitors to stay on designated trails.

Wherever possible, new roads and trails would follow existing routes to preserve the cultural landscape and prevent new disturbance of archeological and natural resources. While preventing damage to archeological and natural resources, most existing informal trails and parking would be reclaimed; others would be improved for visitor use.

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. Ranger presence would deter visitors from violating regulations and serve as an indicator that the regulations are being enforced. Unobtrusive law enforcement techniques, such as electronic sensors, could be used to supplement ranger patrols or to indicate when people are off trails in remote areas. For electronic devices to be effective, rangers must be available to respond. (Recommended staffing levels under each of the alternatives (except no action) are adequate to carry out these functions.) Law enforcement staff would be trained to be sensitive to Pueblo cultural and traditional activities. The monument staff would actively involve adjacent neighborhoods in a neighborhood watch program to help protect monument resources.

Monument rangers (NPS and city) would enforce city, state, and federal laws within the monument. The Park Service would pursue concurrent jurisdiction for non-federally owned portions of the monument for law enforcement purposes by federal officers. The city law enforcement rangers have the authority to enforce federal law on city-owned lands within the monument.

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 traditions and cultural values of American Indians who have ancestral ties to the monument. This policy includes

- developing means for reasonable access to sites with traditional, ceremonial, or cultural significance (which may include temporary closure of some portions of the monument to prevent interference by non-Indians with such ceremonies)
- involving American Indians in the decision-making process where their traditions and cultural values would be affected by monument programs
- providing technical assistance
- participating in cooperative activities or programs related to American Indian history, cultural traditions, or cultural resources
- training monument staff to be aware that the monument lands are significant to American Indians, that most of their traditional and cultural practices

are private, and that the American Indians have rights and needs

- providing opportunities and adequate time for American Indian groups to comment on development and visitor use plans that affect them

The 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. The proximity of the monument to the Albuquerque metropolitan area has the potential for developing innovative programs that would reach a large, year-round audience.

Throughout and after the planning for this management plan, the 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. Formally, this consultation would be through the American Indian Consultation Committee, which is comprised of representatives from the All Indian Pueblo Council Inc., Five Sandoval County Pueblos Inc., Sandia Pueblo, Santa Ana Pueblo, and Zia Pueblo. Consultation with the Pueblo community would help avoid impacts on traditional and cultural sites, provide for continuance of traditional and cultural activities, and help develop culturally sensitive interpretive programs.

Consultation is especially critical to reach mutually acceptable solutions to questions of resource preservation, interpretive programs, visitor use, and archeological research. All possible measures would be taken to resolve differences in a manner that respects the cultural and ethnographic context of sites.

Monument staff would protect information provided by Pueblo people and Atrisco

heirs and keep such information in confidence. Information would be shared with the public only with permission (NPS *Management Policies V:13*).

Traditional uses by Pueblo Indian groups with long-standing cultural ties to the monument might include a wide range of activities, such as gathering special herbs for healing or prayers at a special place. Such activities, rooted in the history of Indian communities, have been passed down from their ancestors and are important in maintaining the continuity of that community's traditional beliefs and practices. The continuation of the current levels of traditional use poses no threats to resources. Future requests for additional traditional uses within the monument would be decided in consultation among concerned groups and monument managers to ensure that there is no resource damage or use conflicts.

Monument managers would work with Pueblo groups to minimize interference with traditional uses, consistent with the American Indian Religious Freedom Act. Opportunities would be provided for American Indian groups to comment on development and visitor use plans in a manner that allows for the American Indian community to consider the proposals.

ATRISCO LAND GRANT HEIRS

The 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.

Throughout the discussion of the Atrisco heirs, the National Park Service is the responsible monument manager because the resources of interest to the heirs is entirely within the Atrisco unit (within the former Atrisco land grant).

The National Park Service would develop and execute cooperative agreements to ensure that the Atrisco heirs have the benefit of use and access to the monument. The National Park Service would protect traditional resources to the extent practicable. The location of sites would not be disclosed to the public.

The National Park Service would consult with the Atrisco heirs regarding planning, management, and operational decisions that affect materials and places or other ethnographic resources with which they are historically associated. Information about the outcome of these consultations would be available to those consulted.

NATURAL RESOURCE MANAGEMENT

Natural resources would be managed to

understand natural processes and human induced effects; mitigate the potential and realized effects; monitor for ongoing and future trends; protect existing natural organisms, species, populations, communities, systems and processes; and interpret these organisms, systems, and processes to the park visitor. Monument lands would be managed to preserve and enhance biodiversity.

Natural Resources Management Guidelines
(NPS 77, 1991 chap. 1, pg. 2)

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.

Inventory and research would be aimed at collecting baseline natural resource data for the entire monument, following up and concluding research activities that were begun before the designation of the monument, and identifying new research needs for natural resources. As part of the planning process for this management plan, natural resource data has been collected and consultation was conducted with the U.S. Fish and Wildlife Service, the New Mexico Department of Game and Fish, and the New Mexico Natural Heritage Program. A federal and state endangered and threatened plant survey was conducted in areas proposed for visitor activity and development. A soils map, habitat map, and general vegetation map were also prepared. However, more baseline data on resources such as soils, flora, fauna, hydrology, biodiversity, natural resource processes, and air quality are needed.

An inventory of the status of all natural resources would provide a baseline against which changes could be measured and assessed and appropriate management actions could be taken to preserve and enhance biodiversity. Limited and incomplete data could make management decisions speculative and could result in mismanagement, including the degradation or destruction of resources. Limited and incomplete data would also make it difficult to provide comment on actions occurring outside the monument boundary and their potential impact on monument resources. A *Resource Management Plan* (draft, National Park Service 1994b) has been prepared by monument staff to address critical resource needs and the priority by which this information would be gathered and analyzed.

Mitigation measures would maintain existing natural processes or system components that might be threatened by human activities from within or outside the monument. Mitigation is also the conversion of a resource, altered by human activity, to a more functional or natural state. Mitigation includes preservation and reclamation activities.

Reclamation is the practice of returning disturbed sites to conditions and processes representing the undisturbed ecological zone in which the disturbance lies. The term reclamation is used to mean actions that reestablish a high level of functioning ecosystem processes such that the new ecosystem is self-sustaining with a minimum of human involvement. NPS goals for reclaiming disturbed land are to accelerate the natural processes of succession and direct them toward self-perpetuating native plant communities with reasonably high species diversity.

Typical reclamation activities include: (1) removing structures or other improvements; (2) reshaping abandoned roads, social trails, mine-related highwalls and waste rock piles, and other human-caused disturbances for erosion control, slope stability, and establishment of contours that blend the site with surrounding lands; (3) reestablishing hydrological systems and functions to conform with surrounding processes; (4) replacing, salvaging or decompacting topsoils; and (5) revegetating the site to an appropriate successional stage. Not all of the potential reclamation steps necessarily occur at each disturbed site; appropriate measures would be evaluated for each site-specific condition.

Monument lands are dominated by grasses, sagebrush, and desert scrub, which contribute to the overall natural character of the monument as well as its cultural landscape setting. It is important to preserve the natural vegetation of the

monument lands in future development and reclamation efforts. The goal would be to reclaim disturbed areas — those already disturbed or those disturbed by future construction — to a plant cover that is consistent with surrounding natural vegetation. Using native plant materials commonly found in the monument would be emphasized, and plants would be acquired either within the monument or commercially.

A successful native plant revegetation program depends on adequate information and testing for the appropriate mix of conditions relative to plant species, soils, climate, and degree of disturbance. A testing program should be developed to identify appropriate species, type of plant material (such as commercial seed mixes, collected seeds, sprigs, container grown, etc.), quantity, and level of manipulation for topsoil, soil ripping, mulching, and fertilizing. The results of the test plots would guide future decisions for revegetation in the monument.

The mesa top has many roads that have resulted from past ranching activities and recreational vehicle use. Many of these roads and trails have created erosion and stormwater runoff issues on the mesa top. Except for those roads and trails required for public use, most of these would be closed and reclaimed to prevent additional erosion and degradation of plant and animal habitat. Many trails and some roads that have developed in the canyons would require reclamation and revegetation.

Existing dirt roads that are used to maintain existing transmission and distribution facilities would remain in their existing condition to ensure the continued operation and maintenance of the transmission and distribution facilities.

An example of an area in need of reclamation is Ladera Wash, which is an area in the monument that has been subject to grazing activity. This area would be reclaimed using native, drought-tolerant species. Research would be conducted to determine if it is necessary to also restrict revegetation to the use of indigenous local species. The amount of area reclaimed varies with each of the alternatives. Reclamation projects would be coordinated with the cultural landscape overview to ensure that significant landscape features are protected.

Monitoring, as defined by NPS 77 "is the systematic collection and analysis of resource data at regular intervals, in perpetuity, to predict or detect natural and human induced changes and to provide the basis for appropriate management response" (pg. 1:3). The collection of baseline inventory information combined with the initiation of a long-term monitoring program would alert management to changes in natural resource conditions that signal the need for a management action. Natural resources would be monitored and managed throughout the monument (as directed by NPS 75, *Guidelines for Natural Resource Inventory and Monitoring*), particularly in visitor use areas, to prevent adverse impacts.

A comprehensive monitoring program would be established for all trails in the monument. Monitoring would include identifying evidence of social trails (which might indicate too much use on trails), trampled vegetation adjacent to trails, and exotic species habitat. If resource degradation were detected, management actions such as more active patrols, limiting the number of permits, and/or closure of trails and areas would ensure the protection of natural resources.

Protection is the prevention of overuse, vandalism, or destruction of natural

resources by human causes and the enforcement of laws and regulations affecting natural resource management (NPS 77, 3:1). Rangers would actively patrol all visitor use areas, including the mesa top, to ensure that, regardless of their activities, all visitors would stay on established trails to avoid damaging natural resources. The use of a permit system to protect natural and cultural resources is discussed under each of the alternatives.

Education and interpretation would be used to explain the significance and value of the natural resources found in the monument, their relationship to the petroglyphs, their role in maintaining a healthy ecosystem on the west mesa, the existence of Chihuahuan desert species that are normally found much further south, and the habitat zones that are present within the monument.

Appropriate trail and facility location, design, and development would ensure minimal adverse impacts on natural resources, including arroyos, floodplains, plants and wildlife and their habitats, and biodiversity.

These and other needed plans and studies related to the monument's natural resources that would be needed are listed in appendix H.

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. The orientation aspect of interpretation is telling visitors where the visitor center is, what there is to see, how to get there, and where the restrooms are. But more important is determining what visitors

should learn about the monument — the interpretive themes — 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. When determined, this is called the interpretive program for the monument.

Different approaches, media, and messages are needed for different groups and visitors. The media or methods are determined by analyzing likely audiences, considering what media work the best for each particular theme or message, and determining what kinds of developments would fit into the landscape and patterns of use. The details of interpretation — for example where the exhibits would be, what they would say, what the movie would describe, and what media should be used — would be in a future monument interpretive plan.

Educational programs, including both text and graphics, would also be developed for the Internet so that the public can learn about the park resources in nonconsumptive ways. Both traditional use areas and inaccessible areas of the monument offer learning experiences through this technology.

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. Interpretive messages at the monument would convey this message.

Orientation

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.

At the visitor center, visitors could learn about monument resources, activities, and policies as well as related area attractions, such as the Indian Pueblo Cultural Center, Coronado State Monument, the Albuquerque Museum, the New Mexico Museum of Natural History, the Rio Grande Nature Center, city open space, parks and trails, nearby pueblos, and other national parks, monuments, and forests. Special emphasis would be given to areas that would complement the interpretive story of the monument. Orientation to services such as food, lodging, and other recreation opportunities would also be available in the visitor center, as would basic trip-planning assistance.

Visitor Experience

Under all alternatives, visitors would have diverse opportunities to see the petroglyphs and other monument resources. The range of opportunities would include

short, flat, hard-surfaced (wheelchair accessible) trails *to* longer, more "primitive" trails

guided programs *to* self-guided experiences

frequent, intensive onsite interpretation *to* no onsite interpretation

well-publicized opportunities *to* personal discoveries

short programs *to* extended/intensive seminars and workshops

unrestricted access *to* permits and previsit education

Visitors could only see the petroglyphs by pedestrian trails, and not all petroglyphs would be accessible to the public. Horses, bicycles, and dogs would not be allowed near petroglyph viewing areas in the canyons below the escarpment (except in escarpment trail crossing areas) because they could impair the experiences of other visitors, degrade the quality of the contextual landscape, and adversely affect traditional and cultural areas. However, these activities could be allowed in designated parts of the monument where there is adequate space, where there are no petroglyphs, and where potential for damage to significant archeological sites is low. Visitors would be instructed to stay on designated trails, but they would have opportunities to hike by themselves on designated trails in various portions of the monument. Activities not directly related to petroglyph viewing may be linked to increased vandalism, as indicated by experience in other petroglyph areas in the Southwest. Monument trails and parking areas would generally be closed to use after dark.

Monument managers, through consultation with the Pueblo community, might restrict access to selected areas. Possible criteria include traditional and cultural importance and resource protection. Access might be restricted by not disseminating information and avoiding trail access.

Interpretation

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.

Monument staff would also work closely with the Atrisco land grant heirs to develop interpretive messages that explain the historical changes in the use of the land and the lives of the people and communities that have evolved in the greater Albuquerque area. Activities, media, and facilities would encourage respect for Pueblo traditions and culture, including respect for solitude.

Important messages, including primary interpretive themes (described below) and resource protection concerns, would be repeated/reinforced in several ways and at several points during a visit. Various communication techniques would encourage maximum visitor cooperation in resource protection. Visitors would be told to stay on the designated trails, how petroglyphs and other resources can be inadvertently damaged, and the reasons for trails and barriers.

Many possible explanations for the petroglyphs could be given and would focus visitors on the significance of the petroglyphs rather than knowing exactly what the image means. These different perspectives would be presented as complementary and parallel rather than competing or mutually exclusive. Interpretation would not focus on individual petroglyphs but rather on the broader context and cultural landscape.

Monument managers, as allowed by applicable hiring regulations, would attempt to hire interpreters with Puebloan, Atrisco land grant heir, ethnographic, anthropological, and/or archeological backgrounds to provide these diverse perspectives. However, extensive consultation with the Pueblo Indian community and the land grant heirs would be required to determine what is and is not appropriate to share regarding the discussion of traditional and cultural information by interpretive media and personnel.

Monument staff would protect information provided by Pueblo people and Atrisco heirs and keep such information in confidence. Information would be shared with the public only with permission (NPS *Management Policies* V:13). Active involvement of Pueblo and Atrisco land grant heir groups would be maintained to ensure quality interpretive programs and media. Efforts would be made to develop programs and staffing to facilitate tours led by Pueblo and Atrisco people.

Personal services (storytellers, interpretive talks, and informal contacts) and audio-visual media (videos, slide shows, and audio recordings) would be used to convey complex and culturally sensitive monument themes.

Many topics could be effectively interpreted inside the visitor center, including area geography, Pueblo culture, the history of Hispanic settlement, stories from Pueblo and Hispanic traditions, and comparing Pueblo structures and petroglyphs with other pueblos, tribes, and time periods as appropriate. If appropriate, archeological items might be displayed in exhibits. Visitor center information could include Puebloan, Hispanic, and anthropological perspectives on monument resources.

Outdoor wayside exhibits at trailheads would guide activities, introduce important information, and interpret views and resources ahead on the trail. Waysides would be located near petroglyphs only in highly developed areas and only with sensitive placement and design. Wayside exhibits could provide effective interpretation of landscapes and contexts.

Every reasonable effort would be made to make the facilities, programs, and services of the monument accessible to all people, including those with disabilities. This policy is based on the commitment to provide access to the widest cross section

of the public and to ensure compliance with the intent of the Architectural Barriers Act (42 USC 4151 et seq) and the Rehabilitation Act (29 USC 701 et seq.).

Outreach programs would provide educational and protection information to schools, adjacent neighborhoods, and other community and public interest organizations. Programs would be developed, with cooperation from Pueblo and community groups, to involve adjacent neighborhoods in protecting the monument. Interpretive displays at parks, public libraries, schools, museums, and other areas where the public might gather would be designed to raise public awareness and communicate a message of respect and preservation.

Monument managers would explore opportunities to enter into cooperative agreements or contracts with Pueblo groups and nonprofit entities for interpretive services and assistance. Such agreements might include the development and operation of interpretive facilities and programs on lands and interests in lands outside the monument boundaries.

Primary Interpretive Themes

The primary interpretive themes for the monument were developed based on the purposes and significance of the monument and its resources. The primary interpretive themes do not include everything that could or should be interpreted in the monument, but they should include those ideas that are crucial to the visitors' understanding of the monument's importance and significance. Within those guidelines, the following four primary interpretive themes were developed for the monument. These primary interpretive themes would be conveyed under any of the alternatives described later in this document.

A variety of interpretive techniques would be used to present these themes. Techniques would vary from area to area but overall would include direct contact with monument ranger-interpreters, an audio-visual presentation, exhibits, outdoor panels, and publications that explain natural and cultural features found in the monument. The difference between the alternatives would be in the extent, place, and method that the themes are conveyed.

- **Petroglyphs (images inscribed in rock) and pictographs (images painted on rocks) and their contexts are expressions of peoples from prehistoric and historic times.** They are rare and irreplaceable symbols that continue to be important in people's lives. Most of the petroglyphs found at the monument date from A.D. 1300 to A.D. 1600; however, early Puebloan and historic images are also found. Petroglyphs can be appreciated from traditional, cultural, and aesthetic perspectives.
- **Human settlement of the Rio Grande valley dates back at least 10,000 years.** Monument resources reflect this continuum of history and human adaptations to the largely arid but biologically diverse environment as well as settlement and transportation patterns, technologies, subsistence, and traditional and cultural life.
- **The petroglyphs were made by — and have special significance to — American Indians and Hispanic settlers.** The petroglyphs and their settings have special meaning and importance to American Indians, especially the descendants of earlier inhabitants. Many of the monument's historic petroglyphs and structures (such as stone corrals) reflect Hispanic settlement and land use.

- **Petroglyphs and other archeological remains are irreplaceable and fragile resources.** Visitors can cooperate in their preservation by not touching or defacing images, leaving artifacts in place, and respecting the rights of other visitors.

Heritage Education Program

Heritage education programs are a top priority for the monument. Educational programs are an excellent way to reach out to audiences who have had little previous access to monument resources, programs, and values. The monument is within the Albuquerque city limits, and more than 89,000 students (54% are minorities) attend the public schools. There is a strong tradition of educational programs at the Boca Negra Canyon unit, which has been conducted by the city Open Space Division; in the last three years NPS interpreters have shared in the interpretation. Teachers and school administrators show strong interest in these programs, and there is considerable interest in expanding educational partnerships.

The monument's resources and interpretive themes correspond both to school curricula and to contemporary issues affecting neighboring populations. The educational program would allow the opportunity to further the goals and mission of the National Park Service and Petroglyph National Monument management policies (see appendix B) as well as to serve the needs of students and other citizens.

Effective educational programs would require some investment in facilities, interpretive media, and personnel. Outreach programs would be an important part of the educational effort, but they would not be a replacement for a site visit; there is no substitute for direct experience with monument resources. The most effective

programs would have both indoor and outdoor components; many introductory and preparatory activities and interpretive media programs would not work on trails and would require indoor space. For these reasons, all alternatives call for a heritage education facility or function. Monument staff would explore partnerships with industry and local educational institutions to fund and cooperate in implementing these programs.

Circulation

Possible Shuttle System. To provide direct and efficient access to the monument, a shuttle bus system would be considered for connecting the visitor center, in whatever location, with other facilities/areas of interest to visitors. Such a system would be evaluated and, if feasible, implemented as visitor use and demand increases. The visitor center area could be used as a central parking and staging area where visitors could get on the shuttle buses. Options that use the regional transit system would also be evaluated in cooperation with the Albuquerque Transit and Parking Department.

Other Ways to See the Monument. An alternate means for national visitors to understand, appreciate, and enjoy the monument could be to go on tours given by the Indian Pueblo Cultural Center or others. Guided tours from the center in Albuquerque would encourage cultural center visitors to visit the monument and learn more about past and present American Indian cultures. The city has also recently initiated a cultural center shuttle to connect Albuquerque museums and cultural centers. This shuttle or a separate shuttle could also connect with the monument visitor center.

CARRYING CAPACITY AND VISITOR IMPACT MANAGEMENT

As the number of monument visitors increases, the potential also increases for visitors to damage cultural and natural resources and/or alter the experiences the monument offers. It is therefore important (and required by NPS *Management Policies* and the General Authorities Act of 1978 [PL 95-625]) to address the concept of carrying capacity — which is defined as the type and level of visitor use that can be accommodated while sustaining the desired resource and social conditions that complement the purposes of the park units and their management objectives.

Although the Park Service is currently developing a visitor experience and resource protection process for addressing carrying capacity, the implementation of an approved carrying capacity methodology is several years away. However, some steps have been defined that are being used in selected national park system areas to begin to address carrying capacity. Briefly, the steps are

- identify management zones and desired resource and social conditions
- devise management strategies to achieve the desired conditions
- identify key impact indicators and standards for each zone, which can measure whether or not the desired conditions are being met
- analyze existing conditions with respect to desired conditions and identify probable causes of discrepancies
- refine management strategies based on this analysis
- implement a program of continuous monitoring and evaluation to ensure that desired conditions continue to be achieved

This management plan provides a basis for beginning to address the monument's

carrying capacity. The plan identifies general management goals and strategies and management zones — the first two steps above. Specific desired conditions and key impact indicators still must be identified in future studies, and desired conditions should be compared with existing conditions. Adopting the above approach to carrying capacity would also require the monument staff to establish monitoring and evaluation procedures to ensure that acceptable resource and social conditions are achieved and maintained. Until further studies are completed, staff would monitor monument resources and visitor use to establish baseline conditions and watch for impact trends. If unacceptable impacts become apparent, monument managers would take actions to restore conditions to acceptable levels.

BOUNDARY ADJUSTMENTS CONSIDERED AND RECOMMENDED / NOT RECOMMENDED

Boundary additions specified in the legislation for the 59-acre Lava Shadows area and the 24-acre area just south of Boca Negra Canyon were completed in June 1994. During the general management plan public meetings and through discussions with the Petroglyph National Monument Advisory Commission and others, the following other areas (see table below) have been discussed as possible boundary adjustments.

In accordance with NPS *Management Policies* and Public Law 101-628, sections 1216 and 1217, the Park Service must apply five conditions or reasons as criteria to evaluate proposed changes to existing boundaries of units of the national park system. The criteria and evaluation for boundary adjustments are detailed in appendix J; a brief summary is provided below for the boundary adjustment areas listed above. The adjustments listed above

TABLE 1. BOUNDARY ADJUSTMENT AREAS

Recommendation	Location/Size	Alternative
Deletion	Single-family house and lot at the end of Creggs Street at the northern edge of the Atrisco unit — less than 0.33 acre.	All
Modification at a later time	Lots in Volcano Cliffs units 2 and 5 that have potentially lost access due to the way that the legislative boundary was drawn — acreage to be determined later	All
No action	Areas adjacent to Piedras Marcadas Pueblo ruin	All

are recommended under all alternatives. Two additional boundary adjustments are recommended, one under alternative 1 and one under alternative 2; they are described under those alternatives.

Single-Family House and Lot

The inclusion of this house and lot within the existing authorized boundaries was an oversight in the initial boundary mapping process. It is the last house on a street with seven houses abutting the monument. This property does not include significant resources or opportunities for the public to further enjoy monument resources and does not fulfill any monument purpose, and it should be removed from the monument boundary.

Volcano Cliffs Units 2 and 5

In drawing the existing monument boundaries, a portion of Rim Rock Drive and lots on either side of this roadway were included within the monument. However, the closure of Rim Rock Drive as envisioned by each of the alternatives would eliminate access to approximately 54 lots in the Volcano Cliffs community.

Some of these lots must be acquired to provide access. The National Park Service

would work with affected landowners, the Volcano Cliffs Property Owners Association, and the city to ensure that access would be provided to these lots. Given several alternatives and the need to consult further with affected parties, it is premature to recommend a specific solution or adjustment at this time.

Piedras Marcadas Pueblo Ruin

The National Park Service has been working with the city to determine the best approach to protecting the ruin and providing for visitor use. The acquisition by the city of the 23.5-acre site south of the ruin has provided new opportunities for access to and visitor use of the site. Because of these new opportunities and existing and proposed adjacent development, it is likely that the current 2-acre site on the west side of the drainage channel might not be used for an NPS visitor contact facility as had originally been intended.

The National Park Service and the city are working together to further define the extent of the archeological site that is beyond the current monument boundary and to evaluate the current level of protection and significance of the areas outside the monument boundary. These ongoing discussions will determine future

boundary adjustment needs and the various options for visitor contact and use of the site. The 2-acre site northwest of the ruin is being considered for deletion from the monument, which would require a boundary adjustment. Other lands with monument-related resources adjacent to the ruin could also be considered for addition to the monument.

Future Boundary Adjustments

Future boundary adjustments would be considered for any lands adjacent to the monument boundary that meet the criteria in appendix J. In addition, boundary adjustments would also be considered if additional lands are required for public access to areas within the monument with high potential for visitor use and as studies are done of Rio Grande style petroglyphs throughout the Rio Grande valley (as mandated in the monument's establishing legislation). Such modification, for this or other reasons, would be consistent with NPS policies and regulations.

Where a boundary adjustment appears to be appropriate, the National Park Service would recommend it to the secretary of the interior for legislative or administrative action. Congressional action is required for boundary adjustments; however, in some cases the secretary of the interior may make minor boundary adjustments where authorized by existing law without additional congressional action (NPS *Management Policies II:9*).

OPERATIONS

Monument facilities would be managed for day use. Overnight facilities would be provided outside the monument by private businesses.

The National Park Service and the city Open Space Division would concentrate on providing opportunities to meet essential visitor experience objectives. Limited resources (such as staffing, funding, space, and locations for development) would be directed toward providing essential experiences — such as seeing the petroglyphs in context. Activities that threaten monument resources or interfere with other visitors' experiences would not be encouraged or permitted.

MONUMENT FEE COLLECTION

The criteria used to establish fees in national park system units are included in the Land and Water Fund Conservation Act (see appendix K). The National Park Service and the city would work together as conditions change to establish a fee structure that would apply to all or some areas and uses within the monument.

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 does 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.

UTILITY RIGHTS-OF-WAY

As lands adjacent to the monument are developed, requests for monument managers to locate utility rights-of-way across the escarpment will occur. Requests for rights-of-way for water, sewer, electricity, telephone, cable television, and stormwater control structures will be reviewed on a case-by-case basis. However, there must be specific statutory authority for granting such rights-of-way and there must be no feasible or practicable alternative, even if the costs are higher. Furthermore, the use must be compatible with the public interest and not a derogation of monument values, resources, and purposes.

The authorities for issuing rights-of-way are contained in 16 USC 5, 16 USC 79, and NPS 53 *Special Park Uses*. Rights-of-way issued by the National Park Service permit access for construction, operation, and maintenance of facilities but do not grant any interest in land and are revocable at the discretion of the director.

Before approval of utility rights-of-way, compliance with the National Environmental Policy Act and section 106 of the National Historic Preservation Act is required. The applicant must be prepared to implement appropriate mitigation measures such as low-impact construction techniques, corridor location, and underground installations, including underground powerlines.

PLANNING AND TECHNICAL ASSISTANCE FOR ADJACENT LANDS

As provided in section 106 of the monument legislation, the National Park Service would participate in land use and trans-

portation planning for lands adjacent to the monument and might provide technical assistance to local authorities and affected landowners for such planning. NPS efforts would be directed to activities that could have adverse effects on monument resources and visitor use, such as activities that could have high noise levels, adverse visual impacts, or introduce plants or animals that could adversely affect the biodiversity of the monument.

The Park Service and city Open Space Division staff would continue to work with adjacent residents to minimize any such adverse impacts.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

For people with disabilities, the highest level of accessibility possible would be provided to buildings, facilities, programs, and services; accessibility would be consistent with the nature of the area, the conservation of monument resources, and the preservation of a quality experience for everyone. The goal for accessibility would be to provide the same experience for people of all abilities. Buildings, facilities, and trails would be designed and constructed or rehabilitated in accordance with *Uniform Federal Accessibility Standards* (49 FR 31528) to provide full accessibility to people with disabilities.

All interpretive programs, activities, and publications would be designed so that people with disabilities receive as close to the same benefits as nondisabled people. Individuals and organizations for disabled persons would be consulted to ensure that facilities and programs are designed and located to provide maximum accessibility where terrain and protection of resources allow.

ALTERNATIVE 1 — PROPOSED ACTION

INTRODUCTION

The overall approach of the proposed action (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 (see Alternative 1 map). Visitors would be directed to a new visitor center at Boca Negra Canyon where they would have opportunities to learn about the significance of the monument resources and past cultures that have lived in the region, as well as have easy access to numerous and various petroglyph viewing areas. This alternative focuses visitor activity on seeing the petroglyphs within the context of the escarpment, mesa top, volcanoes, the Rio Grande valley, and the Sandia Mountains.

Horse and bicycle riding would be allowed on designated mesa-top trails away from petroglyphs and archeological sites. Permits would be required for trail use. Mesa-top resources and visitor experiences would be monitored to identify adverse impacts and needed action. Parking would be provided at Mesa Prieta and Rinconada, Boca Negra, and Piedras Marcadas Canyons, with short trails at each area that would accommodate people of all ages and abilities. Mesa-top panoramic viewing areas would be provided at Mesa Prieta and near the end of 81st Street and at the volcanoes. There would be several access points to the monument but few opportunities for a remote or isolated experience.

PARTNERSHIP JURISDICTION, ROLES, AND RESPONSIBILITIES

Under this alternative, the city Open Space Division would be chiefly responsible for visitor services, visitor and resource pro-

tection (law enforcement), and maintenance operations in the Piedras Marcadas unit. The city would have responsibility for staffing facilities and programs in the Piedras Marcadas unit, and the city and the Park Service would share responsibilities in the Boca Negra unit, including the visitor center.

MANAGEMENT ZONING

NPS *Management Policies* (NPS 1988) state that general management plans prescribe a system of management zones to designate where various management strategies would be implemented to achieve the purposes of the monument. Management zones indicate how resources, visitors, and developments would be managed within different parts of the monument. Subzones are used to focus management on specific types of protection, use, or development.

The monument would be divided into three zones: natural/cultural, development, and transportation (see Management Zones map). Management zones are prepared for the proposed action only. Private lands that would be acquired by the federal, state, or city governments have been zoned to indicate the future management approach to these lands if and when they are acquired. The proposed management zones would not restrict or regulate private lands in any way.

The management zone descriptions in alternative 1 would also apply to alternatives 2 and 3.

Natural/Cultural Zone and Subzones

The natural/cultural zone would be managed to preserve and inter-

resources and natural resources and processes. These resources would include the cultural landscape, which has value and significance because of the importance that Pueblo Indian people and Atrisco land grant heirs have for the area and which includes the area's natural features, plants, and animals. This zone would include most lands above and below the escarpment near existing and proposed residential areas. This zone would be a quiet area in contrast to the nearby urban landscape and would be managed to protect its inspirational, cultural, and natural values while allowing for designated trail corridors along existing dirt roads. All visitors would be required to remain on designated trails. This zone would be managed for a moderate level of visitor use.

The **sensitive resource subzone** would also include quiet areas that contrast with the nearby urban landscape and would include the geologic windows, the escarpment, the Piedras Marcadas Pueblo ruin, and all the volcanoes except Black Volcano, which has been adversely impacted by past mining activity. General visitor use in these areas would be restricted because of the physical limitations of these areas to withstand unrestricted public use, the research potential of the areas, and their significance to the American Indian Pueblo community.

The **mesa-top and flats subzone** would include the mesa-top lands with their valuable wildlife habitat, opportunities to study volcanic processes, numerous archeological sites, value to the Pueblo Indians, and vast open views of the volcanoes, the escarpment, the Sandia Mountains, and other landscape features. This subzone would also include most lands below the escarpment near existing and proposed residential areas.

The **solitude subzone** would be managed to provide a sense of solitude through the

use of permits and/or trail design. Because it is difficult to see the city or other development from these areas, and because of the sense of enclosure, these areas provide a sense of solitude.

Development Zone

The development zone would be managed for the development of visitor and administrative facilities and structures. These facilities would include a visitor center, a heritage education center, a petroglyph research center, visitor contact facilities, parking and picnic areas, and overlooks.

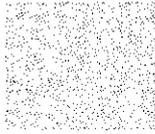
Transportation Zone

The transportation zone would include the Unser Boulevard development corridor through the monument, which is proposed by the city.

VISITOR CENTER — BOCA NEGRA CANYON

The visitor center at Boca Negra Canyon would be the primary visitor destination. Here visitors would learn about the significance of this national monument, the petroglyphs and their context, their fragility, their significance to present-day Pueblo Indians, and current related research. Orientation to the visitor services and facilities, monument, metropolitan area, petroglyph areas, and related sites would be provided through brochures, maps, exhibits, and a staffed information area (see Boca Negra Visitor Center Site Concept Plan). Congressional authorization would be required for the expenditure of federal funds for developing the visitor center and related facilities.

Northern
Geologic
Window



Southern
Geologic
Window



Butte Volcano

Bond Volcano

Vulcan Volcano

Black Volcano

JA Volcano

Piedras
Marcadas
Canyon

Piedras
Marcadas
Fueblo Ruin

Boca
Negra
Canyon

Lava
Shadows

Rinconada
Canyon

Mesa
Prieta

Rio Grande

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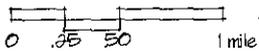
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Double Eagle II Airport

To I-40

To downtown
Albuquerque

NORTH



Proposed Action Alternative 1 Petroglyph National Monument

United States Department of the Interior
National Park Service
DSC • November 1996 • 354 • 20,005A

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

Blst Street

- overlook and parking

Homestead Circle Park

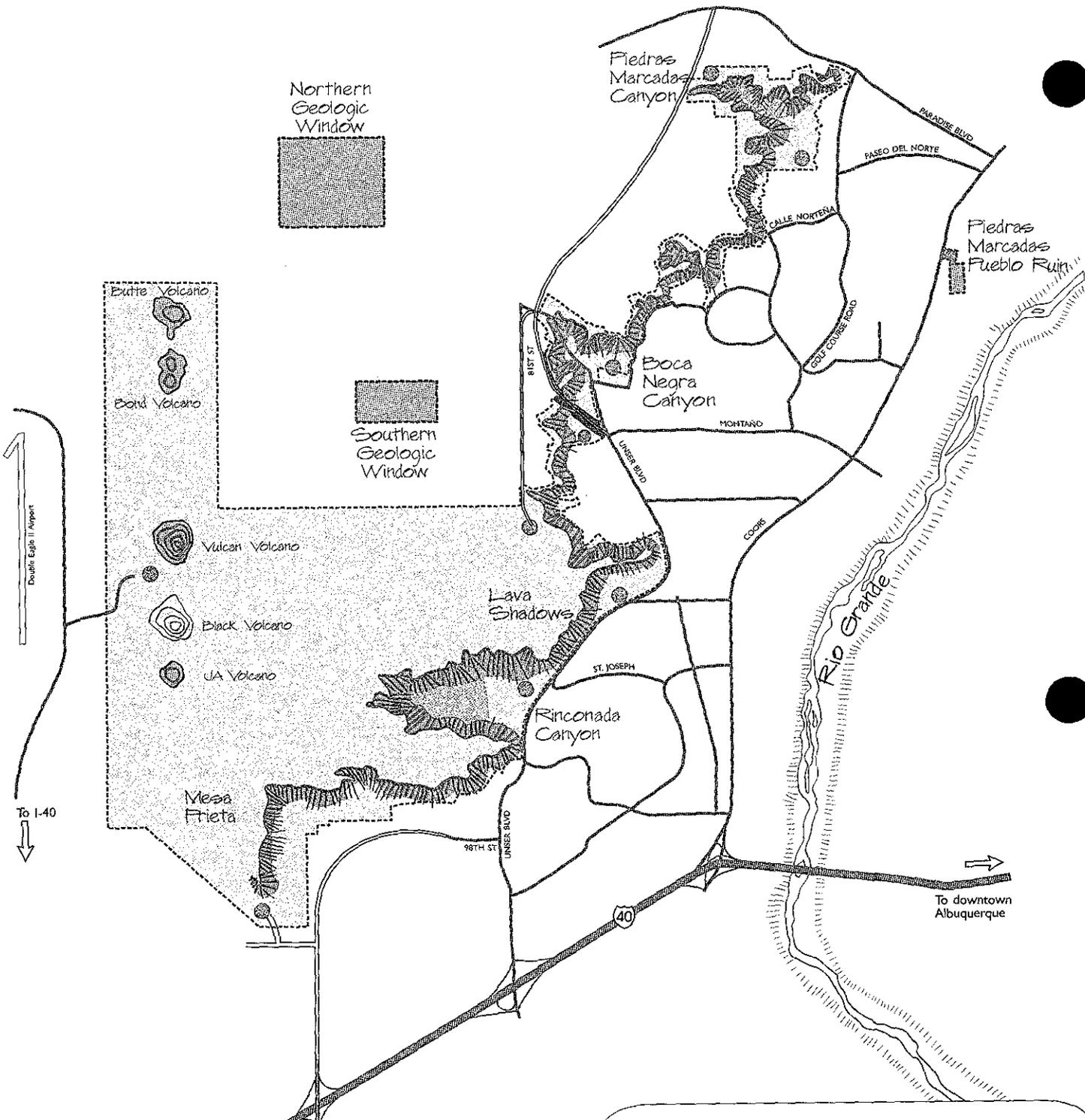
- pedestrian trail and seating area



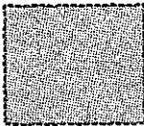
- VC** visitor center
- C** visitor contact facility
- I** visitor information kiosk
- A** administrative facility
- O** overlook
- P** parking area

-  Petroglyph National Monument
-  escarpment
-  foot trail
-  multiuse trail
-  multiuse trail - possible future use
-  boundary addition
-  Paseo Del Norte study corridor
-  proposed paved road





Northern
Geologic
Window



Southern
Geologic
Window



 natural/cultural zone
includes most of monument

 mesa top and flats subzone

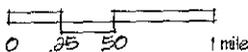
 sensitive resource subzone

 solitude subzone

 development zone

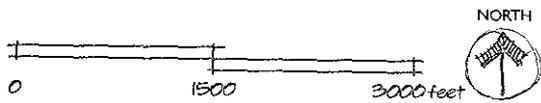
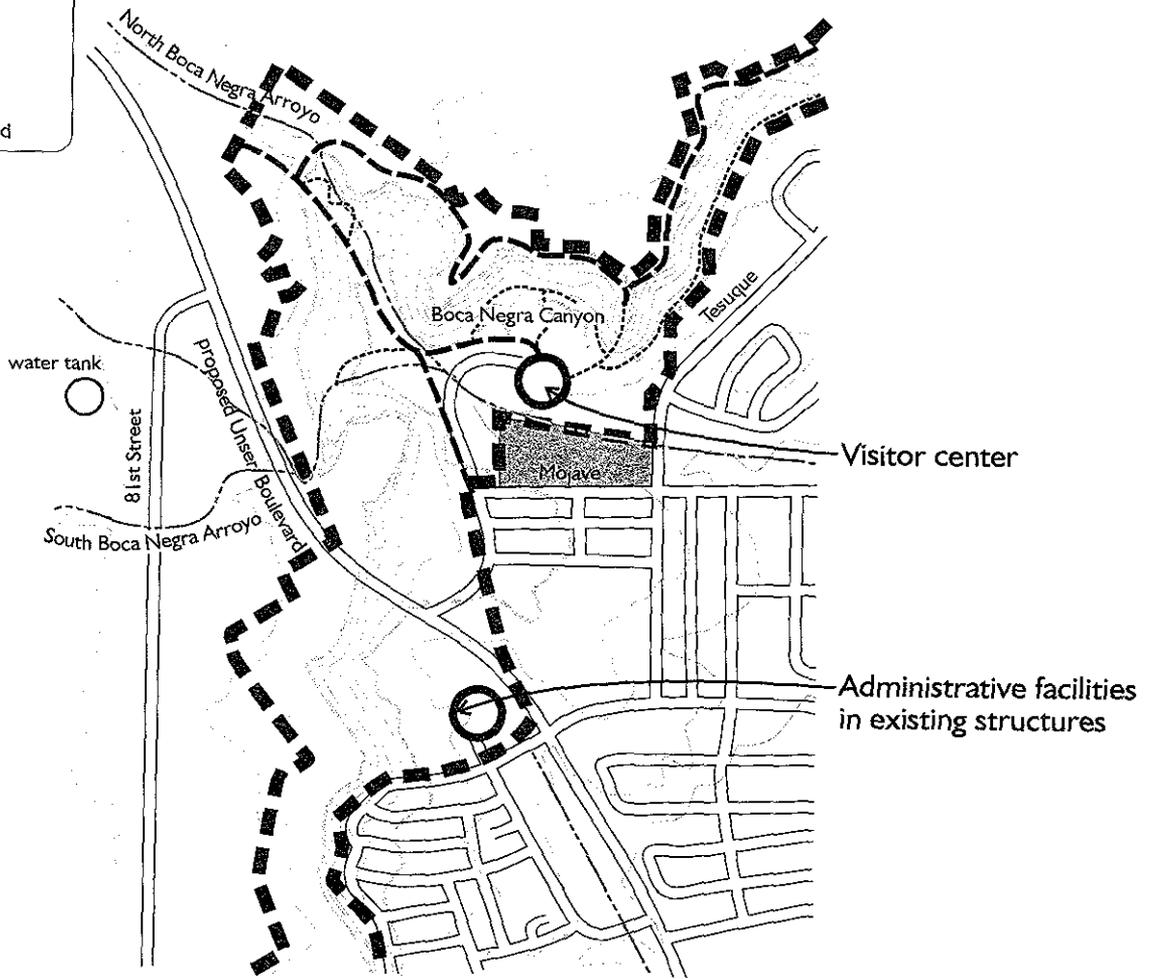
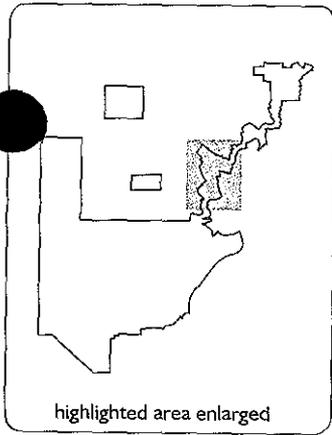
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Management Zones Petroglyph National Monument

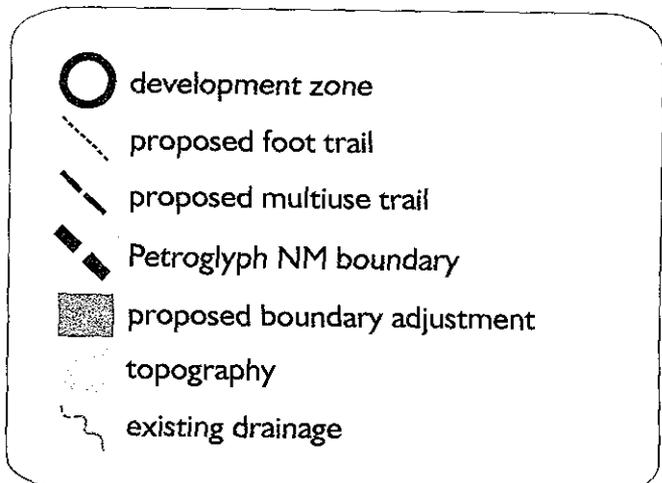
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Boca Negra Canyon Development Concept Plan

Petroglyph National Monument

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As visitors approach and enter the visitor center, most should have impressions that the building is unobtrusive, welcoming, and compatible with the cultural landscape and monument values. The center design, including entry and exit roads and parking, would give visitors a feeling of transition to and from this cultural landscape. The design of the facility and media within would encourage respect for the resource and the monument story. (See appendixes I and L for further information about design guidelines.)

Visitor activity areas would include a lobby and information area; exhibits; an auditorium; a multipurpose room for meetings, demonstrations, and other activities; offices and work areas for visitor center staff; storage; restrooms; and an outdoor plaza. Curatorial storage and a staff library would be accommodated in the petroglyph research center (described below).

The visitor center would also serve as an heritage education facility (see description below). The multipurpose room would serve as a classroom for these heritage education activities. Heritage education programs would include indoor and outdoor activities and would relate both to the primary monument themes and school curricula.

The auditorium would be designed for video and slide and film presentations and talks about monument resources. It would have a sloping floor (with flat areas for wheelchairs), fixed seating for about 60 people, good acoustics and stage lighting, a backstage area (for program preparation, costumes, etc.), and a projection booth.

Interpretive and educational items, such as maps, handicrafts, and other objects directly related to the interpretive and educational themes of the monument and the national park system would be sold by

a cooperating association (currently the Southwest Parks and Monuments Association).

With the redesign and additions to the existing trail system (described below), petroglyph viewing areas, and associated exhibits, visitors would be able to walk on interpretive trails of varying lengths and difficulty from the visitor center to see petroglyphs in Boca Negra Canyon and along Staghorn Drive. (Access to the petroglyphs along Staghorn Drive would be by pedestrian trails from the Boca Negra Canyon area, not from Staghorn Drive.)

Exhibits would contain additional information and emphasize the protection of the petroglyphs and other monument resources. At least one trail would be accessible to visitors of all ages and abilities. The trail redesign would include a connection to the city's proposed recreational trail, which will follow the existing Unser Boulevard alignment. Bicycle racks and horse tie-ups would also be provided near the center but away from the escarpment and petroglyphs.

Heritage education would continue to be a priority for the monument. The visitor center would be used for indoor heritage education programs. Heritage education programs would focus on monument themes and related topics such as cultural diversity, social issues, the cultures of the southwest, natural resources, human adaptation to the environment, and resource stewardship. School programs would also relate to school curricula. Most programs would have both indoor and outdoor components. Efforts would be made to reach out to groups who previously have made little use of the monument.

The National Park Service would cooperate with the city and others in developing and

operating a proposed city visitor contact and education facility south of the Piedras Marcadas ruin or a facility at some other location.

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 heritage education programs.

VISITOR CONTACT FACILITIES

Piedras Marcadas Canyon

Piedras Marcadas Canyon would most likely be visited by city/area residents who are repeat visitors to the monument and national visitors who wanted to see more of the monument and its petroglyphs. Primary access to the canyon would be from Paseo del Norte, where a short access road would lead to a small parking area (about 15 cars and 5 spaces for oversize vehicles) and visitor contact facility and restrooms (see Piedras Marcadas Canyon Development Concept Plan). This facility would be designed to provide orientation and information whether staffed or unstaffed (which would depend on visitor demand and staff availability). Visitors could see exhibits and information in and near the contact facility before going on trails to see the petroglyphs.

The city would be responsible for obtaining the necessary access permits from the Urban Transportation Policy and Planning Board for access to the Piedras Marcadas Canyon from Paseo del Norte.

A pedestrian trail would go into the inner canyon along the base of the escarpment; the initial part of this trail would be hard-surfaced and accessible for people of all ages and abilities, but would become a more primitive, softer-surfaced trail. This

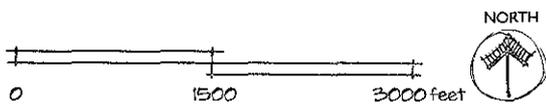
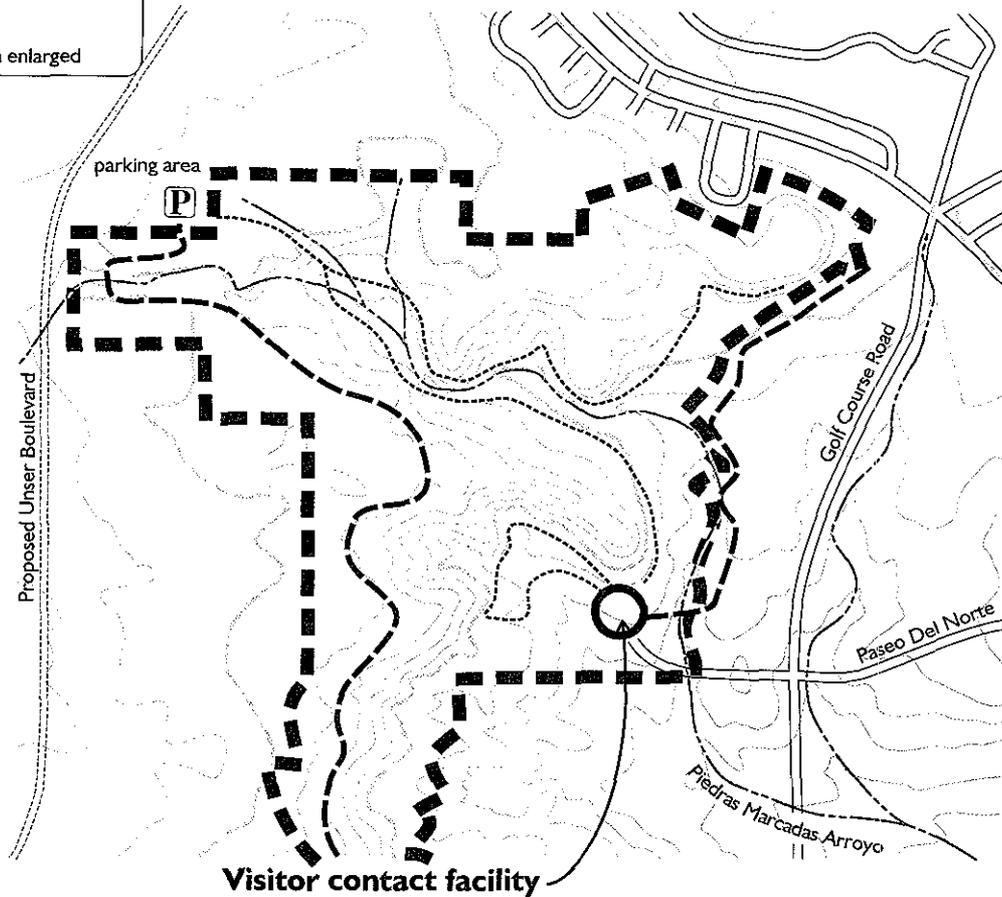
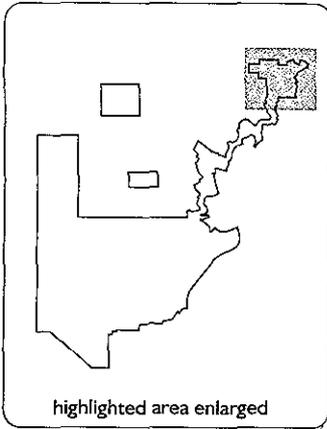
trail would allow visitors to see the petroglyphs with a greater sense of solitude and quiet. If visitor use increases beyond the carrying capacity in the inner canyon, a permit system would be implemented to ensure the preservation of the natural and cultural resources as well as to provide opportunities for visitors to enjoy the area with fewer people around.

Other pedestrian-trail-only access opportunities to the canyon would be from designated access points in the northeast corner of the monument and a 10-car parking area (accessed from the proposed Unser Boulevard segment) in the northwest portion of the monument.

A pedestrian, bicycle, and horse trail would be developed outside and adjacent to the eastern edge of the monument boundary connecting Paseo del Norte (and the contact station) with the northern portion of Golf Course Road (about 100 yards south of Paradise Boulevard).

Piedras Marcadas Pueblo Ruin

The National Park Service is working with the city to decide how to best access the site and locate facilities. One possibility is for the city to develop and manage a visitor contact facility south of the ruin and monument land. This facility would have office and interpretive space, restrooms, and a parking area. The lands south of the ruin have higher values for visitor use. This southern visitor contact area allows easier access from Coors Boulevard and provides better views of the Bosque and the Sandia Mountains. The story of the monument could start where the people lived, in the Bosque. The combined functions would enhance the city-NPS partnership.



Piedras Marcadas Canyon Development Concept Plan

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-  development zone
-  proposed foot trail
-  proposed multiuse trail
-  Petroglyph NM boundary
-  topography
-  existing drainage

Law enforcement rangers, interpreters, or volunteers would always be present when visitors would have access to the site.

Themes to be interpreted would be American Indian daily life during the active period of the pueblo and the connection of the Pueblo people to the escarpment and the Bosque (the river and its bottomland vegetation). Interpretation at this site would explain noninvasive archeological investigations and reasons why excavation is not being conducted at this time. Monument heritage education functions could be combined with city environmental education programs. An interpretive trail would be developed to allow visitors to see the pueblo ruins while preventing damage or increased risk of vandalism. Visitors would be required to stay on the trail. As stated before, further study and consultation would be required before any excavation. This site would be open only when staffed to further reduce chances of vandalism, destruction, and theft.

A proposed multiuse (pedestrian, bicycle, and horseback riding) trail would connect the contact facility with the city's Bosque trail system, Los Metates, Piedras Marcadas Canyon, and the mesa-top trails.

The city's interest in developing the site is in the conceptual planning stages. The Park Service will continue to work with the city.

Rinconada Canyon

Rinconada Canyon would be accessible only on pedestrian trails from a small parking area (15 cars and 5 oversize spaces) and visitor contact facility (which would be staffed or unstaffed depending on need) near the intersection of St. Joseph Drive and Unser Boulevard (see Rinconada Canyon Development Concept Plan). The

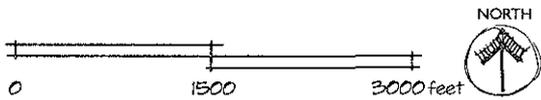
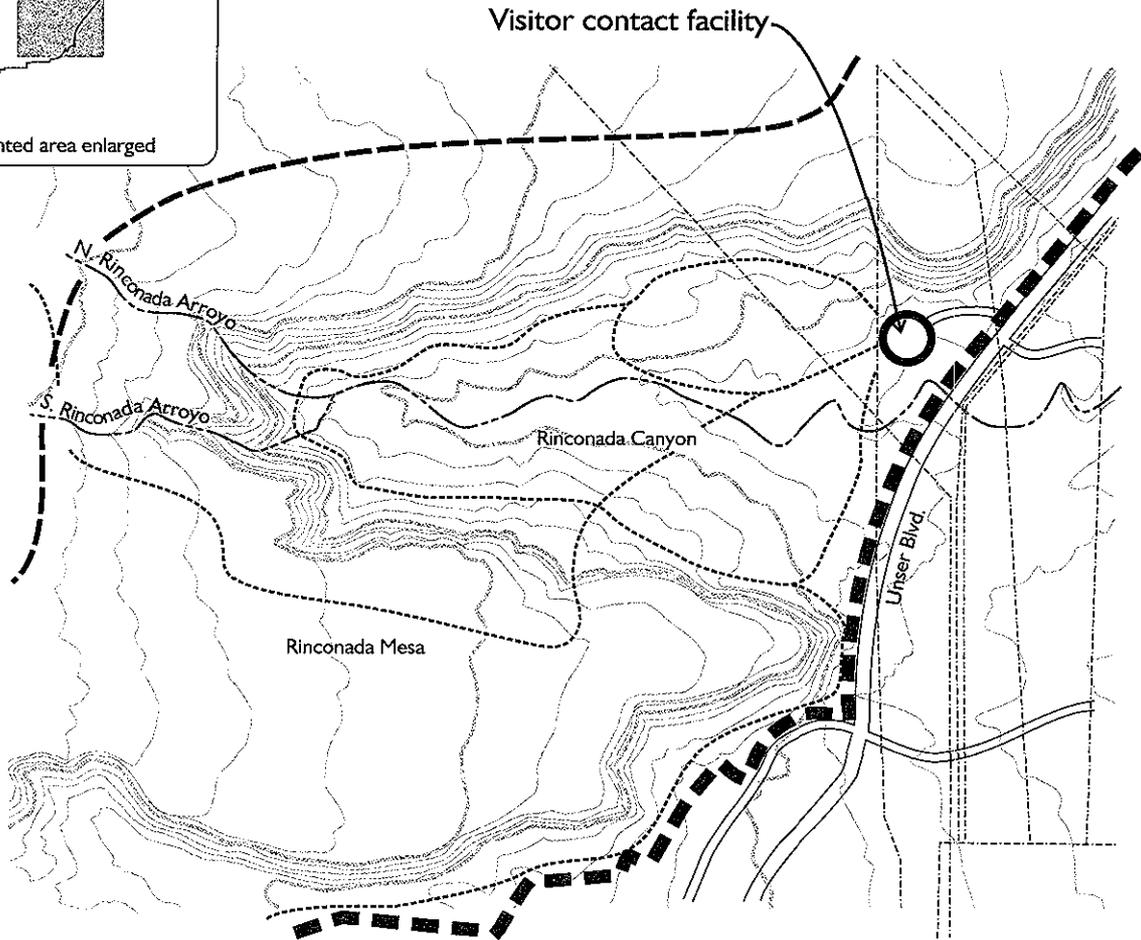
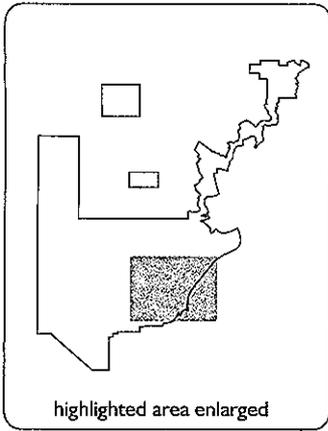
entrance to the parking area would allow access only from southbound Unser Boulevard. Visitors traveling north on Unser Boulevard could not make a left turn from the intersection of Unser and St. Joseph, which would encourage visitors to go to the visitor center first and learn about the monument and its resources. The National Park Service would work with the city and Middle Rio Grande Council of Governments to determine the most efficient access from Unser Boulevard to Rinconada Canyon. The contact facility interpretive information could be in an open-air or enclosed structure, and restrooms would be available.

A pedestrian trail would be designed along the base of the escarpment into the canyon; the first 0.5 mile would be hard surfaced for visitors of all ages and abilities. Beyond this 0.5-mile point, the trail would be a marked but softer-surfaced path. The inner canyon visitor would see the petroglyphs with a greater sense of solitude. If visitor use in the inner canyon increases beyond the carrying capacity of this sensitive area, the number of visitors would be regulated by a permit system. This would ensure the preservation of the natural and cultural resources as well as the visitors' opportunities to enjoy the area with fewer people around.

There would also be a connecting pedestrian trail to the mesa-top trails from Rinconada Canyon.

Mesa Prieta

Currently there is no public access to the southern portion of the monument. The Park Service would work with Westland Development Corporation, Inc., to acquire access from the south to the southern portion of the monument (see Mesa Prieta Development Concept Plan) where a short access road would connect to a parking

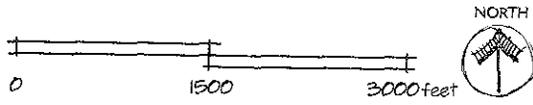
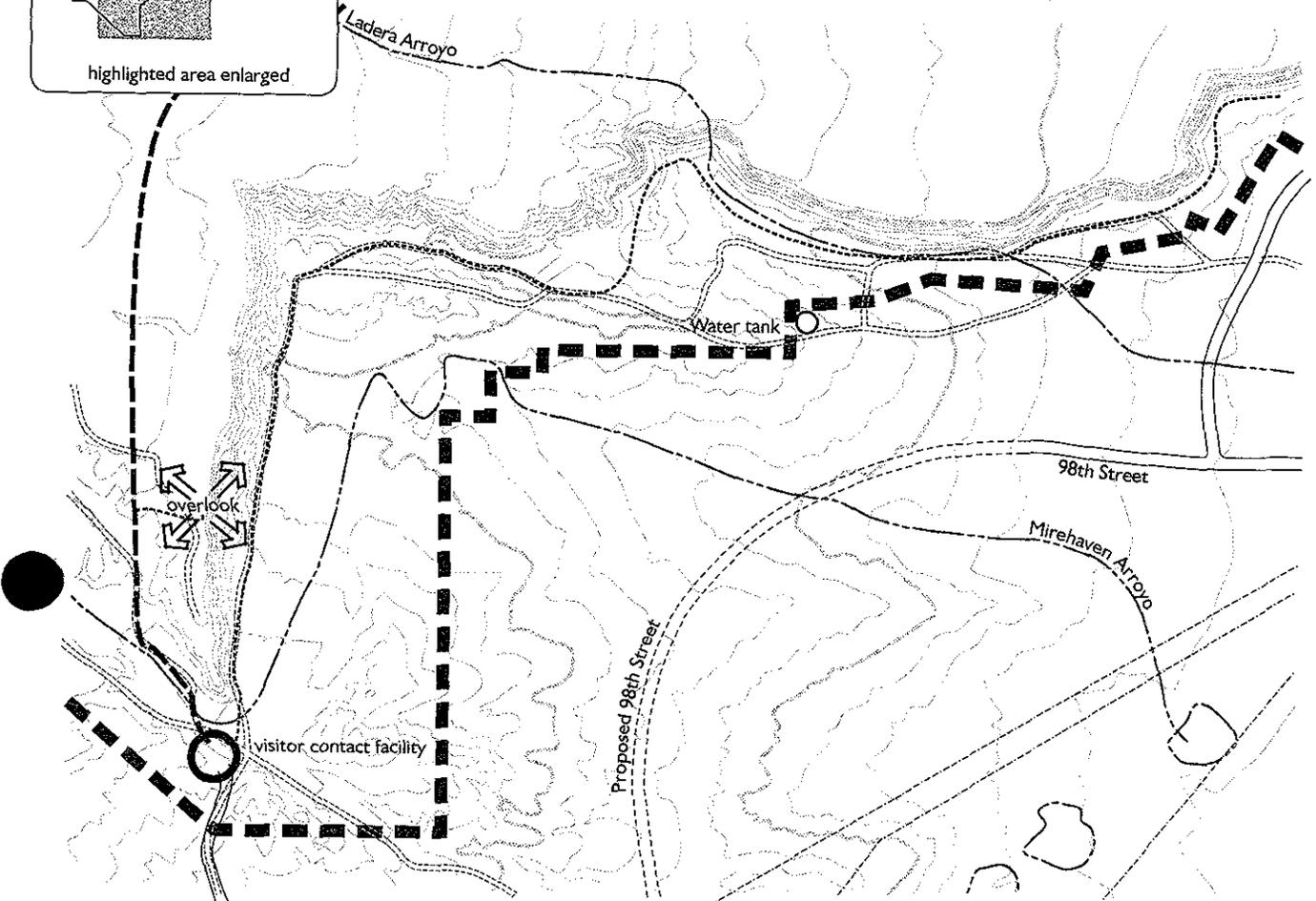
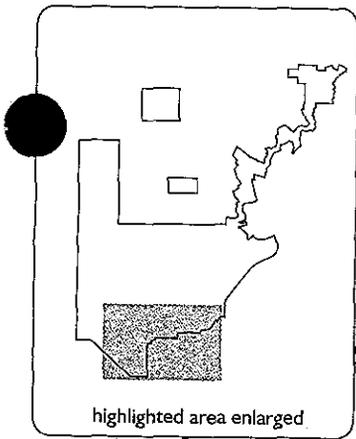


-  development zone
-  proposed foot trail
-  proposed multiuse trail
-  Petroglyph NM boundary
-  topography
-  existing drainage

Rinconada Canyon Development Concept Plan

Petroglyph National Monument

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-  development zone
-  proposed foot trail
-  multiuse trail - possible future use
-  Petroglyph NM boundary
-  topography
-  existing drainage
-  existing dirt roads
to be revegetated in the monument

Piedra Prieta
Development Concept Plan
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area and visitor contact facility. From this parking area and trailhead, pedestrian trails would lead along the base of the escarpment to petroglyph viewing areas and to the mesa top, where an overlook of the entire Albuquerque basin, the mountains to the north and east, and the mesa top and volcanoes would be developed. There would also be access to the mesa-top trail from the parking area.

PETROGLYPH RESEARCH CENTER FUNCTION AND ADMINISTRATIVE FACILITIES — SOUTH OF BOCA NEGRA CANYON AND AT LAVA SHADOWS

Administrative offices for the monument would continue to be in existing structures at Lava Shadows and south of Boca Negra Canyon. Structures and parking would be improved and expanded as needed. If structures are no longer adequate, options would be considered to lease space outside of the monument.

Although in this alternative the petroglyph research center functions would not be in a new facility, the petroglyph research function would continue to be in existing facilities. Other options that would be considered, if existing structures are not adequate, would include cooperative agreements with the University of New Mexico or other universities, museums, institutions, and organizations, and leasing.

A small parking area and trailhead would be developed to connect to the multiuse trail on the mesa top (see Lava Shadows Development Concept Plan).

VOLCANOES AREA

Visitor use of the volcanoes would begin at a redesigned parking area (near the

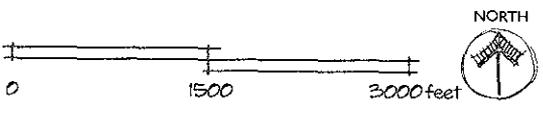
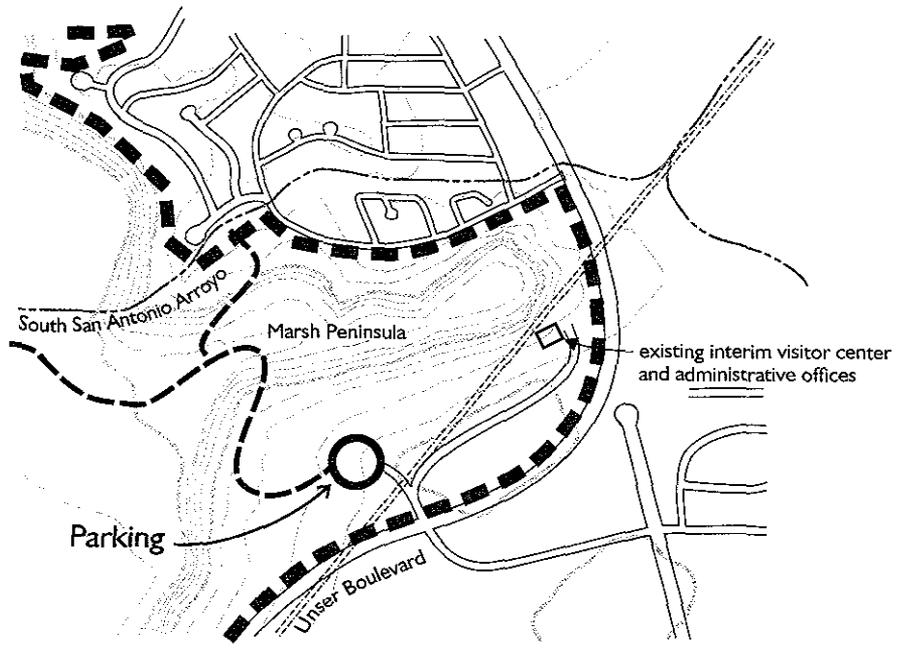
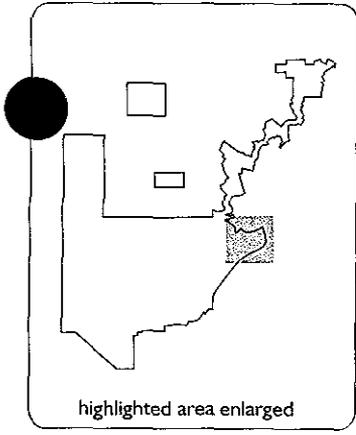
existing parking area), where an unstaffed visitor information/bulletin board/shade structure and restrooms would be provided. The parking and visitor information facilities, which would be directly between and somewhat to the west of Vulcan and Black Volcanoes, would be designed to minimize visual intrusions on the cultural landscape. A picnic area near the parking area but away from the volcanoes would also be provided.

A pedestrian trail south to Black Volcano would lead to the area where an overlook and outdoor exhibits would be developed. (This area, site 2 described below, was surface mined for volcanic rock until the 1980s.) The exhibits would interpret the mesa top and volcanoes. Visitors could appreciate the expansive southwestern landscape with views of the mesa top, Albuquerque basin, and Sandia Mountains, as well as mountains in other directions.

Because the volcanoes are sensitive to the impacts of visitor use (such as trampled vegetation, erosion, and the displacement of rocks and soil) and have traditional and cultural significance to the Pueblo Indians, only approved research projects, occasional guided tours, and traditional and cultural activities would be permitted at the other volcanoes. Climbing and hiking on any of the volcanoes (except Black Volcano) would also be prohibited to avoid further adverse impacts of visitation.

Vehicular access would be from Paseo del Volcan. The Federal Aviation Administration, city, and National Park Service would work together to identify access to the volcano.

There are three abandoned surface mine sites in the area of the volcanoes. Cinder and scoria (vesicular basaltic lava thrown out of the volcanic vents during eruption) were extracted in these areas. The areas are visual intrusions on the landscape in



-  development zone
-  proposed foot trail
-  proposed multiuse trail
-  Petroglyph NM boundary
-  topography
-  existing drainage

Java Shadows
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an area that has high potential for visitor use. A 60-foot highwall (a steep bank excavated into the side of the volcano) at site 1 is a safety hazard for visitors. (See appendix M for more detailed information.)

All three sites would be reclaimed. The combined area of the three sites is about 10 acres. Reclamation would include filling, grading, and revegetation. All three sites would be reclaimed with native vegetation. Further archeological investigations, consultation with the American Indian Pueblos, and site documentation would be conducted to ensure that there would be no adverse impacts on traditional and cultural sites or other significant resources. If such sites would be adversely affected by the above actions, the National Park Service would not conduct the work just described.

GEOLOGIC WINDOWS

Only Pueblo Indian traditional and cultural activities, approved research projects, and guided tours would be permitted. No facilities would be developed. As surrounding properties develop, it would be necessary to reevaluate visitor use and protection programs.

TRAILS/ESCARPMENT CROSSINGS

Mesa-Top Trails/Access/Overlooks

As shown on the Alternative 1 map, 11 miles of trails (for horseback riding, bicycling, and pedestrians) and 2.8 miles of pedestrian-only trails on existing dirt roads would continue to be used on the mesa top. If it has been demonstrated that the proposed multiuse trail use does not have an adverse effect 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. This 5 miles would be available for pedestrian use pending any decisions to provide for multiuse. The trail along the escarpment rim would be set back a reasonable distance from the rim to avoid adverse impacts (such as erosion and disturbance of plant and wildlife habitat) and for visitor safety.

A 0.2-mile road that extends the southern end of 81st Street into the monument would be constructed on the mesa top. A parking area would be developed, with a fully accessible panoramic viewing area. This overlook would not be near the edge of the escarpment. Visitors could see the Rio Grande valley, the city against the backdrop of the Sandia Mountains, and the mesa top and volcanoes. Information about the significance of the entire landscape would be provided on wayside exhibits.

Spur trails would be developed to selected rim overlook points (not overlooking residences and neighborhoods).

Multiuse trails (pedestrian, bicycle, and horseback riding) would be developed by the city adjacent to the monument boundary. Where possible, existing dirt roads would be used for these trails. Unused routes and trails would be reclaimed.

Visitors would be required to stay on designated trails on monument and adjacent open space lands. Where possible, spur trails, horse tie-ups, and bicycle racks would be designed so that bicyclists and horseback riders could leave their bicycles and horses and walk on trails to see the petroglyphs and overlooks. Visitors would be surveyed to see how horses, bicycles, and numbers of people affect them or if such use in various areas exceeds socially acceptable limits and appropriate visitor experiences.

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

Conflicts could occur on trails that combine pedestrian, bicycle, and horse use depending on the design of the trail, the terrain, and levels of use. These conflicts usually result from the relative intensity of use, the terrain, and trail conditions. Visitor use levels would not be expected to result in user conflicts.

Informal trails and dirt roads, except for those retained for pedestrian or multiuse trails, would be reclaimed to natural conditions to prevent loss of resources due to soil erosion.

Trails Crossing the Escarpment

Multiuse (pedestrian, horseback riding, and bicycle) trail crossings of the escarpment would be developed at Lava Shadows, Boca Negra, Calle Norteña, and, if necessary as a critical link to city trails, near the Paseo del Norte study corridor. These escarpment crossings would connect to city Open Space Division lands on the mesa top west of 81st Street and the city's proposed trails below the escarpment. The escarpment crossing near the Paseo del Norte study corridor would connect to proposed city trails along the Piedras Marcadas arroyo and would pass the Piedras Marcadas Pueblo ruin and continue on to the Bosque and to the proposed multiuse trail on the mesa top that connects the northwest portion of Piedras Marcadas Canyon with Boca Negra Canyon along the western edge of the monument boundary.

Neighborhood Access Trails

Neighborhood pedestrian access trails would be provided to cross the escarpment or follow along the escarpment base on a case-by-case basis in consultation with residents. These designated points access would help prevent unauthorized access and reduce erosion resulting from social or unauthorized trails. Neighborhood access points — wherever they are — would not be shown on the proposed alternative map or on future monument brochures. No parking would be provided. As new neighborhoods are developed, monument staff would address and evaluate access needs into the monument. Informal neighborhood access trails (social trails) would be reclaimed, and users would be required to use designated access points.

Permits for Trail Use

Because of the sensitive nature of all lands within the monument, bicyclists and horseback riders would be required to obtain permits for use of most monument multiuse trails on the mesa top. Permits would not be required for the trails crossing the escarpment at Boca Negra Canyon, Calle Norteña, Paseo del Norte, Lava Shadows, and for the mesa-top trail connecting the Boca Negra and Piedras Marcadas units.

The permit system would allow managers to keep accurate track of the number of people using the trail, help managers to determine at what point trails become too crowded, and provide an opportunity to discuss regulations regarding bicycle and horse use and the protection of the fragile resources, the cultural landscape, and visitor experiences. This information helps the permittee understand why the regulations exist and encourages them to observe the regulations. Natural and cultural resources would be monitored to identify resource impacts, as would impacts on

other monument visitors and on traditional activities. Using the information about visitor uses (numbers, locations, and types of use) and resource impacts, monument managers would take actions to ensure that natural and cultural resources were protected and a quality visitor experience is maintained.

The process of getting permits would be designed to be convenient for both the frequent local users and one-time visitors.

Studies of the impacts of bicycle and horse use in other national park system areas have shown various results and no adverse impacts when use is properly managed. The National Park Service would monitor use and impacts in the monument and take appropriate actions to ensure that no damage occurs to monument resources from either bicycle or horse use. If adverse impacts resulting from either horse or bicycle use were identified, specific management actions would be taken relating to either horse or bicycle use.

CULTURAL AND NATURAL RESOURCE MANAGEMENT

The management of the cultural resources would be the same as described in the "Actions Common to All Alternatives" section. In addition, a permitting system for trail use, described above under "Permits for Trail Use" would be implemented to protect cultural and natural resources and to maintain a quality visitor experience. (Trail user permits would be issued for different areas in the different alternatives.) If adverse resource impacts or degradation of visitor experiences are identified, special permitting and enforcement of regulations pertaining to protecting wildlife species listed on state and federal lists as well as cultural resources would be implemented.

OTHER SITES

Homestead Circle park, a city-owned area within the monument and adjacent to Homestead Circle and Westside Elementary, is proposed for passive development by the city. The development of this site would include paths, shade structures, native plantings, and a wall along Homestead Circle Drive to provide some definition and separation from the road. Additional fill would be needed to cover concrete construction debris.

The only access to the mesa top in this area would be the pedestrian trail on the northern end of the site by way of a ridge that separates the site from the Marie Hughes satellite school.

The disturbed area adjacent to Calle Norteña and Taylor Ranch Road would be regraded to more natural contours and seeded with native plants.

BOUNDARY ADDITIONS

As well as the two boundary adjustment areas that would be included under all alternatives, under this alternative a boundary adjustment would be made to include lands south of Boca Negra Canyon and north of Mojave (about 10.5 acres, five lots on Mojave Street east of Unser Boulevard). The addition of these lands to the Boca Negra unit would protect views from the visitor center, provide additional lands for visitor service facilities, and prevent incompatible development that would adversely affect visitor use (see appendix J for more details).

STAFFING

The following are identified staffing needs and assumptions for the various facilities and programs outlined in the proposed

action. Daily staffing needs reflect the total number of employees required to work in a facility or program during a given day. To provide breaks, lunchtimes, vacations, sick days, training/administrative duties, and operate some facilities longer than an 8-hour workday, the total daily staffing needs do not necessarily reflect the total number of people who would be on duty within a facility at one time.

An easy rule of thumb, and an assumption used in computing the total staffing needs for this plan, is that it is necessary to hire three employees to cover a facility/program that operates seven days/week, nine hours/day, and needs two employees in attendance at most times. A total of 126 person hours/week are thus required to operate such a facility/program. Under this scenario, there would be at least six hours per week (126 person hours needed versus 120 person hours worked) when only one person is on duty.

Total staffing needs are shown as full-time equivalents (FTEs). Unless otherwise noted, positions are permanent and full

time. Table 2 is a summary; details are shown in appendix N.

The Piedras Marcadas and Rinconada visitor contact facilities could operate as either staffed or unstaffed facilities. Thus, while the facilities might be open daily, they might only be staffed a portion of the day and/or week.

The staffing needs assume that all functions would be carried out by NPS or city Open Space Division staff. Individual functions would be evaluated regularly to determine if functions could be better and more cost-effectively done through service contracts than hiring additional staff.

COSTS

Development costs for this alternative would be about \$14.2 million; implementation would be in phases (see the following two tables). The estimated NPS annual operating budget would be \$2.5 million; city operational costs would be about \$810,000.

TABLE 2. ALTERNATIVE 1, SUMMARY OF STAFFING NEEDS

Function	Total FTEs Needed
Visitor Services	NPS needs = 12 FTEs; city needs ^a = 6 FTEs
Maintenance Operations	NPS needs = 4 FTEs; city needs = 2 FTEs
Visitor and Resource Protection ^b	NPS needs = 9 FTEs; city needs = 4 FTEs
Resource Management	NPS needs = 4 FTEs; city needs = 1 FTEs
Petroglyph Research Center	NPS needs = 2 FTEs
Administration	NPS needs = 4 FTEs
Monument Management	NPS needs 3 FTEs; city needs = 3 FTEs
	TOTAL= NPS needs 38 FTEs; city needs 16 FTEs

a. City staffing needs would be provided by the city Open Space Division.

b. To provide adequate protection for monument resources, there would be 24-hour law enforcement patrols throughout the year.

TABLE 3. ALTERNATIVE 1, SUMMARY OF DEVELOPMENT COSTS

Facility/Location	Gross Construction Costs ^a	Construction Planning ^a	Total Project Costs
Visitor center, Boca Negra	\$7,215,400	\$1,377,000	\$8,592,400
Contact facility, Piedras Marcadas Canyon	717,900	137,000	854,900 ^b
Interpretive trail and outdoor exhibits at Piedras Marcadas Pueblo ruin	15,100	1,300	16,400 ^b
Contact facility, Rinconada Canyon	520,300	99,300	619,600
Contact facility, Mesa Prieta	602,600	115,000	717,600
Complete fencing and signs of monument boundary	225,000	N/A	225,000 ^d
Trailhead and overlook, Mesa Prieta	78,100	14,900	93,000
Parking and trailhead, Lava Shadows	235,700	44,300	280,000
Volcanoes area	499,900	95,400	595,300
81st Street overlook	763,700	236,700	1,000,400
Pedestrian trails — 9.6 mi. x 3'	287,700	54,900	342,600
Reclaiming existing roads and scars (scarify, topsoil, seed, mulch) 50 acres	642,000	122,000	764,000 ^d
Reclaim abandoned cinder mines	44,000	10,100	54,100
TOTAL	\$11,847,400	\$2,307,900	\$14,155,300

NOTE: See appendix I for a detailed discussion of the size of the facilities mentioned above.

a. Gross construction costs include construction of new facilities, exhibit and audiovisual production, construction supervision, and contingencies. Advanced and project planning costs include aerial/topographic surveys, comprehensive design, utility negotiation, historic furnishings and structural reports, archeological research, construction drawings and specifications, archeological data recovery, exhibit design, and audiovisual design.

b. Actions fully funded by the city.

c. 15.6 miles are in the monument and 2.9 are outside the monument.

d. Actions partially funded by the city.

TABLE 4. ALTERNATIVE 1, IMPLEMENTATION SCHEDULE AND DEVELOPMENT COSTS

Phase 1	Development Costs
Complete fencing and signs of monument boundary	\$225,000 ^a
Construct visitor center, parking, trails, and associated facilities; rehabilitate Boca Negra unit facilities	8,592,400
Construct visitor contact facility, parking, trailhead, trails, and associated facilities at Rinconada Canyon	619,600
Construct visitor contact facility, parking, trailhead, trails, and associated facilities at Piedras Marcadas Canyon	854,900 ^b
Initiate the development of pedestrian trails	114,200 ^a
TOTAL PHASE 1	\$10,406,100
Phase 2	
Develop volcanoes trailhead, parking, picnic area, overlook, and restrooms	595,300
Construct interpretive trail and outdoor exhibits at Piedras Marcadas Pueblo ruin	16,400 ^b
Continue development of pedestrian trails	114,200 ^a
Site reclamation of existing roads and scars	764,000 ^a
Reclaim abandoned surface mines	54,100
TOTAL PHASE 2	\$1,544,000
Phase 3	
Construct visitor contact facility at Mesa Prieta	717,600
Construct Mesa Prieta access road, overlook, trailhead, and parking	93,000
Construct 81st Street access road, overlook, trailhead, and parking	1,000,400
Complete pedestrian trail network	114,200 ^a
Construct parking and trailhead at Lava Shadows	280,000
TOTAL PHASE 3	\$2,205,200
TOTAL ALL PHASES	\$14,155,300

a. Actions partially funded by city.

b. Actions fully funded by the city.

ALTERNATIVE 2

INTRODUCTION

The overall approach of this alternative 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. Visitors would have access to selected petroglyph panels in the Lava Shadows area and would walk about a mile or drive to other petroglyph concentrations (see Alternative 2 map). Some visitors would have more opportunities than under the proposed action to see petroglyphs with a sense of solitude because of the more difficult access to the Rinconada Canyon. Visitors would have relatively easy access to see petroglyphs in context at Mesa Prieta and at Boca Negra and Piedras Marcadas Canyons. A heritage education center would be built at Boca Negra Canyon.

More areas of the monument would be used for research, traditional and cultural use, and occasional guided tours. Horse and bicycle use would not be permitted in this alternative except in two escarpment crossing areas (at Boca Negra Canyon and Calle Norteña). It is recommended that the city Open Space Division manage the mesa-top lands north of the monument the same as monument lands would be managed, for pedestrian use only.

An overlook and picnic area, accessible by vehicles (in the 81st Street boundary addition, described below), and pedestrian trails would be constructed, as well as multiuse trails outside the monument.

Development concept plans and development zones for Boca Negra Canyon (with a heritage education center instead of the visitor center and without the administrative facility and research center), Piedras Marcadas Canyon, Lava Shadows (with a visitor center instead of the parking area), and Mesa Prieta (without the heritage education center site and with an information kiosk instead of an overlook) shown in alternative 1, also apply to alternative 2.

PARTNERSHIP JURISDICTION, ROLES, AND RESPONSIBILITIES

The roles and responsibilities would be the same as alternative 1 except that the city Open Space Division would be chiefly responsible for visitor services, visitor and resource protection (law enforcement), and maintenance operations in the Boca Negra unit. The city would share staffing responsibility at the visitor center.

VISITOR CENTER — LAVA SHADOWS

Visitors would be directed to the new visitor center and parking area at Lava Shadows — the major visitor use/information/orientation area in the monument under this alternative. Existing structures would be removed when no longer needed. The primary interpretive concepts and the visitor center functions would be the same as described under alternative 1.

From the center, all visitors could walk a short distance to see a few petroglyphs along the base of the escarpment on accessible trails; most visitors could also continue on a 0.5- to 0.75-mile softer-surfaced pedestrian trail to the top of the escarpment (on an existing abandoned

road) to areas with several examples of Rio Grande style petroglyphs. The trailhead at Lava Shadows would provide pedestrian access to the rest of the monument.

VISITOR CONTACT FACILITIES

Piedras Marcadas Canyon

This canyon would be developed much as described under alternative 1 — with a visitor contact facility, access from Paseo del Norte, parking, restrooms, a universally accessible, more intensive use outer canyon pedestrian trail, and a soft-surfaced inner canyon trail. Permits would be required for the inner canyon trail. If visitor use increases beyond the carrying capacity in the inner canyon, the number of permits would be limited.

Under this alternative only one other access to the canyon, from a small parking area (15-20 cars) and access road from Unser, would be established on the mesa top near the northwestern part of the canyon and monument boundary.

Piedras Marcadas Pueblo Ruin

Visitor use at the Piedras Marcadas Pueblo ruin would be the same as alternative 1, with a city-owned and -managed visitor contact facility outside monument lands, access from and parking on the city lands to south of the monument, and an interpretive trail. Interpretation would also be as described in alternative 1, including the use of noninvasive techniques to conduct archeological research and Indian daily life during the active period of the pueblo. The site would be staffed whenever it was open to visitors to reduce chances of vandalism, destruction, and theft.

HERITAGE EDUCATION CENTER — BOCA NEGRA CANYON

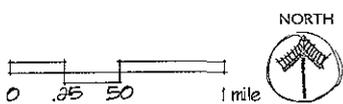
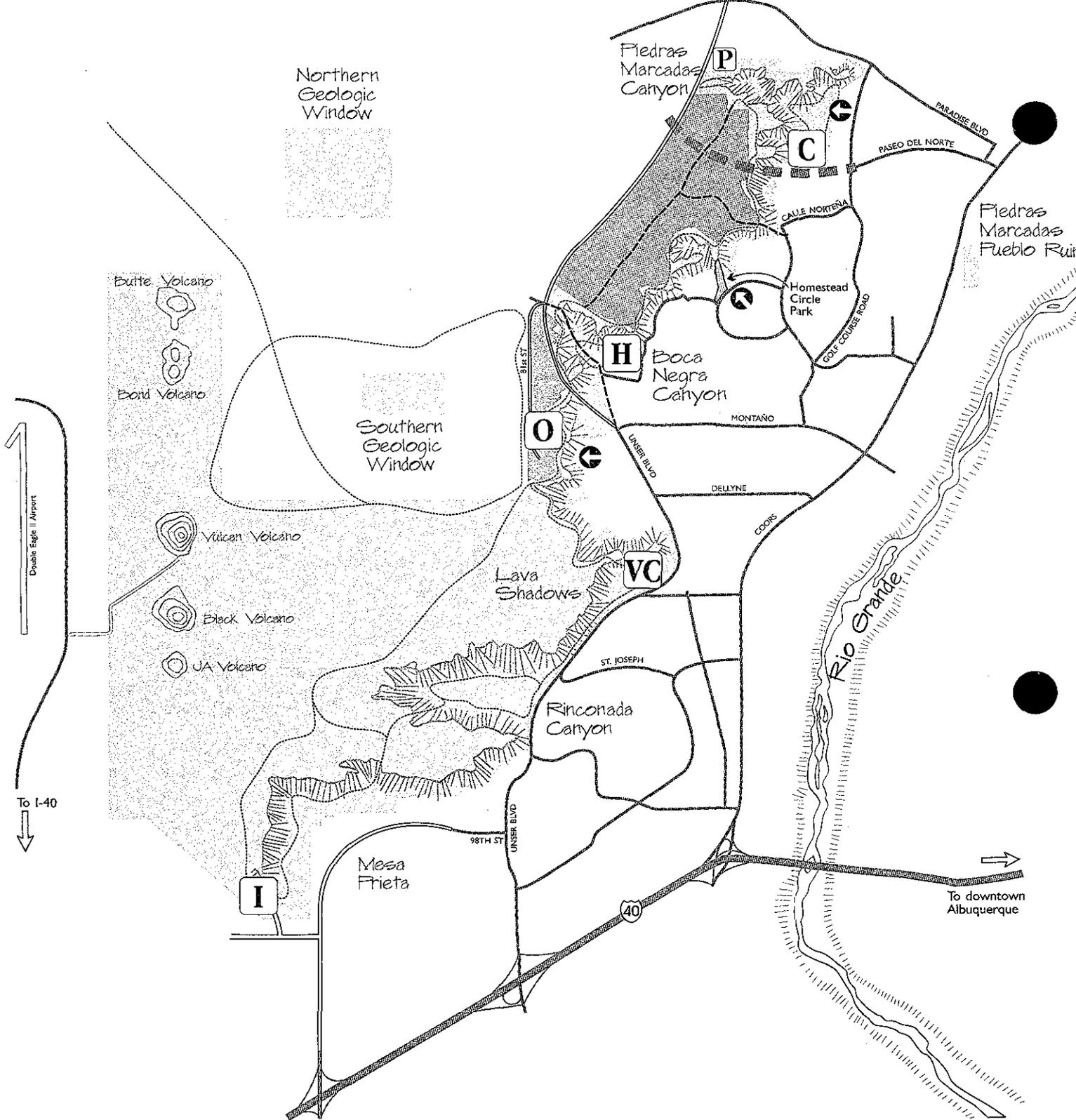
A heritage education center, with functions as described in the "Actions Common to All Alternatives" section, would be developed at Boca Negra Canyon. The pedestrian trail system at the canyon would be improved, along with the shade structures and parking, to better accommodate the needs of groups, protect the petroglyphs, and allow visitors to see the petroglyphs in adjacent areas, such as along Staghorn Drive.

PETROGLYPH RESEARCH CENTER — OFFSITE LOCATION

The petroglyph research center would be located near the Indian Pueblo Cultural Center or the University of New Mexico. The functions of the center would be as described in the "Actions Common to All Alternatives" section.

INFORMATION KIOSK — MESA PRIETA

Mesa Prieta would be accessible to visitors via an access road off 98th Street. A small parking area (10-15 cars), restrooms, and orientation area/information kiosk/shade structure would be constructed. A pedestrian trail accessible to all ages and abilities would lead to nearby petroglyphs. Trails that would not be accessible to visitors with disabilities would continue to the mesa top and further into Mesa Prieta below the escarpment.



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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



PEDESTRIAN TRAIL — RINCONADA CANYON

Rinconada Canyon would be accessed via a 1-mile hard-surfaced pedestrian trail from the Lava Shadows trailhead and from more primitive soft-surfaced pedestrian trails from Mesa Prieta and the mesa top. More frequent visitor contacts would be expected in the outer portion of Rinconada Canyon, and the hard-surfaced trails would minimize erosion and maintenance. The inner canyon trails would be more primitive, softer-surfaced material than the outer canyon trails and would not be accessible to visitors with disabilities; these trails would be managed to give visitors the chance to see the petroglyphs with a sense of solitude.

A permit system would be adopted for the inner canyon. If visitor experiences are adversely affected or resource impacts occur, the number of permits would be limited. No other facilities would be developed.

NONFEDERAL PROTECTED AREA

Under this alternative, it is recommended that a private/public partnership be established to protect an approximately 475-acre area west of the monument, east of the proposed Unser Boulevard, and north of Boca Negra Canyon. The area is not currently served by water, sewer, or electricity; most of the area is zoned for single-family housing and has been subdivided into lots of approximately 10,000 square feet that are owned by various individuals.

Portions of the 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 where single-family housing would be clustered

or combined with multifamily housing and commercial uses and public open space. Nonfederal methods would include acquisition by the city, state, or private trust, land use regulation or planned unit development, conservation easements, or a combination of methods. The public open space dedicated as part of this project would allow horse and bicycle trail connections with other parts of the city.

VOLCANOES AREA

Unlike alternative 1, no access would be allowed to the five volcanoes (including Black Volcano) except for traditional cultural activities, approved research projects, and occasional guided tours. The parking area would be left as is, but the entrance would be gated to restrict access.

Reclaiming abandoned mine sites 1, 2, and 3 would be as described in alternative 1.

GEOLOGIC WINDOWS

As described in alternative 1, only American Indian traditional and cultural activities, approved research projects, and occasional guided tours would be permitted. There would be no facilities developed.

ROADS, TRAILS, AND ESCARPMENT CROSSINGS

81st Street Addition

With a boundary addition (see description below under "Boundary Additions"), visitors would travel on the existing 81st Street to the monument access road. A trailhead would be established at the end of the road, and a 10-15 car parking area would be constructed for visitors who want to enjoy the expansive views or hike

on the mesa top on the pedestrian trail. Pulloffs along the road would be constructed to allow visitors to see the Rio Grande valley, the city against the backdrop of the Sandia Mountains, and the mesa top and volcanoes. Information would be provided on outdoor panels about the significance of the entire landscape and early and current inhabitants of the Rio Grande valley. Picnic areas would also be provided.

Trails

There would be several pedestrian trails on the mesa top — see Alternative 2 map. These trails, on existing dirt roads, would connect with city trails on the city open space land north of the monument and around the southern geologic window. To provide some relief from the urban environment and encourage visitors to think about the significance of this landscape to ancient and current peoples, no other facilities would be developed. Visitors could explore this environment and experience a sense of the open range, away from the city.

Existing roads not converted to pedestrian trails would be reclaimed. A pedestrian trail would be developed on the mesa top along the length of the escarpment from Piedras Marcadas south to Mesa Prieta inside the monument boundary. This trail would follow the western edge of the boundary north of Boca Negra Canyon and would be set back from the escarpment to avoid adverse impacts such as erosion and disturbance to plant and wildlife habitat and for visitor safety.

As in alternative 1, a multiuse trail on the mesa top would be developed from Boca Negra north to Piedras Marcadas Canyon, except in this alternative the trail would be located further west on nonmonument

lands on the nonfederal protected area (described above).

There would be pedestrian trails in Mesa Prieta, Rinconada Canyon, and between Lava Shadows and Rinconada Canyon.

The city Open Space Division would manage city-owned lands north of the monument and adjacent to the geologic windows the same as monument lands. To minimize impacts on the cultural landscape, trail use would be restricted to pedestrians. The city would also evaluate options for relocating the equestrian center and the Maloof Model Airplane Field.

Trails Crossing the Escarpment

Multiuse trails (pedestrian, horseback riding, and bicycling) crossing the escarpment would be developed at Boca Negra Canyon and Calle Norteña to connect to the mesa-top multiuse trail that would be constructed in the mesa-top nonfederal protected area north of Boca Negra Canyon (see Alternative 2 map).

Neighborhood Access Trails

There would be no access points designed specifically for neighborhood residents. Residents would be required to travel the extra distances to designated access points to minimize impacts on the escarpment. As new neighborhoods are developed, monument staff would address and evaluate access needs into the monument. Existing informal neighborhood access routes would be closed.

Walking dogs on leashes would not be allowed under this alternative except at the two escarpment crossings.

Permits for Trail Use

Because of the sensitive nature of all lands within the monument, visitors would be required to obtain permits for going into the inner portions of Rinconada and Piedras Marcadas Canyons. Permits would not be required for the trails crossing the escarpment. The permit system would allow managers to track the numbers of visitors using the trails and discuss use regulations and protection of the resources, the cultural landscape, and visitor experiences. The process of obtaining permits would be convenient for both frequent local users and one-time visitors.

Natural and cultural resources would be monitored to identify resource impacts. If resource damage or adverse impacts on visitor use are identified, use would be restricted or eliminated in specific areas.

CULTURAL AND NATURAL RESOURCE MANAGEMENT

The management of monument cultural and natural resources would be the same as described under "Actions Common to All Alternatives." Slightly less monitoring would be needed without the horse and bicycle use trails.

A permitting program for trail users in inner Rinconada and inner Piedras Marcadas Canyons would be implemented in conjunction with the monitoring program.

The Park Service would seek cooperation from the city to manage the adjacent open space lands with the same policies as monument lands to avoid habitat fragmentation that adversely affects plants and wildlife.

OTHER SITES

Homestead Circle park (on monument land) would be reclaimed by the city to as natural a condition as possible. Construction debris would be removed, and disturbed areas would be reclaimed using native indigenous species. A pedestrian trail would be developed near the northern portion of the site, up along the ridge of the escarpment to access the mesa top.

The disturbed area adjacent to Calle Norteña and Taylor Ranch Road would be regraded to a more natural looking contour and seeded with native plants.

BOUNDARY ADDITIONS

In addition to the boundary adjustments that would be made under all alternatives, under this alternative the mesa-top lands between 81st Street and the monument boundary would be added to the monument to provide for the improvement of 81st Street and the new trailhead, parking, view, and picnic area at the south end of 81st Street. This 129-acre area (289 platted lots) in the Volcano Cliffs subdivision (units #2, #5, and a portion of #24) is between the current monument boundary and the city open space lands. Unlike the adjacent open space lands, gravel roads were developed throughout the property as part of the subdivision process in 1967. Ownership is similar to other parts of Volcano Cliffs currently adjacent to and within the monument boundary — mostly individually owned 0.3- to 0.4-acre parcels. When and if utilities are provided to this area, these private lands would be developed as single-family housing.

This mesa-top land is part of the cultural landscape and a visual and physical extension of the monument and open space lands, with the same high-desert vegetation, wildlife habitat, and expansive

views of the Rio Grande valley and the Sandias as well as the broad, undeveloped mesa top and volcanoes. The area also provides good opportunities for visitor access to mesa-top and Albuquerque basin views, parking, and picnic facilities that would not have adverse impacts on monument resources.

The addition of these lands to the monument is feasible in terms of size and configuration. Congressional action would be required for this boundary adjustment. Inclusion of this area within the monument would provide substantial opportunities for visitors to enjoy distant views, both east and west, relatively unimpaired by proposed development. If the property were developed as currently zoned, visitors would not only have viewing opportunities restricted, they would be faced with having visually intrusive development separate existing monument lands from open space lands to the west.

The Volcano Cliffs subdivision was platted in 1967, yet there has been no residential or commercial development on the mesa top to date because of the lack of utilities. With the proposed extension of Unser Boulevard, there is a greater chance that this area will develop. However, a recent fiscal impact analysis by the city indicates that the cost of utility/infrastructure expansion to this area may be substantially more expensive than in other areas of the city. The city's analysis indicates that the average cost of infrastructure (water, wastewater, storm drainage, and transportation) in Volcano Cliffs would be

about \$25,000 per lot (because of the shallow soil and layer of basalt). The development of an average lot in Albuquerque ranges from \$10,000 to \$12,000 (City of Albuquerque, letter dated November 22, 1993). Responsibility for the additional infrastructure costs would be shared by the city and individual lot owners. A substantial amount of the land acquisition costs could be generated by reallocating public funds that would have been used for developing the infrastructure.

STAFFING

Staffing requirements in this alternative would be greater than alternative 1 because of the heritage education center. The interpretive ranger who would be intermittently assigned to the Rinconada visitor contact facility in alternative 1 would have patrol responsibilities in Rinconada Canyon under alternative 2. All new positions would be evaluated to determine the cost-effectiveness of hiring full-time employees or contracting for services.

COSTS

Development costs for implementing this alternative would be approximately \$16.2 million as shown in the following table. The estimated NPS annual operating budget would be \$3.3 million; city operational costs would be about \$900,000.

TABLE 5. ALTERNATIVE 2, SUMMARY OF DEVELOPMENT COSTS

Facility/Location	Gross Construction Costs ^a	Construction Planning ^a	Total Project Costs
Visitor center, Lava Shadows	\$6,428,000	\$1,226,700	\$7,654,700
Visitor contact facility, Piedras Marcadas Canyon	717,900	137,000	854,900 ^b
Interpretive trail and outdoor exhibits	15,100	1,300	16,400 ^b
Information kiosk, Mesa Prieta	602,600	115,000	717,600
Heritage education center, Boca Negra	2,778,700	530,300	3,309,000
Volcanoes	306,300	64,200	370,500
81st Street overlook and picnic area	900,400	171,800	1,072,200
Multiuse trails (inside monument) 0.9 mi. x 8'	71,900	13,700	85,600 ^c
Pedestrian trails (inside monument) 18 mi. x 3'	539,500	102,500	642,000 ^c
Multiuse trails (outside monument) 4.7 mi. x 8' ^d	375,700	71,700	447,400 ^b
Pedestrian trails (outside monument) 8.1 mi. x 3' ^d	242,800	46,300	289,100 ^b
Reclamation of existing roads (scarify, rip, topsoil, seed mulch) 43 acres	552,000	105,400	657,400 ^c
Reclamation of abandoned surface mines	44,000	10,100	54,100
TOTAL	\$13,574,900	\$2,596,000	\$16,170,900

NOTE: No costs are shown for the administrative facilities because they would be outside the monument in leased space.

a. Gross construction costs include construction of new facilities, exhibit and audiovisual production, construction supervision, and contingencies. Advanced and project planning costs include aerial/topographic surveys, comprehensive design, utility negotiation, historic furnishings and structural reports, archeological research, construction drawings and specifications, archeological data recovery, exhibit design, and audiovisual design.

b. Actions fully funded by the city.

c. Actions partially funded by the city.

d. The Park Service might enter into cooperative agreements with other entities to assist in the planning, construction, and maintenance of these facilities.

ALTERNATIVE 3

INTRODUCTION

The overall approach of this alternative would be to provide easy access to areas with many petroglyphs and to the scenic mesa-top vistas (see Alternative 3 map).

Visitors would be directed to a visitor/heritage education center in Rinconada Canyon where many petroglyphs can be seen without intrusions from adjacent residential development. After orientation at the visitor center, visitors would be directed to petroglyph viewing areas in Rinconada Canyon and to the mesa-top loop road. This road would provide easy access to the mesa-top views and the volcanoes. With the visitor/heritage education center, and hard-surfaced trails at Rinconada Canyon, relatively undisturbed petroglyph concentrations in the canyon would be much more accessible. Parking and trails would be developed at the volcanoes and geologic windows areas. Horse and bicycle use would be provided at two escarpment crossing areas to adjacent city Open Space Division lands.

Interpretive programs would include similar information as in the other alternatives about the petroglyphs, their context, and past cultures, except that there would be increased emphasis on interpreting scenic views and trailside ecology on the mesa top in the visitor center. Mesa-top interpretation would focus (through trail brochures and/or wayside exhibits) on mesa ecology and especially on past use of the mesa.

Development concept plans and the development zones for Boca Negra Canyon (with kiosk but without the visitor center, administrative facility, and research center), Rinconada Canyon (with a visitor center/education center instead of a

contact station), Lava Shadows (with a new administrative facility instead of using the existing structures), and Mesa Prieta, shown in alternative 1, also apply to alternative 3.

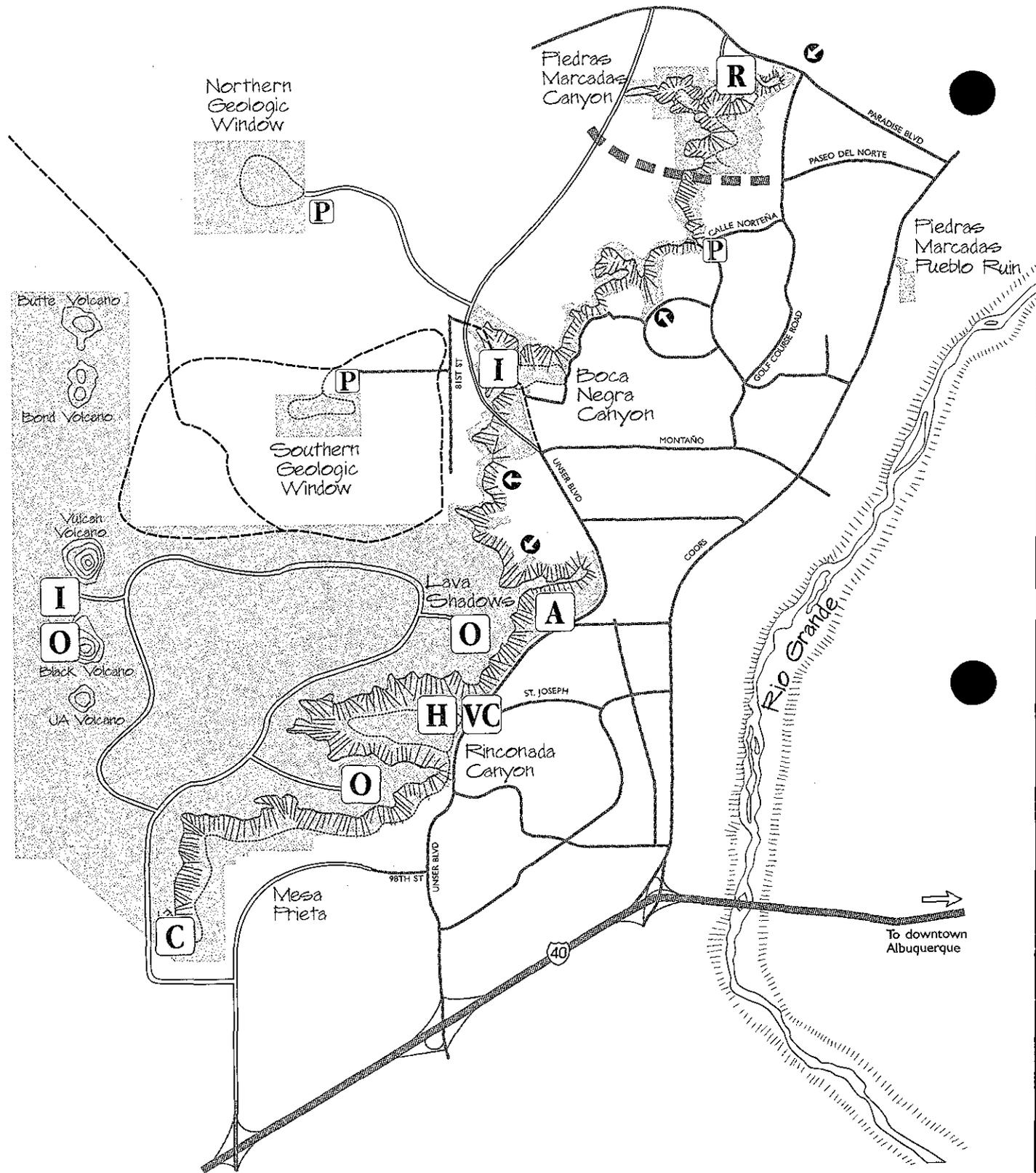
PARTNERSHIP JURISDICTION, ROLES, AND RESPONSIBILITIES

Roles and responsibilities would be the same as described under alternative 2.

VISITOR/HERITAGE EDUCATION CENTER — RINCONADA CANYON

Under this alternative the visitor center would be at Rinconada Canyon. This facility would function as described in "Actions Common to All Alternatives" and include exhibits and a multimedia theater to explain the significance of the petroglyphs, the history of the Rio Grande valley, and the cultures of the people who have lived and passed through the region as well as classrooms that would be used for heritage education programs for organized groups. This education program would function as described in alternative 1.

The canyon would become an intensive visitor use area, with wayside exhibits, guided walks, and patrolling rangers providing interpretation and protection. From the center, visitors could walk to petroglyphs throughout Rinconada Canyon on hard-surfaced trails that would be accessible to people with disabilities. Higher visitation levels would be accommodated in part through several outdoor interpretive exhibits. There would also be a connecting pedestrian trail (not accessible to visitors with disabilities) to Mesa Prieta.



Alternative 3
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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



From the visitor center area, visitors would have the option of driving to see other petroglyph concentrations at Boca Negra and Piedras Marcadas Canyons or at Mesa Prieta, or driving on the new mesa-top road.

VISITOR CONTACT FACILITIES

Piedras Marcadas Pueblo Ruin

This area would be interpreted and managed as described in alternative 1, with a visitor contact facility and access and parking on city-owned and -managed lands south of the monument outside monument lands and an interpretive trail. The site would be open only when staffed to reduce risk of vandalism, destruction, and theft.

Mesa Prieta

There would be a pedestrian trail, along the base of the escarpment, from the new staffed visitor contact facility/parking area/trailhead at the southern end of the monument. This would be the entrance station to the mesa-top road.

PETROGLYPH RESEARCH CENTER — PIEDRAS MARCADAS CANYON

The petroglyph research center and parking area would be constructed on the mesa top just north of Piedras Marcadas Canyon. Access would be from a new road from Paradise Boulevard. The presence of the center would provide some protection for the petroglyphs and easy access to petroglyphs for researchers. Visitor information and restrooms would be provided in the center.

Two pedestrian trail escarpment crossings would be developed to provide the only

access into the canyon; in the canyon there would be pedestrian trails along the base of the escarpment, along which visitors could see some petroglyphs. Visitor use in the canyon would be controlled by a permit system, which would provide visitors with a sense of solitude and also provide additional protection for the resources.

INFORMATION KIOSK — BOCA NEGRA CANYON

This area would continue to be a primary petroglyph viewing area. Where feasible, existing trails would be improved/redesigned to provide access for visitors with disabilities as well as to provide additional protection for petroglyphs and improve safety for visitors. There would be a small parking area and restrooms, and visitor information would be available at an unstaffed visitor information kiosk.

ADMINISTRATION — LAVA SHADOWS

The current interim visitor center in the Lava Shadows area would be removed and a new administrative structure, including offices and work areas for the administration, law enforcement, interpretation, resource management, and maintenance divisions, would also be constructed.

VOLCANOES AREA

The volcanoes would be managed as described in alternative 1 — with a redesigned parking area (near the existing parking area) and visitor information kiosk, a nearby picnic area, a trail to Black Volcano, the development of an overlook and outdoor exhibits, and the reclamation of the previously mined area. However, under this alternative, access would be

from the east (the mesa-top loop road) rather than from the airport access road (Paseo del Vulcan). The existing access road would be closed and reclaimed. Reclaiming abandoned mine sites 1, 2, and 3 would be as described in alternative 1.

GEOLOGIC WINDOWS

The city Open Space Division would manage the northern and southern geologic windows to promote use and enjoyment. Parking would be provided near the mesa-top rims of these depressions, and pedestrian trails to petroglyph viewing areas would be developed. Parking for both areas would be accessed by existing roads.

ROADS, TRAILS, AND ESCARPMENT CROSSINGS

Mesa-Top Loop Road

Visitors could take advantage of the expansive views from the mesa top by driving on a new, paved, two-way loop road. A new spur road from 98th Street would enter the monument just west of the southern end of Mesa Prieta and travel north onto the mesa top. A staffed visitor contact facility within the monument would provide information about the resources and various points of interest. This contact station would also function as an entrance station for vehicles entering the monument.

Picnic areas and overlooks along the road, including a location on Mesa Prieta and one on the mesa north of Rinconada Canyon, would provide opportunities for visitors to enjoy the expansive views of the city, the Rio Grande valley, and the Sandia and Manzano Mountains. The road would continue north from Mesa Prieta to the northern portion of the Atrisco unit, then head west toward the volcanoes (where a

spur road would access the volcanoes parking area, observation area, and accessible trail) and back south to Mesa Prieta.

Multiuse Trails

There would be multiuse trails (pedestrian, bicycling, and horseback riding) on the mesa top, both in the northern part of the monument and in the city open space lands west of 81st Street, and along the escarpment edge from Boca Negra Canyon north to Piedras Marcadas Canyon (see Alternative 3 map).

Trails Across the Escarpment

There would be access across the escarpment via multiuse (pedestrian, bicycle, and horseback riding) trails at Boca Negra Canyon and Calle Norteña, which would connect to existing/proposed city trails, and, if necessary to connect with city trails, a crossing near the Paseo del Norte corridor.

Neighborhood Access Trails

There would be neighborhood access trails at Paradise Hills, Taylor Ranch, and Santa Fe Village. As new neighborhoods are developed, monument staff would address and evaluate access needs into the monument.

Dogs on leashes would be allowed only on designated trails near existing neighborhoods.

Permits for Trail Use

Because of the sensitive nature of all lands within the monument, visitors would be required to obtain permits for going into selected areas. Permits would not be

required for the multiuse trails crossing the escarpment. The permit system would allow managers to track the numbers of visitors using the trails and discuss use regulations and protection of the resources, the cultural landscape, and visitor experiences. The process of obtaining permits would be convenient for both frequent local users and one-time visitors.

Natural and cultural resources would be monitored to identify resource impacts. If resource damage is identified, use would be restricted or eliminated in specific areas.

CULTURAL AND NATURAL RESOURCE MANAGEMENT

Natural and cultural resource management would be the same as described in alternative 1. In addition, a permitting program for trail users in Piedras Marcadas Canyon would be implemented in conjunction with the monitoring program.

OTHER SITES

In this alternative, Homestead Circle park would be developed as a traditional neighborhood park, including a turf grass play area, a children's play structure, picnic tables and benches, and shade trees or shade structure. Multiuse access to the mesa top would be the same as in alternative 2.

The disturbed area adjacent to Calle Norteña and Taylor Ranch Road would be regraded to a more natural looking contour and seeded with native plants. Parking would be provided for 5-10 cars in a portion of the disturbed area near Calle Norteña.

BOUNDARY ADDITIONS

There would be no additional boundary adjustments under this alternative.

STAFFING

Staffing requirements for this alternative would be the same as alternative 1 except for the following. All new positions would be evaluated to determine the cost-effectiveness of hiring full-time employees or contracting for services.

- The interpretive ranger assigned to the Piedras Marcadas visitor contact facility (alternative 1) would not be necessary.
- The alternative 1 Rinconada Canyon interpretive ranger would be relocated to Boca Negra Canyon.
- To maintain the approximately 10 miles of mesa-top road would require one additional laborer and a heavy equipment operator.
- Two additional permanent protection rangers and one seasonal protection ranger would be needed to patrol the road.
- One additional permanent and one seasonal resource management specialist would be required.

COSTS

Development costs for implementing this alternative would be approximately \$28.9 million as shown in the following table. The estimated NPS annual operating budget would be \$3.4 million; city operational costs would be about \$1.4 million.

TABLE 6. ALTERNATIVE 3, SUMMARY OF DEVELOPMENT COSTS

	Gross Construction Costs ^a	Construction Planning ^a	Total Project Costs
Visitor center/heritage education, Rinconada Canyon	\$7,728,100	\$1,474,800	\$9,202,900
Interpretive trail and outdoor exhibits, Piedras Marcadas Pueblo ruin	15,100	1,300	16,400 ^b
Visitor contact facility, Mesa Prieta	602,600	115,000	717,600
Petroglyph research center, Piedras Marcadas Canyon	1,030,400	196,600	1,227,000 ^c
Visitor kiosk, Boca Negra Canyon	690,400	131,800	822,200
Administration, Lava Shadows	1,720,300	328,300	2,048,600
Volcanoes area	327,900	62,600	390,500
Mesa-top loop road (10 mi)	9,643,600	1,840,400	11,484,000
Multipurpose trails (inside monument) 6.7 mi x 8'	535,500	102,200	637,700 ^c
Pedestrian trail (inside monument) 7 mi x 3'	281,700	53,800	335,500 ^c
Multipurpose trails (outside monument) 12.7 mi x 8' ^d	1,015,100	193,700	1,208,800 ^b
Reclaiming existing roads (scarify, rip, topsoil, seed, mulch, 50 acres)	642,000	122,500	764,500 ^c
Reclaim abandoned surface mines	44,000	10,100	54,100
TOTAL	\$24,276,700	\$4,633,100	\$28,909,800

a. Gross construction costs include construction of new facilities, exhibit and audiovisual production, construction supervision, and contingencies. Advanced and project planning costs include aerial/topographic surveys, comprehensive design, utility negotiation, historic furnishings and structural reports, archeological research, construction drawings and specifications, archeological data recovery, exhibit design, and audiovisual design.

b. These costs would be fully funded by the city.

c. These costs would be partially funded by the city.

d. The Park Service might enter into cooperative agreements with other entities to assist in the planning, construction, and maintenance of these facilities.

ALTERNATIVE 4 — NO ACTION

INTRODUCTION

The no-action alternative describes the conditions that would exist at the monument without a change in current management direction or an approved general management plan. This alternative provides a baseline for evaluating the changes and related environmental impacts that would occur under the three action alternatives. Under the no-action alternative, the National Park Service and the city Open Space Division would continue to maintain the monument and the resources and facilities in their existing condition while providing for some increases in visitor use (see Alternative 4 map).

No visitor center would be constructed. Monument staff would continue to give guided tours (mostly at Boca Negra Canyon) to school groups. Staff would also bring interpretive programs to school classrooms.

This alternative would have the fewest facilities and the most areas open to multiple uses (horses and bicycles). Neighborhood access points would be similar to the other alternatives. Horseback and bicycle riding would be permitted within the monument only where currently allowed (north of the Atrisco grant line, excluding Rinconada Canyon).

The development concept plan shown in alternative 1 for Rinconada Canyon indicate the general locations for the small parking areas in this alternative.

PARTNERSHIP JURISDICTION, ROLES, AND RESPONSIBILITIES

The city would be chiefly responsible for visitor services, visitor and resource protection (law enforcement), and maintenance in the Piedras Marcadas and Boca Negra units. The existing interim visitor center would be staffed and operated by the National Park Service.

VISITOR CENTER — LAVA SHADOWS

The interim Las Imagines Visitor Center at Lava Shadows would become the primary visitor center for orientation to the monument. A few exhibits would be provided in the existing space. This facility would only accommodate a limited number of visitors at one time. Visitors would be encouraged to drive to Boca Negra, Piedras Marcadas, and Rinconada Canyons to see the petroglyphs. The existing trail up the cut to the mesa would continue to be used by horseback and bicycle riders and pedestrians). The parking area would be improved to accommodate increased use and provide turning space for long vehicles.

SOME MODIFICATION — BOCA NEGRA CANYON

Here visitors could see the petroglyphs from established trails, some of which would be made accessible to visitors with disabilities. A slightly expanded parking area and restrooms would continue to be used. As already planned, the city would make minor improvements to trails and expand the shade structure. Heritage education programs would continue at Boca Negra Canyon.

PETROGLYPH RESEARCH CENTER — EXISTING FACILITIES AND STAFF

Petroglyph research center functions would be carried out by existing monument and NPS Southwest Regional Office staff in existing facilities within the allocated budget.

PARKING AND TRAILS — RINCONADA AND PIEDRAS MARCADAS CANYONS

Two small parking areas (10-15 cars) would be established, one at Rinconada Canyon and one near Piedras Marcadas Canyon (accessible from Golf Course Road). Visitors could see the petroglyphs in more primitive conditions in these canyons than they would at Boca Negra Canyon. Although minor improvements would be made to existing trails in these canyons (i.e., the designation of routes), trails would not be accessible to visitors with disabilities. There would be no restrooms at these sites.

PEDESTRIAN TRAIL — MESA PRIETA

No facilities or orientation would be provided at Mesa Prieta. This area would only be accessible on pedestrian trails by visitors willing to travel cross country on the existing trails from the mesa top or follow the trail at the base of the escarpment (accessed from the small parking area at St. Joseph and Unser). Visitor use would be discouraged by not providing information.

LIMITED TOURS — PIEDRAS MARCADAS PUEBLO RUIN

The site would be closed to the public except for specially arranged guided tours. There would be no visitor facilities.

VOLCANOES AREA

Visitor use of the volcanoes would continue, with most use occurring on Vulcan. The parking area that now exists would only be open from dawn to dusk and gated when closed. No onsite interpretation or orientation would occur except for occasional guided tours. The parking area would not be redesigned.

There would be no reclamation of abandoned mine sites 1, 2, and 3.

GEOLOGIC WINDOWS

Visitor use of the geologic windows would be discouraged by not providing information.

ADMINISTRATIVE FACILITIES — SOUTH OF BOCA NEGRA CANYON

Existing structures in this area would be used for administrative functions.

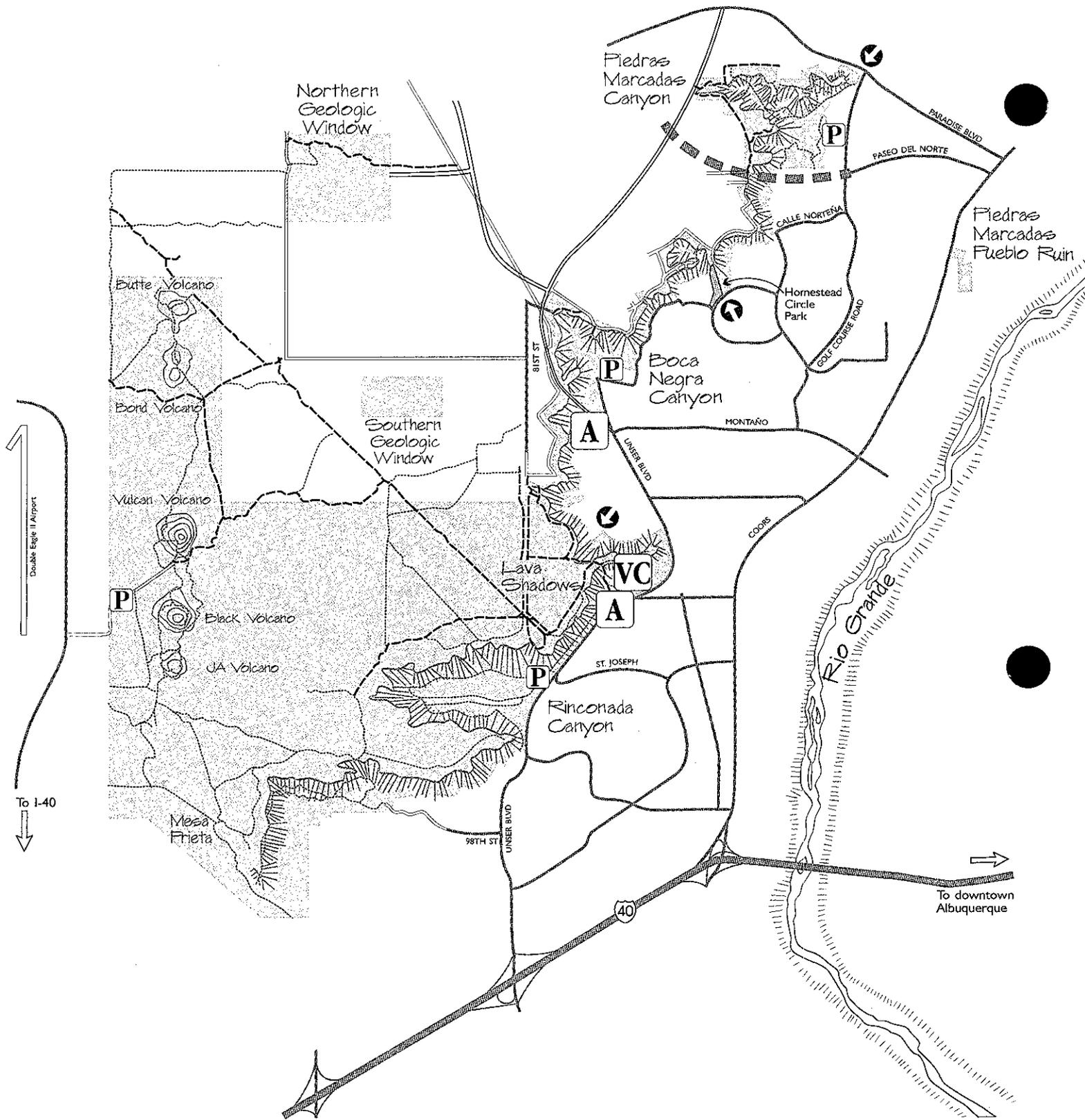
TRAILS AND ESCARPMENT CROSSINGS

Mesa-Top Trails

Visitors could access the mesa from several existing access points. No facilities, new trails, or interpretive exhibits would be provided. Multiuse mesa-top trails would be on existing dirt roads north of the Atrisco grant line.

Escarpment Crossings

Multiuse trail crossings (pedestrian, horseback riding, and bicycling) of the escarpment would be continued at Boca Negra Canyon, Lava Shadows, and Calle Norteña.



Alternative 4
Petroglyph National Monument
 United States Department of the Interior
 National Park Service
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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



Neighborhood Access Trails

Pedestrian access trails for adjacent neighborhoods would be established at Santa Fe Village, Homestead Circle, and Paradise Hills. As new neighborhoods are developed, monument staff would address and evaluate access needs into the monument.

Dogs on leashes would be allowed only on designated trails near existing neighborhoods.

Permits for Trail Use

A permit system would not be required or implemented under this alternative.

CULTURAL AND NATURAL RESOURCE MANAGEMENT

Monument staff would continue to inventory and map cultural and natural resources. The Park Service would not have the funds to develop and manage trails in all petroglyph areas and other portions of the monument. Trails would be improved and managed as funds and staffing permit, which would be less than required for proper management but more than permitted by existing staffing and funding levels. The city would continue its current and proposed programs in and adjacent to the monument. Visitors would be encouraged to use existing monument roads and trails and would be prohibited from climbing and scrambling on the escarpment. Monitoring would be done as staff and funds are available; however, there would be less of it than in the other alternatives.

OTHER SITES

Homestead Circle park would not be developed. The city could look for another site outside the monument boundary for a neighborhood park.

No action would be taken at the disturbed area near Calle Norteña and Taylor Ranch Road.

BOUNDARY ADDITIONS

No additional boundary additions would be required for this alternative.

STAFFING

Even though new facilities would not be constructed in this alternative, slightly less staffing (but similar to) than alternative 1, the proposed action, would be required to conduct resource protection and visitor services programs. For comparison purposes and impact assessment, staffing levels presented under this alternative would be less than required for proper resource management and protection. Two fewer interpretive rangers, seven fewer maintenance workers, two less visitor and resource protection staff, and two less resource management staff, and one less administrative staff than under alternative 1 would be required. Because there would be a greatly reduced petroglyph research center function, the staffing of five (in the proposed action) would be reduced to one.

COSTS

Development costs for implementing this alternative would be approximately \$1.4 million as shown in the following table. The estimated NPS annual operating budget would be \$2.9 million; city operational costs would be about \$274,500.

TABLE 7. ALTERNATIVE 4, SUMMARY OF DEVELOPMENT COSTS

Mesa Prieta, Boca Negra, Piedras Marcadas, the volcanoes area, and the Piedras Marcadas Pueblo ruin have no new facilities under this alternative.

	Gross Construction Costs ^a	Construction Planning ^a	Total Project Costs
Visitor center, Lava Shadows	\$304,400	\$58,100	\$362,500
Minor modifications, Boca Negra ^b			
Parking and trails, Rinconada Canyon	163,700	31,300	195,000
Multipurpose trails (inside monument) 3.3 mi. x 8'	263,800	50,300	314,100 ^b
Pedestrian trails (inside monument) 7.2 mi. x 3'	215,800	41,200	257,000 ^b
Reclaiming (scarify, rip, topsoil, seed, mulch) 18 acres	231,100	44,100	275,200 ²
TOTAL	\$1,178,800	\$225,000	\$1,403,800

a. Gross construction costs include construction of new facilities, exhibit and audiovisual production, construction supervision, and contingencies. Advanced and project planning costs include aerial/topographic surveys, comprehensive design, utility negotiation, historic furnishings and structural reports, archeological research, construction drawings and specifications, archeological data recovery, exhibit design, and audiovisual design.

b. These costs would be partially funded by the city.

TABLE 8. 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	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.	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.	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.	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.
Visitor Center	At Boca Negra with heritage education function.	New center at Lava Shadows area.	New visitor/heritage education center at Rinconada Canyon.	Use of existing interim visitor center at Lava Shadows.
Boca Negra Canyon	See above; expand and redesign trail system.	Construct heritage education center; expand and redesign trail system, parking, and shade structure.	Would continue as a primary petroglyph viewing area; restrooms and expanded/redesigned trails; unstaffed visitor information kiosk.	Continue existing use/heritage education program with improvements to parking area and shade structure and minor trail improvements.
Piedras Marcadas Canyon	Small parking area with visitor contact facility and exhibits, restrooms, and trail to inner canyon.	Same as alternative 1 plus small parking area/trail access in northwestern part of canyon.	Petroglyph research center constructed on mesa top north of canyon, accessed from Paradise Boulevard; two pedestrian trails into inner canyon trail (used by permit).	Small parking area on mesa top at northwest part of canyon; soft-surfaced pedestrian trail into canyon.

TABLE 8. 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 8. 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 8. 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	\$2.5 million	\$3.3 million	\$3.4 million	\$2.9 million
City	\$810,000	\$900,000	\$1.4 million	\$274,500

TABLE 9. 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 9. 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>Toltecolus chihuuanus</i>), a category 2 species, would not be adversely affected by NPS actions.</p> <p>Cumulative Impacts: Cumulative impacts on the millipede (<i>Toltecolus chihuuanus</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 9. 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 9. SUMMARY OF THE IMPACTS OF THE ALTERNATIVES (CONT.)

TOPIC	ALTERNATIVE 1 — PROPOSED ACTION	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
IMPACTS ON BIODIVERSITY	<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>
IMPACTS ON SOILS	<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 boundary adjustment would have 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>
IMPACTS ON SCENIC RESOURCES	<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>
IMPACTS ON THE LOCAL AND REGIONAL ECONOMY	<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 9. SUMMARY OF THE IMPACTS OF THE ALTERNATIVES (CONT.)

TOPIC	ALTERNATIVE 1 — PROPOSED ACTION	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
IMPACTS ON NATIONAL VISITORS	<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>
IMPACTS ON LOCAL VISITORS AND ADJACENT LANDOWNERS	<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 volcanic 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>
IMPACTS ON ENERGY CONSUMPTION	<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 described 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>
IMPACTS OF MONUMENT USE AND ACTIVITIES ON EXISTING NOISE LEVELS	<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 9. SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONT.)

TOPIC	ALTERNATIVE 1 — PROPOSED ACTION	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
<p>IMPACTS ON AIR QUALITY</p>	<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>	<p>Same as alternative 1.</p>	<p>Same as alternative 1.</p>	<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>
<p>UNAVOIDABLE ADVERSE IMPACTS</p>	<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>	<p>Under the National Environmental Policy Act, evaluation of these impacts is not required.</p>		
<p>RELATIONSHIP BETWEEN SHORT-TERM USE OF THE ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY</p>	<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>	<p>Under the National Environmental Policy Act, evaluation of these impacts is not required.</p>		
<p>IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES</p>	<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>Pediocactus 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>	<p>Under the National Environmental Policy Act, evaluation of these impacts is not required.</p>		

ALTERNATIVES AND OTHER ACTIONS CONSIDERED BUT REJECTED

MANAGEMENT ROLES/ RESPONSIBILITIES

Two distinctly different management models were considered in attempting to determine the appropriate role for the city and National Park Service to play in the monument's daily operation. One model looked at having each agency assume overall control for various geographic units of the monument. Under this model, for example, the city could be solely responsible for the Piedras Marcadas and Boca Negra units while the National Park Service could be responsible for the Atrisco unit. A second model looked at assigning roles based on functional responsibility. Under this scenario, for example, the National Park Service might be responsible for all monument interpretation and the city for all law enforcement. The proposed action calls for a hybrid of these two models.

WEST SIDE ACTION COUNCIL PROPOSAL

As part of the public involvement process for preparing the management plan / development concept plan, an alternative proposal for Petroglyph National Monument was presented at the December 6, 1993, Petroglyph National Monument Advisory Commission meeting by the West Side Action Council, which represents several economic development and neighborhood organizations. The key components of the proposal are as follows:

1. "Urban monument" means effective use of the area with nonrestrictive access and the National Park Service's participation in working out long-term and critical infrastructure needs and active support of approved and in-place

developments outside the boundaries of the monument.

2. The Paseo del Norte extension through the monument is critical to meet Albuquerque's long-term transportation needs and can benefit the monument. The construction can be accomplished in an environmentally sensitive manner.
3. Primary access to the monument should be from the mesa top, and strategies to access through existing, or proposed, neighborhoods should be abandoned. Access should be provided from one end of the monument to another. This approach also provides a higher degree of protection by controlling access. The proposed visitor center location would be southwest of the proposed intersection of Unser Boulevard and Paseo del Norte west of the escarpment.
4. The American Indian, Hispanic, and other cultures should be focal points of the educational experience and be integrated with visitor use throughout the monument.
5. The strategies of access throughout the monument should consider ways to enhance economic impacts in the Albuquerque area.
6. New land acquisitions (unidentified) should be limited and considered on a case-by-case basis.
7. The mesa top should be provided with an extensive trail system.
8. The National Park Service should be willing to participate in solving Albuquerque's long-term infrastructure needs.

This management plan / environmental impact statement has incorporated elements of the West Side Action Council proposal that are consistent with the legislation that established the monument and the purposes and significance of the monument. This proposal includes components that have been previously rejected for further consideration or that are contrary to the mission and purpose of the National Park Service and the monument legislation, the legislative history of the monument, and the purpose and significance statements for the monument. The Park Service has responded to each of the above key elements as follows:

1. Petroglyph National Monument, like many other units of the national park system, is within and adjacent to portions of an urban area. As stated in the legislation, federal laws generally applicable to units of the national park system shall apply to the monument. The fact that portions of the monument are within the city of Albuquerque does not diminish the importance of the congressional directive to "preserve for the benefit and enjoyment of future generations." However that proximity in no way diminishes the congressional intent in establishing the monument. There are no special provisions or exceptions of NPS policy that apply to units of the system within urban areas versus rural areas. The only reference to urbanization in the legislation is that the petroglyphs are threatened by urbanization and that there is an urgent need to protect the area from urbanization.

The alternatives address a range of access and public use options consistent with the legislation and monument purposes. Access options addressed in the alternatives include trails for use by pedestrians and horseback and bicycle riders, roads to overlooks, and a variety of parking and trailhead locations.

Alternative 3 incorporates a mesa-top road system similar to the West Side Action Council's proposal. As provided for in the legislation, the National Park Service will participate in land use and transportation planning for lands adjacent to the monument and may provide technical assistance for such planning. Critical infrastructure needs are addressed in the "Utility Rights-of-Way" section.

2. The National Park Service has determined that there is no authority to construct Paseo del Norte through the monument and that there would be significant adverse impacts on the natural and cultural resources of the monument resulting from constructing a four- to six-lane major arterial. There would be no direct benefit to monument visitors. The route would provide the quickest and most direct route through the monument for local traffic. The road would not serve a monument purpose.
3. Preliminary alternatives for visitor use included primary access to the escarpment from the mesa top. This approach was rejected because of the impacts of roads and parking areas on the mesa top and the difficulty in getting from the mesa top to petroglyphs at the base of the escarpment. Alternative 3 incorporates a mesa-top road, but this road does not include primary access to the escarpment. Several escarpment crossing trails would be required that would also have significant adverse impacts on monument resources, including the views, context, and undeveloped nature of the escarpment canyons. Many visitors would have difficulties due to the length of trails required to get to many petroglyph concentrations and the steepness and elevation difference from the base to the mesa top.

None of the alternatives have identified nonlocal visitor access through existing or proposed neighborhoods. Unser Boulevard provides for access from one end of the monument to the other with minimum impact. The West Side Action Council is not specific about how additional protection would be provided by controlling access nor what access controls would be adopted.

Mesa-top visitor center locations were rejected for several reasons: difficulty in interpreting the primary petroglyph resources of the monument to visitors, difficulty in getting large numbers of visitors to petroglyph viewing areas, compatibility of adjacent land uses, additional boundary adjustments and land acquisition would be required, and there would be increased construction expenses due to the difficulty of providing utilities in areas with shallow basalt.

4. We agree that American Indian, Atrisco land grant heirs, and other cultures should be the focal point of interpretive programs.
5. The alternatives do consider ways to enhance economic impacts in the Albuquerque area. However, the monument and the National Park Service have no authority to enhance economic development. Although economic development and tourism may be associated with many units of the national park system, these secondary affects usually occur after the resources have been protected and adequate visitor services and programs have been provided. The private sector would be expected to provide tourist services outside the monument boundary, either independent of or in cooperation with the National Park Service.

6. The alternatives consider several boundary adjustments. Land acquisition policy is addressed in the *Land Protection Plan* (National Park Service and City of Albuquerque 1991). The West Side Action Council proposal did not include how much land would have to be acquired outside the boundary to implement their proposals. It was therefore impossible to evaluate this component of their proposal.
7. The alternatives consider a range of mesa-top trail systems within and adjacent to the monument that are consistent with the nature and character of the mesa top.
8. As provided in the legislation, the National Park Service will participate in land use and transportation planning for lands adjacent to the monument and may provide technical assistance for such planning. See the "Utility Rights-of-Way" section.

OPTIONAL LOCATIONS FOR THE HERITAGE EDUCATION CENTER

Piedras Marcadas Canyon, Southeast Corner

Another possible location for the heritage education center is the southeast corner of the Piedras Marcadas Canyon, north of the Paseo del Norte alignment and west of the Piedras Marcadas arroyo. (This is the proposed site for a visitor contact facility.) This option would combine the visitor contact functions with the heritage education functions. Site modifications would include an expanded parking area with additional space for bus parking and turning areas. From the contact station/ education center, trails would guide visitors to petroglyph concentrations near the Alameda grant line, the "alcove," and

several locations within Piedras Marcadas Canyon.

The site is small and hard to get to from the rest of the monument. Adjacent land use would be intrusive and prevent appreciation of the cultural landscape. This area has too much use and development near petroglyph concentrations and too many facilities are being proposed within the monument boundary. There are other more appropriate places where use could be dispersed. Heritage education functions would detract from local use of the area.

The Roberson Ranch Property

Another alternative site for the heritage education center would be immediately south of the Piedras Marcadas Pueblo ruin. This 23.5-acre site, owned by the city, is proposed to be developed as a city visitor contact facility and heritage education center. Monument heritage education functions could be combined with city environmental education programs. The Park Service will continue to work with the city. At this time the city's interest in developing the site is in the conceptual planning stages.

ABANDONED MINE SITE RECLAMATION

The restoration to original contours of the abandoned mine adjacent to Vulcan Volcano was considered and rejected

because of the volume of material required to restore the site to its original condition. There would be excessive costs and unacceptable adverse impacts that would result because of transporting this volume of fill material to restore the site to its original contours. The benefits of restoration to original contours do not justify the costs or the adverse impacts.

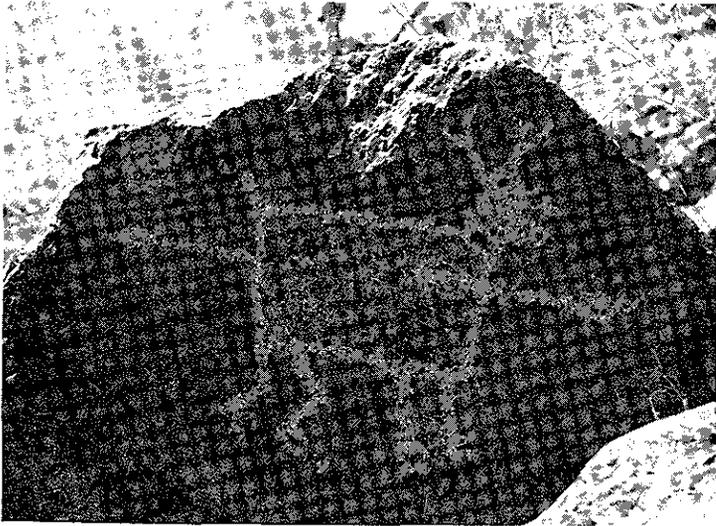
BOUNDARY ADJUSTMENTS CONSIDERED BUT REJECTED

Four areas that were considered and rejected for boundary adjustment are the

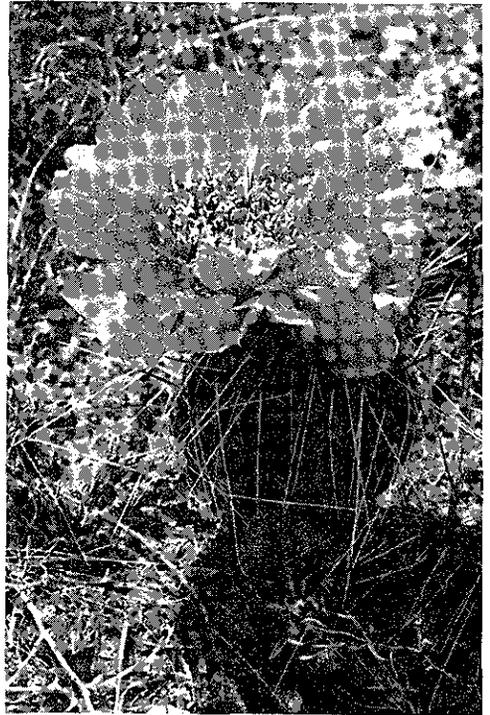
- area north of the volcanoes
- area south of volcanoes
- area east of Mesa Prieta
- Park West (formally known as Laurelwood)

These areas were rejected from further consideration for a variety of reasons including adequacy of protection under current ownership, lack of known connection to monument resources, and feasibility of adjustment at this time.

AFFECTED ENVIRONMENT



Petroglyph, Piedras Marcadas Canyon



Pear cactus in bloom



Looking east from mesa top

CULTURAL RESOURCES

PREHISTORIC USE

The continuum of human occupation in the Rio Grande valley began some 10,000 to 12,000 years before present and continues to this day. More than 300 archeological sites documenting the full span of human use are found within Petroglyph National Monument. (The following discussion was abstracted largely from Schmader 1988).

Evidence for human use of the west mesa dates back to Paleo-Indian times (circa 10,000 B.C. to 5,500 B.C.) and is primarily documented in the area between the Rio Puerco escarpment and the volcanoes. Only a few scattered traces, primarily stone tools, remain of the early hunters and gatherers who pursued large Pleistocene mammals and made use of the resources near these ancient playa (dry lake beds with no outlet) shorelines.

By around 7,000 years before present, the climate had begun to change and many large mammals became extinct. During this period, known as the *Archaic* (circa 5,500 B.C. to A.D. 600), human cultures began to rely more on smaller game and seasonal gathering (Schmader and Hays 1986a; National Park Service 1994c).

These Archaic adaptations led to the formation of early Puebloan (Anasazi) cultures. By about 500 B.C. major changes in human use of this area were underway, beginning the gradual transition to Basketmaker and later Pueblo periods that would occur over the next 10 centuries. Cultivation of corn and construction of pithouse habitations and food storage features suggest settled village life. Populations increased, and improved technologies appeared.

During the Pueblo II period (A.D. 900 to A.D. 1100) there was greater reliance on agriculture. Local groups built above-ground linear room blocks as well as major agricultural features such as terraces, rock alignments, and dams that served to divert and hold water. Campsites and lithic quarry sites also reflect specialized prehistoric activities in this area.

Evidence of the Pueblo III period (A.D. 1100 to A.D. 1300) is found at several sites, including the Piedras Marcadas Pueblo.

Increased use of the monument area between the volcanoes and the east edge of the west mesa occurred during Pueblo IV times (circa A.D. 1300 to A.D. 1600), a period of explosive social and technological change. Large multistory adobe pueblos, including Piedras Marcadas in the monument, were constructed along the Rio Grande valley and reflect the complex social and traditional and cultural organization among pueblos along the river.

Piedras Marcadas pueblo was one of the largest Pueblo IV settlements along the Middle Rio Grande, covering an area of approximately 39,000 square meters. The unexcavated Piedras Marcadas ruin (formerly known as the Zuris-Mann site) is the largest and perhaps the most significant of the sites remaining in the Middle Rio Grande valley. This pueblo complex, of earthen construction, appears to have been inhabited for about 300 years during the Pueblo IV or Rio Grande Classic period. Subterranean kivas reflect the rich and complex traditional and cultural life of prehistoric inhabitants. There is a great deal of midden debris and an unknown number of pithouse constructions concealed by alluvium covering the site (Marshall 1984).

This Southern Tiwa Pueblo may have been an ancestral village for the present-day Sandia Pueblo people, and the site was almost certainly visited by early Spanish expeditions. Ceramics analysis suggests that the site may have been abandoned during the period of initial Spanish exploration but before major Spanish settlement.

The occupants of this pueblo are thought to have been responsible for much of the Rio Grande style rock art in the monument's Piedras Marcadas canyon (along the escarpment). A prehistoric trail may have connected the pueblo with Los Metates, a prehistoric milling and processing area about 0.75 mile west, and continued to the escarpment and beyond. Thus, this prehistoric settlement forms an integral part of the monument's cultural landscape and is linked with the petroglyphs. It is listed on the National Register of Historic Places.

The ruin is about 0.5 mile from the Rio Grande, bordered by a few houses and a nearby bank. There is no other adjacent development, and the escarpment is visible from the ruin. However, development proposed for lands adjacent to the ruin would create a visual intrusion on the pueblo's landscape and prevent views of the escarpment.

Trails connected the large pueblos in the Rio Grande floodplain with the escarpment and the mesas beyond. No doubt both these areas were vital to the existence of Puebloan peoples for hunting, gathering, agriculture, procurement, processing, and traditional and cultural activities. Over 300 boulder metates or grinding slicks have been found along the escarpment, especially at Los Metates (outside the monument, but protected by the city Open Space Division) and in selected petroglyph areas. These grinding slicks may have been used for food processing and for pigments

or herbs used for ceremonial or medicinal purposes.

Agriculture-related structures in the monument include water diversion/control structures, catchment walls for agricultural fields, and fieldhouses. Stone rings or shelters, cairns, and walls are also found in the monument.

The escarpment's petroglyphs are the most unique and visible markers of this period. Most of the more than 15,000 petroglyphs along the escarpment are thought to have been created during the Pueblo IV period. A great profusion of masks, faces, anthropomorphs, animals, tracks, hand prints, and geometric designs were left by Puebloan inhabitants of the Rio Grande valley. Some of these petroglyphs may have been created as part of daily subsistence activities, such as collecting and processing wild or domesticated plant foods and collecting the rocks found on gravel benches for stone tool production. Other petroglyphs are thought to have been created during traditional and cultural ceremonies and may portray events and characters from the Pueblo world or depict various clan symbols.

HISTORIC USE

Although many of the large pueblos along the Rio Grande continued to be occupied until the time of European contact, some had been abandoned at least a century before, probably as a result of factors including overpopulation, drought, warfare, and/or overexploitation of resources.

Members of Coronado's expedition first entered the Rio Grande valley in 1540. They wintered at Pueblo Santiago in the Bernalillo area. It is likely that the Piedras Marcadas Pueblo was occupied at this time and may have been damaged during

fighting between the Puebloans and Coronado's soldiers. The Piedras Marcadas Pueblo was probably abandoned in the 16th century.

The coming of the Spanish and their subsequent expeditions had a massive impact on local populations. During the 1540s, many Indians were killed, and most area pueblos were burned. Although pueblos were reoccupied, strife and disease continued to decimate populations over the next two centuries.

There is little information about land use activities in the monument during the 16th through the 19th centuries. Portions of the monument were, however, included in two early Spanish land grants — the Atrisco and Alameda grants. A portion of the Piedras Marcadas Canyon now within the monument was within the boundaries of the town of Alameda Grant, established in 1710 under a grant by Don Diego de Vargas to Francisco Montes Vigil and included 89,346 acres of land.

The Atrisco grant was established sometime before the Pueblo Revolt of 1680 by members of the Duran y Chavez family near what is now Albuquerque in the Rio Abajo of Atrisco. Following the Pueblo Revolt, the Atrisco grant was reestablished in 1692, including approximately 82,000 acres on the west side of the Rio Grande. Atrisco included the village (collected dwellings and garden plots on individually owned grant lands in the valley), the Ranchos de Atrisco on better bottomland holdings, and the open range/commons of west mesa. West mesa lands were not formally developed as part of the Atrisco or Albuquerque town sites; instead they remained a commons area for livestock grazing. Although there was little change in land use during the succeeding years, increases in the importance of livestock in New Mexico and construction of the

railroad in the 1880s put additional pressure on west mesa lands for grazing.

These land grants facilitated Hispanic settlement throughout the area and were generally occupied by a number of families organized into small plaza-oriented communities or more typically isolated family ranchos. Agriculture and animal husbandry, especially shepherding on the dry mesa grasslands and the canyons along the escarpment, were critical to the economic success of the ranchos. Archeological remains along the escarpment document use of the west mesa for grazing and seasonal herding camps during the historic period. This pattern of land use continued throughout the 18th and 19th centuries and into the 20th century.

In 1917 the Santa Fe Railway was given "checkerboard" grants for the land around the volcanoes and across the mesa top. This land was subsequently leased to area ranchers for livestock grazing. It was not until the early to mid 20th century that several large private ranches were developed on the west mesa. Portions of what is now within the monument were purchased by Frank Bond and Co., Inc., in 1951 from the former railroad grants.

In the 1920s and continuing until the 1980s, portions of the volcanoes area were leased for surface mining of cinder and scoria (vesicular basaltic lava thrown out of volcanic vents during eruption). A large quarry for cinder gravel was excavated southeast of Vulcan, a smaller excavation was mined from the small cone near Black Volcano, and a third surface mining site is south of JA Volcano. The total area disturbed by the three sites is about 10 acres. Also, during this time exploration for oil and gas deposits was conducted in and around the west mesa area.

In December 1941 the War Department (later the Department of Defense) leased lands on the west mesa and established a 15,246-acre precision bombing range that included targets used by the Kirtland Air Force Base bombardier school. The range extended from just east of the volcanoes to the Rio Puerco Escarpment on the west, and from the southern boundary of the town of Alameda Grant on the north to the northern boundary of the town of Atrisco Grant on the south. At least one of the bombing range target areas is included within what is now the monument. The target areas consisted of fences, mock outlines of industrial facilities, and targets that were bladed into the soil. Remnants from spotting charges and concrete practice bombs have been found near the target areas. The range was used for bombing practice during the period 1941-46. Grazing resumed after the war, and the Atrisco land grant was eventually incorporated as the Westland Development Company, Inc., in 1967 and is about 50,000 acres.

HISTORY OF WEST MESA OPEN SPACE LANDS

Albuquerque enjoys the reputation of having a nationally recognized open space program. Over 40,000 acres of land in Bernalillo County is designated by the *Albuquerque/Bernalillo County Comprehensive Plan* (City of Albuquerque 1988) as major public open space, with 23,000 acres in public ownership. Open Space in Albuquerque/Bernalillo County is defined as any large area of land (or water) that is left largely undeveloped and serves at least one of the following major functions: conservation of natural and cultural resources, protection of the public from flooding or other hazards, provision of recreational services, or satisfaction of psychological needs for space.

The history of the Open Space program spans four decades. In 1961 the city acquired more than 4,000 acres on the west mesa from the Bureau of Land Management, as part of the Recreation and Public Purposes Act. Included in this acquisition were the west mesa lands for the Shooting Range State Park, Grasslands Preserve, and La Boca Negra Park. Interest in protecting Albuquerque's open space was first publicly recognized in the City/County Goals Program of 1969. Throughout the 1970s, a desire to protect the open space lands on Albuquerque's west mesa grew as citizens became interested in acquiring the Sandia Mountain foothills, Rio Grande Bosque, and other specific open space lands.

Even before the 1975 and 1988 Albuquerque/Bernalillo County comprehensive plans or establishment of the monument, acquisitions of the northwest mesa's lava flows were proposed. The city acquired the 70-acre Indian Petroglyph State Park in 1972, prompted by a local park dedication ordinance. Matching state and federal funds were later used for park development. In 1973 Albuquerque's City Commission approved acquisition of 1,883 acres on top of the mesa including the three southern volcanoes, using matching federal funds from the Land and Water Conservation Fund. Shortly thereafter, in 1976, the two northern volcanoes containing 440 acres were acquired using the same federal matching source of funds; these lands became known as Volcano Park. A third matching grant from the federal government in 1978 matched city funds to acquire 2,120 acres from the owners of the Bond Ranch between the volcanoes and La Boca Negra Park.

Although the city has been acquiring open space lands for decades, acquisition needs far exceed available funds. Major open space acquisitions below the volcanic escarpment did not occur until the city began purchasing land in Piedras

Marcadas Canyon in 1983. The first formal Open Space program was established in Albuquerque in 1984 with the formation of the Open Space Advisory Board, an appointed citizen's board that, along with staff, is charged with reviewing and approving acquisition priorities and additions to the system. In addition, the board advises the Environmental Planning Commission and the mayor and makes recommendations regarding extraordinary facilities, open space plans, and proposals to sell lease or acquire lands using open space funds.

In 1986 the board placed approximately 3,120 acres along the escarpment in their highest priority group for acquisition in 1986. Nomination of the Las Imagines Archeological District to the National Register was completed in 1986 and includes the escarpment and 50+ meters from the escarpment face. Subsequently, the *Northwest Mesa Escarpment Plan* (City of Albuquerque 1987), adopted by the City Council in 1987 and the County Commission in 1988, recognized the importance of the escarpment, adjacent open space, and the Zuris-Mann (Piedras Marcadas pueblo ruin) site, purchased in 1988 by the city.

After the establishment of Petroglyph National Monument in 1990, the city has continued to acquire lands in and adjacent to the monument. A primary source of funding for the recent land acquisitions is the Open Space fund. Another major source of funding for acquisition of major public open space is the use of the "Quality of Life" funds, generated through a temporary increase in the city's gross receipts tax, which was approved by the voters and expires in 1997. City-generated tax revenues allocated to purchases within the monument have been \$13,800,000.

Several individuals and groups have continued to work hard to raise awareness of and protect Albuquerque's open space

system. Groups such as the Committee to Save the Volcanos, Open Space Task Force, West Mesa Committee, and Friends of the Albuquerque Petroglyphs have been involved in land protection efforts to establish a strong land base. These groups recognized the importance of protecting Albuquerque's western horizon, the volcanic cones, and the escarpment. The success of the open space program is largely due to their efforts.

NATIONAL REGISTER OF HISTORIC PLACES

The entire area encompassed within the monument was added to the National Register of Historic Places in 1990 though the passage of the monument legislation by Congress. Separate national register nominations had been prepared previously for Boca Negra Cave, Piedras Marcadas Pueblo ruin (Marshall 1984), and the Las Imagines Archeological District (the west mesa escarpment) (Schmader and Hays 1986b). The monument appears to be eligible for listing on the National Register of Historic Places as a cultural landscape.

CULTURAL LANDSCAPE

Cultural landscapes are defined as geographic areas, including both cultural and natural resources, associated with an event, activity, or person or exhibiting other cultural or aesthetic values. The lands included within the boundaries of the monument represent a conglomerate of several types of cultural landscape resources.

Cultural landscape resources include natural features such as the volcanoes, caves, promontories, and special plants and minerals and cultural features such as petroglyphs, archeological sites, and traditional and cultural use sites. Other

character-defining features associated with prehistoric activities include agricultural fields along the river bottoms and on the natural terraces found along the escarpment and the broad sweeping grasslands of the mesa top and below the escarpment. Important physiographic features such as the Sandia Mountains and Mount Taylor are visible from the monument and have traditional and cultural importance for the Pueblo Indians. It is the combination of these elements and the meaning they convey to contemporary traditional cultures that helps define this cultural landscape.

Many of the beliefs, customs, and practices of Pueblo peoples that have been passed down through the generations, both orally and through practice, are reflected in the traditional and cultural sites within the monument. The monument encompasses places where traditional and cultural practitioners have gone to perform ceremonial activities or gather special medicinal plants.

Resources that help define the character of this landscape include the fences, survey markers, and landforms that formed visual and legal boundaries of the area, including brush and stone corrals, and acequias (irrigation ditches). Other features include stock tanks, target ranges, and mining pits.

The potentially significant cultural landscapes that have been identified during a cultural landscape overview are detailed in appendix G and the *Petroglyph National Monument Cultural Landscape Overview* (National Park Service 1994a).

ARCHEOLOGICAL SITES

Within the monument, more than 15,000 petroglyphs and more than 300 archeological sites have resulted from centuries of human use. There are significant prehistoric archeological sites in the monu-

ment such as terraces, walls, and field houses in association with major concentrations of petroglyphs. Although most of the lands in the monument boundary have been inventoried, past surveys have varied in their coverage, research design, reporting, analysis of data, and terminology — leading to conflicting and confusing definitions of sites and their contents. Most archeological sites have been defined by the presence of surface materials.

The most visible and prolific archeological sites include petroglyphs found throughout the escarpment, in the geologic windows, and on rock outcrops. Although some petroglyphs are thought to date to the Archaic period, most are probably Anasazi or Puebloan in origin. Others, containing brands, initials, dates, and crosses, are associated with the historic period.

Three of the 13 Paleo-Indian sites identified on the mesa lie within the monument. These sites include lithics and debitage (debris from making stone tools) and fire-cracked rock.

Thirty Archaic sites/site components have been identified within the monument. Site features and artifacts include petroglyphs, grinding stones, occasional stone tools and scattered tool manufacturing debris, and evidence of campsites and procurement and food processing areas such as ash stains, fire-cracked rock, and grinding stones.

Two Basketmaker sites were reported from the mesa top/volcanoes area.

A number of caves, lava tubes, and rock shelters, which were created by volcanic activity, are in the monument. Like the volcanoes, the monument's caves are thought to hold meaning for contemporary Pueblo peoples. The most significant of these features is Boca Negra cave. This

cave is an important multicomponent site containing early as well as late Archaic materials and maize cobs and squash remains radiocarbon dated A.D. 370 ±168 (Reinhart 1968). This cave also contained evidence for the transition between Archaic adaptations and emergent Puebloan horticultural developments.

Only seven of the 129 Anasazi or Puebloan sites/site components within the monument are identified as belonging to the Pueblo I through Pueblo III periods; 62 Pueblo IV sites and four Pueblo V sites were reported for the area. Surveys done in 1992 and 1993 identified an additional 67 sites/site components as "prehistoric."

Some Puebloan occupation sites are quite complex, containing lithics, ceramic sherd concentrations, rock alignments, agricultural fields and water diversion structures, cairns, and stone rings and rubble. (The rubble may be remains of structures or may have come from agricultural uses.) The Schmader and Hays (1986a) and Schmader (1986) surveys along the escarpment found seven sites with agricultural terraces, 12 water/soil control features, and three possible field houses, all probably constructed during the Pueblo IV period. (Field houses are small, sometimes temporary structures built close to agricultural areas to provide shelter for farmers.)

Many water control features are situated along and just below the escarpment itself, where prehistoric inhabitants could easily channel runoff into agricultural fields. More subtle water control features (rock alignments used as check dams and grid gardens) occur on the mesa top when deeper alluvial concentrations made agriculture feasible. Rock shelters often had petroglyphs associated with them, and several had sherd, lithic, and/or ground stone scatters and grinding areas present. Stone alignments, possibly habitation units, may be found near the escarpment.

Smaller sites appear to be related to specialized activities such as camping or food procurement and processing. About 25% of area sites had ash stains, fire-cracked rocks, and/or hearths. Many lithic scatters are relatively small in area, but quarrying/procurement and manufacturing sites may occupy a fairly sizeable acreage. These site types are generally in areas where raw materials such as gravel are readily available, especially in the Mesa Prieta area.

The most striking evidence of procurement specialization (making tools) is the lithic-reduction quarry site. Large gravel outcrops of igneous rocks (from the Santa Fe formation) occur on benches below the escarpment. Petrified wood, chalcedony, chert, quartzite, rhyolite, and basalt cobbles collected from the benches were broken apart by prehistoric toolmakers who left behind the larger, less useful lithic debris. The most useful stones were taken to make into stone tools. This multistep process is evidenced by the progressively finer lithic debris found at occupational sites across the west mesa.

The age and cultural affiliation of some of the monument's sites are "unknown"; these sites generally include rock alignments or cairns on the mesa or along the top of the escarpment. Hearths and ash stains are frequently present. Because lithics are present at several sites, these sites are likely to be either prehistoric or early historic. A few sites reportedly document continued use of the area by historic Pueblo groups following European contact.

A total of 158 site components have been identified as "historic." Four of these are classified as post Spanish in nature, while another 15 predate World War II and appear to be associated with area ranching and grazing between about 1875 and 1940. Most of these historic sites are sheep corrals/pens and are probably related to

AFFECTED ENVIRONMENT

Hispanic occupation of this area. Areas along the escarpment such as Rinconada Canyon provided excellent natural shelter and grazing for livestock.

Historic petroglyphs dating between ca. A.D. 1598 and A.D. 1900 and thought to have been created by the land grant herders using the monument area include livestock brands (symbols and alphanumeric designations), Christian crosses, name initials, and family emblems. These inscriptions are associated with archeological sites such as linear and circular dry-laid (unmortared) masonry wall alignments used as shelters and livestock corrals. Herding sites also include

stone and brush corrals, walls, cairns, campsites, lambing pens, debris scatters and dumps, and brands and initials etched into rocks along the escarpment. It is clear that before about 1950, most activities in the monument area related to herding and ranching. Several structural remains, including footings and walls, reflect brief, scattered occupation of the area during the late 19th or first half of the 20th century.

Eighty-seven historic site components date to World War II and later. Of these, two are shooting range targets and eight are military features such as concrete "dummy bombs."

NATURAL RESOURCES

AIR QUALITY

Air quality is an important resource that directly affects the visitor experience. The Clean Air Act (42 USC 7401 et seq.) was amended in 1977 to, among other things, preserve, protect, and enhance the air quality in national parks, wilderness areas, and other nationally significant areas — such as Petroglyph National Monument. The monument is designated as a class II clean air area under the 1977 amendments. Class II designation permits modest industrial growth in the vicinity of the monument, but the air quality standards (increments) established for class II areas are still more stringent than the national ambient air quality standards (NAAQS). The Clean Air Act was amended again in 1990, and those amendments retained and enhanced the park and wilderness protection provisions.

Petroglyph National Monument is in the Albuquerque-Mid Rio Grande Intrastate Air Quality Control Region in New Mexico. As of July 1993, this region is maintaining the national ambient air quality standards for all regulated air pollutants except carbon monoxide; the region is classified as nonattainment for carbon monoxide. However, this status may soon be reviewed and changed to reflect three consecutive years without violation of these standards. According to Steven W. Walker, manager, Air Pollution Control Division, Albuquerque Environmental Health Department, stationary sources account for about 5% of the air pollution in this air quality control region, and automobile and other mobile sources account for the rest. There are no major stationary sources on the west side of the river near the monument. The city maintains 11 monitoring sites, which measure carbon monoxide, ozone,

inhalable (fine) particles, and oxides of nitrogen. The nearest monitoring site to the monument is near the intersection of Coors and Corrales Roads (pers. comm. 12/21/93.)

Ozone, a secondary air pollutant that results from the chemical transformation of volatile organic compounds (hydrocarbons) and oxides of nitrogen in the presence of sunlight, is a growing problem in Albuquerque. The street system near the monument currently does not allow efficient traffic movement, resulting in increased auto emissions and higher ozone concentrations (pers. comm. 12/21/93.)

NOISE

Noise levels in the monument vary depending on time, wind direction, and location. In the interior of the Piedras Marcadas and Rinconada Canyons there is generally far less noise than at the base of the escarpment near adjacent developments and above the escarpment near the model airplane field. Airplanes landing and taking off from the Double Eagle II Airport are other sources of noise in the monument.

Noise levels were identified at several locations in or near the monument in a study done for the *Unser Middle Transportation Corridor Study, Final Environmental Impact Statement* (Leedshill-Herkenhoff, Inc. 1992). Background noise was identified from distant traffic, aircraft flyovers, barking dogs, and transformer noise. A study conducted by monument staff in 1993, 1995, and 1996 measured 21 sites within the monument for level and source of noise present. Of the 21 sites measured, Boca Negra Canyon and the Las Imagines Visitor Center had the highest noise levels

(ranging from 48–60 decibels) , and those with the lowest levels being the inner Rinconada and Piedras Marcadas Canyons (ranging from 32–47 decibels). Aircraft activity was noticed most often at the northern geologic window and Bond Volcano. Other urban-related noise was evident at almost all locations below the escarpment with the exception of the Piedras Marcadas Canyon and the inner Rinconada Canyon. Noise measurements have not been taken at Mesa Prieta or the southern geologic window.

VISUAL RESOURCES

The mesa top offers panoramic views of Albuquerque and the surrounding environment. Western views encompass the volcanic cones. From the volcanic cones the landscape opens outward to the valley of the Rio Puerco, with Mt. Taylor (north of Grants) visible in the distance. Eastern views include the city, the cottonwood forest lining the Rio Grande (the Bosque), and further east the Sandia and Manzano Mountains. Views to the north include the Ortiz, Sangre de Cristo, and Jemez Mountains. The face of the escarpment generally forecloses vistas from the base, but the southern volcanoes can be seen from Rinconada Canyon. From the escarpment base the views to the east of the Bosque and the Sandia Mountains are often blocked by adjacent development. However, from the mesa top adjacent residential development is less prominent. In the lower Piedras Marcadas and Rinconada Canyons, the walls block all but eastern views; in contrast, a series of rolling ridges at the base of Mesa Prieta block all views of the city, creating a sense of isolation.

Another major aspect of the visual quality of the monument is the importance of the mesa, escarpment, and volcanoes as part of the view from Albuquerque. The

monument is a major landscape feature that helps to frame the city.

Several features affect the scenic quality. Three major transmission lines, owned by Public Service Company of New Mexico, Plains Electric Coop, and El Paso Electric, cross through the monument. These lines provide power to Albuquerque from the Four Corners area. A major substation is also on the southeastern edge of the monument, as is a large water tank.

Several residential developments abut the monument and are clearly visible from the monument, including Santa Fe Village, High Range, Shenandoah, and Las Marcadas. Unser Boulevard runs along the base of the escarpment and there are plans for Unser to cross through the monument. Atrisco Drive is a major cut in the escarpment; eroded trails on the escarpment are also clearly visible at Lava Shadows, just south of Boca Negra and adjacent to many of the neighborhoods. Extensive dumping has occurred at the west end of the Piedras Marcadas Canyon. Sporadic dumping has occurred along dirt roads adjacent to the monument. There are scars from off-road vehicles and ranching roads throughout the monument.

Other developments in the future could affect scenic views, such as development of the Westland Development Corporation, Inc. lands to the south, expansion of the Double Eagle II Airport, and development of the Volcano Cliffs, Shenandoah, and Las Marcadas subdivisions.

The Piedras Marcadas Pueblo ruin has vacant land around it except for a few residences and a bank. The escarpment can be seen from the site, as well as the Rio Grande valley and the Sandia Mountains. Several development proposals are under consideration by the city for high density housing near the site.

GEOLOGY

Petroglyph National Monument lies within the Albuquerque Basin, one of the world's great troughs. The basin has been subsiding over the past 10 million years and filling with sediment eroded from surrounding regions. The Santa Fe formation, which underlies the basalt and other surface deposits on the mesa and terraces at the base of the escarpment, accounts for most of the first several thousand feet of sediment. It consists primarily of unconsolidated to loosely consolidated fine-grained sand, silt, gravel, and clay deposited in the Rio Grande depression. The gravel includes quartzite, quartz, chalcedony, chert, petrified wood, rhyolite, basalt, and granite cobbles.

The basalt in the monument was deposited approximately 190,000 years ago (\pm 40,000 years) (Bachman & Menert 1978), when molten lava rose through a fissure in the uplifted mesa and flowed east toward the ancestral Rio Grande. Because of the difficulty in dating geologically recent basalt, it is possible that the monument lava flows are as young as 110,000 years old (University of New Mexico, John Geisman, geology professor, pers. comm. 1994). Six separate flows erupted in rapid succession. The earlier flows were relatively fluid and may have reached the river. Later flows were more viscous and moved only a few hundred feet from the fissure. The last series of small, explosive eruptions built up the five volcanic cinder cones that are visible today along the original fissure as well as numerous smaller cinder outcrops called spatter cones or nubbins.

The basalt caprock, varying from 2 feet to more than 38 feet thick (Vineyard & Associates Inc. 1992), has been undercut by weathering and modern streams, exposing underlying sands and gravels. The escarpment is retreating slowly to the west as

these less-resistant sediments erode and blocks of basalt at the rim break along joints and tumble down the steep slope.

At Mesa Prieta, Rinconada Mesa, and Marsh Peninsula, narrow promontories of lava rock jut out from the escarpment. These reveal where lava followed ancient streambeds. The lava here was thicker and more resistant to erosion than the surrounding materials.

The true color of the west mesa basalt is a light gray that can be seen on rocks that have chipped or cracked surfaces. When the rock surfaces are exposed to air over time they become coated with a thin, black layer of iron and manganese. This is called "desert varnish." (There is also evidence that desert varnish can be formed by manganese-oxidizing bacteria.) This was the surface most frequently used for carving the petroglyphs. Thus, to make a petroglyph, the rock surface with the desert varnish patina was pecked, chipped, scratched, or abraded in a manner that removed the desert varnish and exposed the lighter gray color of the basalt. When the basalt boulders are turned over, however, the bottoms are crusted with a layer of white calcium carbonate or caliche. The white surfaces of overturned boulders stand out in stark contrast to their dark surroundings.

The northern and southern geologic windows in the middle of the west mesa are believed to have been hills of soft sedimentary materials (they could have been sand dunes) that were surrounded by the lava flows. The windows formed when these sedimentary hills were eroded away by the Boca Negra arroyo, leaving depressions in the terrain. These depressions reveal different lava flows and the underlying sediments, providing a window into the geologic past. There is a "middle" window that is not within the monument because there are few petroglyphs, there

are no other sites of cultural value or significance, and the site has been severely impacted by illegal dumping, offroad vehicle use, vandalism.

The five volcanic cones — JA, Black, Vulcan, Bond, and Butte — are extinct. JA, Black, and Vulcan are the highest cones and illustrate clearly the characteristics of the final eruptions. The sides of JA and Vulcan are composed in some places of crumbly cinder and in others of dense lava, reflecting alternating cinder eruptions and viscous lava flows. JA contains the most diverse, colorful mixtures of lava, spatter, and cinder of all the cones. It also has a small lava cave, "dribble flows" that resemble candlewax in form and behavior, and a tongue-shaped lava flow that formed when the lava in the crater broke through the rim.

The monument lies within the Albuquerque Basin, part of the Rio Grande Rift Zone. The Rio Grande Rift Zone is a major geologic feature in North America that consists of a series of large grabens.

Grabens are elongate, depressed portions of the crust bounded by faults on the long sides. The Albuquerque Basin has been subsiding over the past 10 million years and continues to subside today. In the last 100 years there have been several hundred earthquakes in the Rio Grande rift, but most rarely exceed a magnitude of 3 on the Richter scale; none have exceeded magnitude 5.

The Albuquerque Basin has been filling with sediments eroded from the surrounding mountains and upland areas. The Santa Fe formation accounts for most of the several thousand feet of sediment that underlies the basalts and other relatively thin surface deposits on the mesa and terraces at the base of the escarpment. The Santa Fe consists of unconsolidated to weakly consolidated fine-grained sand silt, gravel, and clay. The gravels consist of

quartzite, quartz, chalcedony, chert, petrified wood, rhyolite, basalt, and granite cobbles.

The only known mineral resources in the Albuquerque area are scoria (loose cinder-like lava) and sand and gravel. (Sources: National Park Service 1988; Schmader 1988; City of Albuquerque 1987; MTK Inc. 1991) Past use of the monument included mining of scoria near the volcanoes. Mining no longer occurs in the monument; however, abandoned pits remain.

SOILS

The common parent materials for all of the soils found in the monument are basalt and fine eolian and alluvial silt and sand. Sand is common in the area and is frequently deposited by wind. On the mesa top, soil varies in depth from zero on the escarpment rim and volcanic cones to more than 5 feet in broad areas of little slope.

Five major soil types overlie the basalt along the upper edge of the escarpment. The predominant type is Alemeda sandy loam, a well-drained soil that occurs on slopes of 0% to 5% from the Piedras Marcadas Canyon to Mesa Prieta. The fine sandy loams of the Madurez-Wink association are deep and well-drained. They occur on slopes of 1% to 7% along the upper edge of the escarpment south of Boca Negra to Marsh Peninsula and north of Mesa Prieta. The Akela-Rock outcrop complex consists of rock outcrops and coarse, gravel loam; basalt is exposed throughout 20% of the complex. It occurs on slopes of 1% to 9% along the upper edge of the escarpment north of Boca Negra and north of Rinconada Canyon.

The rock outcrop-Akela complex is on the volcanic cinder cones, on 10% to 50% slopes. The Akela soil component, a stony

sand loam, is in areas between the rock outcrops. The Latene sandy loam, a deep, well-drained soil, occurs on slopes of 1% to 5% along the upper edge of the escarpment south of Boca Negra. The face of the escarpment is predominately the Kokan-Rock outcrop association. The Kokan soil component is a gravelly sand that occurs on slopes of 25% to 45% near the base of the escarpment.

The predominant soil association along the base of the escarpment is the Bluepoint-Kokan association. Both of these sand/gravel loams are deep and very well drained. The Kokan component occurs on slopes of 15% to 40%, while the Bluepoint component occurs on slopes of 5% to 15%. Bluepoint loamy fine sand occurs on slopes of 1% to 9% at the base of the escarpment in the Piedras Marcadas Canyon area.

Many of the monument's soils have development constraints. Vertical joints along the rim of the escarpment are planes of weakness, and as the soft sediments below the basalt are weakened by water passing down the joints, blocks of rock detach and roll down the slope. The mesa-top soils tend to be shallow with low density and are susceptible to wind erosion, which limits their use for developments. Piping (formation of horizontal conduits below the surface) could be a problem if soils are locally saturated for extended periods.

The soils below the escarpment also have characteristics that can limit development. Especially along the northern and central parts of the escarpment, the soil is fine silt and sand, which is highly erodible, especially on steep slopes.

There are no prime or unique agricultural lands, as defined by the U.S. Department of Agriculture, Soil Conservation Service, in Petroglyph National Monument (Soil

Conservation Service, J. Warner, pers. comm. 1992). (Sources: National Park Service 1988; U.S. Department of Agriculture, Soil Conservation Service 1977; City of Albuquerque 1987).

WATER RESOURCES

There is no standing surface water in the monument, although there are two relatively small playas (closed basins with no outfalls) in the Piedras Marcadas Canyon area and one in the Lava Shadows area. During small storms these playas fill with water; however, in larger storms the playas overflow to adjacent watersheds that drain to the Rio Grande.

The area west of the escarpment can be generally characterized as having broad drainage swales with several intermittent streams or arroyos. Seven arroyos and their branches drain the escarpment: Piedras Marcadas, Mariposa, Boca Negra, San Antonio, Rinconada, Ladera, and Mirehaven. These arroyos can be grouped into four major watersheds: Piedras Marcadas, Mariposa/Boca Negra, San Antonio, and Ladera. All of the arroyos flow in an eastward or southeastward direction to one of several escarpment crossings. Below the escarpment, storm runoff flows through city, Albuquerque Metropolitan Arroyo Flood Control Authority, and Middle Rio Grande Conservancy District facilities and eventually drains into the Rio Grande.

In semiarid climates, arroyos generally carry large amounts of sediments with rainfall runoff. Most sediment is picked up from the arroyos' banks and beds along steep or narrow reaches where velocities are high and deposited at a point where the arroyos widen out or the slopes are milder. There is abundant evidence of historical flows scouring the escarpment

where arroyos cross the escarpment as part of a natural process.

Erosion damage on the escarpment is also occurring due to development adjacent to the monument, which has affected the area's drainage patterns and increased runoff above historic rates. In particular, gravel roads adjacent to the monument and informal trails can concentrate and increase runoff to cause erosion of wind-deposited sands along the escarpment.

Grazing on the west mesa, together with the gravel roads, has exacerbated erosion. In some cases, archeological sites in soft sands adjacent to arroyos have been partly destroyed by erosion.

The Rio Grande trough (20,000 feet deep) is a natural underground reservoir for an immense volume of water. The monument is a recharge area for this aquifer. Precipitation permeates through fissures in the basalt flow and enters the thick, porous, Santa Fe formation, through which water moves with relative ease. The rate of recharge is especially high along the base of the escarpment. The depth to groundwater is estimated to be as much as 800 feet below the surface of the mesa above the escarpment, and as little as 160 feet under the surfaces of the terraces below the escarpment.

Groundwater is the sole source of public drinking water supply in Bernalillo County. The water quality is generally good, requiring little treatment before use. In some portions of the county, including the west mesa, the water quality is below acceptable drinking water standards. The city and county have prepared a *Ground-Water Protection Policy and Action Plan* (City of Albuquerque 1993c) to address these issues.

FLOODPLAINS AND WETLANDS

Although the sparse precipitation in most places is almost immediately absorbed by the monument's porous soils, the arroyos can flood during intense summer thunderstorms that can produce more than 1 inch of rainfall in 30 minutes. Dangerous flash floods are possible in the arroyos, which should be considered high hazard areas. The Federal Emergency Management Agency has mapped the monument area for flood insurance rates. Community panels 350002-0020, 021, 0013, 0014, 0007, and 0008 show the 100-year flood boundaries for the monument; 500-year flood boundaries have not been mapped.

All of the arroyos and their branches in the monument have 100-year flood boundaries that generally coincide with the arroyos' banks and average about 100 feet or less in width. The Mirehaven arroyo in the southern tip of the monument, where it bends around the escarpment, has a broader flood boundary, approximately 250 feet in width. There is a much larger 100-year flood boundary north of the training dike at the southern base of the escarpment: at its maximum, the flood boundary is about 1,500 feet wide. Northwest of Butte Volcano there is another relatively large, flat area, about 100 to 700 feet in width, that falls within the Boca Negra north arroyo's 100-year flood boundary. A small portion of the Piedras Marcadas Pueblo ruin area is within the 100-year floodplain of the Piedras Marcadas arroyo, which may have shallow flooding of 1-2 feet.

According to the U.S. Fish and Wildlife Service's national wetlands inventory maps, the monument has wetlands, the vast majority of which coincide with the arroyos and are classified as riverine

intermittent streambeds.¹ There are also small, isolated palustrine scrub-shrub, lacustrine-littoral-unconsolidated bottom, and palustrine-unconsolidated bottom wetlands identified on the maps. (Sources: Leedshill-Herkenhoff, Inc. 1992; Federal Emergency Management Agency National Flood Insurance Program Floodway, Flood Boundary, and Floodway Maps for the City of Albuquerque 1983; U.S. Fish and Wildlife Service National Wetland Inventory maps.)

VEGETATION

Petroglyph National Monument's vegetation has not been completely inventoried. The monument's flora is influenced by the Great Basin Desert, Rocky Mountains, Chihuahuan Desert, Great Plains, and the Rio Grande. Two grassland and two mixed shrub grassland native plant communities were identified in this area by the Soil Conservation Service in 1977 (U.S. Department of Agriculture, Soil Conservation Service 1977). A survey done in 1993 and 1995 identified some species in the monument that are usually found much further south.

Most of the plant communities in the monument have been disturbed by heavy grazing, off-road vehicles, and other human activities. Consequently, many of the monument's prominent plants are exotic species that thrive once an area has been disturbed. These species would seldom be dominant in natural communities. (Russian thistle, snakeweed, and summer-cyprus are three species that may need to be

controlled in the monument.) The vegetation of the northern geologic window is relatively undisturbed. Most of the plant biomass on the mesa top consists of perennial bunchgrasses, with some shrubs and annual plants. Black grama and galleta are the dominant grasses, and saltbush, winterfat, and Apache-plume are the dominant shrubs. In areas where the soil is sandier, the dropseeds and Indian ricegrass are likely to dominate. (Indian ricegrass is particularly common on the deep soils of the geological windows.) In disturbed areas, black grama is less abundant, while sand dropseed and broom snakeweed are more common. Some of the rockier, less accessible areas appear to be close to natural conditions because they have been little disturbed by recent grazing activity.

The arroyos support several species of shrubs and the only tree species found in the monument. Four-wing saltbush tends to be abundant near the arroyos, while Apache-plume lines stretches of the arroyos. Thickets of skunk-bush also occur in arroyos. One-seeded juniper trees define many of the arroyo cuts below the volcanic cones. Some of these juniper may be very old (Paul Knight, botanist, pers. comm. 1992).

The face of the escarpment supports a mixed shrub grassland. Black grama and bush muhly are the dominant grasses, and four-wing saltbush and sand sage are the dominant shrubs. On south-facing slopes the woody shrub *Parthenium incanum* is fairly common, as is at least one species of thin-stemmed brickelbrush. In disturbed

1. The U.S. Fish and Wildlife Service notes that riverine intermittent streams may not meet the definition of wetlands. In addition, it should be noted that the arroyos and playas on the monument are ephemeral and do not stay inundated long enough for hydric soils to evolve or for hydrophytes to establish themselves. Thus, under the hydrology, hydric soil, and hydrophytic vegetation criteria of the *Federal Manual for Identifying Jurisdictional Wetlands* (1989), there are no jurisdictional wetlands in the monument (U.S. Fish and Wildlife Service, Albuquerque, Chuck Mullins, pers. comm., Feb. 28, 1992).

areas along the escarpment, annual species and shrubs increase in number and size. Prickly pear and chub-cholla cacti are present.

A mixed shrub grassland also occurs at the bottom of the escarpment and the sandy flats extending out to the monument boundary (the flats) (see Ecological Zones map). Indian ricegrass and sand sagebrush are normally the dominant species, but grazing and other human activities have reduced the grass and increased such shrubs as sand sagebrush, rabbitbrush, broom snakeweed, and Russian thistle.

Those ecological zones — mesa top, escarpment, escarpment bottom, and flats — create "edge zones" where the zones meet. These edge zones provide a broad variety of microhabitats for plants and animals that prehistoric peoples used. These microhabitats exist partly because the east-facing slopes of the escarpment are sheltered from the prevailing westerly winds and because the black rock holds and disseminates heat from the sun.

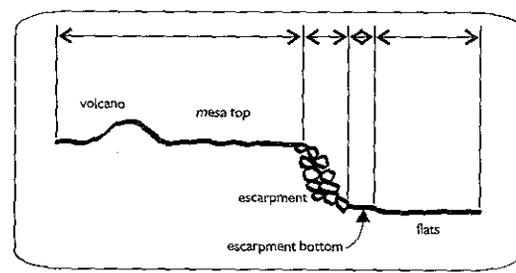
The long narrow zone made up of the escarpment, slope, and sandy dune flats directly below the escarpment are places where many species interact. The dark color of the basalt causes absorption of heat during the daylight hours. The sandy gravel underlying the boulders holds water for several days, especially after summer rainstorms. An environment is created that favors longer growing periods, resulting in denser plant growth that provides good wildlife habitat. This creates an ecotone that is rich in biodiversity compared with the mesa top. The adjacent flatlands also provide good habitat for many species of wildlife, including birds, jackrabbits, coyotes, and rodents.

WILDLIFE

Detailed information is not available on wildlife populations that occur in Petroglyph National Monument. West mesa animals are typical of the upper Chihuahuan Desert. Some animals are year-round residents; others, especially birds, may be present only during the migration or breeding season. Although the monument may appear to not support many wild animals, most mammals and reptiles and some invertebrates are nocturnal — they are not apt to be seen during the day. The populations of some animals, particularly mammals such as pronghorn antelope, are declining on the west mesa as development and human activity increase (National Park Service 1988).

The most common mammals in the monument area are rodents and rabbits. Rodents are found in all of the west mesa habitats. Common species include the whitethroat woodrat, rock squirrel, prairie dogs, kangaroo rat, white-tailed and antelope ground squirrels, rock pocket mouse, deer mouse, and white-footed mouse. Black-tailed jackrabbits and desert cottontail are also common, living in open areas above and below the escarpment.

Other mammals found in the area include bats such as the western pipistrell that roosts in rock cavities along the escarpment. A herd of pronghorn antelope occasionally forages west of the monument. Prairie dogs are found along the western boundary. Other carnivores that may be found in the monument include coyote, badger, and striped skunk. Reptiles are widely distributed throughout the monument. Lizards, such as whiptails, side-blotched, prairie, lesser earless, eastern fence, leopard (collared), and



Ecological Zones
Petroglyph National Monument
 United States Department of the Interior
 National Park Service
 DSC • November 1996 • 354 • 20,011A

Northern
Geologic
Window



Eutite Volcano



Poné Volcano



Vulcan Volcano



Black Volcano



LA Volcano



Mesa
Frieta

Southern
Geologic
Window



Piedras
Marcadas
Canyon

PARADISE BLVD
 PASEO DEL NORTE

Piedras
Marcadas
Fueblo Ruin

Boca
Negra
Cahyon

CALLE NORTERIA
 EAST COURSE ROAD

81ST ST

UNSER BLVD

MONTAÑO
 DELLYNE
 COORS

Lava
Shadows

Rinconada
Canyon

ST. JOSEPH

98TH ST
 UNSER BLVD

40

Rio Grande

To downtown
Albuquerque

-  mesa top
-  escarpment
-  escarpment bottom
-  flats

horned lizards, are plentiful most of the year. Snakes that are common in open areas include the bull snake, western coachwhip, and prairie rattlesnake.

Resident and nonresident birds are also well distributed through the monument. A total of 106 bird species were identified in the monument, primarily along the escarpment, in Piedras Marcadas and Rinconada Canyons and the northern and southern geological window. Some of these are year-round residents, some may be year-round residents, some are summer residents, some are winter residents, and some are migrants. Thirty-five of these species have been observed nesting or are believed to be nesting on the monument (Schwarz 1993). Common nesting species include scaled quail, horned lark, eastern and western meadowlark, rock wren, canyon wren, loggerhead shrike, crissal thrasher, common and Chihuahuan raven, common nighthawk, canyon towhee, rufous-crowned sparrow, and black-throated sparrow.

Great horned owls can often be found on the monument's rocks and cliffs. The red-tailed hawk, northern harrier (winter), and American kestrel are common on the mesa top and in the open areas below. The Mesa Prieta cliffs are good raptor habitat; red-tailed hawks, prairie falcon, and American kestrel may all nest here. An active golden eagle nest was found in the Mesa Prieta area in the mid 1970s.

Insects and other invertebrates are found in all parts of the monument. Several species of spiders, sun spiders (solpugids), and scorpions occupy habitats both in rocks and in open areas. The escarpment supports a thriving population of the common desert millipede *Orthoporus ornatis*. Other numerous invertebrates in the monument include darkling beetles, leafhopper bugs, grasshoppers, camel crickets, and harvester ants. (Sources:

National Park Service 1988; Crawford 1991; Leedshill-Herkenhoff, Inc. 1992; Paul Knight, botanist, pers. comm. 1992; City of Albuquerque 1987; Hart Schwarz, local ornithologist, pers. comm. Jan. 31, 1994.)

THREATENED AND ENDANGERED SPECIES

Of the 13 bird species listed by the U.S. Fish and Wildlife Service as threatened, endangered, or category 2 (those species for which the U.S. Fish and Wildlife Service has information indicating the possible appropriateness of listing but for which further information is still needed) species for Bernalillo County, four species have been seen in the monument — the bald eagle, ferruginous hawk, southwestern willow flycatcher, and whooping crane. Section 7 of the Endangered Species Act does not require protection of category 2 species or their habitat. However, the U.S. Fish and Wildlife Service requests consideration of these species and their habitat, and NPS policy directs that these species be treated as if they are listed species.

The bald eagle is a winter resident in this area, but no nesting habitat occurs in the monument. Whooping cranes were seen migrating through with sandhill cranes in the winter of 1993. The southwestern willow flycatcher was seen in 1990; however, no habitat exists in the monument to support it. The ferruginous hawk, loggerhead shrike, and western burrowing owl are category 2 species. There is potential nesting habitat for the ferruginous hawk in the monument, and the loggerhead shrike is a confirmed nester in the monument. The western burrowing owl has been observed near the monument. Black-footed ferrets historically lived in Bernalillo County, but none have been seen in the county since the 1920s. Black-footed ferrets are listed as endangered on the federal list.

The mountain plover (a category 1 species) has been observed on shortgrass prairie north of Albuquerque and may occur in the short grasses on the monument's mesa top. (Category 1 species are those species for which the U.S. Fish and Wildlife Service has substantial information to support their listing as threatened or endangered and the development and publication of proposed rules for these species are anticipated.) There is a chance the plover could breed in the monument, but more likely it is a migrant.

An unusual millipede, *Toltecolus chihuanus*, is also a category 2 species. This millipede was found in the former Petroglyph State Park and along the south-facing base of the escarpment in Rinconada Canyon. Its only other known occurrence in the world is at the city of Chihuahua, Mexico. The millipede apparently lives in very sheltered areas, beneath volcanic boulders and at the base of cliffs (University of New Mexico, Dr. Clifford Crawford, biologist, pers. comm. 1994).

The state maintains a list of state endangered animals and plants and a list of rare and sensitive plant species. Both the peregrine falcon and grama grass cactus are classified as state endangered species. According to the New Mexico Natural Heritage Program, five plant species classified as rare and sensitive also potentially could occur in the monument:

Santa Fe milkvetch (*Astragalus feensis*), dune unicorn plant (*Proboscidea sabulosa*), Wright's pincushion cactus (*Mammillaria wrightii*), Galisteo sand verbena (*Abronia bigelovii*), and Knight's milkvetch (*Astragalus knightii*).

Santa Fe milkvetch may be present with black grama grass dominating. Dune unicorn plant is not likely to occur this far north (Patricia Barlow, botanist, pers. comm. 1994).

A plant survey for species listed on federal and state lists was conducted during September 1993. This survey included category 2 species because under NPS policy category 2 species are given the same protection as listed species. Of the 14 species known to occur in Bernalillo County, no species were found in the monument. Two cacti species were determined to have the potential to occur in the monument. These were *Pediocactus papyracanthus* (common name grama grass cactus) and *Mammillaria wrightii*, another cactus.

The grama grass cactus is threatened by collection and habitat modification, including grazing activity and trampling. The *Mammillaria wrightii* cactus is protected by state law from unauthorized collection. This species has a wide sporadic distribution and may be in decline due to over-collection and habitat alteration.

REGIONAL AND MONUMENT USE

REGIONAL LAND USE AND REGIONAL VISITOR FACILITIES AND SERVICES

Petroglyph National Monument is bordered by residential developments on the east and northeast and the Double Eagle II Airport (general aviation) on the west.

On the south lies a large tract of undeveloped commercial/residential land. On the north is undeveloped land and a platted subdivision. It is likely that in the future the monument will be completely surrounded by urban development.

SOCIOECONOMIC ENVIRONMENT

County and Regional Characteristics — Overview

Albuquerque has a culturally diverse population. American Indians make up about 3% of the population, and their culture continues to influence modern Albuquerque (as well as the rest of the nation), especially in the areas of fine art and crafts. The Hispanic community comprises about 40% of the area's population. This culture heavily influences the total community in many areas, including architecture, arts, food, and language. Other minorities add to the depth and breadth of the region's cultural diversity.

Albuquerque offers numerous and eclectic cultural activities — from traditional festivals to major sporting events. One of the largest events in the state is the annual Kodak-Albuquerque International Balloon Fiesta that is one of the largest air shows in the world. Albuquerque hosts several arts and crafts fairs as well as the New Mexico State Fair. The metropolitan area

supports a variety of professional dance, music, and theater groups as well as minor league baseball and professional soccer. The city is home to the University of New Mexico. With an enrollment of nearly 25,000, this institution provides a diverse selection of educational and cultural opportunities.

Population

The 1990 census figures place New Mexico's population at 1,519,724. This is an increase of 16.7% over the 1980 figure. Albuquerque is the state's largest city and the 38th largest city in the country. The Albuquerque Metropolitan Area, which includes Bernalillo, Sandoval, and Valencia counties, accounts for 39% of New Mexico's population (see following table). Population growth in the Albuquerque Metropolitan area is highlighted by the growth of the city of Rio Rancho, just north of Albuquerque in Sandoval County, which has more than tripled its population from 1980 to 1990 — from 9,985 to 32,505 (Consensus Planning, Inc. and Cole & Associates 1994). It has been one of the fastest growing communities in the nation.

Economy

Albuquerque's economy is maintaining a pace of slow but steady growth. Non-agricultural employment increased about 2.6% in 1990. This closely matched the performance of the previous years. The area supports a diversified economy including 18 major employers of more than 500 people. The exception to the city's steady growth is the rapid growth of the West Side of Albuquerque and Rio Rancho. Fueled by the development and expansion of Intel Corporation in Rio

TABLE 10. POPULATION AND POPULATION PROJECTIONS

Year	Bernalillo County	Sandoval County	Valencia County	Albuquerque Metro Area	New Mexico
1980	419,700	34,799	30,769	485,268	1,302,894
1990	482,125	63,803	45,479	591,407	1,519,724
1995	518,532	76,719	51,689	646,940	1,643,580
2000	553,500	90,023	58,296	701,819	1,763,742
2005	583,966	104,845	64,946	753,757	1,880,103
2010	612,726	120,852	71,849	805,427	1,996,688
2015	642,709	137,561	79,246	859,516	2,115,878
2020	671,401	154,987	87,125	913,513	2,234,194

SOURCES: Bureau of the Census; Bureau of Business and Economic Research, University of New Mexico.

Rancho, Albuquerque's West Side and Rio Rancho have experienced the rapid development of single-family homes. In January 1994 the West Side represented nearly two-thirds of all building permits issued in the city.

Transportation/Access

Albuquerque and Bernalillo County are served by air, road, and rail transportation systems.

Aviation. The city owns and operates Albuquerque International Airport. The 1,550-acre site is 15 minutes southeast of the central business district and has easy access to the interstate highway system. Eight air carriers provide direct passenger service to 45 cities. More than 100 departures occur daily. In 1989 passenger service was over 4.5 million, and growth is expected to be about 7% per year. Air freight service is provided by 11 carriers. The runways are owned by the city and, by agreement, used by Kirtland Air Force Base. The airfield is capable of handling all types of commercial and military aircraft.

Albuquerque also owns and operates Double Eagle II Airport, a general aviation "reliever," which is due west of the monument. Fixed-base operations were established in 1988. Current flight operations are approximately 37,000 per year and are expected to increase. This airport can accommodate freight operations and aircraft maintenance work.

Coronado Airport is a privately owned facility that is open to the public. Annual flight operations are more than 129,000. This 254-acre facility is adjacent to I-25 and 15 minutes northeast of the central business district.

Highways. Albuquerque has an extensive system of primary and secondary roads. Interstate 25, running north-south, and Interstate 40, running east-west, intersect in the center of town. The area is connected to the entire country by this system of highways.

Freight and passenger traffic are constantly on the move throughout the city and county. More than 40 motor freight carriers operate in the area, providing

access to all national markets. The city owns and operates the Sun Tran bus system. There are more than 30 routes serving all parts of the city.

Interstate bus service is provided by Greyhound-Trailways Bus Lines.

Railroads. The Santa Fe Railway provides mainline daily freight service connecting Albuquerque to all regions of the country. Amtrak provides daily passenger service to Los Angeles and Chicago.

Visitor Services

A full range of visitor services are available in the Albuquerque area. Hotels and motels are numerous. The Albuquerque Convention Center attracts large numbers of visitors year-round. Cultural activities include ballet, opera, symphony orchestra, and live theater. Albuquerque has many fine museums. An introduction to American Indian culture in New Mexico is available at the Indian Pueblo Cultural Center. This cultural attraction/museum is owned and operated collectively by the 19 Pueblo tribes in New Mexico. Shopping opportunities are abundant. The area also has numerous hospitals and related medical facilities.

Recreational opportunities are numerous and varied in the Albuquerque area. Ballooning, camping, golf, hiking, bicycling (touring and mountain), horseback riding, rafting, and snow skiing are a few of the readily available activities. The city offers an outstanding system of city parks; swimming and tennis are two of the popular activities available to the public. The city has one of the largest open space systems in the country, with 22,000 acres of designated open space in the Sandia foothills, Bosque, and along the west mesa.

The city has developed an extensive trail system, comprised of routes on separate rights-of-way and on existing streets, to link various neighborhoods of the city (see Existing and Proposed City Trails map and appendix E for relevant related plans). This trail system provides for commuter and recreational use and connects with the city's extensive open space areas, including the Sandia Mountains, the Rio Grande Bosque, and the west mesa.

Cibola National Forest includes a designated wilderness and provides picnic facilities, a ski area, a snow play area, and many miles of hiking and mountain biking trails.

VISITOR USE STATISTICS AND ANALYSIS

Visitor use (as registered by an inductive loop traffic counter) is reported for Boca Negra Canyon area, which has the most use. Actual numbers of visitors participating in guided tours of Rinconada, Piedras Marcadas, and Mesa Prieta Canyons are also reported. This use amounts to about 9.4% of all recreation visits. At this time, informal use of other areas of the monument is not reported. Therefore, the reported visitation of the monument is less than what is actually occurring.

Reported use of the monument amounted to 48,403 visits in 1990 and 88,059 visits in 1994 (figure A). Relatively, visitor use was lower in January, February, November, and December for both years. October was the busiest month in 1990 and 1994.

Some visitation data are available for the Boca Negra unit of Petroglyph National Monument before June 1990 when this portion of the monument was operated as Indian Petroglyph State Park. Visitation

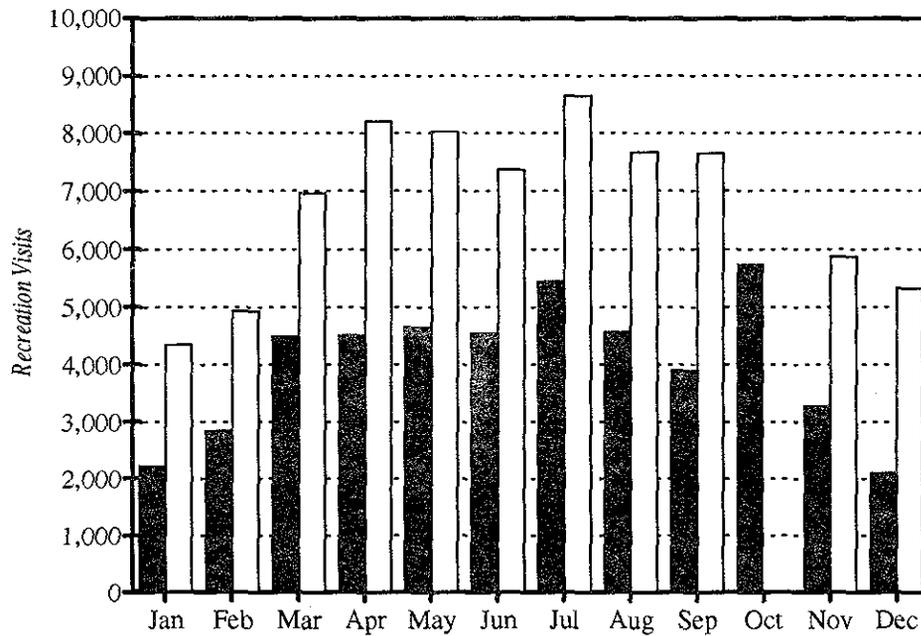


FIGURE A. VISITOR USE OF BOCA NEGRA CANYON BY MONTH FOR 1990 AND 1994

SOURCE: National Park Service, Washington Office, Socioeconomic Studies Division

data for this area for 1985 through 1994 are shown in the following table.

Based on these figures, annual visitation for this area has increased more than fourfold since 1985.

TABLE 11. MONTHLY VISITOR USE DATA FOR INDIAN PETROGLYPH STATE PARK
(BOCA NEGRA UNIT OF PETROGLYPH NATIONAL MONUMENT) —
1985 THROUGH 1993

Month	Number of Visitors						
	1985	1988	1990	1991	1992	1993	1994
January	941	2,120	2,220	2,188	2,710	3,713	4,346
February	893	2,753	2,853	3,288	3,863	3,501	4,940
March	1,868	3,573	4,508	4,738	5,793	6,764	6,962
April	1,844	3,018	4,518	4,483	6,767	9,179	8,204
May	2,012	3,523	4,660	5,273	7,206	9,329	8,030
June	na	3,060	4,563	5,240	6,283	5,323	7,365
July	1,848	3,790	5,455	6,083	7,038	5,160	8,650
August	2,025	3,448	4,575	6,668	7,170	5,280	7,675
September	1,556	3,125	3,908	4,808	6,207	5,186	7,651
October	2,732	4,655	5,740	4,808	7,994	6,413	10,023
November	1,708	2,570	3,290	3,719	4,469	3,444	5,885
December	1,356	2,217	2,113	2,925	2,648	3,053	5,328
TOTAL	18,783 *	37,852	48,403	58,262	68,148	66,345	88,059

SOURCE: City of Albuquerque, Open Space Division, and Petroglyph National Monument

NOTE: The decrease in visitation in summer 1993 was due to the Hantavirus news stories.

* Indian Petroglyph State Park Became the Boca Negra unit of Petroglyph National Monument in July of 1990. Vehicle counts were multiplied by 2.5 persons per vehicle each month to arrive at the figures presented here.

na = Not available, but during June 1984, 1,744 people were reported to have visited the state park.

ENVIRONMENTAL CONSEQUENCES



Rinconada Canyon looking northwest .



Boca Negra arroyo after summer thunderstorm



Santa Fe Village

INTRODUCTION

THE DERIVATION OF IMPACT TOPICS

To compare the alternatives and focus the discussion of potential consequences of implementing the alternatives, specific impact topics were selected based on (1) federal laws, regulations, and executive orders, (2) NPS management policies, (3) knowledge of the resources, (4) resource studies, and (5) concerns expressed by the public, including special interest groups, the Pueblos, and other agencies, including the city and state, during scoping (see the "Consultation and Coordination" section for further discussion of scoping). A brief rationale for the selection of each impact topic is given below.

The cultural resource impacts have been divided into three sections — petroglyphs, the cultural landscape, and archeological sites — only to help organize the impact discussion. By definition, petroglyphs are archeological sites, and individual boulders containing petroglyphs are part of the larger archeological site. Archeological features such as grinding areas are often found near the petroglyphs. In turn, the combination of natural and cultural features (including the petroglyphs) and the meaning they possess for American Indians and land grant heirs make up the monument's cultural landscape.

Petroglyphs The national monument was established specifically to protect this irreplaceable resource.

Cultural Landscape The cultural landscape includes both natural and cultural features and provides the broad context within which these resources can be understood. The development and use of the monument could affect this broad context.

Archeological Sites The National Historic Preservation Act and NPS planning and cultural resource guidelines call for the consideration and protection of historic properties in development proposals. As defined by the National Historic Preservation Act, the term historic properties refers to all cultural resources, including prehistoric archeological sites, cultural landscapes, and historic sites eligible for or listed on the National Register of Historic Places. The evaluation of potential impacts of proposed actions on historic properties is required, as is attention to the provisions of the Native American Graves Protection and Repatriation Act for sites where burials may be present.

Values Held by Culturally Affiliated Groups The Pueblo Indians and the heirs of the Atrisco land grant regard the monument as a place of traditional and cultural use. Use by these peoples could be affected by the development and visitor use of the monument.

Air Quality The Clean Air Act requires federal land managers to protect park air quality, and NPS management policies address the need to analyze air quality during planning. Petroglyph National Monument is designated as a class II area. Albuquerque is currently not in conformity for carbon monoxide according to the Environmental Protection Agency's new regulations. However, this status may soon be reviewed and changed to reflect three consecutive years without violation of these standards. Therefore, the impacts of increased visitor traffic and monument staff are analyzed.

Scenic Resources A fundamental park purpose, according to the NPS organic

act, is to conserve the scenery. The purpose and significance statements that were developed for the monument also recognize the value of the monument's long vistas, both from within and of the monument. Concerns about the views of the city from the mesa top were raised during scoping.

Threatened and Endangered Species

The Endangered Species Act requires an examination of the impacts on all federally listed threatened and endangered species. NPS policy also requires the examination of the impacts on state-listed threatened or endangered species and federal candidate species.

Natural Drainage Patterns and Features

The arid environment, storms, and the state and local regulations pertaining to stormwater drainage require the examination of impacts on natural drainage patterns and features.

Biological Diversity NPS management policies call for protecting the biological diversity within NPS areas. This issue was also raised during scoping.

Soils Soils are important resources because they support plant and wildlife habitat that exists in the national monument. Proposed development and visitor activity would affect soils.

Local Visitors and Adjacent Private Property Owners

This category includes four concerns that were raised during scoping — additional traffic from visitors on neighborhood streets adjacent to the monument, visitors engaging in monument activities close to private lands, changes in existing monument land uses (dog walking, bicycling, and horseback riding), and boundary adjustments.

National Visitors to Petroglyph National Monument The proposed

action and alternatives would affect how visitors from beyond the Albuquerque area understand and appreciate monument resources.

Regional and Albuquerque Economy

National monuments have the potential to contribute to the local and regional economy in various ways, including employment, operational expenditures, and land acquisition. Public lands also can have secondary effects on adjacent lands that could affect land values, the nature of adjacent land development, and local plans. The regional economy could be affected by increased tourism, changes in land values, and the quality of life related to protecting the natural and cultural resources of the monument. The issue is how to measure, evaluate, and quantify these economic impacts.

Energy Consumption The National Environmental Policy Act requires a discussion of the energy requirements of the alternatives. This impact topic includes potential solar energy use.

Noise Levels Additional noise levels that would be generated during construction and operation within the monument are assessed.

CUMULATIVE IMPACTS OF UNSER EXTENSION, RECREATION TRAIL, AND UTILITY CORRIDOR

The extension of Unser Boulevard and the modifications to the existing disturbed area within Boca Negra Canyon by the city for the recreation trail and utility corridor are consistent with NPS policies and this plan. Therefore, the general cumulative impacts of these actions are addressed in the appropriate impact sections.

IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

The following explains the rationale for dismissing specific topics from further consideration.

Impacts on Floodplains Executive Order 11988 requires an examination of the impacts on floodplains and of potential risks involved with placing facilities within floodplains. No floodplains within the monument would be adversely impacted by development. All development has been sited to avoid the 100-year floodplain. In accordance with NPS regulations, all hazardous materials (such as found in maintenance areas) and cultural resource collections, including artifacts, would be stored outside the 500-year floodplain. The 500-year floodplain would be delineated during the design phase.

Impacts on Wetlands Executive Order 11990 and NPS management policies require an examination of the impacts on wetlands. Potential wetlands identified by the U.S. Fish and Wildlife Service are associated with the arroyos throughout the monument. These wetlands are intermittent streams that do not carry water most of the year but do carry water during storms. The national wetlands inventory maps indicate that although the maps identify these streams as wetlands, the assumption should not be made that they all qualify as wetlands. Additional fieldwork, including delineation of wetlands in areas proposed for development, would be completed during design, which would ensure that all development avoids adverse effects on wetlands.

Impacts on Prime and Unique Farmlands There are no prime and unique farmlands as defined by the U.S. Department of Agriculture within the

monument boundary; thus there would be no impacts on these lands.

Paseo del Norte The National Park Service has determined that there is no monument purpose for constructing Paseo del Norte. Therefore, according to the laws that apply to units of the national park system, there is no authority to allow Paseo del Norte to be constructed through the monument. Therefore, the presence or absence of Paseo del Norte is not being analyzed in this *General Management Plan / Development Concept Plan / Environmental Impact Statement*.

Existing City Plans The proposed action and alternatives do not affect the city's existing approved plans. The city's plans were affected by the congressional action designating this area as a national monument in June 1990 and the signing of the binding agreement in 1991. Congressional actions are not subject to the National Environmental Policy Act. Therefore, the impacts of the designation of the monument on the city's plans are not evaluated in this management plan / environmental impact statement.

NEPA AND SECTION 106 GUIDANCE FOR ANALYZING IMPACTS ON CULTURAL RESOURCES

Impacts on cultural resources from actions recommended in this management plan and by other outside influences are analyzed according to the National Environmental Policy Act. Additionally, section 106 of the National Historic Preservation Act requires agencies to consider the effects of their actions on historic properties. Regulations contained in 36 CFR 800 issued by the Advisory Council on Historic Preservation (ACHP) direct this evaluation process for federal agencies. Guidance is also provided by the

1990 servicewide programmatic agreement among the National Park Service, the National Conference of State Historic Preservation Officers, and the Advisory Council on Historic Preservation as well as NPS *Management Policies* and NPS 28, *Cultural Resource Management Guidelines*.

To comply with sections 106 and 110 of the National Historic Preservation Act, cultural resources are inventoried and evaluated to identify historic properties on or eligible for the national register. Following the identification of properties either on the register or that have potential to be on the register, the area of potential effect, in this case the entire monument, is defined. All proposed actions are analyzed in consultation with the state historic preservation officer and the Advisory Council on Historic Preservation to determine if historic properties will be affected.

If the National Park Service determines that there is no effect on historic properties, this decision is documented by the National Park Service (through completion of an assessment of effect form and notification of the state historic preservation office) and the project may proceed. If the proposed action is determined to have an effect on historic properties (and this effect may be beneficial), the project is further analyzed to determine whether or not it would have an adverse effect and require further 106 compliance actions.

According to section 106, an effect on a significant (eligible for the national register) cultural resource occurs if the undertaking (the proposed action) has the potential of changing in any way the characteristics that qualify that property for inclusion on the National Register of Historic Places. The entire area

encompassed within the monument was added to the National Register of Historic Places in 1990 through the passage of the monument legislation by Congress. Separate national register nominations had been prepared previously for Boca Negra Cave, Piedras Marcadas Pueblo ruin, and Las Imágenes Archeological District (Albuquerque west mesa escarpment). Section 106 also requires consultation with American Indians.

The National Environmental Policy Act directs agencies to analyze the direct, indirect, and cumulative impacts of their actions on resources, including cultural resources. Where such impacts might occur, agencies are required to consult with the advisory council, the state historic preservation officer, and the American Indians. Direct impacts are those that are likely to occur from construction. Indirect impacts are those likely to occur over time, during the operation of the monument facilities, such as vandalism, excavation of sites outside the monument, and illegal relic collection. Cumulative impacts are impacts from the proposed actions combined with impacts from actions proposed by others on resources in and outside of the monument.

In accordance with the National Environmental Policy Act, the analysis below discusses the direct, indirect, and cumulative impacts on resources in the national monument from proposed actions in the alternatives. In accordance with section 106 and with procedures established under the programmatic agreement, tables 12, 16, 18, and 20 list the monument's prehistoric and historic properties, the effect upon those properties, the proposed determination of effect, proposed mitigating measures, and further section 106 compliance required.

IMPACTS COMMON TO ALL ALTERNATIVES

The following section, as required by the National Environmental Policy Act, describes the impacts of implementing the four alternatives. Impacts common to all alternatives are described first. Cumulative impacts are described only for topics where there are cumulative impacts.

IMPACTS ON PETROGLYPHS, ARCHEOLOGICAL SITES, AND THE CULTURAL LANDSCAPE

There would be no direct adverse effects on petroglyphs. Under no circumstances would boulders with petroglyphs be moved.

Appropriate siting and design (with compatible materials) of facilities and trails would

- reduce the impacts of development
- minimize visual impacts on petroglyphs and their context and on the cultural landscape and maintain those characteristics that make these resources significant
- avoid direct negative impacts on most archeological sites; however, as outlined in the 1990 programmatic agreement, the Advisory Council on Historic Preservation, the state historic preservation officer, and concerned Pueblo Indians would be invited to participate in the design and construction process to ensure resource protection. If it were impossible to avoid sites, further mitigative measures would be developed before final design, in consultation with the state historic preservation officer, the advisory council, and concerned Pueblo Indians. These measures would be implemented before design and before undertaking any ground-disturbing activities.

Provisions for protecting previously unknown sites encountered during construction, including stipulations required by the Native American Graves Protection and Repatriation Act, would be included in construction documents. All construction would be monitored.

Constructing new trails and rehabilitating existing trails would generally have a positive effect on cultural resources by directing visitor use.

NPS experience in other areas has shown that by establishing an increased presence, directing and controlling visitor use, and providing an experience that allows visitors access but prevents actual contact with petroglyphs provides better protection than uncontrolled use. However, focusing visitor use in areas that previously had no visitor facilities could potentially result in some increased damage to cultural resources.

Having frequent patrols, establishing an increased presence, controlling visitor use, enforcing regulations, enhancing visitor education, and educating schoolchildren and other groups would

- provide better protection for petroglyphs, archeological sites, and the cultural landscape
- educate all visitors about the significance of the resources and stress the importance of preservation, which would provide better protection for petroglyphs, archeological sites, and the cultural landscape
- help prevent illegal collection activities, the trampling of sites, and the creation of social trails
- help minimize indirect impacts on archeological sites and petroglyphs that

might occur from concentrated visitor use in some areas

The identification and evaluation of cultural resources would help prevent negative direct or indirect impacts on archeological sites and the cultural landscape.

Monitoring resource conditions and responding to potential threats, along with the development of designated trails and visitor facilities, would

- minimize adverse impacts on petroglyphs from increased visitation
- minimize most of the potential impacts that could over time gradually diminish the integrity and scientific value of the petroglyphs, archeological sites, cultural landscape, and resources traditionally gathered by Pueblo or land grant heir groups

Constructing utility lines, access roads, and other supporting facilities for the various areas of development would have the potential to adversely affect archeological sites and the cultural landscape. No proposals have been submitted; proposed locations are not known.

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.

Accomplishing reclamation work while avoiding disturbance to subsurface archeological sites or resources would reduce the potential for negative impacts.

A wide variety of sites, from Archaic lithic debris to Hispanic corrals and World War II bomb targets have been found on the mesa top, including the geologic windows.

The proper location of trails would help avoid these sites.

The effects of vibrations and material compaction from nearby construction activity on petroglyphs and archeological sites are unknown. Construction and material compaction techniques would be designed to avoid adverse impacts on petroglyphs and archeological sites.

Developing trails and viewing areas would have a positive effect upon the petroglyphs and their context by providing established viewing areas and by removing trails that wind through and between petroglyph concentrations or are too close to the features. Requiring visitors to stay on established trails and keeping trails at least arm's length back from petroglyphs, combined with regular ranger patrols, would have a positive impact on petroglyphs by decreasing the potential for visitors to touch the petroglyphs or scratch the rocks.

Localized pollution from buses and automobiles might have as yet undetermined effects on the patina into which the petroglyphs are carved. Potential adverse effects from pollution would be minimized by requiring buses to turn off their engines while parked. General urban air quality might also have a negative impact on the patina. Preparing the site and constructing buildings, roads, and trails could disturb or destroy surface and subsurface materials. The reclamation of roads that are on archeological sites could result in additional disturbance. Potential adverse effects on archeological sites would be mitigated by data recovery and by having an archeologist present during ground-disturbing activities that might uncover archeological sites.

IMPACTS ON VALUES HELD BY CULTURALLY AFFILIATED GROUPS

Consultation on facility siting and design with the American Indian Pueblo community and the heirs of the Atrisco land grant would help ensure that new facilities, exhibits, and interpretive programs avoid areas of significance to these groups and would be compatible with the cultural landscape and traditional practices.

Special provisions outlined in the plan, such as temporary closures and the training of personnel, would provide privacy to conduct traditional and cultural activities and minimize negative impacts. Consultation with culturally affiliated groups would ensure that interpretive media and programs present a culturally sensitive and accurate picture of traditional values. Training monument staff in culturally sensitive interpretive messages would reduce negative impacts on cultures affiliated with the monument. Consulting with Pueblo Indians and heirs of the Atrisco land grant would help ensure the preservation and continuation of the resources traditionally gathered by these groups.

The reclamation or revegetation of informal trails or previous development would be preceded by consultation to identify the resources traditionally gathered by Pueblo Indians and heirs of the Atrisco land grant to ensure that there is no negative impact.

IMPACTS ON THREATENED AND ENDANGERED SPECIES

Eagles and whooping cranes (species on the federal list of threatened and

endangered species) migrating through the monument would not be affected. Black-footed ferrets, also listed on the federal list, historically occurred in Bernalillo County, but have not been seen in the county since the 1920s.

The millipede *Toltecolus chihuuanus*, a category 2 species (being considered for listing), would not be adversely affected by NPS actions under this alternative (University of New Mexico, Cliff Crawford, biologist, pers. comm. April 1994).

Fencing the monument would not present a barrier to wildlife.

There might be cumulative impacts on the *Toltecolus chihuuanus* resulting from the city's construction of Unser Boulevard across the escarpment. Site-specific surveys must be conducted before construction to ensure that no threatened or endangered species were present.

IMPACTS ON NATURAL DRAINAGE PATTERNS AND FEATURES

Stormwater management, which would prevent degradation of monument resources and ensure that natural drainage patterns and features, would be maintained. Cooperation by the Park Service, the city, and the Albuquerque Metropolitan Arroyo Flood Control Authority, would have positive impacts on monument drainage features, soils, vegetation, and wildlife.

IMPACTS OF IMPLEMENTING ALTERNATIVE 1 — PROPOSED ACTION

Note: When no cumulative impacts would occur for a specific topic, this heading has been deleted from the discussion.

IMPACTS ON CULTURAL RESOURCES

Methods for Analyzing Impacts on Cultural Resources

Areas proposed for development were inventoried to identify cultural resources. Most sites along the escarpment are included within the national register district or as part of a separate nomination and are considered contributing elements.

Some sites have not yet been evaluated for national register eligibility. However, for the purposes of this document, all potentially affected sites are treated as eligible. Maps showing the locations of petroglyph concentrations, cultural landscape resources, and archeological sites were compared with the development and visitor activity plans. The resulting information was incorporated into tables 12, 16, 18, and 20 and the following impact analysis. The effects of proposed alternatives on resources were assessed according to the advisory council's procedures (36 CFR 800.9), and preliminary conclusions regarding effects are included in the tables listed above. As more detailed site plans were prepared, further analysis and consultation would be conducted.

Cultural resource surveys of monument resources are continuing, and newly discovered sites would be evaluated for the national register as part of the inventory process. When specific information is available on proposed developments (but before final design and implementing actions that might affect potentially eligible resources), appropriate avoidance or

mitigating measures would be developed in consultation with the state historic preservation officer, concerned Pueblo Indians, and the Advisory Council on Historic Preservation.

Impact Analysis on Petroglyphs

The redesign of the trails and viewing areas at Boca Negra Canyon would have a positive effect upon the petroglyphs and their context by providing established viewing areas and by removing trails that wind through and between petroglyph concentrations or are too close to the features.

Locating facilities within the four main canyons would increase visitation in areas where little visitation has occurred, except in Boca Negra Canyon (the current primary visitor use area), which could result in some increased risk for vandalism or inadvertent damage to the petroglyphs.

The petroglyph research function would promote research regarding and public education and appreciation of the petroglyphs. Monument resource management and center staff would develop viable ways to conserve the petroglyphs and repair vandalism — all of which would help prevent adverse impacts on petroglyphs.

Impact Analysis on Archeological Sites

The construction of a parking area, visitor contact facility, and an access road for trails near Mesa Prieta and proposed development in other areas (Lava Shadows and Rinconada, Boca Negra, and Piedras Marcadas Canyons, neighborhood access points, the volcanoes, 81st Street overlook,

and mesa top) would be sited to avoid or minimize direct negative impacts on archeological sites (see following table).

Allowing horseback riding within the monument increases the risk of damage to cultural resources by horses straying off the trail and trampling sites. Negative impacts might also occur from bicyclists straying off the trail. Both activities create a churning effect that destroys soil strata and displaces and breaks artifacts. The designation of trails would focus horseback and bicycle riding activities and help protect archeological sites from illegal collecting and site disturbance. Frequent monitoring of areas along the trails, and implementing protective measures in areas where straying is apparent, would help reduce negative impacts on sites.

At the Piedras Marcadas Pueblo ruin, designing appropriate facilities, monitoring resources and visitor use during and after the development of visitor facilities, and developing site protection measures would help prevent negative impacts on the archeological resources. The use of non-invasive archeological techniques would avoid the destruction of archeological data and prevent the disturbance of areas of traditional and cultural use by the Pueblo Indians.

Consulting with the Pueblo Indians, especially with regard to the Piedras Marcadas Pueblo ruin, would also increase participation and involvement in monument interpretation and resource protection programs, which would also help reduce impacts.

Reclaiming abandoned mine sites would have a slight potential to adversely impact unknown archeological resources.

Impact Analysis on the Cultural Landscape

Facilities would intrude on the cultural landscape and compromise its visual integrity, including those qualities of feeling, association, and setting that contribute to its potential national register properties. Designing and locating facilities to minimize visual intrusion on the cultural landscape and to maintain those characteristics that make it significant would reduce the adverse impacts of development. Such design would be especially important on the mesa near the volcanoes, at Mesa Prieta, and at Piedras Marcadas and Rinconada Canyons where unobstructed views of the Sandia Mountains and valley below are important.

The construction of trails, access road, and parking adjacent to the volcanoes, one of the major character-defining elements of the cultural landscape, would require special attention and consultation with the state historic preservation officer, the Advisory Council on Historic Preservation, and the Pueblos before and during construction to avoid impacts. The modification or removal of significant character-defining features identified in the cultural landscape overview would be avoided to the extent possible and practical.

Existing developments at the volcanoes area contribute some noise and visual intrusion into the cultural landscape; proposed development would result in more visitor use and more intrusive noise and visual clutter from vehicles.

Developing a trail to the top of Black Volcano and prohibiting use on the other volcanoes would have a beneficial effect by eliminating use on the other volcanoes that are considered sensitive areas by the Pueblo peoples.

ENVIRONMENTAL CONSEQUENCES

Modern mining of cinders is one feature of the cultural landscape. Reclaiming the cinder mines would change the nature of this character-defining feature of the

landscape. Documenting this feature and monitoring during reclamation would prevent adverse effects on the landscape.

TABLE 12. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 1 ON CULTURAL RESOURCES LISTED ON OR ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES, PROPOSED PROTECTIVE MEASURES, AND REQUIRED COMPLIANCE WITH SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT.

Note: The entire monument, Boca Negra Cave, Las Imagines Archeological District, and the Piedras Marcadas Pueblo ruin are all listed on the national register. Cultural resources include cultural landscape, archeological and

ethnographic sites, and petroglyphs. Unless otherwise noted in the following table, construction could probably avoid sites.

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>Boca Negra Canyon — Six adjacent sites include 1 stone circle, (age unknown); 4 water and soil control structures; 1 historic shelter. Vicinity: petroglyphs, potential cultural landscape.</p>	<p>Construct visitor center, interim heritage education facility, parking, access roads, restrooms, trails.</p>	<ul style="list-style-type: none"> • No adverse effect of construction. • Positive effect on petroglyphs by rebuilding inadequate trail system. • With mitigation, no adverse effect from visitor or student use. 	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor and student use. • Conduct archeological investigations, collect artifacts, and document and stabilize sites and surface features in areas adjacent to facilities and where intensive use is proposed. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>

TABLE 12. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 1 (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>Piedras Marcadas Canyon — Sites include three prehistoric lithic scatters (one Archaic); one lithic and ceramic scatter; four prehistoric sites with stone circles, water control features, and/or lithic/ceramic scatters; at least two multicomponent sites containing prehistoric lithic scatters, grinding slicks, and/or historic herding artifacts and features. Vicinity: petroglyphs, potential cultural landscape, ethnographic sites.</p>	<p>Construct visitor contact facility, parking, restrooms, access roads, trails.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. • If resource damage were occurring, permits would be required. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>
<p>Mesa Top at Northwest Part of Monument, near Piedras Marcadas Canyon — One site in area (prehistoric lithic and ceramic scatter, PIII-PIV). Potential cultural landscape, petroglyphs.</p>	<p>Construct parking, access road, trail.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. 	<p>Same as above.</p>

TABLE 12. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 1 (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
Piedras Marcadas Pueblo Ruin	Develop interpretive trail.	With mitigation, no adverse effect.	<ul style="list-style-type: none"> • Continued consultation with Pueblos. • Develop ruins management plan in consultation with Pueblo community, SHPO, and ACHP. • Collect, document, and stabilize to prevent erosion. • Develop mitigation plan with SHPO. • Design visitor facilities to avoid pueblo ruins or intrusion upon cultural landscape and to prevent impacts from visitor use. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitation. • Fence and patrol site. 	SHPO/ACHP consultation in preparing preliminary design, mitigation plan, and ruins management plan.
Rinconada Canyon — Two multi-component sites with historic and prehistoric petroglyphs, masonry wall alignments and isolated room; rock shelters and/or post World War II homesite. Potential cultural landscape, ethnographic sites.	Build visitor contact facility, access road, parking, restrooms, trails, and connector trail to mesa top.	With mitigation, no adverse effect.	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. • If resource damage were occurring, permits would be required. • Conduct archeological investigations, collect artifacts, and document and stabilize sites and surface features in areas adjacent to facilities and where intensive use is proposed. 	SHPO/ACHP consultation in preparing preliminary design and mitigation plan.

TABLE 12. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 1 (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>Southern Mesa Prieta — Seven prehistoric sites (lithic quarry and reduction/scatters, activity areas, boulder features); 1 historic site (corral and artifact scatters); and 4 multicomponent sites with historic activity areas, corrals, and/or artifact scatters; prehistoric component has lithic quarry/reduction scatters, ceramics, water catchment/rock features, agricultural fields, and/or hearths/fire cracked rock. Adjacent are petroglyphs, potential cultural landscape, ethnographic sites and historic livestock drive route. At least 12 sites in area.</p>	<p>Build overlook, parking, visitor contact facility, access road, and trails.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>
<p>Lava Shadows — One adjacent site (water control/rock alignments, cairns). Vicinity: petroglyphs, potential cultural landscape, ethnographic sites.</p>	<p>Expand and improve existing structures, build parking area and trailhead.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>

TABLE 12. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 1 (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>Volcanoes — Volcanoes are sensitive ethnographic resources; four prehistoric sites nearby include petroglyphs, rock shelter, lithic/ceramic scatters, and/or grinding stone; three historic sites include corrals, pre- and post-World War II historic debris, lambing pens, hearth and/or corral; 1 site has corral and lambing pen, rock shelter and lithic/ceramic scatters. Vicinity: potential cultural landscape, ethnographic sites.</p>	<ul style="list-style-type: none"> • Construct parking, access road, visitor information kiosk/shade structure, rest-rooms, trails, picnic facilities, and overlook on Black Volcano. • Reclaim cinder mining sites. • Reclaim selected trails and roads. 	<p>With mitigation, no adverse effects from construction, reclamation, or visitor use. Area has been impacted. Limiting public access to other volcanoes would be beneficial to values held by culturally affiliated groups. Cinder mines would not be reclaimed if adverse impacts on values of these groups would occur.</p>	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. • Conduct archeological investigations, collect artifacts, and document and stabilize sites and surface features in areas adjacent to facilities and where intensive use is proposed. • When rehabilitating facilities and cinder mines, use care to avoid disturbance of unknown subsurface remains. • Consult with American Indians to ensure that traditionally gathered resources are not disturbed. • Document cinder mines before reclamation. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>
<p>Geologic Windows — 13 sites in vicinity of proposed trails (prehistoric petroglyphs and rock features, windbreak; historic corrals, structures, shelter, and walls). Potential cultural landscape.</p>	<p>No action.</p>	<p>No adverse effect.</p>	<ul style="list-style-type: none"> • Continued consultation with Pueblos. • Establish monitoring and response plan. 	<p>None.</p>

TABLE 12. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 1 (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>81st Street Overlook — One prehistoric site with structural wall, lithic scatter. Vicinity: potential cultural landscape, ethnographic sites.</p>	<p>Construct parking, access road, overlook, and trails.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>
<p>Mesa Top — Sites are too numerous to list, ranging from Archaic period to present. Potential cultural landscape.</p>	<p>Continue existing trail use; reclaim selected existing roads and trails.</p>	<ul style="list-style-type: none"> • With mitigation, no adverse effect. • Continued multiuse of trails on mesa top, could adversely impact Pueblo values. 	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. • Most trails would follow existing informal roads. • Permits would be required for horse and bicycle users. 	<p>Same as above.</p>

TABLE 12. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 1 (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>Neighborhood Access — Several adjacent sites, including lithic/ceramic scatters. Vicinity: petroglyphs, potential cultural landscape</p>	<p>With neighborhood consultation, possibly construct neighborhood access points and trails.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>
<p>Escarpment Crossings — Boca Negra, Calle Norteña, Lava Shadows — Four sites in vicinity: one prehistoric lithic reduction site (Calle Norteña); prehistoric shelter, Anasazi water and soil control walls and terraces (Boca Negra).</p>	<p>Build multiuse trails crossing escarpment.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • Sites would be avoided. • Design escarpment crossing trails to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). 	<p>None unless resources were found.</p>
<p>Homestead Circle, Taylor Ranch Road/Calle Norteña Area — One prehistoric site (lithic/ceramic scatter) in vicinity</p>	<ul style="list-style-type: none"> • Add fill and develop paths, shade structures, native plantings, wall at Homestead Circle • Recontour and reclaim disturbed area adjacent to Calle Norteña and Taylor Ranch Road 	<p>With mitigation, no adverse effect.</p>	<p>No known resources in proposed development areas. Site-specific surveys would be conducted as appropriate before development.</p>	<p>SHPO/ACHP review of project if resources are discovered.</p>

Conclusion of Impacts on Cultural Resources

The identification and evaluation of resources, sensitive design, and appropriate mitigating measures would help ensure that archeological sites would not be negatively impacted during and after facility development. Directing use as

recommended in this alternative would have less impact on petroglyphs than the existing uncontrolled visitor use. Trail redesign and development would have a beneficial effect on petroglyphs. The management of visitors as described would reduce the potential for negative indirect impacts of concentrated use in selected areas and damage from looting

and vandalism. With continued consultation, direct or indirect negative impacts on ethnographic resources or Pueblo values would be minimized. Visitor facilities would intrude on the cultural landscape, but sensitive design would minimize negative impacts.

Cumulative Impacts on Cultural Resources

Vandalism, illegal artifact collecting, and inadvertent damage to petroglyphs and other archeological sites, both in and outside of the monument, damage these irreplaceable resources and destroy scientific evidence through the undocumented removal or disturbance of objects from their original locations. Potsherds and tools are diagnostic artifacts. Once they are removed from an undocumented site, it may be impossible to determine whether the site dates from 1,000 B.P. or 10,000 B.P., or even who used the site. Over time, these activities reduce the number and quality of sites and there would be a cumulative impact on the sites and on the data base, which can skew and limit the information available for research. Various efforts and programs would be focused on preventing these adverse impacts; however, some impacts would occur.

The impacts of development are mitigated by collecting data, but this is done by 1990s standards. Twenty years ago most of the analytic techniques and technology used today were not imagined. The same will be true 20 or 50 years from now. Once a site is disturbed, there would be no opportunity to do more analysis. Therefore, over time and with development, visitor use and maintenance activities, erosion, etc., some diagnostic artifacts and features would not be preserved for future analytic techniques that would reveal even more about the site than can be learned at present.

The development adjacent to the monument has negatively affected the visual qualities of the landscape and will continue to do so. Monument facility development combined with the adjacent development would adversely affect the cultural landscape.

There would be impacts on cultural resources by the city's construction and use of Unser Boulevard through the escarpment and possibly by the removal of the existing road and the construction of the recreational trail and utility corridor through Boca Negra Canyon. These impacts would be mitigated by minimizing the rights-of-way and disturbed areas required for the routes, using construction techniques that would not disturb adjacent basalt and petroglyphs, and using design and materials to minimize noise and visual intrusion.

IMPACTS ON VALUES HELD BY CULTURALLY AFFILIATED GROUPS

Methods of Analyzing Impacts

The planning team has involved, consulted, and informed the Pueblo Indian communities of the planning process and issues that could affect lands that are significant to them. The initial step was to conduct a rapid ethnographic assessment (Evans et al. 1993) to determine which American Indian groups wanted to be involved with the monument planning process, what their concerns were about monument planning, and what would be the best way for them to participate. Based on the results of the ethnographic assessment, American Indian representatives were invited to participate in core team meetings.

In addition to the rapid ethnographic assessment, planning team members have met with Pueblo and Atrisco heir

representatives, ethnographers, and others in an effort to better understand the impacts on culturally affiliated groups.

Impact Analysis

Developing Piedras Marcadas Pueblo ruin only after special study and consultation with concerned Pueblos would avoid impacts related to intrusion on traditional and cultural activities and areas and archeological sites. Consultation would result in further participation and involvement by culturally affiliated groups in monument interpretive and resource protection programs.

If reclaiming abandoned mine sites would adversely impact areas of traditional and cultural use, reclamation would not occur in that specific area.

Conclusion

There might be positive impacts on the values held by these groups through participation in consultation regarding site protection and interpretation and by limiting public access to the volcanoes. There would be adverse impacts from the intrusion of bicycles and horses into lands that are important to the Pueblo community. Impacts from development and increased visitation on traditional and cultural activities are currently unknown.

Cumulative Impacts

If petroglyphs or archeological sites, features, or objects were destroyed or desecrated by vandals, or if practitioners were disturbed by construction or the presence of visitors and they were not able to use a special area for traditional and cultural activities, those activities might not be continued.

The construction of Unser Boulevard by the city through the monument escarpment is opposed by American Indian groups and the Atrisco heirs. There would be adverse impacts on these groups and their ability to maintain their connections to the monument.

IMPACTS ON FEDERAL AND STATE THREATENED AND ENDANGERED SPECIES

Methods for Analyzing Impacts

The impacts on threatened and endangered species were based on the likelihood of each species and its habitat type occurring in the proposed development and visitor use areas within the monument and direct loss of habitat based on total acreage within the monument. Consultation was conducted with the U.S. Fish and Wildlife Service, the National Biological Survey, and the state. Section 7 consultation would be conducted with the Fish and Wildlife Service.

A plant survey was conducted of all proposed development sites and major visitor activity areas except for the Mesa Prieta area and south of Rinconada Mesa. No plants were found that were either listed or candidates for listing as federal or state threatened and endangered species. The site survey concluded that potential habitat exists for the *Pediocactus papyracanthus*, commonly known as the grama grass cactus (a category 2 species being considered for listing), and the *Mammillaria wrightii* (a state rare plant). Surveys were not conducted for bird species; however, information was obtained from a local ornithologist who has conducted regular bird surveys on monument lands since 1990 and has maintained detailed records.

Impact Analysis on Plants

The continued use of 11 miles of multiuse trails and the possible future use of 5 miles of existing abandoned dirt roads would not adversely impact vegetation provided that users stay on designated trails.

However, development of parking and trailheads would disturb and adversely affect 3 acres of potential habitat for the *Pediocactus papyracanthus* and *Mammillaria wrightii*.

Bicycling and horseback riding could further impact habitat for these species indirectly because of the greater potential for off-trail use and trampling. Permits and the enforcement of regulations that visitors must stay on trails would prevent most adverse impacts associated with these activities.

Conclusion. There are potentially 4,534 acres of total potential habitat available; 3 acres represents less than 0.1% of the total available habitat. This would not be significant in terms of habitat available in the monument.

Cumulative Impacts. The destruction of further habitat could eliminate the opportunity for the *Pediocactus papyracanthus* and *Mammillaria wrightii* to populate this area and thus could incrementally contribute to the overall decline of the species. As more and more habitat is used for development outside the monument by the private sector, habitat within the monument would become more valuable.

It is not anticipated that there would be any adverse impacts on threatened or endangered plant species by the city's construction/extension of Unser Boulevard or the development of the recreational trail and utility corridor in Boca Negra Canyon because these routes are in areas that have been previously disturbed. Site-specific surveys must be conducted before facility

development and before construction to ensure that no threatened or endangered species were present.

Impact Analysis on Birds

Without mitigation, the multiuse trails with horseback and bicycle riders on the mesa top and the parking areas at Mesa Prieta and the volcanoes would have a direct adverse effect on the ferruginous hawk (a federal category 2 species). Trail users would adversely affect the birds' ability to hunt throughout the monument during certain parts of the day as well as disrupt any nesting activity.

These birds are very sensitive to human disturbance. Unlike many other bird species that tolerate human activity near their nest sites, the ferruginous hawk has been known to abandon its eggs and at times its young when disturbed by humans near nest sites. One study found that incubating ferruginous hawks did not habituate to experimental disturbances; rather, they became sensitized and flushed at increasing distances each time they were disturbed. This same study concluded that ferruginous hawk presence may be more an indicator of the level of human disturbances than of habitat quality in the ecological sense (White and Thurow 1985).

The ferruginous hawk has been known to nest on the ground, but other areas also provide suitable habitat for nesting activity. (One possible nest has been identified in the monument.) Based on information available, the use of multiuse trails in the monument would have significant adverse effects on the ferruginous hawk and eliminate them as a breeding species in this area.

Groups hiking south of Rinconada Mesa during the critical nesting period (March 1–July 1) might adversely impact nesting

activities of the ferruginous hawk, causing the birds to abandon their nests and young.

The National Park Service would work with the U.S. Fish and Wildlife Service, National Biological Survey, and local ornithologists to develop mitigation to protect the hawk and avoid a significant adverse effect. This might result in areas of the monument being closed during certain times of the year to allow nesting to occur and prevent disturbance until young are hatched.

Conclusion. Without mitigation, the ferruginous hawk would be significantly adversely affected by the development and use on the mesa top. Because the hawks have been known to nest on the ground and use the monument for hunting, mesa-top trails would eliminate any safe areas where they could be ensured of little to no contact with human activity. Pedestrians on trails below the escarpment at certain areas might adversely affect the hawks during the nesting period (March 1–July 1); however, activity at other times would not be expected to adversely affect this species. Initial mitigation would include avoiding the improvement of trails above and below the escarpment during the nesting period.

Cumulative Impacts. According to records, ferruginous hawks were probably more numerous in central New Mexico than they are currently. However, the conversion of grasslands to urban and agricultural uses has contributed to the hawk's decline. Without mitigation, facility development under this alternative, combined with the development of lands outside the monument by the private sector and Unser Boulevard by the city could incrementally increase the amount and severity of the impacts on this species and could contribute to the elimination of the hawk as a breeding species in this area.

With mitigation, there would be no significant adverse cumulative impacts on the hawk. Site-specific surveys before facility development and construction would ensure that no threatened or endangered species were present.

**IMPACTS ON WILDLIFE
OTHER THAN LISTED SPECIES**

Methods for Analyzing Impacts

Existing studies were consulted to determine the extent and type of wildlife in the monument. No new surveys were conducted; however, recent bird surveys were used, wildlife habitat was identified, and acres affected by development and visitor activity were calculated to determine impact.

The total acreage of wildlife habitat within the monument is 7,244 acres. The acreage distribution is as follows:

	<u>Acreage</u>	<u>% of Total Monument Acreage</u>
Flatlands	1,475	20
Escarpment edge	35	<.5
Mesa top	4,534	63
Escarpment	<u>1,200</u>	17
Total	7,244 acres	

Most impacts on wildlife habitat from development and visitor activity would occur in 7 acres of flatlands below the escarpment. This represents 1% of the total available in the monument. About 3 acres of escarpment edge would be impacted by visitor activity — representing about 1% of the total within the monument. Also, 3 acres of mesa top would be impacted by development, representing less than 0.10% of the total mesa-top habitat available within the monument. Visitor activity on the mesa top would affect about 10 acres of wildlife habitat. About 1 acre of the

escarpment would be adversely impacted by trail crossings, representing less than 0.1% of the total within the monument. These impacts would not be significant.

Impact Analysis on Birds

A total of 106 bird species have been recorded at the monument since 1990, 35 of which have also been seen nesting in or near the monument boundary. The diversity of species present is evidence of a relatively healthy ecosystem (Hart Schwarz, local ornithologist, pers comm., January 1994). As land adjacent to the monument continues to be developed and vacant land is eliminated, the monument will become an island of natural habitat for wildlife. Populations might be displaced onto monument lands and compete for habitat with existing residents.

Except as discussed above for the ferruginous hawk, no other raptors would be impacted by visitors because trails would be constructed far enough from the edge to prevent visitors from disturbing nesting birds. Overlook sites would be placed in areas that avoid any raptor nesting sites, including a golden eagle nest (although apparently abandoned for several years). The temporary closure of these overlooks and trails would prevent adverse impacts on nesting raptors who might, during some years, place their nests near the overlooks.

Temporary direct adverse impacts on these birds would be avoided during construction by limiting construction periods to times when the birds are not nesting (March to August). Horse, bicycle, and pedestrian use and presence on the mesa top might discourage raptors from hunting in this area. Monitoring would be conducted, and visitor carrying capacity levels would be identified to prevent significant impacts from visitors.

The development under this alternative would adversely affect 14 acres of shrub/grassland (flatland), which is habitat for the loggerhead shrike. This represents about 1% of the total available habitat within the monument and would not represent a significant impact on this species. Increased activity in visitor use areas might indirectly impact the birds, causing disturbance and adversely affecting their ability to nest; however, no studies have been conducted to confirm this.

Temporary impacts would occur during construction.

The crissal thrasher and sage sparrow occupy the same habitat as the loggerhead shrike. Adverse effects on shrikes would also occur on the crissal thrasher and sage sparrow.

Impact Analysis on Other Wildlife

No specific parts of the monument are known to support unusual or large populations of wildlife — with the exception of Mesa Prieta, which supports nesting habitat for raptors.

According to biologists, the flatlands in the base of the canyons and the edge area adjacent to the escarpment most likely support more wildlife species than found on the mesa top or on the escarpment itself. Assuming that the flatlands and edge of the escarpment are habitat areas, the construction of facilities, trails, and visitor activities would impact about 20 acres of monument wildlife habitat. Visitor activity on the mesa top would affect about 10 acres of wildlife habitat. This represents about 1% of the total flatlands habitat available in the monument.

Multiuse trails, pedestrian only trails, parking, and overlooks on the mesa top

would disturb 3 acres. There would be a loss of 3 acres of mesa-top habitat, representing less than 0.1% of mesa-top habitat available in the monument.

The 16 miles of horse/bicycle/pedestrian trails on the mesa top would likely increase the numbers of visitors who visit the mesa top. Some wildlife species tend to leave an area when it becomes populated by people, which would create less diversity of species on the mesa top. The presence of hikers, bicycles, and horses on the mesa top might disturb species and lead to a decrease in population due to loss of habitat or disturbance. *Monitoring, issuing permits, identifying carrying capacity levels, and keeping visitors on established trails might mitigate some of these adverse impacts on wildlife species.*

As more and more adjacent land is developed, there would be indirect adverse impacts on wildlife. Habitat for many species such as rodents, rabbits, coyotes, and foxes would diminish, forcing many of them to compete for available habitat on monument lands. Wildlife populations adjacent to the monument would decrease due to loss of habitat.

Conclusion

No significant adverse impacts on birds and other wildlife would be anticipated from developing facilities on 21 acres and visitor activities on 25 miles (about 35 acres) of multiuse and pedestrian only trails within the national monument. Some wildlife populations would be adversely affected due to trails, people, horses, and bicycles on the mesa.

Cumulative Impacts

A total of about 34 acres of facility development and visitor activity combined

with adjacent development and city construction of Unser Boulevard would cumulatively impact birds and other wildlife species by destroying habitat and creating a barrier to movement by some wildlife.

IMPACTS ON NATURAL DRAINAGE PATTERNS AND FEATURES

Methods for Analyzing Impacts

A 1991 U.S. Geological Survey erosion study identified 50 gullies within the monument. These gullies were ranked according to four erosion classes — class I was defined as slight erosion (21 in the monument), class II as moderate erosion (22 in the monument), class III as intense erosion (6 in the monument), and class IV as severe erosion (1 in the monument). Fourteen of the gullies were associated with mesa-top dirt roads, 7 were on pedestrian or bicycle trails, 11 were associated with a permanent stream channel, and 18 were on a hill slope.

The study noted a higher density of gullies in the northern areas of the monument, possibly related to the higher density of dirt and gravel roads and pedestrian and bicycle trails in the northern areas. Mesa-top roads appear to be channeling surface runoff, resulting in gullying and rilling in the roadbed. Thirty of the 50 gullies were identified with surface drainage from existing mesa-top dirt roads. Impacts of development and visitor activity, including trails with hardened surfaces, were evaluated using the results of this study.

Impact Analysis

Most rainwater on monument lands percolates into the ground through the sand and down through cracks and fissures in the basalt caprock. During large storms,

the soils become saturated rather quickly, and the basalt caprock limits complete and fast percolation. Soils compacted by grazing activity also slow percolation. Both conditions lead to the channelization of water and the subsequent formation of gullies and erosion. Stormwater on the mesa top tends to flow as sheet runoff either into arroyos or over the top of the escarpment.

The hardening or compacting of about 21 acres for parking areas, trails, and facilities would increase sheet flow, the formation of gullies, the erosion of sediment, and cause flooding, which would adversely impact soils, vegetation, and possibly facilities. All development would comply with the intent of state and local stormwater regulations. Particular attention during the design phase would be made to minimize adverse impacts. Various stormwater management techniques, such as developing detention ponds (or holding areas), minimizing impervious areas, revegetating disturbed areas, locating structures to minimize erosion, minimizing the disturbance of natural contours, and other innovative approaches, would be used in design to help minimize impacts.

Reclaiming 20–30 miles (about 35 acres) of dirt roads and trails on the mesa top and about 15 acres of disturbed flatlands would decrease the number of gullies forming and minimize further erosion on the mesa top. Gullies would continue to enlarge or get smaller, depending on the amount of water and sediments they would carry during storms. Flooding during major storms would continue, creating new channels and erosion of the escarpment where water comes over. Providing designated trails for residents adjacent to the monument to access the mesa top would reduce further erosion of the escarpment edge.

Conclusion

The hardening of land for facilities and trails would increase surface runoff in the monument. The area of impervious surfaces would be about 21 acres. Establishing designated trails to gain access to the mesa top, and reclaiming about 50 acres of disturbed lands would have a positive impact by eliminating existing gullies and helping to prevent further gullying and erosion. This represents an overall beneficial effect on vegetation and soils and the monument's capacity to handle stormwater.

Cumulative Impacts

The construction of monument facilities and, in addition, the development of adjacent properties and the construction of Unser Boulevard by the city would have impacts on natural drainage patterns and features. There would be adverse impacts on natural drainage patterns within the new Unser Boulevard alignment. Positive impacts from extending Unser Boulevard would include the removal of a 1,000-foot trench that is outside the monument, which directs stormwater flows from Paradise Hills into Piedras Marcadas Canyon. Other positive impacts would be providing an opportunity to manage stormwater flows in a manner that would not adversely affect monument resources.

IMPACTS ON BIODIVERSITY

Methods for Analyzing Impacts

Information on the biodiversity of the west mesa was gathered from ecological studies and reports prepared before the creation of the national monument. It was assumed that facility development and visitor use would alter an area's biodiversity, so development plans, including areas of

visitor use, were analyzed for their affects on biodiversity.

Impact Analysis

The development of a visitor center in the flats in Boca Negra Canyon, parking and expansion of existing facilities at Lava Shadows, and parking and visitor contact facilities at Rinconada, Mesa Prieta, and Piedras Marcadas would eliminate 14 acres of flat dune habitat. Pedestrian trails would impact another 3 acres of the narrow zone at the base of the escarpment. The presence of visitors in areas not now visited might displace some species of wildlife, although this is not anticipated to be significant. About 31 acres of other mesa-top lands would also be affected by development. About 1 acre of escarpment habitat would be impacted by trails crossing the escarpment, and 13 acres of monument land would be impacted by visitor activities.

Horse use on the mesa top would adversely affect biodiversity through the introduction and spread of exotic plants. However, most of the monument has been previously disturbed by extensive grazing, and many of the prominent plants are exotic species. Thus, horse use would not be a significant impact. Reclaiming 20-30 miles (approximately 35 acres) of dirt roads and trails and 15 acres of other disturbed land including Homestead Circle park, Calle Nortefia, and the mined area at the volcanoes, would have a beneficial impact on biodiversity by increasing available habitat. Restricting visitor use in a large portion of the volcanoes area would also improve biodiversity.

Conclusion

The 21 acres of developed land plus the 13 acres of habitat disturbance related to

visitor activities represents 0.5% of the total habitat available in the monument. This would not be a significant adverse impact. Reclaiming disturbed areas would replace lost habitat.

Cumulative Impacts

Visitor activities combined with development would impact 34 acres of land. This might proportionally decrease wildlife and plant species and adversely impact biodiversity in the area affected, although there would be some cumulative benefits from reclaiming habitat. Together with the high rate of development occurring adjacent to the monument, less habitat would remain for these populations.

The construction of Unser Boulevard by the city might have adverse impacts on 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.

IMPACTS ON SOILS

Methods for Analyzing Impacts

Consultations were conducted with the Soil Conservation Service, and a soils map (based on the *Soil Survey of Bernalillo County and Part of Sandoval and Valencia Counties, New Mexico*, USDA 1977) was prepared using the city's geographic information system. Proposed development, including trails, were compared with the map, and the area of impact was determined.

Impact Analysis

The following tables show impacts by soil type and at developed areas to provide a more complete and understandable picture of the impacts on soils. Impacts can be seen by looking at the "Soil Characteristics/Impacts" column. For example, soils with moderate to high potential for erosion (by wind or water) would be impacted by development and vegetation removal more than soils with slight to moderate potential for erosion.

During construction, requirements such as watering and immediate revegetation efforts would mitigate adverse impacts on these soils.

After construction is complete, impacts on soils would include compaction from visitor use. These impacts would not be significant. Horse and bicycle use would be on previously compacted routes. No other impacts would be anticipated. Keeping visitors only on established trails would prevent further erosion, vegetation removal, and compaction that all result in adverse impacts on soils. Mine reclamation around the volcanoes and reclaiming dirt roads, trails, and other disturbed areas would have a beneficial effect on soils by stabilizing sites and creating environments where vegetation would grow.

Conclusion

The development on about 21 acres of soils within the monument would result in adverse impacts on soils. These impacts are significant because soils support plant and wildlife habitat and contribute to the health of the west mesa ecosystem. However reclaiming about 50 acres of other disturbed land would offset this impact. No impacts on soils would be anticipated after construction. Keeping visitors only on established trails would prevent further

erosion, vegetation removal, and compaction. Impacts on soils would not be significant.

Cumulative Impacts

Facility development combined with adjacent development including Unser Boulevard would cumulatively adversely impact soils.

IMPACTS ON SCENIC RESOURCES

Methods for Analyzing Impacts

The alternatives are evaluated by considering the impacts of the proposed developments on the monument scenery. Each proposed development area was visited to document existing views. The monument scenery within the boundaries is dominated by the natural landforms and typical regional vegetation, with relatively few modern intrusions. However, the monument scenery is also influenced by the surrounding suburban development, which creates an already negative effect on the overall quality of the visual resources at the monument boundaries. All proposed development is considered within the context of this existing scenery.

Impact Analysis

Locating major monument facilities close to or adjacent to the monument boundary where suburban development does or will exist would reduce the adverse visual impact of new development. This would relate the facilities more closely to the neighborhood context. Keeping parking areas, visitor contact facilities, and access points closely associated to city streets, would minimize incursions into the monument and have less adverse impacts.

TABLE 13. AFFECTED SOILS AND CHARACTERISTICS

Soil Type	Soil Characteristics/Impacts
Bluepoint-Kokan association, hilly	Slow runoff potential. Moderate to severe potential for erosion by water.
Bluepoint loamy fine sand, 1-9% slopes.	Slow runoff potential. Severe potential for erosion by wind.
Akela-Rock outcrop complex, 1-9% slopes.	Medium runoff potential. Light or moderate potential for erosion by water.
Alemeda sandy loam, 0-5% slopes	Medium runoff potential. Moderate to severe potential for erosion by wind and slight potential for erosion by water.
Madurez-Wink, gently sloping	Slow runoff potential. Gently sloping. Moderate to severe potential for erosion by wind.
Rock outcrop-Akela complex 10-50% slopes	Medium runoff potential. Slight to moderate potential for erosion by water.
Kokan-Rock outcrop	Rapid runoff potential. Slight potential for erosion by water.
Latene sandy loam, 1-5% slopes	Medium runoff potential. Moderate potential for erosion by water or wind.

TABLE 14. SOIL IMPACTS BY DEVELOPED AREA, ALTERNATIVE 1, PROPOSED ACTION

Developed Area	Acres of Moderate to Highly Erodible Soils Affected
Rinconada Canyon	Bluepoint-Kokan, hilly; Bluepoint loamy fine sand, 1-9% slopes; Kokan-Rock outcrop
Piedras Marcadas Canyon	Bluepoint-Kokan, hilly
Lava Shadows	Bluepoint-Kokan, hilly
Boca Negra Canyon	Bluepoint-Kokan, hilly
Volcanoes area	Akela Rock outcrop; Alemeda sandy loam, 0-5% slopes; Rock outcrop-Akela, 10-50% slopes
Piedras Marcadas ruin area	Bluepoint-Kokan, hilly
Homestead Circle park	Bluepoint-Kokan, hilly; however, site reclamation would be result in beneficial impact
Pedestrian trails	Alemeda sandy loam, 0-5% slopes; Bluepoint, loamy fine sand, 1-9% slopes; Bluepoint-Kokan, hilly
Mesa Prieta	Bluepoint-Kokan, hilly
Neighborhood access trails	Kokan Rock outcrop
81st Street	Alemeda sandy loam, 0-5% slopes; Madurez-Wink

Locating less intrusive development such as pedestrian trails in the more naturally scenic areas of the monument would be an adverse visual intrusion. Development at the volcanoes area would be slightly more visible because visitor information, rest-rooms, and parking are further within the natural scenery surrounding the volcanoes

and there is no nearby suburban development to moderate the effect of development in this area.

Having all facilities of the highest quality design to sensitively blend in with the monument surroundings would reduce negative impacts to the greatest degree

possible. Development sites would be selected to minimize visual impacts. Visual impacts of structures would be further minimized by screening structures with topography and vegetation. (Only local native vegetation that was compatible with the cultural landscape would be used.) These would be sensitively built, attractive buildings that would change the scene from a predominantly natural one to one that has monument development.

The natural scenery at Boca Negra, the visitor center location, has already been impacted by existing development. Thus, adverse impacts on the visual quality from additional development would be minimized.

The views of the mesa top would be affected by the increased presence of visitors on the escarpment trails and overlooks. Cars, horseback riders, and bicycle riders might be occasionally sighted in the vicinity of 81st Street. Locating roads, parking, and trails back from the escarpment rim would minimize these intrusions; however, some access points to overlook the city would be visible when looking at the mesa from the east.

Black Volcano offers expansive views of the mesa, the city, and the Sandias. This view would be affected by trail development and the increased presence of visitors on the scene when overlooking the mesa from the volcanoes area.

Many areas of the monument have been disturbed by uncontrolled uses such as all-terrain vehicles, biking, hiking use, walking dogs, illegal dumping, and gun target practice. These uses have degraded the scenery of the monument over a long period of time. The management or prohibition of these uses, as well as reclamation programs, would return these disturbed areas to their original natural character and improve the scenic quality.

Conclusion

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.

Construction equipment, clearing and grading operations, dust, etc., would create temporary negative impacts on the scenic quality during the period of construction.

Cumulative Impacts

The proposals in this alternative would result in preserving large areas of the monument in its existing natural state. In addition, trash removal and reclamation programs would begin to return large portions of the monument to its natural character. Therefore, the alternative would contribute to local efforts to preserve the existing scenic resources of the west mesa. These efforts would combine to 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 combined with the city's construction of Unser Boulevard through the monument would adversely affect scenic quality and views from the monument.

IMPACTS ON THE LOCAL AND REGIONAL ECONOMY

Methods for Analyzing Impacts

All recent information on visitor use was gathered, and a market segmentation analysis was conducted. Socioeconomic impacts were generated through analyzing the local and regional socioeconomic environment. Economic data, historic visitor use data, projections of future

visitor use, and the future development of the monument were all considered in identifying and discussing the expected impacts. Although it is not possible to accurately project visitor use, based on a market analysis and visitor use at similar national park system areas the Park Service projects about 189,000 visitors annually by the year 2000 and 283,000 visitors annually by the year 2010 (see appendix O).

The NPS Socioeconomic Studies Division (WASO-TNT) has developed an economic model called the money generation model to develop dollar estimates of economic impacts and estimates of jobs that would be created or supported by the monument. The model was designed as a means of inexpensively computing the approximate economic benefits generated by monument-related tourism. This model is not very complex nor all encompassing. It was designed to be used by monument staff who may have little or no expertise in economics. A limitation of all models is that the output from a model is only as accurate as the data that is input into it. This is true of all models. A conservative value is presented using the best available information. This economic impact repre-

sents the current situation as the data used is the most current available.

The model is dependent on accurate visitor use data, which in this case is not available. Monument visitation of 88,059 in 1994 and value of 1.6 hours were used for the average length of stay to determine the number of visitor days necessary to run the model. If the actual number of visitors were to be significantly different than this figure, then the results of the model would be significantly affected.

The model does not estimate precisely the economic benefits derived by the local and regional economy due to the operation of the monument. It does, however, give decision makers some indication of the economic impacts of the monument. For instance, when compared to the 1993 total retail sales figure for Bernalillo County of \$4,487, 419,000 (source: New Mexico Taxation and Revenue Department), even the estimated total sales benefits of \$1.9 million is not, relatively, a large amount. Although the monument will contribute to the local economy in a positive way, it will not be a major factor in the overall economy of the region. Results of the application of the model are presented in the following table.

TABLE 15. APPLICATION OF THE MONEY GENERATION MODEL FOR 1994 AND 2004

Combined Benefits Due To:	1994	2004
Increased Sales	\$ 1,943,800	\$10,292,200
Additional Taxes	\$ 139,800	\$740,000
New Non-Monument Jobs Created or Supported	59	309

SOURCE: National Park Service, Denver Service Center, Central Team, Branch of Planning

* The money generation model was run using projected visitation and projected monument budget for 2004 instead of current data. All other data remain the same. This assumes that *Ceteris Paribus* all other variables remain the same over time. This is not likely, but given this assumption allows some speculation about the future economic impact of the monument.

Impact Analysis

The creation of the monument so close to the city has given the city new status. The protection and management of monument resources would enhance aesthetic, biological, cultural, economic, geologic, historic, natural, and recreational resource values of the Albuquerque area — and add to the quality of life in Albuquerque. However, many of these values are extremely difficult and costly to measure. This is especially true of the "nonuse" values, such as scenery or the preservation of archeological sites and cultural landscapes. A dollar value is difficult to assign to these items, yet people do value these things. These benefits would continue into the future.

Monetary benefits could accrue to individuals, businesses, and the city in general through increased tourism. Not only would more visitors be encouraged to come to the city, but those who do might stay longer to see and enjoy the monument.

Another monetary benefit attributable to the monument would be increases in property values. Studies have shown that property near parks has a higher value than property further away from parks. The establishment and development of the monument has and will continue to influence real property values in a positive manner. It then follows that property tax revenues would increase over the years as real property near the monument is revalued for real estate tax purposes.

To speculate regarding the economic impact of the monument in the future, the money generation model was rerun using the visitation figure projected for the monument by the Socioeconomic Studies Division. Estimated visitation is forecast at 245,000 visitors for the year 2004. The National Park Service budget for the

proposed action is \$3.3 million. Projected city expenditures for the monument are \$1.1 million. Compounding this figure by 4% for inflation makes the 2004 monument budget about \$4.9 million. The results of this projection and analysis are presented in table 15. It is assumed that all other variables would remain static over time. Even though this is an unrealistic assumption, it is necessary to make it in order to estimate the potential economic impact of the monument. Performing this type of sensitivity analysis allows comparison of the current situation regarding economic impacts with the future. The forecasted level of visitation and monument budget lead to the expectation that the monument will increase its contribution to the local economy as shown in table 15.

Also, the monument is one more positive inducement for industry and business to locate in the Albuquerque area because of the perceived improvement to the quality of life it contributes. The planned development of the monument would be a boost to the economic life and growth of the region because of the values it protects.

Concerns have been expressed that the monument might hinder the development and westward expansion of the city. This is unfounded; there are plans to improve access via a realigned Unser Boulevard, and I-40 provides ready access to the west. Reasonable and viable alternatives exist to the Paseo del Norte extension. As pointed out above, the values that the monument protects encourage the growth and economic development of the Albuquerque region.

Conclusion

Monument establishment and development has had and will 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.

Cumulative Impacts

Petroglyph National Monument is an economic plus for the city and would become a premier attraction of the city and the region. The development of the monument would lead to increased visitor use of the monument and increased tourism in the city and area. Thus, positive economic benefits would accrue to the local economy.

The city's construction of Unser Boulevard, the recreational trail, and the utility corridor would benefit the local and regional economy by facilitating traffic flow, reducing traffic congestion on other roads, allowing for enjoyment of monument resources, and providing utilities to the mesa top. However, because of the need to minimize impacts on monument resources, there would be increased design and construction costs.

IMPACTS ON NATIONAL VISITORS

Methods for Analyzing Impacts

The alternatives are analyzed by looking at the opportunities for visitors to understand and appreciate the values for which the monument was set aside, to experience the monument in a variety of ways, and to have programs and facilities for people of varying abilities, including visitors with disabilities.

A transit system evaluation was conducted by a consultant to address concerns raised during scoping.

Impact Analysis

Implementing the proposed action would allow visitors to see petroglyphs in the context in which they were created. Except for the addition of constructed trails and petroglyph viewing areas, the inner canyons would appear much as they did in prehistoric times. High-use trails in the outer portions of the canyons, and less improved trails in the inner portions of the canyons would provide a diversity of experiences for all visitors. Visitors who are able and willing to hike to the back of the canyons could see petroglyphs with a sense of solitude.

The improved parking area and interpretive viewing site on Black Volcano would permit visitors to better understand the entire landscape. The interpretation of the connections the Pueblo Indians make between the escarpment and the volcanoes could be better explained from this vantage point.

Constructing a visitor center/interim heritage education center in Boca Negra Canyon would provide visitor orientation and introduction to the monument and the significance of the resources and offer a place for schoolchildren and other groups to learn about the monument. Easy and close access from the visitor center to some petroglyphs would accommodate visitors of different ages and abilities and offer greater opportunities for effective interpretation, both having positive impacts on visitors. Boca Negra Canyon's central location would be convenient for visitors who choose to go north or south to other petroglyph concentrations. The development of a horse tie-up area near the visitor

center would be sited to avoid any potential conflicts with visitors.

Constructing a permanent heritage education center would permit organized groups to have a quality educational experience in an exceptional resource. The Mesa Prieta area, in contrast to Boca Negra, would provide visitors with a more isolated experience because the topography separates it from surrounding land use. The separation of the visitor center and heritage education center would enhance experiences for both visitors and school-children. Typically, students stay longer at the facility than visitors. The Mesa Prieta area would provide more space to accommodate a heritage education program. Additionally, the combined use of trails by public visitors and educational groups in high-use areas could lead to congestion and seriously diminish the experience for both groups of visitors.

Based on current information, it would not be cost-effective to implement a transit system under alternative 1. Further analysis of visitor use patterns would be required (Balloffet 1994b).

Noise levels from development near the Piedras Marcadas Pueblo ruin would increase and adversely affect the site and visitors.

Conclusion

Visitor experience would be improved by preserving the escarpment in its natural state and restricting development within the monument.

Cumulative Impacts

Over time a more positive experience for visitors, schoolchildren, and other organized groups would be provided as a

result of implementing 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 construction of Unser Boulevard and the recreational trail by the city would benefit national visitors by facilitating access to the mesa top by vehicles, bicycles, horseback, and foot. There would also be a beneficial impact of eliminating vehicular traffic in Boca Negra Canyon. There would be adverse impacts on visitors by the visual intrusion, increased noise levels, and the barrier of the four-lane highway. Creative design and material use would minimize these impacts.

IMPACTS ON LOCAL VISITORS AND ADJACENT LANDOWNERS

Methods for Analyzing Impacts

Proposed actions for development and visitor activity were compared with existing uses that occur on monument lands, both by the local public and adjacent landowners. A transportation consultant was hired to evaluate traffic impacts and address concerns raised by neighborhoods and the city Public Works Department.

Impact Analysis

There would be some increased traffic from visitors on Unser Boulevard, but there would be no adverse impacts on residents who use this road for access to their homes. Although parking would be provided for visitors, increased traffic could occur on neighborhood streets, adversely impacting residents in adjacent neighborhoods, including Santa Fe Village, Taylor Ranch, and Laurelwood. If these

impacts become significant, parking regulations, signs, and a visitor transit system would be further evaluated.

Local residents might also be adversely impacted by mesa-top visitors who travel off trails to the rim and look over into backyards, thus affecting privacy. Although the number of visitors who do this would be small, any occurrence might be significant to neighborhood residents.

Regulating horse and bicycle riding and restricting all visitors to trails would prevent erosion and potential safety problems that have affected other park system units that have allowed unregulated horse and bicycle use. Visitors wanting solitude would not be able to find it as easily and might have to go elsewhere.

Constructing three multiuse trail escarpment crossings and the multiuse trails on the mesa top would have a positive impact on people who like to hike, bicycle, and horseback ride on the mesa top. Constructing the multiuse trail in the northern portion of the monument would have a positive impact on users who want a longer trail experience in the monument.

Local residents would benefit most because multiuse trails on the mesa top would tie into a city trail system already planned and in some cases constructed outside the monument. Constructing a horse tie-up area near the visitor center would have a beneficial impact on visitors who would travel to the monument on horseback. Visitors looking for solitude would be disappointed and displaced.

Noise levels from development near the Piedras Marcadas Pueblo ruin would increase and adversely affect the site and visitors.

There might be impacts on adjacent landowners because of stormwater manage-

ment and utility crossing constraints. Federal law requires that there be no degradation of monument resources, even if there is additional cost. Adjacent landowners would also be affected by additional time for consultation, design, construction standards, and compliance with the National Environmental Policy Act and the National Historic Preservation Act, required to prevent impacts on monument resources.

Conclusion

There would be minor increases in traffic and no adverse effects from monument visitation (Balloffet 1994a). This alternative would have 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. In general, greater access would be allowed to the monument than now exists but in a way that ensures better resource protection.

There would be impacts on adjacent landowners because of federal laws that require that there be no degradation of monument resources and because of the additional time for consultation, design, construction standards, and compliance with the National Environmental Policy Act and the National Historic Preservation Act that would be required to prevent impacts on monument resources.

Cumulative Impacts

The construction of Unser Boulevard, the recreational trail, and the utility corridor by the city would benefit adjacent landowners and local visitors by facilitating access and allowing the enjoyment of monument resources. Adjacent landowners west of the escarpment would also benefit from the utility access. There would be

adverse impacts from visual and noise intrusions from traffic on Unser Boulevard. Creative design and material use would minimize these impacts.

IMPACTS ON ENERGY CONSUMPTION

Methods for Analyzing Impacts

Energy consumption impacts were analyzed by applying sustainable design principles and experience in other units of the national park system.

Impact Analysis

Energy conservation measures incorporated in facility development would reduce adverse impacts from increased energy consumption from facility development and use. Building designs would incorporate the most current technology for sustainable design practices to reduce overall energy and resource consumption. Through the use of sustainable practices and consultation with recognized leaders in alternative energy development, the goal of all facility development would be to serve as a local and international model in energy and resource conservation.

Planning for alternative means of transportation in the monument also identifies opportunities for energy savings. For example, each development area could be reached by auto as well as other transportation such as bicycles, foot, and horse to assess the viability of shuttle bus and transit systems. Further studies would be needed as monument facilities are developed and visitor use patterns take shape.

The use of energy-saving devices, such as timers and sensors for lighting, high efficiency insulation, passive and active solar heating, fresh air ventilation, and

maximized daylight in building design for each of the development areas would help conserve energy. Using locally available materials would also reduce energy consumption used to transport building materials. The combination of these devices would result in reducing the adverse effects from increased energy consumption of new facilities.

Conclusion

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.

Cumulative Impacts

The facilities in the monument would contribute to increasing demand for energy in the area. Energy conservation measures of the monument facilities would mitigate much of the adverse energy consumption impacts.

IMPACTS OF MONUMENT USE AND ACTIVITIES ON EXISTING NOISE LEVELS

Methods for Analyzing Impacts

Four sources of information were used to analyze the impacts on noise levels — the *Traffic Impact Evaluation* by Balloffet and Associates, Inc. (1994a); the *Unser Middle Transportation Corridor Study, Final Environmental Impact Statement* by Leeds Hill-Herkenhoff Inc. (1992); noise level monitoring of sites within the monument in 1993, 1995, and 1996; and the cumulative experience of the National Park Service with the construction and development of facilities at other national park system units.

The *Traffic Impact Evaluation* analyzes the potential traffic impacts associated with the operation of Petroglyph National Monument by looking at trip generation and distribution to determine traffic volumes in comparison to forecasted residential and commercial travel on the Albuquerque street system.

The *Unser Middle Transportation Corridor Study* used 1990 and 2010 traffic volumes to measure average existing peak hour noise levels and projected future noise levels at sites within and adjacent to the monument.

Petroglyph National Monument staff used an integrated sound level meter to conduct measurements of noise levels at 21 sites through the monument, with the exception of the Mesa Prieta and southern geologic window. These studies were conducted in 1993 and repeated in 1995 and 1996 to collect baseline noise level data.

Impact Analysis

Noise levels would increase during construction in areas being developed. Construction noise would be temporary and not significant.

Increased noise from cars, recreational vehicles, and buses entering and leaving parking areas would not be significant and would likely be less than surrounding traffic and urban noise levels.

Traffic volumes expected to and from the monument would be small compared to forecasted travel on the street system resulting from residential and commercial sources (Balloffet and Associates, Inc. 1994a)

The greatest increase in noise would probably be at the area between Mesa Prieta and Unser Boulevard (if the heritage

education center is developed on the proposed site) from traffic and buses bringing organized groups and for educational activities. This area does not currently have road access. Adjacent neighborhood development is currently being planned, which would likely be in place before a heritage education facility and parking area is constructed. Therefore, as in other areas, increased noise from visitor activity would be significantly less than adjacent neighborhood noise levels.

Adjacent neighborhood noise and traffic from local streets including Unser and Coors Boulevards would have a greater adverse impact than that generated by development at Boca Negra, Piedras Marcadas, and Rinconada Canyons, the Mesa Prieta, and the Piedras Marcadas Pueblo ruin.

Visitor use activities in the volcanoes area would increase noise levels but would not be a significant adverse impact.

Conclusion

Noise from monument development and operations would not have a significant impact.

Cumulative Impacts

It is expected that noise from proposed adjacent development near Mesa Prieta, Boca Negra and Piedras Marcadas Canyons, the Piedras Marcadas Pueblo ruin, and the volcanoes would adversely affect the monument. Combined noise levels from Unser Boulevard, the expansion of the Double Eagle II Airport, proposed Paseo del Volcan, and proposed adjacent development could cumulatively and significantly increase noise levels in the monument. Mitigation measures regarding Unser Boulevard, the airport,

and Paseo del Volcan would be developed with the Federal Aviation Administration, the state, and the city.

IMPACTS ON AIR QUALITY

Methods for Analyzing Impacts

A 1990 amendment to the Clean Air Act (section 176(c)) requires that the National Park Service analyze the impacts of the development proposed in the general management plan, including visitor traffic and staff commutes, on the city's ability to maintain conformity with the required air quality standards as determined by the Environmental Protection Agency. The city of Albuquerque has been determined to be a nonattainment area for carbon monoxide. However, this status may soon be reviewed and changed to reflect three consecutive years without violation of these standards. The National Park Service has estimated that up to 283,000 visitors may visit the monument annually by the year 2010, when all facilities are constructed and the monument is in full operation. Based on this figure, parking spaces for 55 automobiles and 15 oversize vehicles (buses, RVs, etc.) would be required at the visitor center. Parking spaces would also be provided at the administrative facility and trailheads. Using this information, the amount of carbon monoxide emitted annually was calculated.

The National Park Service contracted with Balloffet and Associates to assist in analyzing the potential traffic impacts associated with the operation of the monument by looking at trip generation and distribution to determine traffic volumes in comparison to forecasted residential and commercial travel on the Albuquerque street system (Balloffet and Associates, Inc. 1994a).

Impact Analysis

The construction of these facilities would result in temporary increases in inhalable particles (dust) and mobile source emissions (e.g., carbon monoxide, nitrogen oxides, and volatile organic compounds). During construction, dust suppression and other mitigating measures used would minimize temporary adverse effects on air quality.

It was calculated that once the monument is fully staffed, federal employees commuting back and forth from home to work would travel 512 miles per day at 8.9 grams of carbon monoxide per mile. This represents 9.2 pounds per day of carbon monoxide emissions. It is assumed that about two-thirds of these employees would not be traveling during peak hours.

Projected visitor use data assumes 283,000 visitors per year by the year 2010. There were about 88,000 visitors to the monument in 1994. The projected additional 195,000 would travel approximately 10 miles round-trip from the interchange with I-40 and Unser Boulevard to the visitor center at Boca Negra Canyon. EPA model Mobile 5a projects that 8.81 grams of carbon monoxide per mile would be emitted in the year 2010 assuming that a mix of light-duty and heavy-duty vehicles were used. This would contribute approximately 41.5 pounds per day of carbon monoxide emissions. It is assumed that visitors would not be traveling during peak hours by 2010. A total of 50.7 pounds per day (9.3 tons per year) of carbon monoxide emissions would be generated by visitors and federal monument staff.

There would be no known indirect emissions. These total emissions are below de minimus levels (the maximum amount of carbon monoxide allowed to be emitted per year, which in this case is 100 tons per year) as described in the Environmental

Protection Agency's general conformity regulation; therefore this action is exempt from conformity. However, employees would be encouraged to use the city transit system as well as carpool to further reduce emissions.

Due to the lack of information available to determine emission levels generated by construction activity, conformity would be determined during the design phase for proposed development sites. If required, construction would be designed to ensure conformity. Limiting the number of trips, traveling during nonpeak hours only, suppressing dust, and using other methods would be required if necessary to ensure that conformity is met. Other emissions, such as ozone, particulates, and lead, would be under de minimus levels as set in the regulations pertaining to nonattainment areas.

Conclusion

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 from the proposed action would not exceed de minimus levels (100 tons per year for carbon monoxide) as described in the Environmental Protection Agency's general conformity regulations (section 176 [c] of the 1990 Clean Air Act amendments). Temporary adverse impacts might occur during construction from dust, but they would not be significant.

Cumulative Impacts

Particulate matter (dust) 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 adjacent roads and development and the airport would increase emissions.

UNAVOIDABLE ADVERSE IMPACTS

Developing facilities and providing 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 their backyards on social trails of their own design. All visitors would be required to use established access points to the mesa top and canyons. This might be perceived by some adjacent landowners and local residents to be an adverse impact on their ability to enjoy the monument resources.

A total of about 34 acres of biotic communities, wildlife and wildlife habitat, soils, and associated biodiversity would be adversely impacted by the development of visitor facilities and visitor activities.

Additionally, the construction of Unser Boulevard through the monument would adversely impact the above resources.

Several archeological sites could be negatively affected by construction and 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.

RELATIONSHIP BETWEEN SHORT-TERM USE OF THE ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The disturbance of 34 acres by facility development and visitor activities and increasing visitor use of areas now not visited by many people would cause a long-term decrease of natural biological productivity. 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, partly within the Albuquerque city limits, has likely already experienced changes in productivity due to the extent and type of development occurring adjacent to the west mesa.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

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.

The habitat for the *Pediocactus papyranthus* and *Mammillaria wrightii* cacti 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.

Although most developed areas could be reclaimed to previous conditions over time, the use of land, wildlife habitat, and financial resources to implement the proposed action would, in the practical sense, be an irretrievable commitment of resources.

IMPACTS OF IMPLEMENTING ALTERNATIVE 2

IMPACTS ON CULTURAL RESOURCES

Impact Analysis on Petroglyphs

Fewer petroglyphs would be exposed to risk from vandalism and inadvertent damage because the visitor center area would not provide easy access to large numbers of petroglyphs and access to Rinconada Canyon would be more difficult. Also, fewer visitors would have the opportunity to see the petroglyphs because of the more difficult access. Education, understanding and appreciation of petroglyphs are critical components of the petroglyph protection program. Loss of educational opportunities could increase the risk of vandalism because of the lack of visitor understanding and appreciation for petroglyphs. (See table 16 below for potentially affected sites, effects of this alternative upon resources, proposed protective measures, and further 106 compliance needed.)

Redesign of the trails and viewing areas at Boca Negra Canyon would have a positive effect upon the petroglyphs and their context by providing established viewing areas and by removing trails that wind through and between petroglyph concentrations or are too close to the features.

Locating facilities within Mesa Prieta and Piedras Marcadas Canyon would increase visitation in areas where little visitation has occurred, which could result in some increased risk for damage to the petroglyphs.

There would be less impact on the cultural landscape in this alternative than in alternative 1 because development is generally focussed in previously disturbed areas.

The petroglyph research center would promote research regarding and public education and appreciation of the petroglyphs, and resource management and center staff would develop ways to conserve the petroglyphs and repair vandalism — all of which would be positive impacts on petroglyphs.

Impact Analysis on Archeological Sites

Visitor contact and information centers at Mesa Prieta, Piedras Marcadas Canyon, and Piedras Marcadas Pueblo ruin would have about the same impact as in alternative 1. There might be an impact on one site at the 81st Street overlook site, which the Park Service would try to avoid during specific site location and design.

There would be few indirect impacts from visitor use would be expected because the development is focused into previously disturbed areas at Boca Negra Canyon and Lava Shadows. Frequent patrols and law enforcement would reduce potential for adverse impacts on sites in outlying areas (Rinconada Canyon and the mesa top). Limited development near the boundary in the nonfederal protected area might mean less risk of vandalism and destruction of sites in the monument; however, a number of factors, such as ease of access, could result in a different outcome.

Reclaiming abandoned mine sites could potentially adversely impact unknown archeological resources at the volcanoes.

See table below for a summary of effects, mitigation, and further compliance needed.

TABLE 16. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 2 ON CULTURAL RESOURCES LISTED ON OR ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES, PROPOSED PROTECTIVE MEASURES, AND REQUIRED COMPLIANCE WITH SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT.

Note: The entire monument, Boca Negra Cave, Las Imagines Archeological District, and the Piedras Marcadas Pueblo ruin are all listed on the national register. Cultural resources include cultural landscape, archeological and

ethnographic sites, and petroglyphs. Unless otherwise noted in the following table, construction could probably avoid sites.

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>Lava Shadows — No known resources in immediate area of existing structures; see alternative 1 for further information on entire development area.</p>	<p>Remove existing nonhistoric facilities; construct visitor center, parking, trails, trailhead, access road.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • When removing facilities, use care to avoid disturbance of unknown subsurface remains. • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (construction and use of formal trails protects resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>
<p>Piedras Marcadas Canyon — Sites include three prehistoric lithic scatters (one Archaic); one lithic and ceramic scatter; four prehistoric sites with stone circles, water control features, and/or lithic/ceramic scatters; at least two multicomponent sites containing prehistoric lithic scatters, grinding slicks, and/or historic herding artifacts and features. Vicinity: petroglyphs, potential cultural landscape, ethnographic sites.</p>	<p>Construct visitor contact facility, parking area, access road, rest-rooms, and trails.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion upon cultural landscape. • Design trails to reduce impacts from visitor use (construction and use of formal trails protects resources from inadvertent damage.) • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. • Permits would be required. 	<p>Same as above.</p>

TABLE 16. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 2 ON CULTURAL RESOURCES (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>Mesa Top at Northwest Part of Monument, near Piedras Marcadas Canyon — One site in area (prehistoric lithic and ceramic scatter, PIII-PIV). Potential cultural landscape, petroglyphs.</p>	<p>Construct parking, access road, trail.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (construction and use of formal trails protects resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>
<p>Piedras Marcadas Pueblo Ruin</p>	<p>Develop interpretive trail; remove existing building.</p>	<p>With mitigation, no adverse effect</p>	<ul style="list-style-type: none"> • Continued consultation with Pueblos. • Develop ruins management plan in consultation with Pueblo community, SHPO, and ACHP. • Collect, document, and stabilize to prevent erosion. • Develop mitigation plan with SHPO. • Design visitor facilities to avoid pueblo ruins or intrusion upon cultural landscape and to prevent impacts from visitor use. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitation. • Fence and patrol site. 	<p>SHPO/ACHP consultation in preparing preliminary design, mitigation plan, and ruins management plan.</p>

TABLE 16. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 2 ON CULTURAL RESOURCES (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>Southern Mesa Prieta — Seven prehistoric sites (lithic quarry and reduction/scatters, activity areas, boulder features); one historic site (corral and artifact scatters); and four multicomponent sites with historic activity areas, corrals, and/or artifact scatters; prehistoric component has lithic quarry/reduction scatters, ceramics, water catchment/rock features, agricultural fields, and/or hearths/fire cracked rock. Adjacent are petroglyphs, potential cultural landscape, ethnographic sites and historic livestock drive route. At least 12 sites in area.</p>	<p>Build visitor information kiosk, rest-rooms, parking, access roads, trails.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>
<p>Boca Negra — Six adjacent sites include one stone circle (age unknown); four water and soil control structures; one historic shelter. Vicinity: petroglyphs and potential cultural landscape.</p>	<p>Construct heritage education facility, parking, shade structures, access road, trails.</p>	<ul style="list-style-type: none"> • With mitigation, no adverse effect. • Positive effect on petroglyphs by rebuilding trail system. 	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (construction and use of formal trails protects resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor and student use. • Conduct archeological investigations, collect artifacts, and document and stabilize sites and surface features in areas adjacent to facilities and where intensive use is proposed. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>

TABLE 16. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 2 ON CULTURAL RESOURCES (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
Rinconada Canyon — Petroglyphs and other archeological sites, potential cultural landscape, ethnographic sites.	Formalize pedestrian petroglyph viewing trail.	With mitigation, no adverse effect.	<ul style="list-style-type: none"> • Same as above. • In addition, permits would be required. 	SHPO/ACHP consultation in preparing preliminary design and mitigation plan.
Volcanoes — Volcanoes are sensitive ethnographic resources; four prehistoric sites nearby include petroglyphs, rock shelter, lithic/ceramic scatters, and/or grinding stone; three historic sites include corrals, pre- and post-World War II historic debris, lambing pens, hearth and/or corral; one site has corral and lambing pen, rock shelter and lithic/ceramic scatters. Vicinity: potential cultural landscape, ethnographic sites.	<ul style="list-style-type: none"> • Retain parking area and access road for occasional tour groups. • Gate entrance • Reclaim cinder mining sites. 	<ul style="list-style-type: none"> • With mitigation no adverse effects. Area previously impacted. Limiting public access to volcanoes would be beneficial to values held by culturally affiliated groups. Reclaiming mining sites would not occur if values of these groups would be adversely impacted. 	<ul style="list-style-type: none"> • When rehabilitating facilities, use care to avoid disturbance of unknown subsurface remains. • Consult with American Indians to ensure no traditionally gathered resources would be disturbed. • Establish monitoring and response plan. 	Same as above.
Geologic Windows — 13 sites in vicinity of proposed trails (prehistoric petroglyphs and rock features, windbreak; historic corrals, structures, shelter, and walls). Potential cultural landscape.	No action.	No adverse effect.	<ul style="list-style-type: none"> • Continued consultation with Pueblos. • Establish monitoring and response plan. 	None.
81st Street Overlook — Potential cultural landscape. No known sites in area.	Construct parking, access road, overlook, picnic area, exhibits, trails.	No known petroglyphs, archeological or ethnographic sites would be affected. With mitigation, no adverse effect on cultural landscape.	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (construction and use of formal trails protects resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. 	SHPO/ACHP consultation in preparing preliminary design and mitigation plan.

TABLE 16. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 2 ON CULTURAL RESOURCES (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>Mesa Top — Sites are too numerous to list, ranging from Archaic period to present. Potential cultural landscape, ethnographic sites.</p>	<ul style="list-style-type: none"> • Construct pedestrian trails. • Reclaim selected roads and trails. 	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • When rehabilitating facilities, use care to avoid disturbance of unknown subsurface remains. • Design trails/facilities to avoid cultural sites or intrusion upon cultural landscape, and to reduce potential for inadvertent damage from visitor use. • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Include in monitoring and response plan. • Most trails would follow existing roads. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>
<p>Neighborhood Access — Several adjacent sites, including lithic/ceramic scatters. Vicinity: petroglyphs, potential cultural landscape.</p>	<p>Construct neighborhood access points and trails.</p>	<p>With mitigation, no adverse effect</p>	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (construction and use of formal trails protects resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. 	<p>Same as above.</p>
<p>Escarpment Crossings, Boca Negra and Calle Norteña — Four sites in vicinity: one prehistoric lithic reduction site (Calle Norteña); prehistoric shelter, Anasazi water and soil control walls and terraces (Boca Negra).</p>	<p>Build multiuse trails crossing escarpment.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • Sites would be avoided. • Design escarpment crossing trails to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). 	<p>None unless resources were found.</p>

TABLE 16: SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 2 ON CULTURAL RESOURCES (CONT.)

Area and Major Resource	Action	Proposed Defermination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
Homestead Circle, Taylor Ranch Road/Calle Norteña Area — One prehistoric site (lithic/ceramic scatter) in vicinity.	<ul style="list-style-type: none"> • Remove construction debris, reclaim disturbed areas at Homestead Circle park. • Develop pedestrian trail neighborhood access to mesa. • Recontour, regrade, and reclaim disturbed area at Taylor Ranch Road/Calle Norteña. 	With mitigation, no adverse effect.	<ul style="list-style-type: none"> • No known resources in proposed development areas • Site-specific surveys would be conducted as appropriate before development. 	SHPO/ACHP review of project if resources are discovered.

Impact Analysis on the Cultural Landscape

With close coordination and consultation with Pueblo Indian groups, no adverse impacts on the cultural landscape from the development at Piedras Marcadas Pueblo ruin would be expected. Because development in this alternative is generally focussed in previously disturbed areas, the only new intrusions on the cultural landscape would be the small parking area at the 81st Street overlook and the visitor facilities at Piedras Marcadas Canyon and Mesa Prieta. These facilities would be sited to minimize their visibility. Limiting visitor access to the volcanoes area would have a positive impact on that area's cultural landscape and resources.

Modern mining of cinders is one feature of the cultural landscape. Reclaiming the cinder mines would change the nature of this character-defining feature of the landscape. Documenting this feature and monitoring during reclamation would prevent adverse effects on the landscape.

Conclusion of Impacts on Cultural Resources

Impacts on the cultural landscape and archeological sites would be minimal because development is generally focussed in previously disturbed areas.

Limiting visitor access to the volcanoes area would have a positive impact on that area's cultural landscape and resources.

Overall, the 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.

The identification and evaluation of resources, sensitive design, and appropriate mitigating measures would help ensure that archeological sites would not be negatively impacted during and after facility development. The management of visitors as described would reduce the potential for negative indirect impacts of

concentrated use in selected areas and damage from looting and vandalism. With continued consultation, potential for direct negative impacts on ethnographic sites or Pueblo values would be minimized. Indirect effects would be difficult to evaluate, but they would not be expected to be adverse.

Cumulative Impacts on Cultural Resources

Cumulative impacts of this alternative would be similar to those described for alternative 1. 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.

IMPACTS ON VALUES HELD BY CULTURALLY AFFILIATED GROUPS

Little if any adverse impact upon culturally affiliated groups would be expected under this alternative, except that the limiting of visitor access to the volcanoes area would result in a positive impact on values held by these groups. With no bicycles or horses on top of the mesa, there would be fewer impacts under this alternative.

Developing Piedras Marcadas Pueblo ruin only after special study and consultation with concerned Pueblo Indians would avoid impacts related to intrusion on traditional and cultural areas and archeological sites. Consultation would result in further participation and involvement by culturally affiliated groups in monument

interpretive and resource protection programs.

No adverse impacts on areas of traditional and cultural significance would occur from reclaiming abandoned mining sites because reclamation would not occur if Pueblo Indians had strong objections.

Conclusion

There might be positive impacts on the values held by these groups through participation in consultation regarding site protection and interpretation. No adverse impacts would occur from reclaiming mine sites.

Cumulative Impacts

The cumulative adverse 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 adverse impacts on resources that are sensitive to culturally affiliated groups. Privacy for traditional and cultural activities might be easier to achieve, contributing to continuation of traditional activities in the future.

The city's construction of Unser Boulevard through the monument escarpment is opposed by American Indian groups and the Atrisco heirs. There would be adverse impacts on these groups and their ability to maintain their connections to the monument.

IMPACTS ON FEDERAL AND STATE THREATENED AND ENDANGERED SPECIES

Impact Analysis on Plants

Section 7 consultation would be conducted with the U.S. Fish and Wildlife Service for the *Pediocactus papyracanthus* and *Mammillaria wrightii* cactus species. About 7.5 acres of potential habitat for the two cacti would be adversely impacted by trails and visitor activity.

Conclusion. The 7.5 acres of potential habitat for the *Pediocactus papyracanthus* and *Mammillaria wrightii* cacti represents 0.10% of the total potential habitat and would not be a significant adverse impact within the monument.

With the mesa-top lands in the monument being managed for pedestrian use only, along with the 2,200 acres of open space lands north of the monument, there would be fewer people on the mesa top than in the other alternatives and less disturbance to habitat for the *Pediocactus papyracanthus* and *Mammillaria wrightii*.

Cumulative Impacts. Destruction of further habitat could eliminate the opportunity for these cactus species to populate this area and thus could contribute to the overall decline of these species. As more and more habitat is developed outside the monument by the private sector, habitat within the monument would become more valuable, and development actions under this alternative could incrementally increase the amount and severity of potential impacts on these cacti.

These impacts would be mitigated by site-specific surveys conducted before facility development and before the city's construction of Unser Boulevard and the recreational trail to ensure that no

threatened or endangered species were present.

Impact Analysis on Birds

Impacts would be similar to those described under the proposed action alternative.

Development would disturb and adversely impact the ferruginous hawk during its nesting period. Pedestrian use only in the entire monument might result in fewer visitors to the mesa top, thereby providing more privacy to the hawk.

Conclusion. Managing the monument 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. Pedestrian trails would be located far enough back from the escarpment edge (at least 100 meters; National Biological Survey, Greg Farley, ornithologist, pers. comm. August 10, 1994) to avoid adverse impacts on potential nesting areas. Mitigation might include closing trails from February 1 to July 1 to avoid disturbing the hawks during sensitive nesting periods. Development in areas that have been closed to the public would likely adversely affect the hawk, causing disturbance and visitor activity in an area that is currently closed to the public and undisturbed.

Cumulative Impacts. Developing certain sites in the monument, combined with adjacent residential development outside the monument boundary and the city's construction of Unser, might disturb the ferruginous hawks, causing them to abandon the area. This would contribute to this species overall decline.

Site-specific surveys done before facility development and before the city's

construction of Unser Boulevard would ensure that no threatened or endangered species were present.

**IMPACTS ON WILDLIFE
OTHER THAN LISTED SPECIES**

Impact Analysis on Birds

Pedestrian use on the mesa top would not adversely impact bird species. As described under the proposed action, impacts on raptor species in the Mesa Prieta area would be avoided by constructing trails far back from the rim and placing overlooks away from nesting sites. Temporary closures of nesting area sites would occur if, during certain years, nesting activity was found near overlooks. Monitoring would be conducted, and carrying capacity levels would be identified to prevent significant impact from visitors. Pedestrian use only on the mesa top would by itself limit the numbers of visitors and any associated impacts on birds. With less development and visitor use occurring in Rinconada Canyon and Mesa Prieta than under the proposed action, less bird habitat would be adversely affected than under the proposed action.

About 3.5 acres of habitat for the loggerhead shrike would be adversely impacted by facility development. There would also be adverse impacts on the crissal thrasher and sage sparrow, which occupy the same habitat as loggerhead shrikes. These impacts would not be significant.

Impact Analysis on Other Wildlife

Constructing facilities would adversely impact about 10 acres of wildlife habitat within the monument. Constructing 18 miles of pedestrian trails would adversely

impact another 13 acres of habitat. Indirect impacts on wildlife would occur as more and more adjacent land was developed.

Total acreage of wildlife habitat within the monument is 7,244 acres. The acreage distribution and percentage of the total available acreage in the monument is as follows:

	<u>Acreage</u>	<u>% of Total Monument Acreage</u>
Flatlands	1,475	20
Escarpment edge	35	<.5
Mesa top	4,534	63
Escarpment	<u>1,200</u>	17
Total	7,244 acres	

Most impacts on wildlife habitat from facility development and visitor activity would occur in the flatlands (12.5 acres), encompassing 0.8% of the total habitat available. Three acres of escarpment edge would be impacted by visitor activity, representing 8% of the total habitat available. About 9.5 acres of mesa top would be impacted by development, representing 0.20% of the total available within the monument. About 0.5 acre of the escarpment would be impacted by trails, representing 1.5% of the total within the monument.

Conclusion

No significant impacts on birds and other wildlife would be anticipated from developing facilities on 10 acres and 18 miles of trails (13 acres) in the monument.

About 23 acres of development would occur under this alternative; however, 50 acres of disturbed land would be reclaimed, creating more available habitat for plants and wildlife. This would have a beneficial effect.

Protecting 129 acres (through the boundary addition) of wildlife habitat now proposed for development would be a beneficial impact on all species.

Cumulative Impacts

Impacts would be the similar to those described in alternative 1 plus the additional protection of 475 acres adjacent to the monument and the 129 acres within the monument from the boundary adjustment would help avoid significant adverse cumulative impacts on birds and other wildlife.

IMPACTS ON NATURAL DRAINAGE PATTERNS AND FEATURES

Impact Analysis

Hardening and compacting 13 acres for parking areas, trails, and facilities would increase sheet flow and stormwater drainage. Sheet flow would contribute to the formation of gullies and erosion of sediment and result in flooding, which would adversely impact soils, vegetation, and possibly facilities. About 40 acres of roads on the mesa top would be reclaimed, resulting in less gully formation. Stormwater management techniques would minimize the impacts of stormwater flows. Providing designated trails for residents living near the monument would help prevent further gullying and erosion of the escarpment edge because nearby residents would use designated trails instead of creating of social trails.

Conclusion

Hardening and compacting 13 acres for facilities and trails would increase stormwater flows in the monument. Establishing holding structures and designated trails to gain access to the mesa top and reclaiming about 40 miles of roads and trails on the mesa top would help prevent further gullying and erosion of soils because visitors and local residents would be less likely to create or need social trails, which contribute to impacts of erosion and gullying. This would represent an overall beneficial effect on vegetation and soils and the monument's capacity to handle stormwater. Reclaiming 40 acres would also have a positive impact by eliminating existing gullies and preventing new gullies from forming.

Cumulative Impacts

Cumulative impacts would be similar to alternative 1. The construction of monument facilities and, in addition, the development of adjacent properties and the construction of Unser Boulevard by the city would have impacts on natural drainage patterns and features. There would be adverse impacts on natural drainage patterns within the new Unser Boulevard alignment. Positive impacts from extending Unser Boulevard would include the removal of a 1,000-foot trench that is outside the monument, which directs stormwater flows from Paradise Hills into Piedras Marcadas Canyon. Other positive impacts would be providing an opportunity to manage stormwater flows in a manner that would not adversely affect monument resources.

IMPACTS ON BIODIVERSITY

Impact Analysis

Developing an heritage education center and parking at Boca Negra Canyon, a visitor center at Lava Shadows, visitor contact facilities at Piedras Marcadas Canyon and Pueblo ruin, visitor information and parking at Mesa Prieta, and trails in Piedras Marcadas, Boca Negra, Rinconada, and Mesa Prieta Canyons would impact 13 acres of flat dune habitat. The presence of large numbers of people in areas not now visited might adversely affect some species of wildlife, although this would not be significant. Reclaiming the Homestead Circle park site to its native condition would have a beneficial impact and add 7 acres of wildlife habitat that is currently disturbed. About 10 acres of other land would also be disturbed for development.

Reclaiming 10 acres of mined area at the volcanoes would help establish habitat and contribute to the monument's biodiversity. Closing the volcanoes would also contribute to biodiversity, as would reclaiming about 50 acres of disturbed land including Homestead Circle park, Calle Norteña, and various trails, roads, and other disturbed areas.

Conclusion

About 23 acres would be developed, representing less than 0.1% of the total habitat available; thus, this would not likely be a significant adverse impact. About 50 acres of disturbed land would be reclaimed, creating more available habitat and resulting in a beneficial effect on biodiversity. This represents less development and adverse impact than under the proposed action (alternative 1).

Cumulative Impacts

Developing 23 acres might proportionally decrease wildlife species and adversely impact biodiversity in the area. About 23 acres of plant species would be eliminated, which would also contribute to an adverse impact on biodiversity. With the high rate of development occurring adjacent to the monument, less and less habitat would remain for wildlife and plant populations. Reclaiming about 50 acres of disturbed areas would contribute to increased biodiversity.

The city's construction of Unser Boulevard, might have adverse impacts on biodiversity by eliminating habitat, increasing noise levels, and preventing some movement of wildlife.

Protecting 475 acres by other than federal means, if developed as a compatible, planned development as envisioned, would have a beneficial cumulative impact on biodiversity in the area of the monument, as would the 129-acre boundary addition. However, if dedicated open space in the 475 acres included exotic species and application of large amounts of fertilizer and herbicides and pesticides, there would be adverse impacts on biodiversity.

The monument is likely to become an isolated island of habitat that over time would have a significant adverse impacts on biodiversity.

IMPACTS ON SOILS

Impact Analysis

The following table shows impacts by soil type and at development areas to provide a more complete and understandable picture of the impacts on soils. Impacts can be seen by looking at the "Soil

TABLE 17. SOIL IMPACTS BY DEVELOPED AREA, ALTERNATIVE 2

Developed Area	Acres of Moderate to Highly Erodible Soils Affected
Rinconada Canyon	Bluepoint-Kokan, hilly; Bluepoint loamy fine sand, 1-9% slopes
Piedras Marcadas Canyon	Bluepoint-Kokan, hilly; Bluepoint loamy fine sand, 1-9% slopes
Lava Shadows	Madurez-Wink, gently sloping; Bluepoint-Kokan, hilly
Boca Negra Canyon	Bluepoint-Kokan, hilly; Kokan-Rock outcrop
Volcanoes area	none
Piedras Marcadas ruin area	Bluepoint-Kokan, hilly
Homestead Circle	none
Mesa Prieta	Bluepoint-Kokan, hilly; Bluepoint loamy fine sand, 1-9% slopes
Mesa-top trails	Bluepoint loamy fine sand, 1-9% slopes; Madurez-Wink, gently sloping; Alameda sandy loam, 0-5% slopes; Akela Rock outcrop, 10-50% slopes
Neighborhood access trails	Bluepoint-Kokan, hilly; Kokan Rock outcrop; Bluepoint loamy fine sand, 1-9% slopes
81st Street addition	Latene sandy loam, 1-5% slopes

Characteristics/Impacts" column on table 13. For example, soils with moderate to high potential for erosion (by wind or water) would be impacted by development and vegetation removal more than soils with slight to moderate potential for erosion.

During construction, requirements such as watering and immediate revegetation efforts would mitigate adverse impacts on these soils.

After construction is complete, adverse impacts on soils would include compaction from visitor use. No other impacts would be anticipated. Keeping visitors on established trails would prevent further erosion, vegetation removal, and compaction.

Overall, impacts on soils would be less than under the proposed action because there would be no horse and bicycle use on the mesa top.

Homestead Circle park would be a more natural setting than under alternative 1.

Reclaiming the site that has been used as a dumping ground for builders would have a positive impact because it would prevent further loss of soil from erosion.

Conclusion

Facility development on 23 acres of soils within the monument would result in an adverse impact on soils, which is important because soils support plant and wildlife habitat and contribute to the health of the west mesa ecosystem. Less impact on soils would occur under this alternative than under the proposed action, and the impacts would not be significant.

No adverse impacts on soils would be anticipated after construction. Keeping visitors only on established trails would prevent further erosion, vegetation removal, and compaction.

Reclaiming 50 acres including the site near the Taylor Ranch Road and Calle Norteña, the volcanoes, and other disturbed areas,

would have beneficial impacts on monument soils.

Cumulative Impacts

Cumulative impacts would be similar to alternative 1. The 129 acres in the boundary addition and the 475 acres in the nonfederal protected area would be a positive impact.

IMPACTS ON SCENIC RESOURCES

Impact Analysis

Impacts under this alternative would not be significantly different from alternative 1. The elimination of facilities at Rinconada would decrease the adverse visual impacts of facility development by a small degree. Also, pedestrian only trails on the mesa top would eliminate the adverse visual impacts from horse and bicycle use. Adverse visual impacts would also be eliminated by leasing facilities for the petroglyph research center, which would reduce the square footage of building structures by a nominal amount within the monument. Adding 129 acres to the monument would help preserve additional scenic views. Reclaiming the Calle Norteña area and Homestead Circle park to a more natural setting would have a beneficial effect on scenic resources.

Conclusion

The proposals of this alternative would not result in significant adverse impacts on the visual quality of the monument. However, it is expected that adjacent development would adversely impact the views from the monument.

Cumulative Impacts

The cumulative beneficial impacts of preservation and reclamation would be the same as alternative 1.

Compatible development of the 475-acre nonfederal protected area adjacent to the monument and dedication and preservation of open space would have positive visual effects on the monument's scenic qualities.

The city's construction of Unser Boulevard would adversely impact the scenic views.

IMPACTS ON THE LOCAL AND REGIONAL ECONOMY

Impact Analysis

The analysis provided for the proposed action (alternative 1) also applies to alternative 2. It is likely that this alternative would have fewer visitors than the proposed action because access to some portions of the monument would be more difficult. Differences in positive economic impacts between alternatives would be expected, but these differences cannot be quantified.

The 81st Street boundary addition would remove 289 platted lots from private ownership and eliminate the need for the provision of utilities and infrastructure improvements (such as roads, water, sewer, electricity, and stormwater disposal) to this area. It is likely that there would be a net savings of public funds if this area were added to the monument and acquired. Although individual homeowners would be paid the fair market value for their lots (not the perceived speculative value), removing this area from private ownership and development would impact landowners who have invested in these lots.

If the 475-acre nonfederal protected area is developed under the cluster concept, it would be expected to decrease infrastructure costs. There would be a lower overall density because of areas dedicated as open space.

Conclusion

Because visitors would have to do more hiking to see the entire monument, visitors might stay longer than they would under the proposed action. However, less development might also attract a slightly smaller number of visitors, and this would have a less positive impact on the local and regional economy than the proposed action.

At this time it is not clear if utilities would be provided for the 81st Street development by the city and how the cost for the utilities would be paid. It is likely that some combination of city tax revenues, special assessments, and individual owner contributions would be used to cover the costs. It appears that 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 National Park Service.

Cumulative Impacts

Cumulative impacts would be the same as for the proposed action, except for the impacts of the 81st Street boundary addition and the nonfederal protected area. The 81st Street boundary addition and the nonfederal protected area would have long-term positive impacts on the local and regional economy by reducing expenditure of public funds. The nonfederal protected area would be an asset to the local and regional economy and enhance adjacent land values because it would demonstrate to the city, region, and

nation the net high economic value of innovative, environmentally sensitive, quality development.

The city's construction of Unser Boulevard, the recreational trail, and the utility corridor would benefit the local economy; however, increase design and construction costs would be required because of needs to minimize impacts on monument resources.

IMPACTS ON NATIONAL VISITORS

Impact Analysis

Implementation of alternative 2 would allow visitors to experience the monument in a very different way than the proposed action. It provides a wider range of opportunities but accommodates fewer visitors throughout the monument than the proposed action. Most visitors would visit Boca Negra Canyon, and a smaller number would visit Piedras Marcadas and Mesa Prieta. Fewer visitors would see petroglyph concentrations in context at Rinconada Canyon.

The protection of the 129-acre boundary adjustment area would allow visitors to better appreciate the cultural landscape and views of the city and the Sandias. With very little development in Rinconada Canyon and Mesa Prieta, other than pedestrian trails and a visitor information kiosk, visitors would see a landscape with minimal intrusions. This would be of greater value given the proximity of Albuquerque to the monument and would have a positive impact on the quality of life.

The 81st Street boundary addition and the development of the picnic area and overlook would provide visitors with an opportunity to access the mesa top by vehicle. Some view this as necessary to have a positive visitor experience.

The Mesa Prieta parking area and trail-head would provide easy access to the southern portion of the monument.

Developing a visitor contact facility in Piedras Marcadas Canyon would provide visitors with interpretation of and orientation to this resource. Numerous alcoves would separate visitor groups more effectively than in Rinconada and would provide more solitude.

The trails in Rinconada Canyon would provide visitors with opportunities for more isolated experiences while seeing the petroglyphs than found in the other petroglyph concentration areas or in the other alternatives. The canyon is considered by some to be one of the monument's principal resources, and this lack of development under this alternative would preserve its high resource values.

Because the visitor center at Lava Shadows would not be near any major petroglyph concentrations, visitors would have to walk (1 mile) or get back into their cars to see many petroglyphs. This would provide staff with the ability to direct visitors throughout the monument rather than focussing them in a few areas, which would also allow opportunities for visitors to see the petroglyphs in solitude. Visitors would have a variety of areas to visit, some easily accessible and others that would require more time. More time would be required to see the monument under this alternative.

The heritage education center in Boca Negra Canyon would provide school and other organized groups with the opportunities to see the resources and have nearby classroom space.

Combined use of trails by public visitors and educational groups in high-use areas would lead to congestion and seriously

diminish the experience for both groups of visitors.

Noise levels from development near the Piedras Marcadas Pueblo ruin would increase and adversely affect the site and visitors.

Conclusion

This alternative would provide a different experience of the monument than under the other alternatives. Visitors would have opportunities to visit large portions of the monument with a minimum of encounters with other visitors. There would likely be fewer total visitors to the entire monument because of the more difficult access. With the concentration of visitors at the Lava Shadows visitor center and Boca Negra Canyon to see the petroglyphs, these areas would be more crowded and congested than in the proposed action, making it more difficult to convey the significance of monument resources.

Cumulative Impacts

The 475-acre nonfederal protected area 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 described in alternative 1.

IMPACTS ON LOCAL VISITORS AND ADJACENT LANDOWNERS

Impact Analysis

Impacts would be the same as described in alternative 1. Additionally, local residents

would be adversely impacted by not allowing continuation of uses such as horseback riding and bicycling on the mesa top. Neighborhood residents would be adversely impacted by the closure of existing informal access points. Adding 129 acres of undeveloped land to the monument and the different development suggested for the nonfederal protected area would enhance local residents' quality of life by preserving a natural landscape so close to an urban setting.

Compatible management of open space lands adjacent to the monument (including the southern window) would preclude horse and bicycle use of this area, which could have an adverse impact on local residents by requiring them to go elsewhere for these activities. There would be more opportunities for undisturbed hiking and solitude.

As a reclaimed natural area, Homestead Circle park would have higher scenic value to the local visitor and adjacent landowners. No adverse impacts would result due to this reclamation because the site is not currently used as a developed park area. Neighborhoods could be adversely impacted by not having a neighborhood park. Because of the natural vegetation and no designated trails, the park's primary value would be its appearance from outside rather than active use. Closure of the volcanoes might adversely impact local residents who consider this area a popular visitor attraction.

Noise levels from development near the Piedras Marcadas Pueblo ruin would increase and adversely affect the site and visitors.

Conclusion

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 the proposed action. Some residents would be adversely impacted by the restriction of bicycles and horses except at the two escarpment crossings, no use of Homestead Circle park as a neighborhood park, and the closure of informal access points. Closing the volcanoes would adversely affect local residents.

Cumulative Impacts

Cumulative impacts would be the same as described in alternative 1. The construction of Unser Boulevard, the recreational trail, and the utility corridor by the city would benefit adjacent landowners and local visitors by facilitating access and allowing the enjoyment of monument resources. Adjacent landowners west of the escarpment would also benefit from the utility access. There would be adverse impacts from visual and noise intrusions from traffic on Unser Boulevard. Creative design and material use would minimize these impacts.

IMPACTS ON ENERGY CONSUMPTION

Impact Analysis

Energy consumption impacts for this alternative would be the same as alternative 1. There would be less energy consumption because there would be no new construction of visitor contact facilities at Mesa Prieta and Rinconada Canyon. However, there would be a separate heritage education center. There would also be approximately 25% less new trail construction than in the proposed action. Energy consumption for all other facility development would remain the same as alternative 1 and the same mitigation measures would apply.

Conclusion

Impacts would be the same as alternative 1. 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.

Cumulative Impacts

Impacts would be the same as alternative 1. The facilities in the monument would contribute to increasing demand for energy in the area. Energy conservation measures of the monument facilities would mitigate much of the adverse energy consumption impacts.

IMPACTS OF MONUMENT USE AND ACTIVITIES ON EXISTING NOISE LEVELS

Impact Analysis

Noise levels would increase during construction in areas being developed. Construction noise would be temporary and not significant. Noise levels would be similar to alternative 1. Different areas would be affected by noise resulting from visitor use. Some areas would have increases from visitor use and other areas would have less noise than alternative 1 — such as Rinconada Canyon. The Lava Shadows visitor center area would not be expected to have a significant increase in noise levels, given its proximity to Unser Boulevard. Noise levels at Mesa Prieta would also increase with the parking and visitor information station. As in the proposed action, noise levels from adjacent development at the Piedras Marcadas Pueblo ruin would increase and adversely affect the nature of the site and visitors. Noise levels in Rinconada Canyon and the

volcanoes would be less than that in alternative 1.

Conclusion

Impacts would be similar to alternative 1. Some areas would have more noise than alternative 1, and other areas would have less noise.

Cumulative Impacts

It is expected that noise from proposed adjacent development near Mesa Prieta, Boca Negra and Piedras Marcadas Canyons, the Piedras Marcadas Pueblo ruin, and the volcanoes would adversely affect the monument. Combined noise levels from Unser Boulevard, the expansion of the Double Eagle II Airport, proposed Paseo del Volcan, and proposed adjacent development could cumulatively and significantly increase noise levels in the monument. Mitigation measures regarding Unser Boulevard, the airport, and Paseo del Volcan would be developed with the Federal Aviation Administration, the state, and the city.

IMPACTS ON AIR QUALITY

Impact Analysis

Impact analysis would be the same as alternative 1 because it is assumed that all visitors traveling to the visitor center at Lava Shadows would also travel to Boca Negra Canyon to see the petroglyphs.

Conclusion

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

from this action would not exceed de minimus levels (100 tons per year for carbon monoxide) as described in the Environmental Protection Agency's general conformity regulations (section 176 [c] of the 1990 Clean Air Act amendments). Temporary adverse impacts might occur during construction from dust, but they would not be significant.

Cumulative Impacts

Particulate matter (dust) 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 adjacent roads and development and the airport would increase emissions.

IMPACTS OF IMPLEMENTING ALTERNATIVE 3

IMPACTS ON CULTURAL RESOURCES

Impact Analysis on Petroglyphs

No negative direct impacts of development on petroglyphs would be expected under alternative 3. The development of visitor facilities would establish a presence and help provide greater protection for petroglyphs. However, because there would be more visitor activities focused in Rinconada Canyon, the geologic windows, and Mesa Prieta, and on the mesa top, negative indirect impacts on petroglyphs could be expected. Petroleum products from vehicles on the mesa could have as yet undetermined effects on petroglyphs.

On one hand, the projected slightly higher visitation and the location of the visitor center in one of the most dramatic petroglyph concentrations of the monument would increase the number of people who would be exposed to the interpretive messages about the monument's significance and values. This awareness would help to protect the petroglyphs from damage and vandalism by visitors. Conversely, increased visitation and access would increase the potential for accidental damage to petroglyphs and other archeological sites. The location of major facilities in primary resource areas (the visitor center in Rinconada Canyon and the loop road on the mesa top) would provide easy access to important resources of high interest to visitors, but it would be more difficult to explain the significance and values of the monument because major facilities would be placed in primary resource areas.

The petroglyph research center would promote research regarding and public education and appreciation of the petroglyphs. Resource management and

center staff would develop ways to conserve the petroglyphs and repair vandalism. All of these actions would have positive impacts on petroglyphs.

Redesign of the trails and viewing areas at Boca Negra Canyon would have a positive effect upon the petroglyphs and their context by providing established viewing areas and by removing trails that wind through and between petroglyph concentrations or are too close to the features.

The increased activity levels at Homestead Circle park could increase the risk to the 50+ petroglyphs along the escarpment in this area. Petroglyphs would be easier to access and thus more likely to be destroyed through vandalism and inadvertent actions such as climbing.

Impact Analysis on Archeological Sites

The presence of the research center would reduce vandalism and illegal collecting in Piedras Marcadas Canyon and would provide for new dimensions in public education. Constructing paved roads, multiuse trails, and other visitor facilities could directly impact sites, especially considering the larger scope of the development in this area when compared to the other alternatives.

Increased numbers and mobility of visitors on the mesa top and elsewhere would increase risks for relic hunting, vandalism, and destruction of archeological sites, including long-term continued loss of surface artifacts.

Creating horse tie-ups and multiuse trails in the northern section of the monument would increase the possibility of damage to cultural resources by horses straying off

the trail and trampling sites, grazing, and rubbing on rocks. Negative impacts might also occur from bicyclists straying off the trail. Both activities create a churning effect that destroys soil strata and displaces and breaks artifacts. Designation of trails would focus horseback and bicycle riding activities and help protect archeological sites from illegal collecting and site disturbance. Frequent monitoring of areas along the trails and enforcement of regulations and other protective measures in areas where straying is apparent would reduce potential for negative impacts on sites.

Sites in the geologic windows would also be at risk for vandalism and relic hunting because they are separate from the rest of the monument and visitors would have unrestricted access, which would make the windows more difficult to manage and protect.

The management of visitors as described in this alternative would help mitigate the negative impacts of concentrated use in selected areas and damage from looting and vandalism. However, some vandalism and loss of archeological materials would likely continue.

Reclaiming abandoned mine sites could potentially impact unknown archeological resources.

See the following table for a summary of suggested effects, mitigation, and further compliance needed.

Impact Analysis on the Cultural Landscape

Facilities would intrude on the cultural landscape and compromise its visual integrity, including those qualities of feeling, association, and setting that

contribute to its potential national register properties. Designing and locating facilities to minimize visual intrusion on the cultural landscape and to maintain those characteristics that make it significant would reduce the adverse impacts of development.

Constructing paved roads on the mesa top would adversely affect the cultural landscape by introducing visual intrusions and noise from vehicular activity. The west mesa, especially the volcanoes, has been identified as an area of traditional and cultural significance, and roads would be an adverse impact on this resource. The presence of facilities, especially the mesa-top road and the visitor center in Rinconada Canyon, would intrude on the cultural landscape. Changes in vegetation patterns could result from modified drainage patterns as hard surfaces are introduced on the mesa. Although sensitive design and management strategies would reduce these adverse impacts on the cultural landscape, there would be no way to avoid them entirely.

Conclusion of Impacts on Cultural Resources

Developing a road on the mesa top would adversely impact the cultural landscape and its significance to the Pueblo community. This alternative would directly impact more archeological sites and would require more costly programs to mitigate than any of the other alternatives. Identification and evaluation of resources, sensitive design, and appropriate mitigating measures would minimize impacts on archeological sites during and after facility development. There would be some adverse effects on cultural resources. There would also be a greater risk for long-term loss of cultural resources under this alternative.

TABLE 18. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 3 ON CULTURAL RESOURCES LISTED ON OR ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES, PROPOSED PROTECTIVE MEASURES, AND REQUIRED COMPLIANCE WITH SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT.

Note: The entire monument, Boca Negra Cave, Las Imagines Archeological District, and the Piedras Marcadas Pueblo ruin are all listed on the national register. Cultural resources include cultural landscape, archeological and

ethnographic sites, and petroglyphs. Unless otherwise noted in the following table, construction could probably avoid sites.

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>Rinconada Canyon — See alternative 1 for sites in vicinity of visitor center and heritage education facility. Other sites in canyon too numerous to mention.</p>	<p>Build visitor center and heritage education facility, parking, rest-rooms, access roads, and pedestrian trails.</p>	<p>With mitigation, most proposed activities would have no adverse effect. Intensive use of area might have adverse impacts on resources.</p>	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion upon cultural landscape. • Design trails to reduce impacts from visitor use (construction and use of formal trails protects resources from inadvertent damage.) • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor and student use. • Conduct archeological investigations, collect artifacts, and document and stabilize sites and surface features in areas adjacent to facilities and where intensive use is proposed. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>
<p>Piedras Marcadas Pueblo Ruin</p>	<p>Develop interpretive trail; remove existing building.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • Continued consultation with Pueblos. • Develop ruins management plan in consultation with Pueblo community, SHPO, and ACHP. • Collect, document, and stabilize to prevent erosion. • Develop mitigation plan with SHPO. • Design visitor facilities to avoid pueblo ruins or intrusion on cultural landscape and to prevent impacts from visitor use. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. • Fence and patrol site. 	<p>SHPO/ACHP consultation in preparing preliminary design, mitigation plan, and ruins management plan.</p>

TABLE 18. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 3 (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>Mesa Prieta — See alternative 1 for description of sites in proposed development area and along 98th street access road. Sites on mesa top in vicinity of proposed roads too numerous to list, ranging from Archaic period to present. Also, potential cultural landscape, ethnographic sites.</p>	<p>Build visitor contact facility, parking, restrooms, access road, trails.</p>	<ul style="list-style-type: none"> • With mitigation, no adverse effect from construction or visitor use. • Adverse effect on cultural landscape from mesa-top road and traffic. 	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites and minimize intrusion on cultural landscape. • Design roads to prevent impacts from visitor use (e.g., informal pullouts, overlooks adjacent to sites, etc.). • Develop mitigation plan with SHPO. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitation. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>
<p>Piedras Marcadas Canyon — Three sites in vicinity (two PIII-PIV lithic-ceramic scatter and water control features; historic campsite). Petroglyphs, potential cultural landscape.</p>	<p>Construct petroglyph research center, parking, restrooms, pedestrian trails.</p>	<ul style="list-style-type: none"> • With mitigation, no adverse effect. • Presence of center would deter vandalism. 	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (construction and use of formal trails protects resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. • Permits would be required. 	<p>Same as above.</p>
<p>Boca Negra — Six adjacent sites include 1 stone circle, (age unknown); 4 water and soil control structures; 1 historic shelter. Vicinity: petroglyphs, potential cultural landscape.</p>	<p>Construct visitor information kiosk, improved trails, parking, access road, restrooms.</p>	<ul style="list-style-type: none"> • With mitigation, no adverse effect. • Positive effect on petroglyphs by rebuilding inadequate trail system (helps to prevent impacts from visitor use). 	<p>Same as described for Rinconada Canyon (above).</p>	<p>Same as above.</p>

TABLE 18. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 3 (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>Lava Shadows — No known resources in immediate area of existing structures.</p>	<p>Construct structure for administration; raze existing structures.</p>	<p>With mitigation, no adverse effect.</p>	<p>Presence of administrative facility would help prevent unauthorized access to cultural sites in vicinity.</p>	<p>No action.</p>
<p>Volcanoes — Volcanoes are sensitive ethnographic resources; four prehistoric sites nearby include petroglyphs, rock shelter, lithic/ceramic scatters, and/or grinding stone; three historic sites include corrals, pre- and post-World War II historic debris, lambing pens, hearth and/or corral; one site has corral and lambing pen, rock shelter and lithic/ceramic scatters. Vicinity: potential cultural landscape, ethnographic sites.</p>	<ul style="list-style-type: none"> • Construct parking, access road, visitor information, improved trails, rest-rooms, picnic facilities, overlook. • Reclaim cinder mining sites. 	<ul style="list-style-type: none"> • With mitigation no adverse effects. Parking area previously impacted. • Limiting public access to other volcanoes would be beneficial to values held by culturally affiliated groups. • The reclamation of cinder mines would not occur if adverse impact on values of these groups would occur. 	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (construction and use of formal trails protects resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. • Conduct archeological investigations, collect artifacts, and document and stabilize sites and surface features in areas adjacent to facilities and where intensive use is proposed. • When rehabilitating facilities, use care to avoid disturbance of unknown subsurface remains. • Consult with American Indians to ensure no traditionally gathered resources are disturbed. • Develop memorandum of agreement with SHPO, ACHP, and Pueblos regarding development impact on ethnographic landscape values and sites. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>

TABLE 18. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 3 (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
<p>Geologic Windows — 13 sites in vicinity of proposed trails (prehistoric petroglyphs and rock features, windbreak; historic corrals, structures, shelter, and walls). Potential cultural landscape.</p>	<p>Rehab existing access roads; construct parking and trails.</p>	<p>Potential adverse effect on resources at geologic windows.</p>	<ul style="list-style-type: none"> • Design facilities to avoid cultural sites or intrusion on cultural landscape. • Design trails to reduce impacts from visitor use (construction and use of formal trails protects resources from inadvertent damage). • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Establish monitoring and response plan. • Increase educational programs and law enforcement to prevent impacts of visitor use. 	<p>SHPO/ACHP consultation in preparing preliminary design and mitigation plan.</p>
<p>Mesa Top — Sites too numerous to mention, ranging from Archaic period to present, many different activities land uses represented.</p>	<ul style="list-style-type: none"> • Construct scenic drive, multiuse trails, picnic areas, overlooks. • Rehabilitate and reclaim existing roads and selected trails. 	<ul style="list-style-type: none"> • Adverse effect of road, traffic on ethnographic values and cultural landscape. • Possible adverse impacts on archeological sites. 	<ul style="list-style-type: none"> • See proposed protective measures for volcanoes. • Develop memorandum of agreement with SHPO, ACHP, and Pueblos regarding development impact on ethnographic landscape values and sites. 	<p>Same as above.</p>
<p>Neighborhood Access — Several adjacent sites, including lithic/ceramic scatters. Vicinity: petroglyphs, potential cultural landscape.</p>	<p>Construct neighborhood access points and trails.</p>	<p>With mitigation, no adverse effect.</p>	<p>Same as geologic windows (above).</p>	<p>Same as above.</p>
<p>Escarpment Crossings, Calle Norteña and Boca Negra — Four sites in vicinity: one prehistoric lithic reduction site (Calle Norteña); prehistoric shelter, Anasazi water and soil control walls and terraces (Boca Negra).</p>	<p>Develop multiuse trails crossing escarpment.</p>	<p>With mitigation, no adverse effect.</p>	<ul style="list-style-type: none"> • Sites would be avoided. • Design escarpment crossing trail to reduce impacts from visitor use (the construction and use of formal trails would protect resources from inadvertent damage). 	<p>None unless resources were found.</p>

TABLE 18. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 3 (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
Homestead Circle, Taylor Ranch Road/Calle Norteña Area — One prehistoric site (lithic/ceramic scatter) in vicinity. Petroglyphs.	<ul style="list-style-type: none"> • Develop Homestead Circle park as neighborhood park. • Develop trail for access as in alternative 1. • Regrade and reclaim disturbed area near Taylor Ranch Road/Calle Norteña. 	No effect of development, but increased risk to adjacent petroglyphs from proximity to park.	<ul style="list-style-type: none"> • No known resources in proposed development areas. • Site-specific surveys would be conducted as appropriate before development. • Increase public education and patrols. 	SHPO/ACHP review of project if resources are discovered.

Cumulative Impacts on Cultural Resources

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.

There would be impacts on cultural resources by the city's construction and use of Unser Boulevard through the escarpment and the removal of the existing road and the construction of the recreational trail and utility corridor through Boca Negra Canyon. These impacts would be mitigated by minimizing the rights-of-way and disturbed areas required for the routes, using construction techniques that would not disturb adjacent basalt and petroglyphs, and using design and materials to minimize noise and visual intrusion.

IMPACTS ON VALUES HELD BY CULTURALLY AFFILIATED GROUPS

Facility construction and continuing intrusion by visitors and automobiles would have a negative impact on the monument area's traditional and cultural values to the

Pueblo Indians. Because easy access is provided to the volcanoes, the opportunity for unauthorized use of these ethnographically important features would increase. Because of the increased use and road development, it would be more difficult to ensure privacy for affiliated groups and traditional and cultural activities and they would be adversely affected.

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. Consultation would result in further participation and involvement by culturally affiliated groups in monument interpretive and resource protection programs.

If reclaiming abandoned mine sites would adversely impact areas of traditional and cultural significance to the Pueblo community, reclamation would not occur in those areas.

Conclusion

There might be positive impacts on the values held by these groups through participation in consultation regarding site protection and interpretation. There would also be negative impacts because of the development, especially on the mesa top.

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, contribute to degradation of archeological sites, and make solitude much more difficult to achieve.

The city's construction of Unser Boulevard by the city through the escarpment is opposed by American Indian groups and the Atrisco heirs. There would be adverse impacts on these groups and their ability to maintain their connection to the monument.

IMPACTS ON FEDERAL AND STATE THREATENED ENDANGERED SPECIES

Impact Analysis on Plants

Facility development in the monument would adversely impact 50 acres of potential habitat for the *Pediocactus paprycanthus* and *Mammillaria wrightii*. Bicycle and horse activity in the northern portion could also further adversely impact this habitat because of greater potential for off-trail use and trampling.

Conclusion. Although 50 acres represent 1% of total available habitat, this alternative would impact more potential habitat for the *Pediocactus paprycanthus* and the *Mammillaria wrightii* than in the other

alternatives, and the impacts would result in a significant adverse effect.

Cumulative Impacts. The destruction of potential habitat for these cactus species could eliminate the opportunity for this species to populate the area and thus could contribute to the overall decline of these species.

As in alternative 1, conducting site-specific surveys before facility development and before the city's construction of Unser Boulevard and the recreation trail and utility corridor would ensure that no threatened or endangered species were present.

Impact Analysis on Birds

Development in the monument would adversely impact the ferruginous hawk. A 10-mile road and associated visitor activity would provide enough disturbance to eliminate the bird as a breeding species in this area.

Conclusion. Development in the monument would have a significant adverse affect on the ferruginous hawk. It would be eliminated from the area as a breeding species.

Cumulative Impacts. Developing certain sites, combined with adjacent development and the city's construction of Unser, would eliminate the hawk as a breeding species in this area would contribute to the overall decline of the ferruginous hawk nationwide.

As in alternative 1, site-specific surveys should be conducted before facility development and before the city's construction of Unser Boulevard to ensure that no threatened or endangered species were present.

IMPACTS ON WILDLIFE OTHER THAN LISTED SPECIES

Impact Analysis on Birds

Impacts from developing visitor facilities would be much the same as discussed under the proposed action. Development below the escarpment would adversely impact 16.5 acres of habitat. This would be an adverse effect, but it would not be significant.

Additionally, developing a 10-mile paved road on the mesa top would adversely impact habitat for many bird species — more than in any of the other alternatives. As land is developed adjacent to the monument, bird populations would attempt to move to monument lands. The extent of development under this alternative would discourage that process.

Impact Analysis on Other Wildlife

Constructing a 10-mile loop road and 7 miles of multipurpose trails on top of the mesa would adversely impact 60 acres of habitat that supports coyote, rabbits, foxes, and rodents. Road kills would be increased. Some populations might decrease due to the increased presence of people and motorized vehicles in an area that currently has no paved roads. Detailed wildlife surveys have not been conducted on the mesa top; however, roads have been known to fragment habitat and populations in other areas. Some species are not likely to cross roads, thus roads become a barrier and gene pools are impacted. Population decreases would occur as species leave the monument due to the disturbance from road and visitor activity. Homestead Circle park development would eliminate small mammal habitat and adversely affect 3 acres of native wildlife habitat.

Conclusion. Approximately 78 acres of wildlife habitat would be developed. Most impacts on wildlife from development and visitor activity would occur in the flatlands and equal 16.5 acres of impact. This represents 1% of the total available habitat in the monument. Adverse impacts on birds and other wildlife would be significant under this alternative.

Cumulative Impacts. Facility development combined with adjacent development and the city's construction/extension of Unser Boulevard would impact wildlife species by destroying habitat. The cumulative impacts on birds and other wildlife would be greatest under this alternative.

IMPACTS ON NATURAL DRAINAGE PATTERNS AND FEATURES

Impact Analysis

Five arroyos would be crossed by the road, requiring bridges and culverts. The construction of the road would change the natural drainage patterns on the mesa, causing more sheet flow from 103,250 square yards of pavement. Depending on road construction methods, sheet flow might be directed into these arroyos, increasing erosion and deposition of sediment downstream. A drainage management plan would have to be developed to address stormwater flows resulting from road development.

Erosion from rainfall would continue on the mesa top. Arroyos would continue to enlarge and get smaller, depending on the amount of water and sediment they would carry during storms. Flooding would continue, creating new channels and erosion of the escarpment edge.

Conclusion

Constructing and hardening 78 acres of parking areas, roads, trails, and facilities would increase stormwater flows in the monument. Establishing designated trails to gain access to the mesa top and reclaiming existing roads and trails on the mesa top would slow current erosion and gully formation. However, the level of development would not be a beneficial effect on monument vegetation and soils. About 50 acres of disturbed land would be reclaimed throughout the monument, decreasing gully activity and erosion.

Flows would be diverted into holding structures or other stormwater management methods that would decrease potential for erosion and gulying but would not eliminate these actions during storms. 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.

Cumulative Impacts

The cumulative impacts would be similar to alternative 1 but greater because of the extent of road construction in the monument. The construction of monument facilities and, in addition, the development of adjacent properties and the construction of Unser Boulevard by the city would have impacts on natural drainage patterns and features. There would be adverse impacts on natural drainage patterns within the new Unser Boulevard alignment. Positive impacts from extending Unser Boulevard would include the removal of a 1,000-foot trench that is outside the monument, which directs stormwater flows from Paradise Hills into Piedras Marcadas Canyon. Other positive impacts would be providing an opportunity to manage

stormwater flows in a manner that would not adversely affect monument resources.

IMPACTS ON BIODIVERSITY

Impact Analysis

Constructing a road on the mesa top might fragment existing habitat and serve as a barrier to some species. Fragmenting habitat and eliminating species interaction adversely impacts biodiversity and gene pools within species. Populations decline either through death or displacement thus having further adverse impact on biodiversity. This alternative develops more land, 78 acres, than the other alternatives. The development of 78 acres might proportionally decrease wildlife species and plant species. Due to the high rate of development occurring adjacent to the monument, the monument might serve as an area where species would move to if habitat exists to support them. In this alternative, less species might move to monument lands due to the level of development in the monument.

Horse use on the mesa top would adversely affect biodiversity by the introduction and spread of exotic plants. However, most of the monument has been previously disturbed by heavy grazing, and many of the prominent plants are exotic species. This would not be a significant impact.

Developing an active recreation park at Homestead Circle would introduce exotic species, fertilizers, and possibly herbicides and pesticides into the monument. There would be negative impacts on biodiversity.

Reclaiming 10 acres of mined area at the volcanoes would help establish habitat and contribute to the monument's biodiversity. Closing a large portion of the volcanoes would also contribute to biodiversity, as

would reclaiming 50 acres of various trails, roads, and other disturbed areas.

Conclusion

The development of 78 acres in the monument out of a total of 7,244 acres represents 1.0% of the total habitat available. This would be a significant adverse impact. However, this would be mitigated by reclaiming 50 acres of disturbed land.

Cumulative Impacts

Development in the monument would have a adverse cumulative impact on biodiversity in the monument because of species displacement that would occur because of monument development and adjacent land development. However, there would be some cumulative benefits of helping to establish habitat.

The city's construction of Unser Boulevard might have adverse impacts on 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.

IMPACTS ON SOILS

Impact Analysis

The following table shows impacts by soil type and at development areas to provide a more complete and understandable picture of the impacts on soils. Impacts can be seen by looking at the "Soil Characteristics/Impacts" column on table 13. For example, soils with moderate to high

potential for erosion (by wind or water) would be impacted by development and vegetation removal more than soils with slight to moderate potential for erosion.

During road construction, requirements such as watering and immediate revegetation efforts would mitigate adverse impacts on these soils. Constructing new access to volcanoes and revegetating existing roads would not adversely affect soils because there would be no net loss.

Runoff from the paved road would contaminate soils. Typically roadways accumulate deposits of oil and other petroleum-based products. These products would migrate into the soil in stormwater runoff. This would be an adverse impact on soils.

Keeping visitors only on established trails would prevent further erosion, vegetation removal, and compaction, which all result in adverse impacts on soils.

Conclusion

Facility development on about 78 acres of soils within the monument would result in an adverse impact on soils. This is important because soils support plant and wildlife habitat and contribute to the health of the west mesa ecosystem.

Reclaiming mining sites, the volcanoes, Calle Norteña, and other disturbed areas (about 50 acres) would be a beneficial impact, stabilizing soils that are currently subject to erosion.

Cumulative Impacts

Facility development combined with adjacent development, including Unser Boulevard would cumulatively adversely impact soils.

TABLE 19. SOIL IMPACTS BY DEVELOPED AREA, ALTERNATIVE 3

Developed Area	Acres of Moderate to Highly Erodible Soils Affected
Rinconada Canyon	Bluepoint-Kokan, hilly; Bluepoint loamy fine sand, 1-9% slopes
Piedras Marcadas Canyon (including trails)	Alemeda sandy loam, 0-5% slopes; Bluepoint loamy fine sand, 1-9% slopes
Lava Shadows	Madurez-Wink, gently sloping; Bluepoint-Kokan, hilly
Boca Negra Canyon	Bluepoint-Kokan, hilly
Volcanoes area	Akela-Rock outcrop, 1-9% slopes; Alemeda sandy loam, 0-5% slopes; Rock outcrop-Akela, 10-50% slopes Continued visitor access to Vulcan would continue erosion of the shallow talus soils and have an adverse impact on these soils.
Piedras Marcadas ruin area	Bluepoint-Kokan, hilly
Homestead Circle park	Bluepoint-Kokan, hilly
Mesa Prieta	Bluepoint-Kokan, hilly; Bluepoint loamy fine sand, 1-9% slopes
Mesa top trails	Madurez-Wink, gently sloping; Alemeda sandy loam, 0-5% slopes; Akela-Rock outcrop, 1-9% slopes
Neighborhood access trails	Bluepoint-Kokan, hilly; Kokan Rock outcrop; Alemeda sandy loam, 0-5% slopes; Bluepoint loamy fine sand, 1-9% slopes
Windows	Kokan-Rock outcrop; Alemeda sandy loam, 0-5%; Akela Rock outcrop
10-mile mesa-top loop road	Alemeda sandy loam, 0-5% slopes; Madurez-Wink, gently sloping; Rock outcrop-Akela, 10-50% slopes

IMPACTS ON SCENIC RESOURCES

Impact Analysis

Developing a 10-mile loop road on the mesa top would affect views from Black Volcano, I-25, and from the new Unser alignment. The road proposed in this alternative would fundamentally change the scene of the mesa top from a primarily natural scene to a scene eclipsed by a major development and many cars circulating on the mesa top. Although the road would provide access to views of the city, the Sandia Mountains, and the general character of the mesa, it would adversely impact the views of the mesa from all directions.

Developing a visitor center at Rinconada Canyon would adversely impact an

important natural scene of the monument. The canyon would be the primary location where the escarpment could be seen in its natural setting from Unser, the principal visitor access route through the monument. As development occurs adjacent to the monument boundary and disrupts views of the escarpment, this view would become increasingly important.

Homestead Circle park and playground development would change the scenic quality at this location by using nonnative turf and playground structures, which would be inconsistent with the native vegetation and architectural style of the structures of the rest of the monument. This action would relate Homestead Circle more closely with the neighboring suburban development, and it would lose its visual connection to the monument,

thus resulting in an adverse impact on visual quality.

Mesa-top drainage facilities would have significant visual impacts.

Other proposed actions of this alternative would result in the same visual quality impacts as alternative 1.

Conclusion

The visual quality of the monument would be permanently changed and be adversely impacted by developing facilities on the mesa top, at Rinconada Canyon, and from adjacent development.

Cumulative Impacts

Developing a road on the mesa, locating the visitor center at Rinconada, and developing Homestead Circle park as a neighborhood park would contribute to the increasing suburban development of the west mesa area and prevent the preservation of expansive or important natural views. Other actions of this alternative combined with adjacent development, the Unser Boulevard extension by the city would have the same cumulative impacts as alternative 1, but they would be greater because of the extent of the monument road.

IMPACTS ON THE LOCAL AND REGIONAL ECONOMY

Impact Analysis

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 cannot be quantified.

Conclusion

Monument establishment and development has had and will 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.

Cumulative Impacts

Petroglyph National Monument is an economic plus for the city and would become a premier attraction of the city and the region. The development of the monument would lead to increased visitor use of the monument and increased tourism in the city and area. Thus, positive economic benefits would accrue to the local economy.

The city's construction of Unser Boulevard the recreational trail and the utility corridor would benefit the local and regional economy by facilitating traffic flow, reducing traffic congestion on other roads, allowing for enjoyment of monument resources, and providing utilities to the mesa top. However, because of the need to minimize impacts on monument resources, there would be increased design and construction costs.

IMPACTS ON NATIONAL VISITORS

Impact Analysis

Developing a 10-mile loop road on the mesa top would not provide an experience for the visitor that is vastly different than what is provided by the 81st Street extension and overlook described under the proposed action. It would provide driving experience on the mesa top that allows visitors to drive from the escarpment to the volcanoes on a monument road. Similar mesa-top driving experiences are achieved by driving I-40, 81st Street, and the Double Eagle II access road. Views of Albuquerque provided by this road are also provided from 9-mile hill on I-40 and from the summit of the Sandias.

The 10-mile loop road would provide monument visitors with an experience similar to what is obtained in other NPS areas in which a closed loop road is provided for visitors to enjoy the monument. However, visitors would not be able to see petroglyphs along this road, because most of the petroglyphs are along the base of the escarpment.

Developing a visitor center in Rinconada Canyon would provide visitors with a dramatic entrance to the monument, close to the interstate. Sufficient orientation and interpretation would occur to introduce visitors to the monument and its resources. Petroglyphs would be within easy walking distance for all visitors and abilities, thus providing immediate interpretive opportunities.

Developing a visitor contact facility and entrance station at Mesa Prieta would also provide visitors with a dramatic experience soon after they leave the interstate. Visitors would walk along the base of the escarpment on a designated trail to petroglyph viewing areas.

Developing the visitor center and driving route in the southern portion of the monument would effectively concentrate and focus visitor activity in this area rather than spreading it throughout the monument. Only those visitors with more time or who expressed specific interest would be directed to Piedras Marcadas and Boca Negra Canyons. These areas would have the impression of remaining the most isolated and undeveloped; however, both would be surrounded by neighborhood development.

Combined use of trails by visitors and educational groups in high-use areas would lead to congestion and seriously diminish the experience for both groups.

Noise levels from development near the Piedras Marcadas Pueblo ruin would increase and adversely affect the site and visitors. Because of the level of development in this alternative, there would be few opportunities for solitude.

Conclusion

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, resulting in an adverse affect on visitors.

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.

The construction of Unser Boulevard and the recreational trail by the city would benefit national visitors by facilitating access to the mesa top by vehicles, bicycles, horseback, and foot. There would also be a beneficial impact of eliminating vehicular traffic in Boca Negra Canyon. There would be adverse impacts on visitors by the visual intrusion, increased noise levels, and the barrier of the four-lane highway. Creative design and material use would minimize these impacts.

IMPACTS ON LOCAL VISITORS AND ADJACENT LANDOWNERS

Impact Analysis

Implementing this alternative would, better than the other alternatives, separate national and local visitors from each other by focusing national visitors in the southern portion. Piedras Marcadas and Boca Negra Canyons would likely accommodate more local residents who visit the monument on a more regular basis.

Constructing a 10-mile loop road would adversely impact those horseback riders and bicyclists who use the mesa top for a wide open space, free from urban development. Some might use the shoulders of the road.

Constructing a visitor center and heritage education center in Rinconada Canyon would decrease visitor traffic through neighborhoods that would likely have increased traffic in the other alternatives. Developing a petroglyph research center at Piedras Marcadas Canyon would not likely adversely impact local residents.

Constructing neighborhood access points would have a positive impact on adjacent landowners, providing them with easy access to the monument and protecting the escarpment from the creation of social trails.

Developing Homestead Circle park as an active recreation area with turf and playground equipment would benefit neighborhood residents because of the limited opportunities for these activities in the area.

Local residents and adjacent landowners might be adversely affected by the requirement to obtain a permit before entering Piedras Marcadas Canyon, but they might also appreciate the benefits afforded by the use of permits.

Noise levels from development near the Piedras Marcadas Pueblo ruin would increase and adversely affect the site and visitors.

Conclusion

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. This might provide a feeling of greater stewardship for the area than exists today among residents.

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.

Cumulative Impacts

The cumulative impacts would be similar to alternative 1 but greater because of the extent of monument facilities. The construction of Unser Boulevard, the recreational trail, and the utility corridor by the city would benefit adjacent landowners and local visitors by facilitating access and allowing enjoyment of monument resources. Adjacent landowners west of the escarpment, would also benefit from the utility access. There would be adverse impacts from visual and noise intrusions from traffic on Unser Boulevard, combined with the monument road. Creative design and material use would minimize these impacts.

IMPACTS ON ENERGY CONSUMPTION

Impact Analysis

Developing the mesa top road would significantly increase energy use and result in adverse impacts on energy conservation. Much energy would be used to construct, use, maintain, and patrol the road.

New facilities constructed at Lava Shadows would increase energy consumption to a minor degree. Other actions in this alternative would result in impacts similar to alternative 1.

Conclusion

New roads and facilities would result in adverse impacts on energy consumption.

Cumulative Impacts

The construction and vehicular use of the mesa-top road would contribute to increasing demands for energy in the area as surrounding suburban development continues to grow. Constructing new facilities at Lava Shadows would raise local energy use for new building materials and transportation to a minor degree. Energy conservation measures would mitigate much of the adverse energy consumption impacts.

IMPACTS OF MONUMENT USE AND ACTIVITIES ON EXISTING NOISE LEVELS

Impact Analysis

The greatest increase in noise levels would likely be at Mesa Prieta, the mesa top, the volcanoes, and Rinconada Canyon. Noise levels from construction would be temporary and not significant. Noise levels from operation in the above-mentioned areas would be increased significantly. Developments in this alternative would have a greater impact on noise levels than development in the other alternatives.

Conclusion

Developing and operating monument facilities would have a significant adverse impact on noise levels.

Cumulative Impacts

It is expected that 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 with noise levels from Unser Boulevard, the expansion of the Double Eagle II Airport, proposed Paseo del Volcan, and proposed adjacent development could cumulatively and significantly increase noise levels in the monument to a greater degree than in the other alternatives. Mitigation measures regarding Unser Boulevard, the airport, and Paseo del Volcan would be developed with the Federal Aviation Administration, the state, and the city.

IMPACTS ON AIR QUALITY

Impact Analysis

Carbon monoxide emissions from visitor travel on the 10-mile mesa-top loop road could be as much as double the emissions in the proposed action.

Conclusion

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 from this alternative would not exceed de minimus levels (100 tons per year for carbon monoxide) as described in the Environmental Protection Agency's general conformity regulations (section 176 [c] of the 1990 Clean Air Act amendments). Temporary adverse impacts might occur during construction from dust, but they would not be significant.

Cumulative Impacts

Particulate matter (dust) 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 adjacent roads and development and the airport would increase emissions.

IMPACTS OF IMPLEMENTING ALTERNATIVE 4 — NO ACTION

IMPACTS ON CULTURAL RESOURCES

Impact Analysis on Petroglyphs

Implementing the no-action alternative would increase the risk of loss of petroglyphs because of the lack of facilities and programs except at the Boca Negra unit. Existing trails would not be improved or changed, thus continuing adverse impacts on petroglyphs. In many areas, existing trails are directly adjacent to petroglyph panels. The location of the trail adjacent to the petroglyphs combined with the narrowness of the trail has the effect of encouraging visitors to touch the petroglyphs. Over time, there could be an adverse affect on the patina of rocks that outline the petroglyphs because of thousands of visitors touching or scratching the rock surfaces.

Also, existing trail alignments pass between petroglyph panels, allowing visitors to walk between them, thereby interrupting the understanding of possible relationships of panels in a concentrated area. Direct and indirect adverse impacts would occur on petroglyphs in Rinconada and Piedras Marcadas Canyons by providing parking but having limited interpretive information and resource protection staff.

The petroglyph research center would promote research regarding and public education and appreciation of the petroglyphs. Resource management and center staff would develop ways to conserve the petroglyphs and repair vandalism. All of these action would have positive impacts on petroglyphs. However, with less staff and funding, these gains would be less effective than in the other alternatives.

Impact Analysis on Archeological Sites

Fewer direct adverse impacts on archeological sites from construction would be anticipated than in the other alternatives. Because of minimal monitoring and regulation on the many existing horseback riding and bicycle trails, there would be greater risk of damage to the archeological resources. Horses straying off the existing trails could trample sites. Negative impacts might also occur from bicyclists straying off the trails. Both activities, if off the trail, create a churning effect that destroys soil strata and displaces and breaks artifacts. There is also greater risk of pot-hunting.

See the following table for a listing of the monument's prehistoric and historic properties, the rationale for affects to those properties, determinations of effect, and further section 106 compliance requirements.

Impact Analysis on the Cultural Landscape

Developing parking at Rinconada and Piedras Marcadas Canyons would have limited negative effects on the cultural landscape in these areas.

Conclusion of Impacts on Cultural Resources

Adverse impacts on petroglyphs, the cultural landscape, and archeological sites would occur. Under this alternative, resource deterioration and vandalism could occur due to lack of adequate funding, opportunities to educate the public, and programs to protect sites, including petroglyphs.

TABLE 20. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 4 ON CULTURAL RESOURCES LISTED ON OR ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES, PROPOSED PROTECTIVE MEASURES, AND REQUIRED COMPLIANCE WITH SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT.

Note: The entire monument, Boca Negra Cave, Las Imagines Archeological District, and the Piedras Marcadas Pueblo ruin are all listed on the national register. Cultural resources include cultural landscape, archeological and

ethnographic sites, and petroglyphs. Unless otherwise noted in the following table, construction could probably avoid sites.

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
Lava Shadows — No known resources within immediate vicinity; potential cultural landscape, ethnographic sites in general vicinity.	Use existing visitor center, parking, roads, and trails.	No adverse effect.	Presence of monument staff, visitor center would help deter vandalism, resource degradation in vicinity.	SHPO/ACHP review of individual actions affecting significant cultural resources.
Boca Negra — Six adjacent sites include 1 stone circle (age unknown); 4 water and soil control structures; 1 historic shelter. Vicinity: petroglyphs, potential cultural landscape.	Parking, rest-rooms, continued heritage education function; minor trail improvement, and improved parking and shade structure.	<ul style="list-style-type: none"> • With mitigation, no adverse effect of construction. • Continued adverse affect on patina because of visitors touching rock surfaces. 	<ul style="list-style-type: none"> • Areas receiving intensive use would be documented, artifacts collected, and surface resources stabilized. • Continued consultation with Pueblos. • Design trails to prevent impacts from visitor use. 	Same as above.
Rinconada Canyon — Petroglyphs, archeological and ethnographic sites — too numerous to list. Potential cultural landscape.	Construct parking, access road, and trails.	<ul style="list-style-type: none"> • With mitigation, no adverse effect of construction. • Potential adverse effect of visitor use. 	<ul style="list-style-type: none"> • Design trails and facilities to avoid cultural sites or intrusion upon cultural landscape, and to reduce potential for inadvertent damage from visitor use. • Develop mitigation plan with SHPO if cannot avoid sites during construction. • Continued consultation with Pueblos. • Include in monitoring and response plan. • Use educational programs and law enforcement to help prevent indirect impacts of visitation. 	Same as above.
Piedras Marcadas Canyon — Petroglyphs and potential cultural landscape	Construct parking and access road.	With mitigation, no adverse effect. Potential adverse effect of visitor use.	<ul style="list-style-type: none"> • Locate parking to avoid intrusion upon cultural landscape and sites. • Use educational programs and law enforcement to help prevent indirect impacts of visitation. • Use fencing, patrols, visitor education to reduce indirect impacts of visitor use. 	SHPO/ACHP review of individual actions affecting significant cultural resources.

TABLE 20. SUMMARY OF THE SUGGESTED EFFECTS OF ALTERNATIVE 4 (CONT.)

Area and Major Resource	Action	Proposed Determination of Effect	Proposed Protective Measures, Mitigation	Further 106 Compliance Requirements
Mesa Prieta — Petroglyphs, several prehistoric quarry sites, archeological sites ranging in age from Paleo-Indian times to present, historic livestock drive area, potential cultural landscape, ethnographic sites. See alternative 1 for more information.	No facilities; use existing trails.	With mitigation, no adverse effect of visitor use.	<ul style="list-style-type: none"> Continued consultation with Pueblos. Establish baseline monitoring plan to detect damage or deterioration of sites and petroglyphs. 	SHPO/ACHP review of individual actions affecting significant cultural resources.
Piedras Marcadas Pueblo Ruin	Conduct occasional tours.	With mitigation, no adverse effect.	<ul style="list-style-type: none"> Stabilize any eroding areas. Continue to inventory site resources. See that informal trails do not impact buried resources. Fence site and provide law enforcement. 	Same as above.
Volcanoes — Volcanoes are sensitive ethnographic resources; four prehistoric sites nearby include petroglyphs, rock shelter, lithic/ceramic scatters, and/or grinding stone; three historic sites include corrals, pre- and post-World War II historic debris, lambing pens, hearth and/or corral; one site has corral and lambing pen, rock shelter and lithic/ceramic scatters. Vicinity: potential cultural landscape, ethnographic sites.	<ul style="list-style-type: none"> Continue use of informal parking, access road, and trails. No reclamation of cinder mine sites. 	Potentially adverse impact of continued unauthorized use of volcanoes.	<ul style="list-style-type: none"> Consult with Pueblos regarding operational methods of preserving sites, ethnographic values. Use patrols, signing, and visitor education to help protect sites. 	Same as above.
Geologic Windows — 13 sites in two areas.	No action.	Potential for adverse effect of unauthorized use.	Use fencing, patrols, and visitor education to reduce indirect impacts of visitor use.	Same as above.
Mesa Top — Mesa-top sites too numerous to list, ranging from Archaic period to present. Includes ethnographic resources and potential cultural landscape.	Continue to use multiuse and pedestrian trails.	With mitigation no adverse effect.	<ul style="list-style-type: none"> Most trails follow existing informal roads. Restrict use to trails. Continued consultation with Pueblos. 	Same as above.
Neighborhood Access — Several adjacent sites, including lithic/ceramic scatters. Vicinity: petroglyphs, potential cultural landscape	Construct neighborhood access points and trails.	With mitigation, no adverse effect.	Same as Mesa Prieta. Trail construction would avoid sites.	Same as above
Homestead Circle, Taylor Ranch Road/Calle Norteña Area — One prehistoric site (lithic/ceramic scatter) in vicinity	No action.	With mitigation, no adverse effect.	<ul style="list-style-type: none"> Consult with Pueblos regarding operational methods of preserving sites, ethnographic values. Use patrols, signing, and visitor education to help protect sites. 	Same as above.

Cumulative Impacts on Cultural Resources

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 loss on other federal, state, and private lands.

There would be impacts on cultural resources by the city's construction and use of Unser Boulevard through the escarpment and possibly by the removal of the existing road and the construction of the recreational trail and utility corridor through Boca Negra Canyon. These impacts would be mitigated by minimizing the rights-of-way and disturbed areas required for the routes, using construction techniques that would not disturb adjacent basalt and petroglyphs, and using design and materials to minimize noise and visual intrusion.

IMPACTS ON VALUES HELD BY CULTURALLY AFFILIATED GROUPS

Developing parking at Rinconada and near Piedras Marcadas Canyons would not have direct adverse impacts on values held by these groups. Lacking a major interpretive program to teach visitors respect for the traditional and cultural values of traditional groups, more conflicts would arise between visitor use and groups practicing cultural and traditional activities. Traditional and cultural use sites might lose value because of inadvertent visitor use.

Conclusion

There might be positive impacts on the values held by these groups through participation in consultation regarding site protection and interpretation. Values held by these groups might also be negatively impacted by uncontrolled visitor use and more potential for vandalism.

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.

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 construction of Unser Boulevard by the city through the monument escarpment is opposed by American Indian groups and the Atrisco heirs. There would be adverse impacts on these groups and their ability to maintain their connections 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.

IMPACTS ON FEDERAL AND STATE THREATENED AND ENDANGERED SPECIES

Impact Analysis on Plants

Implementing the no-action alternative would adversely impact 8.5 acres of potential habitat for the *Pediocactus papyracanthus* and *Mammillaria wrightii* cacti. Bicycle and horse activity would

have greater impact on this potential habitat than under the proposed action because permits would not be required and it would be more difficult to monitor and manage activities.

Conclusion. The 8.5 acres of potential habitat disturbance represents 0.30% of total potential habitat available. This would not be significant.

Cumulative Impacts. Development actions under this alternative could contribute to the extinction of the *Pediocactus papyracanthus* and *Mammillaria wrightii*.

It is not anticipated that there would be any adverse impacts on threatened or endangered plant species by the city's construction/extension of Unser Boulevard or the development of the recreational trail and utility corridor in Boca Negra Canyon because these routes are in areas that have been previously disturbed. Site-specific surveys must be conducted before construction to ensure that no threatened or endangered species were present.

Impact Analysis on Birds

It is anticipated that there would likely be no adverse effects on the ferruginous hawk from actions proposed in this alternative. However, the hawk might be adversely affected by development adjacent to the monument.

Conclusion. Development would not adversely affect the ferruginous hawk. Development actions would not contribute to the nationwide decline of this species.

Cumulative Impacts. Without mitigation, facility development under this alternative, combined with the development of lands outside the monument by the private sector and Unser Boulevard by the city,

could incrementally increase the amount and severity of the impacts on this species and could contribute to the elimination of the hawk as a breeding species in this area. These impacts, however, would be less severe than for implementation of alternative 1. With mitigation, there would be no significant adverse cumulative impacts on the hawk.

IMPACTS ON WILDLIFE OTHER THAN LISTED SPECIES

Impact Analysis

Trails that are shown on the Alternative 4 map are ones that currently exist. Minor trail improvements would be made to control erosion and prevent further widening, but no new trails would be developed. Therefore no additional adverse impacts on wildlife would be anticipated. Constructing parking areas would not have a significant impact on wildlife. About 4 acres of habitat would be eliminated. This would not have any significant adverse impacts on wildlife. Adverse impacts on 8 acres of flatland habitat would impact the crissal thrasher, sage sparrow, and loggerhead shrike. This would not be a significant impact. The monument would continue to have a beneficial impact on wildlife species on adjacent lands as their current habitat is developed.

If the former surface mine areas remain in their existing condition, the recovery of vegetation to conditions found in the surrounding lands might take several decades or centuries.

Conclusion

No significant adverse impacts on wildlife would occur as a result of implementing the no-action alternative.

Cumulative Impacts

Over time, increased visitor use of the monument without the use of permits and resource monitoring could result in more off-trail use, which would adversely impact wildlife species.

Monument facility and trail development combined with the city's constructing 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; however, these impacts would be slightly less than alternative 1 due to the limited monument facility development proposed under this alternative.

IMPACTS ON NATURAL DRAINAGE PATTERNS AND FEATURES

Impact Analysis

Erosion from rainfall would continue on the mesa top. Arroyos would continue to enlarge and get smaller, depending on the amount of water they would carry during storms. It is likely that new erosional cuts would be created during storms where water cuts over the top of the escarpment. Only a small portion of disturbed land would be reclaimed, allowing continuing gully activity and erosion. Without adequate staffing to patrol all areas of the monument, social trails would be more likely to occur under this alternative, increasing erosion and gully activity.

Conclusion

Current erosion and gully activity would continue on the mesa top and along the escarpment. Stormwater drainage from the monument would increase, but not significantly.

Cumulative Impacts

The construction of monument facilities and, in addition, the development of adjacent properties and the construction of Unser Boulevard by the city would have impacts on natural drainage patterns and features. However, these impacts would be less than described in alternative 1 because of the limited extent of monument facilities proposed. There would be adverse impacts on natural drainage patterns within the new Unser Boulevard alignment. Positive impacts from extending Unser Boulevard would include the removal of a 1,000-foot trench that is outside the monument, which directs stormwater flows from Paradise Hills into Piedras Marcadas Canyon. Other positive impacts would be providing an opportunity to manage stormwater flows in a manner that would not adversely affect monument resources.

IMPACTS ON BIODIVERSITY

Impact Analysis

The presence of large numbers of visitors in the monument, without available staff to ensure that all visitors are staying on trails, would increase the likelihood for creation of social trails and might displace some species of wildlife, though this would not be anticipated to be significant. Developing a total of 2 acres (0.02% of the total habitat available) would decrease wildlife and plant species and adversely impact biodiversity, but this would be insignificant.

Under this alternative 22 acres (0.3 % of the total habitat) would be developed. However, most of this development (18 acres) would occur on previously disturbed land. This would not be a significant adverse impact on biodiversity. A small amount of disturbed land (20 acres) would be reclaimed.

Continued horse use in the monument would adversely affect biodiversity by the introduction and spread of exotic plants. However, most of the monument has been previously disturbed by heavy grazing and many of the prominent plants are exotic species. This would not be a significant impact.

Conclusion

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.

Cumulative Impacts

Due to the high rate of development occurring adjacent to the monument and the construction of Unser Boulevard, less habitat would remain for wildlife species, thus displacing them onto the monument lands and associated open space lands.

The monument is likely to become an isolated island of habitat surrounded by development. This over time will have a significant adverse impact on biodiversity.

IMPACTS ON SOILS

Impact Analysis

The following table shows impacts by soil type and at development areas to provide a more complete and understandable picture of the impacts on soils. Impacts can be seen by looking at the "Soil Characteristics/Impacts" column on table 13. For example, soils with moderate to high potential for erosion (by wind or water) would be impacted by development and vegetation removal more than soils with slight to moderate potential for erosion.

During construction, requirements such as watering and immediate revegetation efforts would mitigate adverse impacts on these soils.

Conclusion

Visitor use and facility development on about 22 acres of soils within the monument would result in a adverse impact on soils. Soils are important because they support plant and wildlife habitat and contribute to the health of the west mesa ecosystem. This would not be a significant impact because most of this development would occur on previously disturbed land.

TABLE 21. SOIL IMPACTS BY DEVELOPED AREA, ALTERNATIVE 4

Developed Area	Acres of Moderate to Highly Erodible Soils Affected
Rinconada Canyon	Bluepoint-Kokan, hilly; Bluepoint loamy fine sand, 1-9% slopes
Piedras Marcadas Canyon	Alemeda sandy loam; Bluepoint loamy fine sand, 1-9% slopes; Bluepoint-Kokan, hilly
Lava Shadows	none
Volcanoes area	Unrestricted visitor use would compact soils and increase erosion in this area.
Neighborhood access	Kokan-Rock outcrop; Bluepoint loamy fine sand, 1-9% slopes; Alemeda sandy loam, 0-5% slopes; Bluepoint-Kokan, hilly
Mesa Prieta	Bluepoint-Kokan, hilly; Bluepoint loamy fine sand, 1-9% slopes; Alemeda sandy loam, 0-5% slopes; Madurez-Wink, gently sloping

After construction is complete, impacts on soils would include compaction from visitor use. Under this alternative there would likely be more off-trail use than in the other alternatives. Unless visitors remained on designated trails, adverse impacts on soils would occur from off-trail use. This could result in a significant adverse effect. This alternative would have the least beneficial impacts on soils because only a small portion of disturbed and compacted soil would be reclaimed.

Cumulative Impacts

Facility development combined with adjacent development including Unser Boulevard would cumulatively adversely impact soils — not to the degree that they would be impacted in the other alternatives due to the limited facility development proposed in this alternative.

IMPACTS ON SCENIC RESOURCES

Impact Analysis

Scenic qualities of the monument would be less affected because there would be fewer buildings in the monument under this alternative. The main visual impression of the monument as the visitor enters the monument access points would be of existing roads and parking areas. The net gain in visual quality would not be increased from fewer buildings in this alternative. The adverse visual impacts of trail use would also be increased by allowing most of the existing roads scars on the mesa to be used for trail development, and less area of the mesa top would be reclaimed to a more natural scenic character. However, these actions would result in minor adverse visual impacts on the monument. There could be a positive impact on visitors because most of the monument's natural scenic resources

would not be disturbed by the development of new facilities.

There would be no improvements from mine reclamation or reclamation of Homestead Circle park or Calle Norteña under this alternative.

Conclusion

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.

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 construction of Unser Boulevard by the city would adversely affect scenic resources and views, but less so because fewer monument facilities would be developed.

IMPACTS ON THE LOCAL AND REGIONAL ECONOMY

Impact Analysis

Fewer facilities and a lack of development would prevent visitor use of the monument from reaching its highest potential. The monument would continue to serve primarily as a local resource and would not provide the level of service to visitors nor the level of resource protection consistent with the monument's purpose and significance. As a result, the monument

would be less of a national and regional attraction than in the other alternatives.

Conclusion

The direct economic benefits would remain relatively small in relation to the entire economy of the region.

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 construction of Unser Boulevard, the recreational trail, and the utility corridor by the city would benefit the local and regional economy by facilitating traffic flow, reducing traffic congestion on other roads, providing recreation opportunities, and providing utilities to the mesa top. However, because of the need to minimize impacts on monument resources, there would be increased design and construction costs.

IMPACTS ON NATIONAL VISITORS

Implementation of the no-action alternative would provide visitors with a minimal experience. The existing visitor center would include some new, small exhibits, but would continue to function primarily as an orientation site. Access would be provided to petroglyph concentrations, and trails would be maintained only to prevent significant resource damage. Some personal interpretation would occur in these areas, but no facilities such as wayside exhibits, restrooms, and visitor contact facilities would be constructed.

The absence of these facilities would adversely impact visitors' experiences of the monument and limit the ability of the monument managers to impress on the public the significance of this resource. Lack of staff would impact monument managers' abilities to effectively patrol the monument, thus there might be an increase in vandalism, which would adversely impact opportunities for visitors to see undamaged petroglyphs.

Vandalism would also likely increase because of the lack of appropriate facilities (a heritage education center) to teach schoolchildren and other organized groups about the significance and importance of the petroglyphs and their context. This would have an adverse impact on the experience of national visitors.

Interpretation of the area's traditional and cultural qualities would be more difficult given the type of visitor experience provided and the level of development throughout the monument.

Additionally, combined use of trails by public visitors and educational groups in high-use areas would lead to congestion and seriously diminish the experience for both groups of visitors.

Noise levels from development near the Piedras Marcadas Pueblo ruin would increase and adversely affect the site and visitors.

Conclusion

Implementing this alternative would provide visitors with a less-than-adequate experience and result in an adverse affect. There would be an increase in vandalism throughout the monument because of the limited visitor and heritage education facilities. This would result in an adverse impact and make it more difficult for

visitors to understand the significance of the monument.

Cumulative Impacts

The construction of Unser Boulevard and the recreational trail by the city would benefit national visitors by facilitating access to the mesa top by vehicles, bicycles, horseback, and foot. There would also be a beneficial impact by eliminating vehicular traffic from Boca Negra Canyon. There would be adverse impacts on national visitors by the visual intrusion, increased noise levels, and the barrier of the four-lane highway. Creative design and material use would minimize these impacts.

IMPACTS ON LOCAL VISITORS AND ADJACENT LANDOWNERS

Impact Analysis

There would be no impacts from increased visitor traffic.

Neighborhood access trails and multiuse trails in the monument would accommodate Albuquerque citizens who have traditionally used this landscape to hike, ride bicycles, and ride horses, thus providing an expanded trail system for city residents. Increased local visitation would continue.

Combined use of trails by visitors and educational groups in high-use areas would lead to congestion and seriously diminish the experience for both groups of visitors.

Noise levels from development near the Piedras Marcadas Pueblo ruin would increase and adversely affect visitors on occasional tours.

Continuation of the existing education program would provide limited opportunities for heritage education.

Conclusion

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.

Cumulative Impacts

The construction of Unser Boulevard, the recreational trail, and the utility corridor would benefit adjacent landowners and local visitors by facilitating access and providing recreation opportunities. Adjacent landowners west of the escarpment would also benefit from the utility access. There would be adverse impacts from visual and noise intrusions from traffic on Unser Boulevard. Creative design and material use would minimize these impacts.

IMPACTS ON ENERGY CONSUMPTION

Impact Analysis

All monument and visitor facilities would use existing structures. Reusing the buildings at Lava Shadows for administrative offices and visitor orientation would eliminate adverse energy consumption impacts by saving the energy required for building the buildings, producing new building materials, and transporting those materials. However, new buildings would be designed and constructed to be more energy efficient.

Conclusion

No adverse energy consumption impacts would result from implementing this alternative.

IMPACTS OF MONUMENT USE AND ACTIVITIES ON EXISTING NOISE LEVELS

Impact Analysis

Constructing parking areas in Rinconada and Piedras Marcadas Canyons would cause temporary increases in noise levels but would not be significant. Operation of these areas would not create a significant increase in noise levels in the monument. Any increase in noise would not be noticeable compared with noise levels adjacent to the monument.

Conclusion

Noise from monument development and operations would not have a significant impact.

Cumulative Impacts

It is expected that noise from proposed adjacent development near Mesa Prieta, Boca Negra and Piedras Marcadas Canyons, the Piedras Marcadas Pueblo ruin, and the volcanoes would adversely affect the monument. Combined noise levels from Unser Boulevard, the expansion of the Double Eagle II Airport, proposed Paseo del Volcan, and proposed adjacent development could cumulatively and significantly increase noise levels in the monument. Mitigation measures regarding Unser Boulevard, the airport, and Paseo del Volcan would be developed with the Federal Aviation Administration, the state, and the city.

IMPACTS ON AIR QUALITY

Impact Analysis

Implementation of the no-action alternative would include some development of parking areas at trailheads. Because the

level of development would be much less than under any of the other alternatives, visitors to the monument would primarily be from the local area. Air quality emissions would stay below the de minimus levels as set by the Environmental Protection Agency and would be well below the levels of emissions in the other alternatives.

Due to the lack of information available to determine emission levels generated by constructing the two trailhead parking areas, conformity would be determined during the design phase. If required, construction would be designed to ensure conformity. Limitations on the number of trips, traveling during nonpeak hours only, dust suppression, and other methods would be employed if necessary to ensure that conformity is met. Other emissions, such as ozone, particulates, and lead, would be under de minimus levels as set in the regulations pertaining to nonattainment areas.

Conclusion

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 might occur during construction activity from dust.

Cumulative Impacts

Particulate matter (dust) from proposed 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 adjacent roads, airport, and development would increase emissions.

COMPLIANCE /CONSULTATION AND COORDINATION



Piedras Marcadas Canyon

COMPLIANCE WITH CULTURAL AND NATURAL RESOURCES REQUIREMENTS

In implementing the Petroglyph National Monument general management plan, the Park Service, the state, and the city would comply with all applicable laws and executive orders, including the following.

Architectural Barriers Act of 1968 (42 USC 4151 et seq.) and Rehabilitation Act of 1973 (29 USC 701 et seq.) — All facilities and programs developed would be accessible to visitors with disabilities.

Clean Air Act, as amended (42 USC 7401 et seq.) — Petroglyph National Monument is designated as a class II clean air area. Maximum allowable increases (increments) of sulfur dioxide (SO₂), particulate matter (TSP), and nitrogen oxides (NO_x) beyond baseline concentrations established for class II areas cannot be exceeded. These class II increments would allow modest industrial activities in the vicinity of the monument. Section 118 of the Clean Air Act requires all federal facilities to comply with existing federal, state, and local air pollution control laws and regulations. Petroglyph National Monument would work with the Albuquerque Air Pollution Control Division and the state to ensure that all monument activities meet all requirements. During the design phase for development proposed in the monument, an analysis of anticipated emissions from construction activities would be conducted to ensure conformity with federal and state air quality regulations as part of the Clean Air Act.

Endangered Species Act of 1973, as amended (16 USC 1531 et seq.) — Section 7 of the Endangered Species Act requires all federal agencies to consult with the U.S. Fish and Wildlife Service to ensure that any action authorized,

funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. The National Park Service is conducting a section 7 consultation with the U.S. Fish and Wildlife Service. Before construction and during the design phase, further surveys and consultation would occur to protect these species.

NPS policy provides protection for species proposed for listing as well as any state-listed species. It is the conclusion of the National Park Service that the proposed action may adversely impact habitat for *Pediocactus papyracanthus* (the grama grass cactus, category 2) and *Mammillaria wrightii* (a state-listed rare species) and might adversely affect the ferruginous hawk (category 2). Consultation would occur with the Natural Heritage Program and the U.S. Fish and Wildlife Service to make further determinations on this and provide for adequate mitigation. The Mesa Prieta area and the site for the heritage education center were the only sites not surveyed for threatened and endangered plant species. Site surveys would be completed during the design phase.

Executive Order 11988, "Floodplain Management" — This order requires all federal agencies to avoid construction within the 100-year floodplain unless no other practical alternative exists. No known floodplains would be affected by the proposed action. Trails are exempt from compliance under NPS guidelines to implement this executive order. During the design stage of any development, the most recent floodplain maps shall be consulted and siting of any

structures would be accomplished while avoiding the 100-year floodplain, unless the activity is exempted.

Executive Order 11990, "Protection of Wetlands" — This order requires federal agencies to avoid, where possible, impacts on wetlands. No known wetlands would be affected by the proposed action. Trails are exempted from compliance under NPS guidelines for implementing this executive order. During the design phase of any development, the most recent wetland maps shall be consulted to ensure that facilities are sited outside of any wetlands.

"Analysis of Impacts on Prime and Unique Agricultural Lands in Implementing the National Environmental Policy Act" (45 CFR 59189) — Federal agencies are required to analyze the impacts of federal actions on agricultural lands, in accordance with the National Environmental Policy Act. This policy was developed to minimize the effect of federal programs in converting prime, unique, or locally important farmland to nonagricultural uses. According to the Soil Conservation Service there are no prime and unique farmlands within the national monument.

During the design phase for all development proposed in the monument, NEPA compliance would be conducted as determined necessary by the National Park Service.

The following additional actions would be taken to ensure compliance with federal, state, and city laws and regulations.

Consultation with the U.S. Fish and Wildlife Service and the New Mexico Natural Heritage Program would be carried out before construction to ensure that no new listed species have been found on site.

During design, the most recent wetland and floodplain maps would be consulted to ensure that development is not located in either one of these resources. In the event that new data shows floodplain or wetlands in areas previously not identified, development would be sited to avoid these areas or if not possible, a statement of findings would be prepared in accordance with NPS guidelines for implementing Executive Orders 11990 and 11988.

During design, consultation with the New Mexico Environmental Improvement Division shall be accomplished to ensure compliance with the state's 401 water quality certification program, the National Pollution Discharge Elimination System (NPDES) for stormwater discharge, and the state's groundwater protection program.

If any unknown hazardous waste is found in areas proposed for development or visitor use, the National Park Service would comply with the Comprehensive Environmental Response Compensation and Liability Act (42 USC 9601 et seq.) to determine if resources are being polluted by the substance or if it presents a health and safety issue. If any excavated material is determined to be hazardous, the National Park Service would comply with the Resource Conservation and Recovery Act (42 USC 6901 et seq.)

The National Park Service would work with the city and Bernalillo County, to the extent possible, to comply with the intent of all applicable regulations and policies including the Storm Drainage, Flood, and Erosion Control Ordinance of 1986, and the city's 1983 *Development Process Manual*. Those regulations and policies that protect monument resources to a greater extent than that provided for under federal law would be enforced and adhered to. Consultation would continue with the city of Albuquerque during the design and

construction phase for development of the monument.

The National Park Service is mandated to preserve and protect its cultural resources — through the organic act of August 25, 1916, and through specific legislation such as the Antiquities Act of 1906, the National Environmental Policy Act of 1969 (as amended), and the National Historic Preservation Act of 1966, which is described below. Cultural resources in Petroglyph National Monument would be managed in accord with these acts and in accord with chapter V of the *NPS Management Policies*, the *Cultural Resources Management Guideline* (NPS 28), the Advisory Council on Historic Preservation's implementing regulations regarding "Protection of Historic Properties" (36 CFR 800), and the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (FR 48:44716-40). Other relevant policy directives and legislation are detailed in NPS 28.

As part of its cultural resource management responsibilities, as directed by section 110 of the National Historic Preservation Act, the National Park Service surveys and evaluates all cultural resources on lands under its jurisdiction. Cultural resources are evaluated by applying the eligibility criteria for the National Register of Historic Places. All cultural resources in the monument eligible for the national register would be recorded according to the highest professional standards. Consultation with traditionally associated American Indian and Atrisco groups would occur before nomination of ethnographic resources.

Before preliminary design, a professional archeologist would determine the need for further archeological inventory or testing evaluation. Any such studies would be carried out in consultation with the state historic preservation officer and concerned

Pueblo Indians before construction. Any large-scale archeological investigations would be undertaken in consultation with the state historic preservation office and the Pueblo Indians.

Responsibility for protecting archeological resources is included under several laws mentioned earlier as well as the Archeological Resources Protection Act of 1979.

Section 106 of the National Historic Preservation Act of 1966 requires that federal agencies having direct or indirect jurisdiction over undertakings consider the effect of those undertakings on properties on or eligible for listing on the national register and afford the Advisory Council on Historic Preservation and the state historic preservation office an opportunity to comment. Toward that end, the National Park Service would work with these entities to meet the requirements of 36 CFR 800 and the August 1990 programmatic agreement among the National Conference of State Historic Preservation Officers, the Advisory Council on Historic Preservation, and the Park Service. The agreement requires the Park Service to work closely with the state historic preservation office and the advisory council in planning and design for new and existing NPS areas, and provides for their review of monument development projects at four stages — task directive, policy review draft, and draft and final documents. The state historic preservation office and the Advisory Council on Historic Preservation would be invited to participate in the scoping process for design of the proposed facilities.

Comments on the *Draft General Management Plan / Development Concept Plan / Environmental Impact Statement* received from the Advisory Council on Historic Preservation and the state historic preservation office would be included in the *Final General Management Plan /*

Development Concept Plan / Environmental Impact Statement.

Also this agreement provides for a number of "programmatic exclusions" for specified actions that are not likely to have an adverse effect on cultural resources. These actions may be implemented without further review by the state historic preservation office or the advisory council provided that NPS internal review finds the actions meet certain conditions and this review is documented with an assessment of effect. Undertakings, as defined in 36 CFR 800, not specifically excluded in the programmatic agreement must be reviewed by the state historic preservation office and the advisory council during the planning and design stages and before implementation.

Internally, the National Park Service will complete an "Assessment of Effect on Cultural Resources" form (XXX form) before implementing any proposed actions. This is necessary to document any project effects, outline actions proposed to mitigate any effects, and document that the proposed action flows from the general management plan. All implementing actions for cultural resources would be reviewed, using the XXX form, and certified by regional office cultural resource specialists as specified in NPS 28.

To ensure that general management plan proposals that might affect properties eligible for the national register comply with provisions of section 106, the Advisory Council on Historic Preservation and the New Mexico state historic preservation office were invited to participate in the planning process. Representatives of the state historic preservation office have been regular participants in core team planning and will, along with the advisory council, have an opportunity to review and comment on the draft general management plan.

As elements of the plan are implemented, site-specific information on proposed actions and affected properties would be submitted to the state historic preservation office and the advisory council for their review and comment to ensure adequate mitigation of any adverse effects. These different actions for each alternative are delineated in the text of this management plan and are summarized in tables 12, 16, 18, and 20. Also included in these tables are actions that are either programmatic exclusions under the programmatic agreement among the National Conference of State Historic Preservation Officers, the Advisory Council on Historic Preservation, and the National Park Service or that are subject to further 106 consultation with the state historic preservation office and the advisory council.

In the interim, no potentially eligible property would be inalterably affected without consultation with the state historic preservation office and the Advisory Council on Historic Preservation.

Especially relevant to the management of Petroglyph National Monument are the various laws, rules, regulations, etc. that deal with American Indian relationships and discovery of human remains. Throughout the planning process representatives from the National Park Service, the city, and the state met with concerned Indian and Atrisco land grant groups, and dialogue regarding the project is expected to continue in the future. The principal concerns raised in discussions have been continued access for traditional and cultural purposes, traditional use of resources, protection of sites, and facility development. In 1992 a *Rapid Ethnographic Assessment* (Evans et al. 1993) was conducted by researchers from the University of Arizona to help define the presence and general location of ethnographically sensitive areas within the monument and

to gain an understanding of Indian and land grant heir concerns.

The 1992 amendments to the National Historic Preservation Act and the Archeological Resources Protection Act provide means whereby information about the character, location, or ownership of archeological sites, historic properties, and ethnographic sites, including traditional and cultural sites, might be withheld from public disclosure. This provision is especially important in cases where disclosure could risk harm to the resource or impede the use of a traditional site by practitioners. Monument managers would honor Indians' requests for confidentiality of information received as part of ongoing surveys.

The American Indian Religious Freedom Act provides for the preservation of Indian rights to practice their traditional beliefs. The National Park Service will continue to consult with American Indian tribes on a government-to-government basis. This special legal relationship is outlined in the secretary's April 29, 1994, memorandum for the heads of executive departments and agencies. In keeping with this mandate and provisions of the National Environmental Protection Act, the Park Service will consult with Indian groups on planning and management activities that affect them. The Park Service and the city would develop and accomplish their programs in a way that reflects respect for the beliefs, traditions, and other cultural values of the Indian tribes who have ancestral ties to the monument. The Park Service and the city would also strive to ensure privacy for American Indians to pursue traditional and cultural activities without interference or inappropriate observation by those who want to learn of Indians ways.

Training programs would cover the etiquette to be followed when monument staff encounter traditional and cultural

activities or sites and offerings. Consultation with American Indian groups would continue in the future, helping to improve understanding and achieve common goals. Consultation is especially critical to reach mutually acceptable solutions to questions of archeological excavations, resource preservation, and visitor use. All possible measures would be taken to resolve differences reasonably so monument plans and actions respect the cultural and ethnographic context of sites.

Discovery of significant archeological resources would be followed by protective measures. The Native American Graves Protection and Repatriation Act addresses the rights of tribes and consultation procedures regarding certain human remains and cultural items with which they are affiliated. Because of the monument's long human history and known association with Pueblo communities, there is potential for discovery of human remains and associated items of cultural patrimony.

To comply with the provisions of this act and its implementing regulations (43 CFR 10), monument managers would establish a prompt and effective notification system as outlined in the law to contact and consult with concerned groups regarding discovery of human remains and associated objects. Managers would deal with burials on a case-by-case basis with informed awareness of tribal concerns. Burials and associated objects would be afforded the utmost respect, and the National Park Service and the city would consult with tribes regarding remains associated with these groups. A Native American Graves Protection and Repatriation (NAGPRA) implementation plan would be developed, which would include strategies to include discussions with Pueblo Indians regarding archeological investigations and inadvertent discoveries.

CONSULTATION AND COORDINATION

Public involvement and consultation are key components throughout the preparation of the *General Management Plan / Development Concept Plan / Environmental Impact Statement*. The NPS planning staff works very closely with the city and state agencies that have responsibilities for land and program management within and adjacent to the monument. In addition, there have been numerous meetings with city boards and advisory groups, organizations, and neighborhood and business organizations.

STEPS IN THE PLANNING PROCESS

The first step in the planning process was the establishment of an intergovernmental core planning team to coordinate and prepare the *General Management Plan / Development Concept Plan / Environmental Impact Statement*. Because of the partnership nature of Petroglyph National Monument, the general management plan is being prepared by a core team that includes representatives from four city agencies, two state agencies, the American Indian Pueblo community, the Federal Aviation Administration, and the National Park Service. The core team has met throughout the planning process to develop and refine statements of purpose, to identify the significant resources of and the objectives for the monument, to develop alternatives for visitor use and management, and to assess the impacts of implementing each of the alternatives.

To ensure participation from the many governmental agencies that are concerned with the monument, an agency coordinating team was established. The coordinating team includes representatives with expertise in various disciplines from city, county, state, and federal agencies as well

as American Indian governments. The coordinating team advises the core team regarding past, ongoing, and proposed projects and programs that have an effect on the monument and provides input on various aspects of the plan preparation.

Throughout the planning process the team 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 general management plan 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. The National Park Service keeps the advisory commission informed of their planning activities and regularly consults with the advisory commission. The advisory commission has taken a very active interest in planning for the monument and met regularly with the Park Service to review alternatives and make recommendations regarding other alternatives.

In November 1992 the first planning newsletter, including a comment and response form, was distributed. The purpose of this newsletter was to let the local and national community know that a plan and environmental impact statement were being prepared for the monument. The newsletter outlined the steps in the planning process, some of the issues to be addressed by the plan, the overall plan schedule, the purposes and significant resources of the monument, and preliminary goals. Two public open houses were conducted by the planning and monument staffs to enable one-on-one interaction with concerned residents. A series of meetings

were held with community boards, organizations, and groups to discuss the planning process.

To maintain a dialogue with the public, the planning team members and monument staff held a second series of open houses on December 7 and 8, 1992. At these meetings, planning team members presented initial conceptual alternatives that were described in the February 1993 newsletter for managing the monument.

A second newsletter, published in February 1993, presented the refined purpose and significance statements and the planning team's three conceptual alternatives for visitor use and resource management. This newsletter also included a comment and response form, which will be summarized in the next document.

A series of public workshops was held to allow opportunities for the public to discuss the various elements of the alternatives. Planning team members met with city boards and committees, organizations, neighborhood associations, the monument advisory commission, representatives of the American Indian community, and individuals to discuss the issues and alternatives.

The partnership arrangement of this monument with the city, state, the core team, consisting of individuals from state and local offices and an advisory commission that have taken an active interest in the plan, has greatly affected the degree of public participation. Because advisory commission meetings are by law open to the public, the public has seen alternatives in very early forms, before they were complete, before analysis had been completed, and before approval by park service directorate.

Revised alternatives were presented in October 1993 to the commission. Based on

input from a commission subcommittee and others, the National Park Service revised the alternatives in December 1993 and these alternatives were presented to the public. There were extensive comments on the alternatives.

In November 1994 a preliminary draft of this document was reviewed by the Petroglyph National Monument Advisory Commission and the intergovernmental core planning team. Revisions have been made based on comments received. Verbal comments were received from the city of Albuquerque staff, but official comments have not been provided. The National Park Service has attempted to work with the city to resolve issues that were unclear or contrary to NPS policies. The National Park Service continues to work with the city in the preparation of all monument-related plans.

The Draft General Management Plan / Development Concept Plan / Environmental Impact Statement was reviewed by the public during a 90-day public comment period, which included public meetings. Public meetings were held with

Bernalillo County Planning Commission
City of Albuquerque
Greater Albuquerque Recreational Trails Committee
Open Space Advisory Board
Planning Commission
Middle Rio Grande Council of Governments
Public Involvement Committee
Technical Coordinating Committee
Urban Transportation Policy and Planning Board
Petroglyph National Monument Advisory Commission There were 30 speakers giving comments at the Advisory Commission meeting.
Santa Fe Village Neighborhood Association

Comments on the *Draft General Management Plan / Development Concept Plan / Environmental Impact Statement* have been summarized, and appropriate revisions have been made in the *Final General Management Plan / Development Concept Plan / Environmental Impact Statement*. The final document includes responses to substantive comments.

AMERICAN INDIAN CONSULTATION

To facilitate consultation with American Indian and Hispanic groups, the National Park Service conducted a rapid ethnographic assessment. This study identified the principle concerns of American Indian groups and how the National Park Service should focus its consultation efforts. The monument staff is continuing its efforts to enhance communication and consultation with both American Indian and Hispanic groups as the planning process proceeds regarding continuing and long-term planning and management issues.

Based on the results of the ethnographic assessment, monument and planning team members met with American Indian and Hispanic representatives and invited representatives to participate in core team meetings. Park and planning team members have had both short and long term interests in meeting with American and Hispanic representatives. The Park Service has had the desire to initiate communication and understanding of monument and planning issues as well as an understanding of American Indian and Hispanic interests.

Formally, this consultation has been and will continue to be through the American Indian Consultation Committee, who conducted their first meeting on July 7, 1993. This consultation committee is comprised of representatives from the All Indian Pueblo Council Inc., Five Sandoval

County Pueblos Inc., Sandia Pueblo, Santa Anna Pueblo, and Zia Pueblo.

Throughout the preparation of this management plan, the planning team has involved and informed the American Indian Pueblo community of the planning process and issues that could affect lands that are significant to the American Indians.

The monument staff recognizes that the lands within the monument may have significance to several Pueblos and nearby groups and that most traditional and cultural practices are very private. Opportunities will be provided for American Indian groups to comment on development and visitor use plans in a manner that enables adequate time for the Pueblos and Tribes to consider the proposals.

American Indians will be provided reasonable access to all portions of the monument consistent with 36 CFR 2.51. The superintendent may adopt temporary closures of specific portions of the monument so that American Indians may practice ceremonies or rituals without interference from non-Indians. Monument staff will be trained in identifying ritual and traditional and cultural practices to ensure privacy for these practices.

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 multiuse 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

LIST OF AGENCIES AND ORGANIZATIONS THAT RECEIVED COPIES OF THE DRAFT PLAN

An asterisk (*) has been added to those who sent comments on the draft plan.

Federal Agencies

Advisory Council on Historic Preservation*
Bureau of Indian Affairs
U.S. Environmental Protection Agency,
Region 6*
U.S. Department of Agriculture, Forest
Service
U.S. Department of the Interior, Fish and
Wildlife Service*
U.S. Department of Transportation, Federal
Aviation Administration*

Native American Tribes and Groups

All Indian Pueblo Council*
Acoma Pueblo, New Mexico
Alamo Navajo Chapter, New Mexico
Cochiti Pueblo, New Mexico
Five Sandoval Indian Pueblos*
Hopi Tribe, Arizona
Isleta Pueblo, New Mexico
Jemez Pueblo, New Mexico

Jicarilla Apache Tribe, New Mexico
Laguna Pueblo, New Mexico
Mescalero Apaches, New Mexico
Nambe Pueblo, New Mexico
National Indian Youth Council*
Navajo Nation, Arizona
Picuris Pueblo, New Mexico
Pojoaque Pueblo, New Mexico
Ramah Navajo Chapter, New Mexico
San Felipe Pueblo, New Mexico
San Ildefonso Pueblo, New Mexico
San Juan Pueblo, New Mexico
Sandia Pueblo, New Mexico*
Santa Ana Pueblo, New Mexico
Santa Clara Pueblo, New Mexico
Santo Domingo Pueblo, New Mexico
Southern Ute Tribe, Colorado
Taos Pueblo, New Mexico
Tesuque Pueblo, New Mexico
Ysleta del Sur, Texas
Zia Pueblo, New Mexico
Zuni Pueblo, New Mexico

State Agencies

Department of Game and Fish,
Habitat, Environment, and Lands
Division
Highway and Transportation Department
Highway and Transportation Department,
Aviation Division*
Historic Preservation Division*
Office of the Attorney General
Park and Recreation Division
State Land Office
Tourism Department

Local Governments

City of Albuquerque,
Advance Planning Division*
Aviation Division
Environmental Health Department*
Environmental Planning Commission*
Mayor's Office*
Office of Neighborhood Coordination
Open Space Advisory Board*

Open Space Division
Parks and General Services Department
Public Art Program*
Public Works Department
Albuquerque Metropolitan Arroyo Flood
Control Authority*
Bernalillo County
Greater Albuquerque Recreational Trails
Committee*
Middle Rio Grande Council of
Governments*
Urban Transportation Planning and Policy
Board

Organizations

Alban Hills Neighborhood Association
Albuquerque Archeological Society
American Rock Art Research Association
The Archeological Conservancy*
Atrisco Land Rights Council*
Bay Area Rock Art Research Association*
Central New Mexico Audubon Society*
Corrales Horse and Mule People*
Friends of the Albuquerque Petroglyphs*
Greater Albuquerque Chamber of
Commerce*
Ladera Heights Neighborhood
Association*
Las Colinas Realty and Development
Company*
League of Women Voters of
Albuquerque/Bernalillo County*
National Indian Youth CouncilNational
Parks and Conservation
Association*
New Mexico Horse Council

Paradise Hills Civic Association, Inc.*
Petroglyph Citizens Alliance
Rim Rock Road Property Owners
Association*
Santa Fe Village Neighborhood Association
Sierra Club, Albuquerque Group*
Sierra Club Legal Defense Fund*
Taylor Ranch Neighborhood Association*
Volcano Cliffs Homeowners Association
Westland Development Co., Inc.*
Westside Action Council*

Individuals

Letters from the following individuals
have been printed because they provide a
sample of the types of comments received.
Other letters from individuals were
received which expressed a preference for
a particular alternative or addressing a
specific issue have not been printed in this
document.

JoAnn B. Anders*
Howard H. Chapman*
Russell E. Dickenson*
Joe D. Luehring*
Richard M. Mooney*
Patrick J. Rogers*
Larry Weaver*

COMMENT LETTERS AND RESPONSES

The letters and responses are printed in
the following pages.

COMMENTS

RESPONSES

**Advisory
Council On
Historic
Preservation**

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

Reply to: 730 Simms Street, #401
Golden, Colorado 80401

December 12, 1994

Lawrence Beal
Chief of Planning
Petroglyph National Monument
123 Fourth Street SW, Room 101
Albuquerque, NM 87102

RE: *Draft General Management plan for Petroglyph National
Monument, New Mexico.*

Dear Mr. Beal:

We recently received a copy of the draft General Management Plan/Development Concept Plan and Environmental Impact Statement for Petroglyph National Monument with a request for our comments on the four proposed alternatives. The document is very detailed and informative regarding the nature and significance of cultural resources at Petroglyph National Monument, and the expected impacts of proposed actions under each alternative. It appears to us that the National Park Service has also done a very good job of outlining the concerns of the Indian Pueblos and other interested parties, and has provided a series of reasonable alternatives for the public to review and comment on.

From a cultural resource protection standpoint, Alternative 2, as proposed in the Plan, would clearly have the least impact. This alternative would preserve the National Monument in as natural condition as possible, would focus improvements in areas already disturbed by visitor use, and would allow for the continued traditional cultural use of the volcanoes and West Mesa by Pueblo Indian groups with minimal disturbance by recreational visitors. If the National Park Service believes that this alternative does not provide adequate opportunities for public recreation, Alternative 1 provides increased visitor access to petroglyphs and more remote areas of the Monument, without proposing actions that will severely impact historic properties. As the National

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Park Service's proposed alternative, we have focused our comments on Alternative 1.

Under Public Law 101-313, Petroglyph National Monument was established to preserve, for the benefit and enjoyment of present and future generations, the significant natural and cultural resources in the Monument, and to facilitate research activities associated with the resources (Section 102(a)). The authorizing legislation also points out the urgent need to protect the cultural and natural resources of the area from urbanization and vandalism. As noted in the Plan, the entire National Monument is listed in the National Register of Historic Places and is likely eligible as a cultural landscape. The All Indian Pueblo Council has indicated that bicycling and horseback riding is inconsistent with traditional use of this landscape and should not be allowed on the sacred lands of the Monument. Before proceeding with a preferred alternative that includes such use, the National Park Service should seriously consider the possible consequences of permitting bicycling and horseback riding, and of developing trails for such multiple use on the integrity of setting, feeling, and association, and on traditional Pueblo Indian ceremonial use of the West Mesa and volcano area. Because of the All Indian Pueblo Council's expressed concern, and because the authorizing legislation for Petroglyph National Monument places primacy on the preservation of the Monument's cultural resources (presumably including the cultural landscape), we encourage you to fully consider the potential adverse effects that development of bicycle and horseback riding trails on West Mesa would have on historic properties. We encourage you to adopt a preferred alternative within the Plan that best preserves this landscape.

The inclusion of initial assessments of effects to historic properties, and descriptions of additional consultation and mitigation needed, will help interested parties and the general public understand the actual impacts of proposed alternatives, inasmuch as they can be determined at this time. Table 12 is particularly useful in detailing this information. We do note, however, that proposed determinations of "no adverse effect" have been made for actions that may require archaeological excavation as mitigation. Under the Council's regulations, at 36 CFR 800.9(c)(1), such a determination may not be appropriate where archaeological properties are ascribed traditional cultural value by Pueblo Indian communities or if there is a likelihood of disturbing human remains during excavations. While archaeological data recovery may still be appropriate as

1. The table has been revised.

COMMENTS

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mitigation, where an archaeological property is of value for reasons other than, or in addition to, its research potential, a determination of "adverse effect" should be made.

2

We also note one small typographical error on page 231: the referred to amendments to the National Historic Preservation Act were passed into law in October 1992, not 1993.

Thank you for providing us an opportunity to provide you with some early feedback on the proposed draft GMP. If you have any questions or concerns regarding these comments, please contact Carol Gleichman of the Western Office of Review at (303) 231-5320.

Sincerely,


Claudia Niesley
Director, Western Office
of Review

2. The final plan has been revised.

COMMENTS

RESPONSES



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

OCT 26 1995

Mr. Lawrence Beal
Chief of Planning
Petroglyph National Monument
4735 Unser Boulevard NW
Albuquerque, New Mexico 87120

Dear Mr. Beal:

In accordance with our responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act (NEPA), and the Council on Environmental Quality Regulations for Implementing NEPA, the U.S. Environmental Protection Agency (EPA) Region 6 office in Dallas, Texas, has completed its review of the U.S. Department of the Interior, National Park Service (NPS) Draft General Management and Development Concept Plan Environmental Impact Statement (DEIS) for the Petroglyph National Monument, Bernalillo County, New Mexico.

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. This document presents four alternatives, including a preferred alternative, for the development, resource management, and visitor use of the monument.

The proposed action is to provide diverse opportunities for the visitors of different ages and abilities to see petroglyphs within the context of the escarpment, mesa top, volcanoes, Rio Grande Valley, and the Sandia Mountains. Visitors would be directed to a visitor center/heritage education center at Boca Negra Canyon. Horseback and bicycle riding would be permitted on selected designated mesa top trails and at several crossing points. No horses or bicycles would be allowed in petroglyph viewing areas or archeological sites anywhere in the monument.

EPA classifies your DEIS and proposed action as "LO," i.e., EPA has "Lack of Objections". Our classification will be published in the ~~Federal Register~~ according to our responsibility under Section 309 of the Clean Air Act, to inform the public of

1. Thank you for your review and comment.

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our views on proposed Federal actions. We appreciate the opportunity to review the DEIS and request that you send our office two (2) copies of the Final EIS at the same time that it is sent to the Office of Federal Activities, EPA, 401 M Street S.W., Washington, D.C. 20460.

Sincerely yours,



Jane M. Saginaw
Regional Administrator

COMMENTS

RESPONSES



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services State Office
2106 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 761-4526 Fax: (505) 761-4542

September 8, 1995

Cons. #2-22-92-I-082

DE
Larry

Memorandum

To: Superintendent, Petroglyph National Monument, National Park Service,
Albuquerque, New Mexico

From: State Supervisor, New Mexico Ecological Services State Office

Subject: Draft General Management Plan/Development Concept Plan, Environmental
Impact Statement for Petroglyph National Monument

This responds to your request for comments on the subject draft document dated August 1995. In a memorandum dated January 9, 1992, this office indicated no ~~federally listed endangered or threatened species would be affected by the proposed~~ action. Data in our files and information in the draft document indicate a "no effect" finding remains correct. We are enclosing an updated list of endangered, threatened, and candidate species that may occur in Bernalillo County, some of which may occur on Petroglyph National Monument. You should request an update to this list prior to initiating any development projects.

Thank you for the opportunity to comment on this document. If we can be of further assistance, please contact Charlie McDonald of my staff at (505) 761-4525.

Jennifer Fowler-Propst

cc:
Regional Director, National Park Service, Southwestern Region, Santa Fe, New Mexico

1. Thank you for your review and comment.

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COMPLIANCE / CONSULTATION AND COORDINATION

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Threatened, Endangered, and Candidate Species Potentially
Occurring in Bernalillo County, New Mexico
Petroglyph National Monument General Management/Development
Concept Plan and Environmental Impact Statement
September 8, 1995

Bernalillo

Arizona black-tailed prairie dog, *Cynomys ludovicianus arizonensis*, C2
Big free-tailed bat, *Myotis myotis macrootis* (= *Tadarida m. l. molossa*), C2
Black-footed ferret, *Mustela nigripes*, E
Fringed myotis, *Myotis thysanodes*, C2
Long-legged myotis, *Myotis volans*, C2
New Mexican meadow jumping mouse, *Zapus hudsonius luteus*, C2
Occult little brown bat, *Myotis lucifugus occultus*, C2
Pale Townsend's (= western) big-eared bat, *Plecotus townsendii pallascens*, C2
Pecos River muskrat, *Ondatra zibethicus rioensis*, C2
Small-footed myotis, *Myotis ciliolabrum*, C2
Spotted bat, *Euderma maculatum*, C2
Yuma myotis, *Myotis yumanensis*, C2
American peregrine falcon, *Falco peregrinus anatum*, E
Arctic peregrine falcon, *Falco peregrinus tundrius*, T (S/A)
Baird's sparrow, *Ammodramus bairdii*, C2
Bald eagle, *Haliaeetus leucocephalus*, T
Black tern, *Chelidonias niger*, C2
Ferruginous hawk, *Buteo regalis*, C2
Loggerhead shrike, *Lanius ludovicianus*, C2
Mexican spotted owl, *Strix occidentalis lucida*, T w/CH
Mountain plover, *Cheragrius montanus*, C1
Northern goshawk, *Accipiter gentilis*, C2
Southwestern willow flycatcher, *Empidonax traillii eximius*, E w/PCH
Western burrowing owl, *Athene cunicularia hypuga*, C2
White-faced ibis, *Plegadis chihi*, C2
Whooping crane, *Grus americana*, E
Flathead chub, *Platygobio* (= *Hypobosis*) *gracilis*, C2
Rio Grande silvery minnow, *Hypognathus amarus*, E w/PCH
Texas horned lizard, *Phrynosoma cornutum*, C2
Millipede, *Toxotus chiluanus*, C2

Index

E = Endangered
T = Threatened
PCH = Proposed critical habitat
C1 = Category 1 Candidate
C2 = Category 2 Candidate
S/A = Similarity of Appearance

COMMENTS

RESPONSES



United States Department of the Interior
NATIONAL PARK SERVICE
Petroglyph National Monument
6001 Unser Boulevard NW
Albuquerque, New Mexico 87120

In reply refer to:

L76 (PETR)
XN1621 (SWSO-PQS)

September 20, 1995

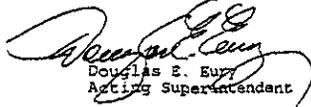
Field Supervisor
Ecological Services
U. S. Fish and Wildlife Service,
2105 Osuna NE
Albuquerque, New Mexico 87113

Enclosed is the informal biological assessment for the subject Draft Environmental Impact Statement which includes proposals for future development of visitor and administrative facilities at Petroglyph National Monument, Bernalillo County, New Mexico.

We find that the proposed developments would not likely adversely affect proposed, threatened, or endangered species, or designated critical habitat. This assessment is provided to advise you of our current actions and decisions. Also enclosed is a copy of the Draft General Management Plan/Development Concept Plan and Draft Environmental Impact Statement, as well as a concurrence form which may facilitate your communications with us in this informal consultation.

Should you have any questions regarding this matter, please telephone Nancy Skinner at 505-988-6859. Thank you for your assistance.

Sincerely,


Douglas E. Eury
Acting Superintendent

Enclosures

RECEIVED
SEP 22 1995
9237
SWSO-PQS

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COMPLIANCE / CONSULTATION AND COORDINATION

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Cona. #2-22-95-I-550

Long
JK

CONCURRENCE FORM FOR SOUTHWEST CLUSTER NPS
ENDANGERED SPECIES BIOLOGICAL ASSESSMENT

We have reviewed your informal Biological Assessment for implementing the general management plan and development concept plan, which would provide for visitor and administrative facilities at Petroglyph National Monument, Bernalillo County, New Mexico.

We concur with your findings that the above proposed National Park Service action is not likely to adversely affect listed species or critical habitat.

We do not concur with your Biological Assessment and believe additional informal/formal consultation may be necessary in this matter.

EXPLANATIONS (if necessary):

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for *Sonja Jahnsdorfer*
Signature
State Supervisor
Title
New Mexico Ecological Services State Office
USFWS Office
5 Oct. 1995
Date

RECEIVED N.P.S.
OCT 10 1995
Petroglyph National Monument

COMMENTS

RESPONSES



U.S. Department
of Transportation
Federal Aviation
Administration

Southwest Region
Arkansas, Louisiana,
New Mexico, Oklahoma,
Texas

Fort Worth, Texas 76193-0000

November 3, 1995

Mr. Stephen Whitesell
Superintendent, Petroglyph National Monument
4735 Unser Boulevard NW
Albuquerque, NM 87120

Dear Mr. Whitesell:

This letter transmits our comments on the Draft General Management Plan/Environmental Impact Statement for Petroglyph National Monument. We are faxing this letter to you to expedite our response and will follow up with a hard copy via the mail.

1. One of our major concerns, one we have stressed in our comments provided to you on December 13, 1994, is that it is extremely important for the National Park Service (NPS) to take into consideration the established flight tracks for Double Eagle II Airport (DBE II) when siting the visitor facilities, meditation points, etc., where solitude and quiet would be very important. It is noted in the Bibliography of the draft we could find no mention of reference to the Final Environmental Assessment (EA) for an on-airport access road on DBE II. Flight tracks and noise exposure contours found in the final EA may prove to be of assistance to you.

2. We would appreciate having a copy of the Land Protection Plan referred to in the draft EIS when addressing land acquisition policy. It is noted that reference is made to the Land Protection Plan when addressing acquisition of land into the Monument boundary in lieu of discussing any acquisition action in the EIS document itself.

3. Unless we have missed it, a map depicting areas identified in Table 1, page 49 of the draft EIS, would have been very helpful.

4. On page 67 of the draft EIS reference is made to access from the Airport Haul Road to the volcanoes and that an amendment of an agreement between the city of Albuquerque and the Federal Aviation Administration (FAA) would be necessary. As we have stressed in past correspondence, there is no room for latitude on use of the Haul Road strictly for airport access. The only alternative would be for the city of Albuquerque to repay the Federal Government all Federal monies that have been expended on construction of the road; then the city would own it and be able to determine its uses. There can be no amendment to the agreement, which was, in actuality, the grant agreement when the FAA invested Federal money into the airport road. In our January 12, 1995, letter to you we enclosed an excerpt

1. The *Final Environmental Assessment* for an on-airport access road on Double Eagle II was used as a reference and is cited on the second page of the bibliography in the draft plan.
2. The National Park Service will continue to work with the city and the Federal Aviation Administration to resolve the access issue. See "Volcanoes Area" section in alternative 1.

COMMENTS

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from FAA Order 5100.38A, Airport Improvement Program (AIP), which specifically addressed the use of airport access roads and their eligibility for AIP funding. Since this access to the volcanoes is a part of Alternative 1, the proposed action, it is important that the NPS understand that this is not a negotiable item, but is a part of our established regulations.

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5. Throughout our review of the draft EIS, discussions of impacts, whether they were direct, indirect, or cumulative, seemed to be directed only towards possible impacts to the Monument itself. NEPA compliance, to us, has meant that Federal agencies are charged with the task of evaluating not only the onsite impacts, but also impacts that could occur outside the area of the proposed action. Reference is made to page 141, Paseo del Norte (PDN), in the draft EIS. The NPS has determined that construction of PDN through the Monument will serve no purpose for the Monument; therefore, the NPS is not obligated to evaluate possible impacts to the surrounding communities or the city of Albuquerque itself should PDN ultimately be constructed elsewhere or not at all. We feel that this approach does not meet the intent of NEPA and that the NPS should consider the effects of its actions on others as well as the Monument.

We appreciate the opportunity to review and comment on the draft EIS. If you should have any questions concerning our comments, please contact Ms. Joyce M. Porter at (817) 222-5644.

Sincerely,

Joyce M. Spriggs
Joyce M. Spriggs, Manager
New Mexico/Oklahoma Airport
Development Office

cc:
Mr. Hanson Scott
Director of Aviation
Albuquerque International Airport
P.O. Box 9022
Albuquerque, NM 87119

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3. The intent of the National Environmental Policy Act has been met. There are no actions proposed in the management plan that have not been analyzed.

The Draft and Final General Management Plan / Environmental Impact Statements are consistent with federal law and policy. Paseo del Norte was identified on page 21 of the draft plan as an issue beyond the scope of this general management plan. Therefore, further analysis as cited in 1502.9(a) is not required.

The plan does not contain any actions that conflict with city policy that did not already conflict with city policy with the establishment of the monument. Establishing the monument and signing the binding agreement are the actions that put city policy in conflict with the monument, not any actions in the general management plan. The National Park Service does not have the authority under current law and policy to allow development that would derogate the values and purposes for which the monument was designated.

As stated on page 23 of the draft plan, the plan is consistent with the City and County Comprehensive Plan, the Northwest Mesa Area Plan, and the Northwest Mesa Escarpment Plan. We look forward to working with the city staff to identify the specific conflicts, other than Paseo del Norte, that may exist.

It is not the purpose or intent of the National Environmental Policy Act or the general management plan to resolve all these conflicts. Rather, the National Environmental Policy Act requires the consideration of conflicts resulting from a proposed agency action.

On page 23, the National Park Service clearly states that there are conflicts with federal and city policy; however, these conflicts are not a result of the management plan but they are a result of legislation creating the monument. However, the National Park Service also states that we are working with the city to resolve these conflicts. We state those plans that we know we are generally consistent with, and we identify the one plan with which we are in conflict.

COMMENTS



U.S. Department
of Transportation
Federal Aviation
Administration

Southwest Region
Arkansas, Louisiana,
New Mexico, Oklahoma,
Texas

Fort Worth, Texas 76193-0000

January 12, 1995

Mr. Larry Beal
Petroglyph National Monument
National Park Service
123 Fourth St., S.W., Room 101
Albuquerque, NM 87102-9953

Dear Mr. Beal:

In reference to your telephone call of January 10, 1995, to Ms. Joy Porter, of this office, and to further clarify our letter to you dated December 13, 1994, the following is offered.

The appropriate operations forecast table in the preliminary master plan update (Plan) for Double Eagle II Airport (DBE II), to be used in estimating projected aircraft operations, is Table 3.14 on page 3-43 of the Plan. That table utilizes three different scenarios for projected growth at DBE II, all of which are defined on pages 3-4 through 3-6 of the Plan. Of those three, we feel that the most realistic is Scenario 2. As stipulated in Scenarios 2 and 3, we do not anticipate a new reliever airport being developed in the area any time in the foreseeable future; however, Coronado Airport could remain open, in one form or another, due to its acquisition by the Sandia Pueblo. All remaining items in Scenario 2 are deemed feasible. Scenario 3 assumes that 80 percent of the general aviation activity at Albuquerque International Airport (AIA) will move to DBE II. It is our belief that the 40 percent estimate in Scenario 2 is a much more realistic and feasible figure.

- Together We Succeed -

RESPONSES

It is not the purpose of the general management plan to resolve citywide and regional transportation issues. The Unser Middle Project has been discussed as an issue beyond the scope of this plan.

There is no authorization for the Paseo del Norte right-of-way. The entire Unser Middle Project is an issue beyond the scope of this plan.

COMMENTS

RESPONSES

There are options other than DBE II in the area for relocation of general aircraft, i.e. Belen or Moriarity. We also do not foresee large scale development opportunities becoming a reality at DBE II in the foreseeable future; modest is a much more realistic projection.

The operations activity forecasts in Table 3.14 are considered to be the most appropriate forecasts for DBE II. We do agree, however, that the table is somewhat confusing when considering its set up. A revised copy of the table is enclosed with heading lines adjusted, more clearly indicating the appropriate figures to be included in each category. In estimating total aircraft operations, which is usually a high estimate, the Operations column under the Total heading represents the total operations forecasts. For the year 1995 under Scenario 2, the operations total is estimated at 83,700; for 2010 it is estimated at 270,088. This is a little over a threefold increase in operations; not the stated sevenfold as identified in the draft EIS for the Monument. Even when looking at the Scenario 3, which you identified as the worst case scenario and used in preparation of the NPS EIS, the 1995 forecast is 111,380; the 2010 is 327,418. Again, it is not quite a threefold increase in operations, keeping in mind that these figures are higher than we anticipate occurring at DBE II.

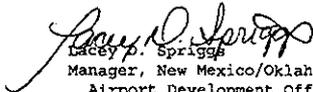
Enclosed as you requested is an excerpt from Order 5100.38A, Airport Improvement Program (AIP), addressing eligibility of airport roads for AIP funding. Also enclosed is a copy of the original grant cover sheet indicating Federal participation in the access road. As stated in our letter to Mr. Whitesell dated July 26, 1993, access to the Monument via the portion of the road on airport property would be in violation of the grant agreement between the city and the FAA. Access to the Monument via the portion of the access road below the airport boundary should be discussed with the city.

COMMENTS

RESPONSES

We hope this further clarifies the FAA's concerns. If you would like to discuss this letter further, please contact Ms. Joy Porter of my staff at (817) 222-5644.

Sincerely,


Lacey D. Spriggs
Manager, New Mexico/Oklahoma
Airport Development Office

3 Enclosures

CC:
Mr. Hanson Scott
Director of Aviation
Albuquerque International Airport
P.O. Box 9022
Albuquerque, NM 87119

COMPLIANCE / CONSULTATION AND COORDINATION

COMMENTS

RESPONSES



U.S. Department
of Transportation
Federal Aviation
Administration

Southwest Region
Arkansas, Louisiana,
New Mexico, Oklahoma,
Texas

Fort Worth, Texas 76193-0000

December 13, 1994

Mr. Larry Beal
Petroglyph National Monument
National Park Service
123 Fourth St S.W., Room 101
Albuquerque, NM 87102-9953

Dear Mr. Beal:

Thank you for the opportunity to review the draft General Management Plan/Development Concept Plan Environmental Impact Statement (EIS) for the Petroglyph National Monument.

I apologize for not being able to attend the upcoming meeting in Albuquerque on December 14 due to previous commitments in connection with the EIS we are preparing in Taos. I have, however, enclosed our comments and recommendations for your consideration.

I will be back in the office on December 19 and 20 before leaving for the holidays. If you have any questions, please give me a call at (817) 222-5644. We extend to you and the National Park Service staff our sincere wishes for a very Merry Christmas.

Sincerely,

Joyce M. Porter
Environmental Specialist
NM/OK Airport Development Office

Enclosure

- Together We Succeed -

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COMMENTS

RESPONSES

COMMENTS ON DRAFT GENERAL MANAGEMENT
PLAN/DEVELOPMENT CONCEPT PLAN
ENVIRONMENTAL IMPACT STATEMENT
PETROGLYPH NATIONAL MONUMENT

1. Page 26, Double Eagle II General Aviation Airport: Reference is made to the number of aircraft operations increasing sevenfold by the year 2010. The actual master plan update forecast figures reflect the present (1991) operations as 227,507; the 2010 operations forecast figures indicate the estimated operations will be 283,700. This is an increase of approximately 56,193 operations over the 20 year planning period; not the sevenfold increase indicated in the preliminary EIS.

2. Pages 26/27: Reference is made to 1,315 acres of the monument now in private ownership. If the Monument plans to acquire these properties, will it be done under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (URARPAPA)? If so, no mention was found. Not having seen the referenced Land Protection Plan, we were unable to determine if URARPAPA was applicable.

Because of the recently completed EA for the airport and our public involvement process, we have received concerns from the public about the EIS for the monument and whether the NPS is following NEPA in its land acquisition.

3. We have reviewed the various alternatives recommended in the EIS. Please refer to FAA letter dated July 26, 1993, copy attached, concerning planned access to the Monument from the airport access road referred to as the Haul Road. We would like to again reiterate that any other use of the airport access road other than airport access would be in direct violation of the grant agreement presently existing between the City of Albuquerque and the FAA. Alternatives 1 (proposed action), 2, and 4 show public access to the Monument from the Haul Road.

4. The final locations selected for visitor facilities, meditation, and areas where primarily solitude and quiet are of the utmost importance are recommended to be planned and sited keeping in mind operations connected with Double Eagle II Airport. When possible, areas where the noise levels from existing overflights from aircraft connected with Double Eagle II Airport are at the lowest level should

COMMENTS

RESPONSES

be considered. We recommend that you refer to the final EA for Double Eagle II Airport for noise contours in the vicinity of the airport. Those contours may prove to be beneficial to you in the design and siting of these areas for public use. If you need an additional copy of the EA, please let us know.

COMMENTS

RESPONSES

NOV 26 1993

Mr. Stephen Whitesell, Superintendent
Petroglyph National Monument
123 4th Street, Room 101
Albuquerque, NM 87102-9953

Dear Mr. Whitesell:

This letter rescinds our letter dated July 15, 1993, concerning the use of the Double Eagle II Airport Haul Road for access to the Petroglyph National Monument. After further review and discussions with our Albuquerque Airports District Office personnel, we have found our previous letter was incorrect in the exact definition of the term "use" on the different portions of the road in question.

The portion of the Airport Haul Road from I-40 to the airport property boundary is owned by the city of Albuquerque, and the city should be contacted concerning any use other than airport access.

The portion of the Airport Haul Road that is on airport property has exclusive use in that it can only be used for access to Double Eagle II Airport. Any other use of that portion of the road would violate the grant agreement between the city of Albuquerque and the Federal Aviation Administration.

We hope that this clarifies the appropriate use of the Double Eagle II Airport Haul Road. If you should have any questions, please give me a call at (517) 624-5608.

Sincerely,

**Original signed by:
JOYCE M. PORTER**

Joyce M. Porter
Environmental Specialist
NM/OK Airport Development Office

- TOGETHER WE SUCCEED -

green copy
1 of 4 pages

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

GRANT AGREEMENT

Part I-Offer

Date of Offer AUG 3 1979

West Mesa Airport

Project No. 5-35-0002-02

Contract No. DOT-FA79SW-8925

TO: The City of Albuquerque, New Mexico
(herein referred to as the "Sponsor")

FROM: The United States of America (acting through the Federal Aviation Administration, herein referred to as the "FAA")

WHEREAS, the Sponsor has submitted to the FAA a Project Application dated July 30, 1979, for a grant of Federal funds for a project for development of the West Mesa Airport (herein called the "Airport"), together with plans and specifications for such project, which Project Application, as approved by the FAA is hereby incorporated herein and made a part hereof; and

WHEREAS, the FAA has approved a project for development of the Airport (herein called the "Project") consisting of the following-described airport development:

Phase II of: Acquire land, fee title, (approximately 2,655 acres). Acquire land, fee title, (approximately 1,045 acres); acquire clear zone easements (approximately 70 acres); construct access road (30' x 20,000'); perimeter fencing (approximately 50,000 l.f.).

all as more particularly described in the property map and plans and specifications incorporated in the said Project Application;

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COMMENTS

RESPONSES

FOTAP=Friends RBO Petros 505 889 3779 P. 00
RYV-17-1994 15149 A.I.P.C. 505 883 7682 P. 02

JAMES E. MENA, Chairman
BENNY ATENCIO, Vice-Chairman
DANIEL L. GONCHEZ, Secretary/Treasurer



ALL INDIAN PUEBLO COUNCIL
OFFICE OF THE CHAIRMAN

3000 San Pedro, N.E., Suite 2 • Post Office Box 3588 • Albuquerque, New Mexico 87103 • (505) 881-2882

May 17, 1994

Mr. Steve Whitesell
National Park Service
123 Fourth Street, S.W.
Albuquerque, New Mexico 87102

Dear Mr. Whitesell:

We have been informed that the Five Sandoval Indian Pueblos, Inc. (FSIP) Pueblo Governors have considered your plans for developing trails on the sacred lands of the Petroglyph National Monument and that they have consented to building trails for people only.

In our discussion with them, strong reservations on the total plan were indicated. They indicated their agreement to build trails to accommodate people, but were sure that these trails should not be used for bikes or horses. Strong feelings were expressed by all and again, the most important concern was that the non-Indians have no understanding that this monument is a sacred and religious site first and foremost for Pueblos and other Indians of the area.

For those Pueblo Indians who have used these sites for many centuries and continue to use them, we strongly demand that the Park Service respect and hold this area in a reverent manner just like Christian church property. As with other denominations throughout the United States and possibly the world, horses or bikes should not be allowed in our churches! Our churches or sites of worship are not enclosed structures, however, they are nevertheless a place for worship, prayer, sacrifice, offerings and burial. These are consecrated and hallowed areas and will remain so.

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RESPONSES

FW-17-1994 15:58 FOTAP Friends ASB Petros 305 809 3779 P.03
A.I.P.C. SPS 881 7632 P.83

Mr. Whitesell
Page Two

Therefore, the All Indian Pueblo Council urges in support of
the five Pueblos, that mountain bikes and horses be excluded
on the property for now and in the future.

Sincerely,

ALL INDIAN PUEBLO COUNCIL

James S. Hena
James S. Hena, Chairman

#Wkadi:PTVE:5/2/94

COMMENTS

RESPONSES

STATEMENT OF BILL WEANKEE, EXECUTIVE DIRECTOR
Presented September 28, 1995, to the Joint Planning Commissions
City of Albuquerque and County of Bernalillo, New Mexico

Because of the severely limited time, I, representing the Five Sandoval Indian Pueblos, must reiterate their stance on the Petroglyph National Monument. I ask that you listen with your hearts as we do not have a vote in this City.

The Petroglyph National Monument area is a sacred place. It is recognized by all the pueblos. It is recognized as sacred by non-Indians who are authorities in this area of knowledge. Many things have been buried there over the centuries. These things should not be disturbed in any way as many of these items were placed there to accompany the deceased on his or her journey into the next world. To disturb or destroy these things that belong to deceased individuals also destroys their chances of reaching their destination on this long journey. No greater harm or evil can be done to a spirit!

The genuine and mostly ancient petroglyphs are an inherent part of the rituals used to signal the spirit world that one is on this journey. Therefore, no petroglyphs should be moved from their place as they have been consecrated by our medicine people.

Although people living now may try to measure the journey of those who left here centuries ago there is no time element in the realm of the Great Spirit. The petroglyphs have other uses and meaning but this will have to suffice for now.

We would ask that more serious consideration be given to our questions. Cities throughout the United States are constantly spending great amounts of money to capture and/or rebuild ancient or historical places within their cities. Some undertakings are relatively small and many are large. Why can't Albuquerque join other cities with a preservation mentality and recognize that the petroglyphs are ancient and the art found in these settings is priceless, one of a kind, never to be duplicated in the same place or time?

Although we understand there is a transportation plan, we must state that the plan has not been followed exactly and that many changes have taken place rendering it obsolete. It can no longer be useful in predicting the uses that are most appropriate for this changing environment.

It is our opinion that much work needs to be done and consensus achieved from those who address transportation issues for this entire area. Specifically, the planners for Albuquerque, Rio Rancho, the Middle Rio Grande Council of Governments, the counties of Bernalillo and Sandoval and communities who have some semblance of autonomy or sovereignty need to get together. Foremost in this planning must be representatives of the pueblo governments as portions of their reservations will be affected.

COMMENTS

The ideal planning group would work in an atmosphere of equality, mutual respect and serious considerations of serving the public at large wherever transportation impacts communities and where those impacts will remain into the distant future.

Naturally, provisions would be made to protect areas such as the petroglyphs and open spaces.

In the present situation, it seems incongruous to us to have the City of Albuquerque spend time, effort and millions of dollars to purchase open space above and adjacent to the escarpment for public use and at the same time plan for multiple roads in the same area. Perhaps we have the wrong concept in mind but we are under the impression that open spaces are for quiet use by people.

The use of open space by people on the west side should be similar to the use of the Elena Gallegos grant on the east side. No vehicular traffic goes through the land. Imagine the two different areas in our backyards!

Also, we do not understand why roads cannot go around the Petroglyph National Monument. Many of the major roads in Albuquerque stop and go around golf courses. Golf courses are not in the category of ancient, historic or sacred. Or, are they sacred? Commuters are conditioned to taking a few more minutes to get to their destinations by going around parks, golf courses, schools, etc.. Besides, if the City wanted to seriously consider other available roads, it will find them as they do exist.

Lastly, we would ask the leaders to stop long enough to see all the real beauty in Albuquerque that is being destroyed. Under the heading of "development" and "economic progress," most scenic areas are displaced by homes, businesses, etc. It seems as though whenever we see a beautiful place that nature has spent millions of years sculpturing, planing, and coloring, man has his own version of what is needed and promptly "plumps" himself in the midst of it thinking his creation adds beauty. In reality, he destroys it.

The Great Spirit through nature is the creator of all beauty in all its forms. Try as we may, we cannot compete and out do the natural forms existing around us. Therefore, we suggest and plead that we save what little nature is left in Albuquerque.

RESPONSES

COMMENTS

RESPONSES

National Indian Youth Council

318 Elm Street, S.E., Albuquerque, New Mexico 87102
(505) 247-2251
FAX (505) 247-4251



National Indian Youth Council, Inc.
Testimony on Draft General Management Plan and
Environmental Impact Statement for
Petroglyph National Monument
Albuquerque TVI
Board Rm 100, Smith Brasher Hall
717 University Blvd SE, Albuquerque NM

Mr. Chairperson and Commission Members:

I am Norman Ration, Executive Director of the National Indian Youth Council, Inc. We are a non-profit organization and have been in operation since 1961. With offices in Albuquerque, Farmington, and Gallup. We are an Indian organization established to advocate and preserve Indian interest in health, education, employment, economic development, religious rights, etc.

The National Indian Youth Council, expresses support of Modified Alternative #2.

Concerns to alternatives presented in the General Management Plan are:

The level of input or lack of input from the Native American community particularly the surrounding Pueblos and Indian Tribes-

Was input really pursued and how much consideration was given to the religious significance of the area?

COMMENTS

RESPONSES

After repeated testimony from Mr. Bill Weahkee and the local Native American organizations regarding the religious significance of the area the presented alternatives do not reflect any accommodation to Native American concerns, when the legislation specifically calls for adhering to the Native American Religious Freedom Act.

We have reviewed all four alternatives presented at this time and feel that while each complies with the present legislation to a degree, none fully incorporates every aspect of the legislation.

Most recently Mr. Malcom Montoya had given testimony presenting the Pueblo of Sandia's four main concerns; these concerns are reasonable and legitimate.

Concerns stated are the following:

1. No roads
2. No bikes and horses
3. Keep development in already disturbed areas
4. Presence of park people to protect area

Modified Alternative #2 presented by Mr. Ike Eastvold incorporates all the above issues and concerns which are reasonable and legitimate and most importantly they complies with the

COMMENTS

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present legislation and its intent.

In closing we request that you consider and approve modified alternative # 2 as presented here today, and that you vigorously pursue input from the local surrounding tribes and include them in every aspect of this development.

COMMENTS

RESPONSES

FOTAF*Friends And Petros 585 889 5779

P.06

Governor
Joe H. Lujan
Lt. Governor
Frank Melvin Paisano
Treasurer
Lucia Benalli



Box 6008
Bernalillo, New Mexico 87004
(505) 867-3317

March 4, 1994

Stephen Whitesell, Superintendent
Petroglyph National Monument
National Park Service
123 Fourth Street, SW, Room 101
Albuquerque, NM 87102

Dear Superintendent Whitesell:

We have reviewed your most recent Preferred Alternative for the General Management Plan. It appears you have incorporated the previous Alternative #1A emphasizing recreational trail development into your Preferred, and they are now one and the same. Also, you show the Paseo Del Norte crossing as a dashed line "Study Corridor," and the Unser crossing as a solid line, evidently indicating your acceptance of Unser.

The Pueblo of Sandia is opposed to these changes. We wish to have Petroglyph National Monument protected from development intrusions like these roads and recreation trails, and kept in a largely natural condition. For this reason, we support the recommendations of the Blue Ribbon Panel for pedestrian access on walking trails, and no new roads.

The Pueblo Indian tribes consistently have emphasized the importance of educating the non-Indian visitor to Petroglyph National Monument so as to awaken a respect and deeper appreciation for our culture. In his October 11, 1988, testimony to the Interior Committee of the U. S. Congress, AFPC Chairman Herman Agoyo stated our resolve that the area be protected so as to provide for our continued religious uses and, "for the benefit of both Indians and non-Indian visitors who come to appreciate our culture."

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RESPONSES

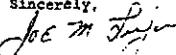
FDIAP=Friends And Patros 305 889 3779 P.07

Superintendent, Whitesell
March 4, 1994
Page 2

And the Pueblo Indian Position Paper prepared by Ted S. Jojola and Joe L. Jojola in 1988 for Senator Domenici's Advisory Committee reaffirms that the Monument contains,

"...A great heritage which has considerable religious and cultural importance to Pueblo Indian people today... (and was) created for the benefit of all unborn generations."

The extensive recreational development proposed in your Preferred Alternative, together with the proposed road intrusions, does not belong in a National Monument dedicated to the above purposes. Just as there are good alternatives for the roads, there are many other places where recreational trails can be located. Our ancestral sacred lands are a special place set aside by Congress specifically for our continued religious uses, for contemplation and prayer, and for interpretation to the non-Indian public. Uses allowed should be consistent with the contemplative tone of a great outdoor church so as to awaken respect and appreciation in the non-Indian for our cultural heritage.

Sincerely,

Joe M. Lujan
Governor

- cc: Bill Weahkee, FSIP
- Dave Diley, AIPC
- Mayor Martin Chavez
- Governor, Alvaro Lucero, Isleta Pueblo
- Governor, Reginald T. Pasqual, Acoma Pueblo
- Governor, Joe L. Pecos, Jemez Pueblo
- Governor, Andrew Quintana, Cochiti Pueblo
- Governor, Andrew Gallegos, Santa Ana Pueblo
- Governor, Henry Shijs, Zia Pueblo
- Rex Funk, Superintendent Open Space Division
- John Cook, NPS

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COMPLIANCE / CONSULTATION AND COORDINATION

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RESPONSES



CARY E. JOHNSON
GOVERNOR

COMMISSION

- Hugh Bursum, III
Chairman, Socorro
- Edward T. Bogy
Vice-Chairman, Salsip
- Peter T. Mocho, Sr.
Secretary, Albuquerque
- Joel M. Alvarez
Member, Stanley
- Albert N. Sanchez
Member, Santa Rosa
- Sanny G. Straback
Member, Clovis

DEPARTMENT

- Secretary
Patsy K. Rubin
- General Office
P.O. Box 1148
Santa Fe, N.M.
87504-1148
505-827-5100
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505-548-2823
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505-824-3900
- District Three Office
P.O. Box 91750
Albuquerque, N.M.
87198-1750
505-841-2700
- District Four Office
P.O. Box 30
Las Vegas, N.M.
87701-0030
505-454-3600
- District Five Office
P.O. Box 4127
Carlsbad Station
Santa Fe, N.M.
87502-4127
505-827-3900
- District Six Office
P.O. Box 2129
Miami, N.M.
87021
505-282-6823

NEW MEXICO STATE HIGHWAY
AND TRANSPORTATION DEPARTMENT
AN EQUAL OPPORTUNITY EMPLOYER

25 October 1995

U.S. Dept. of the Interior
National Park Service
Petroglyph National Monument
6001 Unser Blvd NW
Albuquerque, NM 87120

Attn: Douglas E. Eury

Subj: Petroglyph Monument and Double Eagle II Airport

Gentlemen:

I am sorry I was unable to attend and participate in the recent public comment sessions regarding the Draft Plan and EIS for Petroglyph National Monument. However, I would like to take this opportunity to submit for your consideration the concerns of the New Mexico State Aviation Division regarding the park and its proximity to, and effect on, nearby Double Eagle II Airport.

In essence, Double Eagle II Airport was built with a great deal of foresight and vision by Albuquerque's City Fathers. Unfortunately, those visions have yet to be entirely fulfilled due to an "identity crisis" by the airport and its unfortunate geographical association with the Petroglyphs and the Volcanoes. In spite of the many years of rhetoric and differing opinions by all sides in the matter, two things remain certain: The Petroglyph Monument will remain in some form or fashion, and Double Eagle II will remain in some form or fashion. It is my sincerest hope that a way can be found in the near future in which we can accept those facts and find a way in which both sites can work together with, instead of against, each other.

It is the charter of this Division to ensure that Double Eagle II Airport survives - especially in these fiscally anorexic times. I'm sure the same can be said of your efforts with the Park. While it may be my personal opinion that, inevitably, the Petroglyph Park complex will emulate New York's Central Park in terms of being surrounded by "civilization", it remains the position of this Division that the Park should and will not

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survive at the expense of the inevitable development of the west mesa. I would like to think that, together, we might find a reasonable solution which provides peaceful co-existence of both while providing some form of mutually-rewarding economic viability and compatability. After all, airports are all about open space, and with aircraft getting quieter all the time (along with their ability to modify traffic patterns), there is certainly something to be said about the benefits of having an airport nearby, vice the misplaced perception that it is a nuisance and a target for elimination. While it is true that reduced federal spending is doing a darn good job in shutting down airports all by itself, rest assured that Double Eagle II will not be one of them.

Please feel free to contact this office at any time if you would care to discuss the facts about Double Eagle II and aviation in the area. We would be happy to help you in any way possible. Thank you for your time and interest in this matter.

Sincerely,



Pete Alexander
Director
Aviation Division

cc: Sen. Pete Domenici, Washington, D.C.
Sen. Jeff Bingaman, Washington, D.C.
Secretary Bruce Babbitt, Washington, D.C.
Governor Gary Johnson, Santa Fe, NM
Mayor Martin Chavez, Albuquerque, NM
FAA - Albuquerque Airports District Office
Ernest Guenther, Double Eagle II Airport Manager
Double Eagle II Airport Services, Inc.

COMMENTS

RESPONSES



GARY E. JOHNSON
GOVERNOR

STATE OF NEW MEXICO
OFFICE OF CULTURAL AFFAIRS
HISTORIC PRESERVATION DIVISION

VILLA RIVERA BUILDING
228 EAST PALACE AVENUE
SANTA FE, NEW MEXICO 87503
(505) 827-6320

MICHAEL ROMERO TAYLOR
DIRECTOR

March 8, 1995

Mr. Lawrence Beal
Chief of Planning
Petroglyph National Monument
123 Fourth Street SW, Room 101
Albuquerque, N. Mex. 87102

Re: Draft General Management plan for Petroglyph National Monument, New Mexico

Dear Larry:

Our office has reviewed the draft General Management Plan/Development Concept Plan and Environmental Impact Statement for Petroglyph National Monument. The plan requests comments on four proposed alternatives. The plan is well presented and concise. Lynne Sebastian (Deputy SHPO and State Archaeologist) and I were appreciative of the time you took to tour us on site in January where we were able to discuss the alternatives as we visited various sections of the Monument.

Our comments concur with those of the Advisory Council dated December 12, 1994 to your office. Alternative 2 would have the least impact to the cultural resources in the Monument. However, Alternative 1 which is the NPS proposed alternative, would increase opportunities for public recreation and education, and still keep impacts to the cultural properties to a minimum.

Our office concurs with Alternative 1 as NPS's proposed alternative, taking into account the comments provided to you by the Advisory Council in the communication of December 12.

Sincerely,

Michael Romero Taylor
State Historic Preservation Officer

cc: Claudia Nisley, Advisory Council on Historic Preservation, Western Office

1. Thank you for your review and comment.

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1

COMMENTS

RESPONSES



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Martin J. Chavez
Mayor

September 29, 1995

Douglas Eury, Acting Superintendent
Petroglyph National Monument
6001 Unser, NW
Albuquerque, New Mexico 87120

Dear Mr. Eury:

The city of Albuquerque has completed its review of the August 1995, draft General Management Plan for Petroglyph National Monument and we find that there are still many key issues that must be resolved before development of the Monument can move forward. While we are pleased with the Park Service's agreement to include horse and bicycle access to the mesa-top trails and to consider our preferred location for the Piedras Marcadas Pueblo ruin visitor facility, other matters noted in our response to the earlier draft of the General Management Plan have been essentially ignored.

The Park Service refusal to adequately address extension of Paseo del Norte or to make allowance for drainage improvements within the Monument continues to fly in the face of our community's obligation to adequately accommodate new growth on the west mesa, while also ignoring an important option for protection of the Monument's key resources. The western extension of Paseo del Norte provides a clear park purpose by providing access to the Piedras Marcadas portion of the Monument and offering a corridor for drainage and utility routes, yet the Park Service continues to dismiss this without support as being beyond the scope of the management plan. Drainage improvements within the Monument are critical to avoiding damage to petroglyphs and surrounding natural features, yet the Park Service continues to place the burden for managing storm water on property owners, including the City, outside of the Monument with no consideration for the potential value of improvements on Monument land.

The City has expended funding and staff resources over several decades to acquire and protect Open Space land in and around the Monument. We are now asked to donate over 2,300 acres of this property to the federal government, with no details of how our

==== THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER ====

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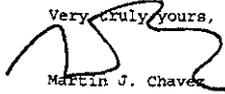
RESPONSES

Mr. Douglas Eury
September 29, 1995
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concerns for the development and operation of the Monument will be addressed. The City objects to proposed boundary additions that would bring more land into the Monument without adequate funding for acquisition or consideration as to how it is to be managed. The federal government has been very slow to acquire property within its portion of the Monument, and additional owners should not be subjected to having their land placed in an administrative limbo.

The City actively protected resources in this area prior to creation of the Monument, and has always recognized their value to the community. The Park Services has failed to recognize the needs of this community in its planning efforts and is seriously jeopardizing the partnership that helped create Petroglyph National Monument. Please review the attached comments carefully. The final version of General Management Plan must be revised to include the City's position on these matters. The continued bad faith of the Park Service regarding the Petroglyph National Monument needs to give way to a shared partnership between the Park Service and the city of Albuquerque for the betterment and protection of both the Monument and the residents of the city of Albuquerque.

Very truly yours,



Martin J. Chavez

cc: P.R. Grant, Chairman, Petroglyph NM Advisory Commission
Members of the Petroglyph Advisory Committee
Pete Domenici, U.S. Senator
Jeff Bingaman, U.S. Senator
Steve Schiff, Congressman
Bill Richardson, Congressman
Joe Skeen, Congressman

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CITY OF ALBUQUERQUE RESPONSE TO
DRAFT GENERAL MANAGEMENT PLAN
FOR PETROGLYPH NATIONAL MONUMENT

September 1995

INTRODUCTION:

This document summarizes the City of Albuquerque's response to the National Park Service's Draft General Management Plan for Petroglyph National Monument. It was originally prepared in response to the General Management Plan preliminary draft, released in November 1994, and has been updated to reflect changes made by the Park Service in the August 1995 plan draft.

The City's response addressed wide-ranging concerns over many of the Park Service recommendations, particularly the failure to incorporate local adopted policy in the General Management Plan action that would provide for the extension of infrastructure improvements through the Monument. Other unresolved issues include potential impacts of proposed federal actions on both public and private land surrounding the monument, the implications of giving control of City Open Space land to the federal government, and the level of staffing and development costs proposed by the Park Service.

The City of Albuquerque has a long record of protecting natural and cultural resources in the Monument area. The City was an active partner in establishing the Monument and has always recognized and respected its resources. The National Park Service, however, has failed to recognize and respect the needs of the greater Albuquerque community. These comments address Monument issues that significantly affect our community.

The City's review focuses on Alternative 1, the proposed action in the Park Service's draft management plan. Where appropriate, the City addresses other sections of the Park Service plan, calling out areas where the City's preference differs from that of the Park Service. Issues not addressed in the City alternative reflect agreement with the approach presented in the Park Service plan.

The Park Service plan deals with the entire National Monument, while the City's response concentrates on the two northern portions of the monument, the Boca Negra and Piedras Marcadas units. Within these units, monument lands are owned by the City of Albuquerque and State of New Mexico and managed by the Open Space Division of the City's Parks and General Services Department. The City also notes areas where its recommended management approach differs from that of the Park Service for items within the Federally managed Atrisco Unit of the Monument.

BACKGROUND ON PETROGLYPH NATIONAL MONUMENT:

Petroglyph National Monument was established in 1990 by Congressional action (Public Law 101-313). This law states that the monument was established to "...preserve, for the benefit of present and future generations, that area in New Mexico containing the nationally significant West Mesa Escarpment, the Las Imagines National Archeological District, a portion of the Atrisco Land Grant, and other significant natural and cultural resources, and to facilitate research activities associated with these resources...."

The comments presented by the City are consistent with the intent of the Federal legislation--protection of the monument's resources. They also consider potential economic impacts of the monument as a visitor destination and recognize the importance of providing infrastructure necessary to maintain and support future development on land surrounding the monument.

The initial legislation established a Monument of approximately 5,280 acres, made up of the southern-most Atrisco Unit. Agreements between the City of Albuquerque, State of New Mexico, and National Park Service expanded the Monument to 7,160 acres, including the Boca Negra and Piedras Marcadas Units. The Boca Negra Unit includes approximately 215 acres around the former Petroglyph State Park. The Piedras Marcadas Unit (approximately 1,779 acres) includes the northern portions of the volcanic escarpment, the northern and southern geologic windows (areas where erosion has exposed different lava

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flows), the area around the two northern-most volcanic cones, and the Piedras Marcadas Pueblo ruin, an archeological site east of Coors Boulevard. Two later boundary additions brought approximately 84 acres into the Monument, for a total size of 7,244 acres.

Following establishment of the monument in June 1990, the City of Albuquerque and the National Park Service entered into three agreements regarding monument management, operations and land acquisition. Substitute Joint Powers Agreement 78-521.81-277A (March 1991) calls for the City to purchase property within the Piedras Marcadas Unit and to act as agent for the State of New Mexico for property purchases in the Boca Negra Unit. This agreement also calls for all parties to manage property in accordance with the law establishing the monument. The agreement can be terminated only if all parties agree to the termination, and, after termination, each party is obligated to perpetually manage property in accordance with the establishing legislation.

A Memorandum of Understanding, signed June 6, 1991, calls for the City to manage the Piedras Marcadas and Boca Negra Units under existing policy, but not in conflict with the act establishing the monument. It also authorizes the Park Service to enter these units to carry out resource management, protection and interpretation activities. The term is for five years from June 6, 1991. This agreement may be terminated by either party upon 60-days notice to the other party.

A letter agreement dated March 1992 notes that the Substitute Joint Powers Agreement (June 1991) serves as the binding agreement required by Section 104 of the Establishment Act to incorporate the Piedras Marcadas and Boca Negra Units into the Monument. The June 1991 Substitute Joint Powers Agreement and March 1992 letter agreement were also signed by the State of New Mexico.

In addition to these agreements, a Petroglyph National Monument Land Protection Plan was approved by the National Park Service and City of Albuquerque in October 1991. The Land Protection Plan determines what properties would be acquired to carry out the mandates of the legislation establishing the monument and establishes priorities for these acquisitions.

Summary of key issues:

The following section summarizes key issues of agreement and disagreement with the National Park Service's preferred action. Each topic is discussed in more detail later in this document.

Areas of agreement with National Park Service, Alternative One:

1. **Mesa-top access:** The proposed action in the Park Service General Management Plan provides for permitted, monitored bicycle and equestrian access to mesa-top trails within the monument. The November draft of the plan included a note stating that mesa-top trails might be limited to pedestrian use. This note has been deleted from the August 1995 draft. The City agrees with this approach, and supports bicycle, equestrian, and pedestrian use of the mesa top, as indicated in the National Park Service alternative 1.

2. **Location of major facilities:** The proposed action (Alternative 1) in the National Park Service plan calls for locating the monument's main visitor center at Boca Negra Canyon, within the City-managed portion of the monument. Initially, this would be combined with an interim Heritage Education Center. A permanent site for the education center is proposed for the area south of Rinconada Mesa, below the escarpment near Mesa Prieta. A Petroglyph Research Center and Administrative Facility would be located south of Boca Negra Canyon. The Rinconada site and area south of Boca Negra are both within the federally managed Atrisco Unit.

In general, the City agrees with these proposed locations. It may be more appropriate to look at sites other than Boca Negra Canyon for the main visitors center. Also, in order to consolidate facilities where practical, the city proposes combining the Heritage Education Center with either the main visitors center or with the visitor contact station at the Piedras Marcadas Pueblo ruin. Differences regarding other facilities, such as the Mesa Prieta overlook, are noted below and discussed in more detail elsewhere in this document.

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3. Piedras Marcadas Pueblo visitor facilities: The Park Service revised its earlier draft of the General Management Plan to allow for location of visitor facilities for the Piedras Marcadas Pueblo ruin on property south of the pueblo site. The site originally considered for a visitor contact station east of the pueblo on Coors Boulevard would be deleted from the Monument. The City agrees with this approach, although the costs for visitor facilities here, which were not included in the August draft, should be retained in the budget for development of the monument.

Areas of disagreement with National Park Service, Alternative One:

1	1. Paseo del Norte: The City disagrees that issues related to Unser Boulevard and Paseo del Norte are beyond the scope of this General Management Plan (ref. page 21). The City also takes exception to the statement on page 23 (Federal and City Policies) that conflicts between the proposed General Management Plan and state and local policy were created by the monument legislation and not the General Management Plan and, therefore, need not be assessed in the General Management Plan and Environmental Impact Statement. The National Environmental Protection Act makes clear (ref. NEPA § 1502.16; 1506.2) that the EIS shall discuss any inconsistencies between the proposed General Management Plan action and any approved state or local plan and laws (whether or not federally sanctioned). Moreover, where an inconsistency exists, the Environmental Impact Statement must describe the extent to which the National Park Service would reconcile its proposed action with the plan or law.
2	On the issue of Paseo del Norte serving a park purpose, the document fails to provide any convincing evidence to support the declaration that Paseo del Norte does not serve a park purpose. Furthermore, there are a number of citations in the General Management Plan, as written, from which to reasonably conclude that Paseo del Norte does indeed serve a park purpose. The determination by the National Park Service in support of Unser boulevard and disapproval of Paseo del Norte is arbitrary and unsubstantiated by any meaningful analysis. In fact, there is sufficient evidence that Paseo del Norte does provide for the protection and preservation of monument resources.
3	In addition to providing the only reasonable roadway access to the Piedras Marcadas visitor facility, Paseo del Norte also serves to protect sensitive areas in the monument by diverting substantial storm water flows from the Piedras Marcadas Canyon that otherwise would be channeled through the canyon area. It also ensures conformity with National Air Quality Standards, and minimizes noise impacts to sensitive areas in and about the monument. The likely negative environmental impact of not constructing Paseo del Norte, a significant link in the City's long range transportation plan, will adversely affect the public health, welfare or environmental quality of activities both within the monument as well as those of the surrounding community.
4	2. Hydrology issues: The Park Service originally called for allowing only the pre-development level of stormwater runoff through the monument. The August draft allows for accepting drainage flows provided "stormwater coming into the monument does not derogate the values and purposes for which the Monument was established." This would be accomplished through control of upstream development and drainage improvements by the City and the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA). Given the complicated nature of drainage on the west mesa and its potential impact on both developed areas below the escarpment and areas yet to develop above the escarpment, the Park Service plan should not preclude the potential for some drainage improvements within the monument. The City advocates working with National Park Service and AMAFCA to establish drainage policies for the area that allow for improvements designed to protect both monument resources and surrounding properties where necessary.
5	3. Land ownership issues: The Land Protection Plan for the Petroglyph National Monument (October 1991) calls for City Open Space land within the Arapaho Unit to be donated to the federal government. The plan notes that donation of these lands will be the subject of future discussions between the City and Park Service. To date, no discussions have been held regarding these lands, which include approximately 2,300 acres. Details would have to address the City's concerns regarding all aspects of the monument's management and operation.

1. The Draft and Final General Management Plan / Environmental Impact Statements are consistent with federal law and policy. Paseo del Norte was identified on page 21 of the draft plan as an issue beyond the scope of this general management plan. Therefore, further analysis as cited in 1502.9(a) is not required.
2. The plan does not contain any actions that conflict with city policy that did not already conflict with city policy with the establishment of the monument. Establishing the monument and signing the binding agreement are the actions that put city policy in conflict with the monument, not any actions in the general management plan. The National Park Service does not have the authority under current law and policy to allow development that would derogate the values and purposes for which the monument was designated.

As stated on page 23 of the draft plan, the plan is consistent with the City and County Comprehensive Plan, the Northwest Mesa Area Plan, and the Northwest Mesa Escarpment Plan. We look forward to working with the city staff to identify the specific conflicts, other than Paseo del Norte, that may exist.

It is not the purpose or intent of the National Environmental Policy Act or the general management plan to resolve all these conflicts. Rather, the National Environmental Policy Act requires the consideration of conflicts resulting from a proposed agency action.

On page 23, the National Park Service clearly states that there are conflicts with federal and city policy; however, these conflicts are not a result of the management plan but they are a result of legislation creating the monument. However, the National Park Service also states that we are working with the city to resolve these conflicts. We state those plans that we know we are generally consistent with, and we identify the one plan with which we are in conflict.

3. The purpose of the monument is a determination made by the National Park Service. The monument purpose is determined by assessing the legislation and the legislative record with the proposed action. It has been determined as stated on page 22, that Paseo del Norte does not serve a monument purpose. There is no mention of Paseo del Norte in

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5 A second issue is the lack of progress by the federal government in acquiring private property within the monument boundary. The City has moved forward diligently with property acquisition in the Boca Negra and Piedras Marcadas units of the Monument. Federal acquisition in the Arisco unit has been much slower.

4. Potential boundary Adjustments: The plan recommends several adjustments to the Monument boundary, to add or delete properties for various reasons. Some recommendations apply to all alternatives, while others are recommended only as part of one of the four alternatives reviewed in the plan. The City does not agree with several of the proposed additions to the Monument. No new properties should be slated for future acquisition until current acquisition needs are completed in a timely manner and other Monument issues are addressed.

6 5. Staffing/costs: The National Park Service estimates that implementation of their preferred alternative would require an additional 25 City employees, with operating expenses for the City estimated at \$1.1 million. The plan calls for 57.5 federal employees, with an estimated \$3.3 million in Park Service operating expenses. Total (National Park Service and City) development (planning, design and construction) costs for this alternative are estimated at \$22.7 million.

The City disagrees with the need for such a large staff and extensive facilities. The Park Service estimates appear high for adequate operation of the Monument. While the General Management Plan does not obligate the City to carry out the programs specified for the Monument, it does establish a phased schedule for future improvements, and outlines an aggressive management program. The required personnel and facility costs should be carefully analyzed prior to proceeding with the Management Plan.

6. Double Eagle II: Double Eagle II Airport serves as a general aviation reliever facility for Albuquerque International Airport. The City is concerned about providing adequate access, utilities, and other services for the airport as operations there increase and the area around the facility develops.

7 7. Fees: The City often relies on fees to offset maintenance and operational costs of its recreational and cultural facilities. The Park Service has indicated that fees should not be charged for monument visitors. The City feels that the potential for fee collection should not be ruled out by the management plan, but should be determined as it would for other city-managed facilities, based on the specific requirements of the operation in question.

8 8. Heritage Education Center: The National Park Service proposes locating an interim Heritage Education Center at the Visitor Center in Boca Negra Canyon, with a permanent center proposed eventually to be built below the escarpment near Mesa Prieta. The City prefers either keeping the Heritage Education Center with the main Visitor Center at Boca Negra or combining it with the Boque Education Center proposed near the Piedras Marcadas public ruin.

9. Neighborhood access points: The City recognizes that it is important to allow limited access to the monument for nearby residents and to provide connections into the monument from the City/County trail network. It is also important to avoid potential adverse impacts of access points on adjacent neighborhoods. This alternative recommends policies for discouraging use of neighborhood access points by the general public.

9 10. Mesa Prieta overlook: The National Park Service preferred alternative includes a parking area at the base of the escarpment with a trail leading to an overlook on the mesa top. The City recommends continuing the access road at the southern end of the escarpment to a small parking area at the mesa top, providing access to the overlook for people with disabilities and others who might not be able to walk the trail.

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Public Law 101-313 establishing the monument or in the legislative record.

No monument purpose can be found for a six-lane 50 mph road through the monument. Unser Boulevard has been determined to have a monument purpose because it would relocate the current Unser Boulevard, which goes through the center of Boca Negra Canyon. The existing Unser Boulevard has an adverse effect on current (and future) visitors. The new alignment for Unser Boulevard does not adversely affect monument resources. Furthermore, Unser Boulevard was mentioned in the legislative record.

4. Page 43 of the draft management plan discusses stormwater management and states that the National Park Service will work with the Albuquerque Metropolitan Arroyo Flood Control Authority and the city Hydrology Division to study stormwater flows, characteristics of the drainage basins that affect the monument, and alternative management approaches. The management plan does not preclude the potential for drainage improvements as long as there is no derogation of the values and purposes for which the monument was established.

5. The National Park Service and the city of Albuquerque have discussed potential land donations. In the past four years the federal government has acquired about 1,517 acres at a cost of about \$21.3 million. The National Park Service has been negotiating with landowners regarding acquisitions with fiscal year 96 appropriations. Further land acquisition can only occur after congressional appropriations and according to federal law and policy.

6. The National Park Service has reviewed and modified the preferred alternative to reduce some of the costs related to staffing and development. The city staffing estimates were provided to the National Park Service by the city's Division of Open Space. The city staffing estimates have also been reduced.

7. This section of the document has been revised.

8. The document has been revised. See alternative 1, "Visitor Center — Boca Negra Canyon" section. The development of a facility for heritage education has been eliminated, but the function of heritage education is

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Section by section comments on August 1993 draft General Management Plan for Pecos National Monument.

Planning Issues and Concerns

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The following three topics--the Unser Middle Project, donation of City-owned land within the Atresco Unit, and Double Eagle II Airport--are identified by the Park Service as planning issues beyond the scope of the General Management Plan. The City disagrees with this assessment. These issues should be addressed in the "Summary of Related Plans and Projects" section, which is found on page 24 of the National Park Service draft General Management Plan.

UNSER MIDDLE PROJECT--UNSER BOULEVARD CONTINUATION AND PASEO DEL NORTE (Page 21)

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The National Park Service dismisses Paseo del Norte as being beyond the scope of General Management Plan, based on the Monument's establishing legislation and the binding agreement signed by the City and National Park Service. The City disagrees with this assessment and feels that the Paseo del Norte extension serves a clear park purpose and must be addressed in the management plan.

The monument legislation is generally consistent with the Albuquerque/Bernalillo County Comprehensive Plan (City of Albuquerque 1988), the Northwest Mesa Area Plan (City of Albuquerque 1981), the Northwest Mesa Escarpment Plan (City of Albuquerque 1987) and the Unser Middle Transportation Corridor, Record of Decision (December 1993). However there are differences of opinion between the National Park Service and the City of Albuquerque regarding how to address the interpretation and implementation of some city policies such as the Long Range Major Street Plan (Middle Rio Grande Council of Governments 1993), which identifies Paseo del Norte with an alignment through the monument.

The Albuquerque City Council, at a public hearing held June 7, 1993, on the Unser Middle Transportation Corridor, Final Environmental Impact Statement (FEIS), adopted the MWI alternative, which includes Unser Boulevard (a four-lane major arterial parkway) and Paseo del Norte (a four- to six-lane major arterial) both of which would go through the monument. As a condition of its approval, the Council specified that neither construction nor preparation of construction drawings is authorized until the City Attorney sends an Executive Communication to the Council indicating that no credible legal barrier remains to the road construction through the Monument, and until such communication is approved by the Council. The planning policy set forth in Unser Middle Transportation Corridor Record of Decision, dated December 1993, and applicable documents, should by reference be made a part of the General Management Plan.

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As the Park Service points out, the Unser Boulevard Middle project includes (1) continuing Unser from Dellyne north to Paradise Boulevard, (2) constructing Paseo del Norte from Unser east to Golf Course Road, and (3) developing a recreational trail and utility corridor in the former Unser right-of-way (Roca Negra Canyon). The purpose of new roadway construction in the Unser Boulevard and Paseo del Norte corridors is to provide improved transportation services on the west side of Albuquerque, to relieve existing and future traffic congestion on Coors Boulevard and other area arterials, and to distribute traffic in the most efficient manner to adequately serve east-west travel across the Rio Grande. Paseo del Norte is intended to serve the Double Eagle II Airport and complement the city road network. Paseo del Norte is initially planned to be four lanes, with the potential for future widening to six lanes.

As noted by the Park Service, the Monument's establishing legislation states that federal laws generally applicable to units of the national park system shall apply to the monument. The continuation of Unser Boulevard would be consistent with protecting Monument resources and purpose. The National Park Service has the authority to permit the construction of roads in national monuments when they serve a park purpose. The Park Service has determined that construction of Unser would serve a monument purpose by reducing the noise and visual impacts that the current two-lane road now causes at Roca Negra Canyon.

emphasized. The function may be included at the proposed visitor center, or the National Park Service could cooperate with the city and/or others to share the function of this facility outside of the monument boundary.

- 9. Mesa-top access for vehicles and people with disabilities is provided in two other locations with minimal environmental impacts. A new road to the top of the Mesa Prieta would likely have significant impacts and be very costly.
- 10. These issues are adequately addressed as issues beyond the scope of this plan.
- 11. See response #1.
- 12. Because there is authorization for Unser Boulevard, the impacts of Unser Boulevard have been addressed in the cumulative impacts section of relevant topics as an action proposed by the city. It is not the purpose of this document to incorporate by reference city-proposed projects that have no authorization and that are not directly related to resource protection and visitor use.

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Similarly, the authority to construct Paseo del Norte is contained in the enabling legislation, P.L. 101-313 (June 27, 1990), Section 104(a). An additional Act of Congress is not necessary. A map specifically depicting the Paseo del Norte extension was a prominent part of the law. The Park Service agreed that Paseo del Norte was an important part of the urban park and so specified its agreement by preparing the map which includes a specific designation for the construction of Paseo del Norte. Additionally, Paseo del Norte serves a park purpose because this park is an urban park. The Paseo del Norte extension was so identified in the boundary proposals of all of the groups now opposed to construction. The City of Albuquerque, neighborhood groups, and private property owners relied upon the representations and public positions of the Park Service and the groups now in opposition. These groups are estopped from opposing the construction of Paseo del Norte. Paseo del Norte serves a park purpose in that it is the only east-west crossing that can provide reasonable access to the visitor centers planned by the National Park Service. Among other purposes, it also serves to protect sensitive areas in the monument by diverting substantial storm water flows from the Piedades Marcadas Canyon that otherwise would be channeled through the canyon area, ensures conformity with National Air Quality Standards, and minimizes noise impacts to sensitive areas in and about the Monument.

DOUBLE EAGLE II AIRPORT (Page 23)

The Double Eagle II Airport (DEII) is owned and operated by the City of Albuquerque Aviation Department as a general aviation reliever airport. Current operations at DEII are listed at 51,000 per year. DEII is critical to the future of air transportation in Albuquerque as it provides a means for increased air carrier capacity at Albuquerque International Support through diversion of general aviation aircraft to DEII.

Ground transportation to DEII is currently limited to a haul road established during construction of the airport which is accessed from Interstate 40. The establishment of transportation corridors such as Unser, Paseo del Norte, and Paseo del Volcan is essential to the future of DEII to provide access sufficient to accommodate the anticipated growth and development of the airport.

Equally as important as the transportation corridors is the establishment of utility corridors to provide the necessary power, water, gas, communications, drainage, and sanitary sewer capabilities to meet forecasted growth and development. Noise, although not currently an issue at DEII, will become more important as operations at the airport increase.

The Aviation Department recognizes that projected growth and additional development at DEII would require environmental assessment as required by the National Environmental Policy Act and in accordance with Federal Aviation Administration requirements. If significant adverse impacts are shown through the environmental process, mitigation measures to the extent practicable and as required by law will be implemented. It is imperative that the National Park Service also recognize the importance of DEII to transportation in the region and offer mitigation measures for the monument's impact on the airport.

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The National Park Service must recognize DEII as a major transportation facility critical to air travel in the state of New Mexico and must also recognize that the development of Petroglyph National Monument and Double Eagle II Airport will impact each other, requiring a cooperative relationship between the City of Albuquerque and the National Park Service.

LAND OWNERSHIP (Page 24)

The Land Protection Plan for the Petroglyph National Monument (October 1991) calls for City Open Space land within the Atrisco Unit (the southern portion of the monument, slated for federal management) to be donated to the federal government. The plan states, "Donation of these lands will be the subject of future discussions and a memorandum of understanding between the National Park Service and the City."

- 13. A map depicting the Paseo del Norte extension does not constitute congressional authorization. Agreeing to put the Paseo del Norte alignment on a map does not constitute an NPS position or endorsement for the road. Federal laws and NPS policies apply to all units of the national park system, including units in urban areas. The purpose of the monument is to protect resources from urbanization.

See response #3; monument purpose is a determination made by the National Park Service.

In reference to the city's proposed benefits, the National Park Service has determined that (1) a 4- to 6-lane roadway is not needed to provide improved stormwater management, (2) a 4- to 6-lane roadway is not required to provide access to visitor centers, (3) a 4- to 6-lane roadway would not minimize noise impacts in the monument.

- 14. Double Eagle II Airport is addressed as an issue beyond the scope of this plan. This plan / environmental impact statement is prepared for general management plan proposals. None of the general management plan proposals would affect the Double Eagle II Airport.

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To date, no mechanism for carrying out this land transfer has been established. Any discussions or memorandum of understanding regarding this land would have to involve the City's Open Space Advisory Board, City Council, the City administration, and the Department of Finance and Management's Real Property Division. Such discussions would have to be carried out in a cooperative manner, recognizing the city's concerns for all elements of the monument's operation and management.

The National Park Service must recognize that, although much of the open space land within the Atrisco Unit was originally acquired with Recreation and Public Purpose funds, the City matched these funds at its expense. The opportunity costs lost to the City are significant, since other properties could have been acquired instead of those now scheduled for donation. Similar acquisitions would be much more expensive today due to the increased value of property throughout the metropolitan area. The City also has a significant investment in the protection and management of these lands over the last 10 to 20 years.

Donation of City open space land would be based on agreements to be negotiated by the City and the National Park Service. As the problems associated with development adjacent to the Monument have become more clearly defined with respect to the posture of the National Park Service and the practical needs for development and infrastructure, the City will insist that any transfer of those lands will be conditioned in part on resolution of drainage problems and the acquisition by the City of easements and corridors permitted by the National Park Service; resolution of transportation problems including roads and trails, and the acquisition of right-of-way and corridors permitted by the National Park Service; and resolution of water, sewer, and other utility problems including the acquisition by the City of easements and corridors permitted by the National Park Service.

Another issue related to land ownership is the timely acquisition of private property within the Monument boundary by the Federal government. The City has received a motion for summary judgment in one of the many lawsuits alleging inverse condemnation which the City has defended in conjunction with the Petroglyph National Monument. This particular case cites Federal Case Law arising out of the creation of Voyageurs National Park in Minnesota. The judge determined that the cumulative delays in land acquisition from the date of publication of the Land Protection Plan were a taking of the properties. (ALTHUS v. UNITED STATES)

The City has expended a large sum defending the moratoriums enacted to preserve the status quo until land could be acquired. In ALTHUS, the Court determined that the accumulation of events triggered a taking, even though a single event was not a taking.

The National Park Service has been the slowest to acquire private property of all of the partners to the Monument and the Joint Powers Agreement. The General Management Plan almost presupposes that all of the land will have been acquired. However, the delays in Federal appropriations mean that City resources must be diverted to litigating claims by property owners. The Park Service must include an accelerated schedule for land acquisition in the General Management Plan, or a contingency plan for the Monument should development preclude land acquisition. Future additions to the Monument should not be considered until current land acquisition needs are addressed.

Actions Common to All Alternatives

This section describes issues common to all of the Park Service's alternative management approaches. Several issues are of great importance to the City and should be revised to include the language noted below.

TRANSPORTATION MANAGEMENT (to be inserted before the "Stormwater Management" section, page 43.)

Unser Middle Project: Unser Boulevard Continuation and Paseo del Norte: Transportation and associated infrastructure improvements (e.g. local and regional drainage, utility relocation, bicycle lanes and trails) shall be permitted through the boundaries of the Petroglyph National Monument in keeping with the policy guidance set forth in the Unser Middle Transportation Corridor, Record of Decision, dated December 1993. Said Record of Decision, which by reference is made a part of this General Management Plan, is available for review in the office of the Transportation Development Division, Public Works Department, City of Albuquerque, Albuquerque, New Mexico, 87103.

15. See response #5.

16. It is not the purpose of the general management plan to resolve citywide and regional transportation issues. The Unser Middle Project has been discussed as an issue beyond the scope of this plan.

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Possible Shuttle System: The National Park Service notes the possibility of a shuttle bus system for connecting the visitor center with other facilities or interest points. The possibility of connecting the Monument to other attractions through the City's trolley system is also noted. The feasibility of such a trolley connection would have to be determined by the City Transit and Parking Department based on their funding and operational capabilities.

STORMWATER MANAGEMENT (Page 43)

Albuquerque's west side consists of very erosive soils. Any disturbance can increase erosion potential, while stormwater runoff from urban development will create significant problems if mitigating measures aren't taken. Stormwater management within the Petroglyph National Monument must consider existing local ordinances and policies, which allow for release of flows based on downstream capacity. The National Park Service, working closely with the City and AMAFCA, should undertake a comprehensive study to identify the capacities, allocation of those capacities across the existing basins, the level of protection desired by the monument, and finally the type and location of improvements needed by the monument to enhance and protect their facility. This study should be reviewed by all affected and interested parties, both public and private.

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This approach would allow the Park Service to be an active participant in solutions to drainage problems that have existed for years near the escarpment, while providing some control of development near the monument. Major issues that should be addressed in the study include:

- Allowing for accepting flows at a rate and volume consistent with fully developed basin(s) at their historic location(s), transmitting flows through the monument, and releasing them in a controlled manner. The capacity of existing facilities downstream of the monument may affect the acceptable flow rate(s) or volume(s). Any such restrictions will be prorated evenly across the entire drainage basin.
- Establishing methods for transporting developed flows across the monument in a manner consistent with the policies and practices of the National Park Service, with the understanding that the unique location and urban setting of the monument may require special requirements and/or considerations.
- Determining methods for the National Park Service to provide the City of Albuquerque and/or the Albuquerque Metropolitan Arroyo Flood Control Authority rights-of-way or easements in a form acceptable to the receiving party for the conveyance of public water across the monument. If maintenance is required by the City or AMAFCA, facilities must be built to the appropriate current standards.

Wind and water erosion have been major contributors to the carving of the escarpment into what it is today. There are at least 17 and very likely dozens of places where water will flow off of the escarpment during a storm event. The exact location may be dependent on the storm and its characteristics and may change from event to event. Major arroyo locations where entrenching has occurred over time will most likely remain relatively stable with respect to location; less defined areas are where flow paths could change the most.

Where the drainage basin, or a major portion of the drainage basin, is within the monument boundary creative approaches such as small check dams or earthen windrows along the contours could be used to improve infiltration and vegetation while reducing runoff overall. These methods could also be used to insure that major events are directed where most desirable and where facilities within and downstream of the monument exist.

17. The National Park Service would work with the City Transit and Parking Department to discuss the possibilities for connecting the monument to the city's public transit system.
18. It is not the responsibility of the National Park Service to undertake a comprehensive drainage study. Drainage management is a regional issue that is the responsibility of the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA), the city's Hydrology Division, and the Bernalillo County Public Works Department. As stated in the draft plan, the National Park Service would work with the flood control authority and others to identify ways to manage drainage so that there is no derogation of monument values. The National Park Service has worked with the flood control authority and the city's Hydrology Division in the past and has volunteered to participate in drainage management plans that affect monument resources. The flood control authority and the city's Hydrology Division must take the lead in preparing regional drainage studies.

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COMMENTS

RESPONSES

The exact locations of facilities on private property adjacent to the Monument cannot be controlled beyond the normal planning and zoning requirements. Diversion of drainage flows to locations other than their historic locations must be acceptable to all affected property owners and public agencies. Any such diversions must be formally documented through the establishment of rights-of-way or easements as indicated above. The financial burden for constructing such facilities will be that of the proposing party and cannot be shifted to others without their concurrence. However, after construction, the City may be obligated to accept maintenance of major facilities (as defined in the City's Drainage Ordinance) provided that such facilities are built to City standards.

19 The National Park Service will be financially responsible for all improvements within the monument or proposed for the direct benefit of the monument. Should incremental additions, modifications or elimination of facilities on or off of the monument be proposed in the future, the burden of construction and maintenance will be that of the requestor or as agreed to by all parties at the time facility is proposed. This does not mean that the Park Service cannot seek alternate funding or participation from any other source.

In order to carry out the initiatives noted above, the National Park Service, City and AMGFCA will continue to work together to study stormwater flows, the characteristics of drainage basins that affect the monument and surrounding areas, and alternative stormwater management approaches that serve to protect the resources of the monument while meeting the needs of the entire community.

MONUMENT FEE DETERMINATION (Page 51)

The City does not agree with the Park Service's determination that Petroglyph National Monument does not lend itself to fee collections. The City often relies on fees to offset maintenance and operational costs of its recreational and cultural facilities. In the case of Petroglyph National Monument, the bulk of maintenance costs falls on the City's Open Space Division, with limited participation by the Park Service. Many other units of the National Park Service charge fees and the potential for future fee collection should not be ruled out by the management plan.

20 Fees have been collected at the Boca Negra visitors center for several years. Entry fees could be considered at the main visitors center, as well as the visitor contact facilities at Piedras Marcadas Canyon and the Piedras Marcadas Pueblo. A policy for fee collections within any City-managed portions of the monument should be established as it would for other City managed recreation programs, through discussion and approval by City Council and the City administration.

UTILITY RIGHTS-OF-WAY (Page 51)

Rights-of-issues are important to the City's abilities to service long-term growth in the areas surrounding the Monument. The first paragraph of this section of the Management Plan should be reworded as follows:

21 As lands adjacent to the monument are developed, requests to locate utility rights-of-way across the escarpment will occur. Excepting those rights-of-way authorized with the expansion of Unser Boulevard and Paseo del Norte, as provided for in the Unser Middle Transportation Corridor. Record of Decision, dated December 1993, requests for rights-of-way for water, sewer, electricity, telephone, cable television, and stormwater control structures will be reviewed on a case-by-case basis. Grants of rights-of-way are subject to the standards and procedures prescribed by statutory authority. Furthermore, the use must be compatible with the public interest and not a derogation of monument values, resources, and purposes.

- 19. The National Park Service does not have the authority to accept financial responsibility for all drainage improvements in the monument or proposed for the direct benefit of the monument. As stated in the "Actions Common to All Alternatives" section, the city would have the primary responsibility for managing the Piedras Marcadas and Boca Negra units. This management responsibility would include drainage management. If detailed drainage studies are conducted that include compliance with the National Environmental Policy Act and section 106 of the National Historic Preservation Act, the National Park Service could request funds for drainage improvements that would protect monument values.
- 20. See response #7.
- 21. There is no authorization for the Paseo del Norte right-of-way. The entire Unser Middle Project is an issue beyond the scope of this plan.

COMMENTS

RESPONSES

Proposed Action

MANAGEMENT ZONING (Page 53)

The National Park Service General Management Plan identifies three zones for implementing differing management strategies within the Monument. These are the Natural/Cultural Resources Zone, made up of the sensitive resource and the mesa-top and flats subzones, the Development Zone, where Monument facilities would be located, and the Transportation Zone, called out as the Unser Boulevard and Paseo del Norte corridors proposed by the City. The City proposes that the transportation zone be described as follows:

TRANSPORTATION ZONE (Page 57)

The transportation zone encompasses the Unser Boulevard and Paseo del Norte development corridors (including the utility/trail corridor crossing through the Boca Negra Canyon) selected MUI alternative, as authorized by the Albuquerque City Council, June 7, 1993 (Council Bill R-277, Enactment No. 75-1993). The development of transportation and associated infrastructure improvements shall be consistent with the selected alignment plans for each of the corridors, together with the commitment of numerous mitigation measures to ensure the protection of the Petroglyph National Monument. Further detail on the Unser Boulevard and Paseo del Norte corridors and specific mitigation measures are provided in the Unser Middle Transportation Corridor - Record of Decision, dated December 1993.

Selected Unser Boulevard West Alignment: The Unser Corridor improvements provide for a 4-lane, limited access, principal arterial roadway extending approximately 1.1 miles from Del Rio Avenue north to Unser Boulevard. In addition to typical roadway features, improvements are also proposed to accommodate other infrastructure needs such as local and regional drainage, utility relocation, bicycle lanes, and trails. The multi-purpose nature of the Unser Corridor is intended to consolidate facilities, and therefore, minimize impacts to the Petroglyph National Monument.

Selected Paseo Del Norte Middle Escarpment Crossing, Mesa Top Alignment No. 1: The Paseo del Norte corridor improvements provide for a 4-lane, limited access, principal arterial roadway from the existing intersection of Golf Course Road to a connection with Unser Boulevard, approximately 1.6 miles to the west. The typical roadway cross-section includes additional right-of-way for the potential future widening of Paseo del Norte to a 6-lane roadway. In addition to typical roadway features, other infrastructure needs such as local and regional drainage, utilities, bicycle lanes and trails are accommodated. As with the Unser Corridor, the multi-purpose nature of the Paseo del Norte Corridor is intended to minimize impacts to the Petroglyph National Monument. The alignment could be adjusted to insure minimal impact on Monument resources and to provide a buffer for the Piedras Marcadas Canyon area.

VISITOR CENTER--BOCA NEGRA CANYON (Page 57)

The primary visitor center for the Monument would be situated at the Boca Negra unit (former Indian Petroglyph State Park). This may not be the most appropriate location for the main facility, due to potential impacts on surrounding areas and access problems as traffic increases through the Monument. The City suggests careful analysis of other sites for use as the main visitor center.

The visitor center should also serve as the monument's heritage education facility. Co-location of the visitor center and the heritage education facility would provide efficiency, since many interpretive materials are suitable for use in both heritage education and visitor information. To avoid possible conflicts, education programs would be scheduled primarily during periods of moderate to low visitation (October through April). If location of the heritage education center proves impractical in conjunction with the visitor center, the City's second preferred location is at the visitor contact station near the Piedras Marcadas pueblo ruin as noted below.

The development of the visitor center, to the extent characterized in the Alternative 1 - proposed action, is contingent largely on relocation of the

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- 22. The transportation zone does not include Paseo del Norte. Paseo del Norte does not serve a monument purpose, is not authorized, and is an issue beyond the scope of this plan. See responses #1 and #3.
- 23. A monument purpose is identified for Unser Boulevard to go through the monument, and Unser is included in the transportation zone. The associated infrastructure, such as local and regional drainage, utility locations, bicycle lanes, and trails, are addressed in the "Utility Rights-of-Way" and "Stormwater Management" sections under "Actions Common to All Alternatives," under each of the alternatives, and in the "Environmental Consequence" section of the document.
- 24. Several alternative sites have been analyzed for a visitor center location (see Draft General Management Plan / Environmental Impact Statement, appendix L, page 273).
- 25. See response #8.
- 26. The development of the visitor center in the preferred alternative is not contingent on the relocation of Unser Boulevard. See response #1.

COMMENTS

RESPONSES

COMPLIANCE / CONSULTATION AND COORDINATION

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existing Unser Boulevard from the canyon area to the "gas line" location outside the canyon as provided for through the action of the Unser Middle Transportation Corridor. Moreover, the benefits of such a relocation action which contribute to the protection and preservation of the Monument, most notably noise and air quality benefits, are based on the implementation of both Unser Boulevard and Paseo del Norte. Without the development of both corridors, traffic levels and corresponding noise and air quality impacts would worsen at receptors within the Unser Boulevard and Paseo del Norte Transportation Management Zone, thus having a potential adverse effect on the proposed Boca Negra Visitor Center facility. For further detail, reference the Unser Middle Transportation Corridor - Record of Decision, dated December 1993.

A summary of the Unser escarpment crossing through the Boca Negra unit is provided below:

The Unser Boulevard escarpment crossing consists of 2 crossing components: the "gas line" roadway corridor crossing and utility/recreation corridor crossing. Both corridors extend from Montano Road to the top of the mesa, a distance of approximately 1.2 miles. The "gas line" crossing alignment follows an existing 100 foot wide gas line easement which cuts across the face of the escarpment. The utility/recreation corridor follows the existing Unser Boulevard alignment through the Boca Negra Canyon and existing Petroglyph State Park.

"Gas Line" Escarpment Crossing: The "gas line" roadway crossing involves a new 4-lane, concrete barrier divided roadway extending through the boundaries of the Petroglyph National Monument a distance of approximately 1,000 feet.

As the roadway ascends the escarpment, the typical roadway section transitions from a fill section to a cut section. The required right-of-way width ranges from 342 feet with the earthen fill section to 129 feet with the single tie-back cut section. The maximum cut depth and fill height at the escarpment face are 25 and 30 feet, respectively. The length of the roadway fill and cut sections are 1,100 feet and 700 feet, respectively. A 15 foot wide access/maintenance area behind the retaining walls has been provided to allow space for the wall anchors and for future maintenance.

The access limitation plan provides full access east of the escarpment at Santo Domingo Street (new entrance to the Boca Negra Canyon, Petroglyph State Park) and west of the escarpment at 81st Street. Both accesses are provided to serve the Petroglyph National Monument.

Utility/Trail Corridor Crossing: The objective of utilizing the existing Unser Boulevard right-of-way is to minimize the width of the roadway section along the "gas line" crossing. Specifically, the utility/trail corridor improvements would utilize approximately 72 feet of the 106 to 230 foot wide existing Unser right-of-way for utility, drainage and recreational purposes.

The proposal is to provide a naturalistic trail setting within the Boca Negra Canyon area including removing portions of the existing roadway pavement. The area will thus be protected from through traffic (motorized vehicles) currently traveling this stretch of roadway. Access to the canyon area is proposed from the intersection of Unser Boulevard ("gas line" roadway) and Santa Domingo Street.

OTHER VISITOR CONTACT FACILITIES

Piedras Marcadas Canyon (Page 59)

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As in the case of the visitor center proposed at the Boca Negra Canyon, development of the Piedras Marcadas Contact Center, and more importantly, the preservation of the quality of the area environment, particularly noise and air quality, are contingent on implementation of both Unser Boulevard and Paseo del Norte. Without the development of both corridors, traffic levels and corresponding noise and air quality impacts would worsen at receptors within the Unser Boulevard and Paseo del Norte Transportation Management Zone, thus having a potential adverse effect on Monument activities proposed in and about the Piedras Marcadas Canyon Area. Additionally, storm drainage

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improvements within the Paseo del Norte corridor also serves to protect sensitive areas in the monument by diverting substantial storm water flows from the Piedras Marcadas Canyon that otherwise would be channeled through the canyon area.

27. See response #1.

28. See responses #18 and #19. Storm drainage may be permitted provided that there is no derogation of monument values. See "Stormwater Management" "Utility Rights-of-Way" sections in the "Actions Common to All Alternatives" section of the plan.

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COMMENTS

RESPONSES

Conservatively, it will be best to recognize the fragile and sensitive nature of the resources in the Piedras Marcadas area. This must be done while considering the high quality of the resources and the desire of the public to access one of the best areas of the monument. To accomplish this, trails will be limited only to those needed to expose the public to a limited quantity of high-quality petroglyphs rather than to all petroglyphs in the area. The city may elect, through trail design, monitoring, and resource management, to periodically rotate areas open to the public. Bicycle and equestrian access would be allowed to the trailheads, with bicycle racks and horse tie ups provided for pedestrian access to the petroglyph viewing areas.

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It should also be noted that the current roadway access policy for Paseo del Norte does not allow for access to the Piedras Marcadas Canyon as proposed. Provision of such a connection is contingent on the approval of additional access by the Urban Transportation Planning Policy Board of the Middle Rio Grande Council of Governments. Paseo del Norte provides the only reasonable access to serve the Piedras Marcadas visitor contact station.

Piedras Marcadas Pueblo Ruin (page 61)

30

The City will acquire and renovate the Roberson Ranch residence for use as a visitor contact facility/museum/boque environmental center at the Piedras Marcadas Pueblo Ruin. This requires a minor boundary adjustment to the monument, deleting the site along Coors Boulevard currently proposed as a visitor contact station. The Roberson property provides better access to the pueblo site and is more in keeping with the historic context of the ruin than the site located directly along Coors.

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Costs for the visitor facility here were deleted from the August draft of the management plan. These figures should be included as part of the overall operation of the Monument. This facility would emphasize the combined functions of the pueblo ruin museum and bosque environmental education center. It would include scale models of the pueblo, full-size replicas of several pueblo rooms, craft demonstration areas, living history presentations, demonstration gardens highlighting traditional agricultural techniques, remote sensing information, and a limited trail system, probably designed as a boardwalk.

Due to the extreme sensitivity of the cultural resources at the ruin, visitor impacts would have to be closely monitored. Access to the ruin may have to be limited to an overlook. At this time, no excavation of the pueblo ruin is proposed. Limited excavation could be considered in the future, after careful consultation with the area's pueblo community. Local Pueblo Indians, who may have traditional or ancestral ties to the ruin, could also be employed in staffing the site and providing interpretative tours.

MESA PRIETA OVERLOOK (page 62)

32

The National Park Service preferred action proposes an overlook at Mesa Prieta accessed by a trail from a parking area at the base of the escarpment. While this area is within the federally managed Atrisco Unit of the monument, the City feels that it is appropriate to propose development of a small parking area at Mesa Prieta, providing access to the overlook for people with disabilities and others who might not be able to walk the trail. The views from this area are excellent and should be available to a broad audience. This can be accomplished without impacting monument resources, since the route to the top is not very steep here and the overlook is a relatively short distance from where the proposed road would stop. This accessible overlook at the southern end of the monument would complement the overlook/parking area proposed at the northern end along an extension of 81st Street.

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The Park Service also discusses locating the Heritage Education Center near Mesa Prieta. As noted above, the City's preference combines the Education Center with the main Visitor Center at Boca Negra, or alternately with the Visitor Contact Facility at the Piedras Marcadas Pueblo ruin.

MESA-TOP TRAILS/ACCESS (Page 67)

The National Park Service has considered several approaches to mesa top access within the monument. The City agrees with the Park Service's preferred alternative, which would allow a choice of non-vehicular methods for reaching the mesa top, including bicycle and equestrian as well as pedestrian access.

- 29. The plan has been revised to indicate the need to provide access approval by Urban Transportation Planning and Policy Board. It would be the city's responsibility to make such requests because the proposed access is in the city-managed Piedras Marcadas Unit.
- 30. The National Park Service and the city are evaluating the impacts of this specific potential boundary adjustment.
- 31. Costs for the renovation of the Roberson property have not been included because: (1) the city has not acquired the property; (2) specific uses and functions have not been determined; (3) renovation needs have not been developed; and (4) the property is outside the monument boundary. The National Park Service will continue to work with the city regarding the use and operation of the property as it relates to the monument.
- 32. See response #9.
- 33. See response #8.

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COMMENTS

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This approach would permit a wider base of users on defined trails which could avoid sensitive areas. A permitting system would allow for control and monitoring of activities on the mesa by Monument personnel. Providing multiple-use trails on the mesa would help increase public support for the Monument, since many people have anticipated being able to continue at least limited recreational use of Monument land. This approach also recognizes that a large portion of the Monument was purchased with City funds and should be available to a broad range of users from the community.

NEIGHBORHOOD ACCESS TRAILS (Page 68)

34

Access to the monument from adjacent neighborhoods must be carefully planned and monitored. While it is important to allow limited access for residents near the Monument and to provide connections from the City/County regional trail network, it is also important to avoid adverse impacts on the neighborhoods. To limit traffic and parking problems neighborhood access points must be designed to discourage use by the general public. These access points must not be shown on informational kiosks or in brochures, maps, or other literature distributed to the public and must not be disclosed by monument personnel or others providing tours or other information regarding the monument. Parking for neighborhood access points will be on-street only; permit parking systems may be established for the neighborhoods adjacent to the monument if this is determined necessary by residents of the affected area and City traffic engineers in order to control nonresident parking.

OTHER SITES--Homestead Circle Park (Page 69)

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Prior to the establishment of Petroglyph National Monument, Homestead Circle Park was given to the City pursuant to the Park Dedication Ordinance to offset increased demand for park land created by a large residential development. When the monument was established, Homestead Circle Park was included within its boundaries. The City remains committed to providing an additional developed neighborhood park in the Homestead area. The City Parks and General Services Department, Design and Development Division, and the National Park Service should enter into negotiations for a park design acceptable to the Park Service that meets the needs of the neighborhood.

BOUNDARY ADDITIONS (Page 70)

36

Alternative 1 recommends the addition of five lots along Mojave, south of Boca Negra. The City feels that this is not appropriate. This property would be located within the City-managed Boca Negra Unit, requiring city or state acquisition. Funding for additional acquisitions is severely limited. These lots are zoned for office use and serviced by City utilities, which would make them expensive to acquire. Even with the potential for federal acquisition, the likelihood of adequate funding is very narrow.

Adding this property to the Monument with no clear indication of the costs or provision for funding acquisition would meet with opposition from the owners. It does not make sense to add more land to the Monument when there are now difficulties acquiring the land already earmarked for purchase. The City cannot support this boundary amendment while property owners elsewhere in the Monument are left in limbo due to the slow pace of federal acquisitions.

STAFFING/COSTS (Page 70)

The National Park Service identifies the following staff needs and project costs for implementing the preferred alternative development scheme for Petroglyph National Monument:

Park Service Employees	57.5 full time equivalents
City of Albuquerque Employee	25 full time equivalents
Park Service Operating Costs	\$3.3 million
City Operating Costs	\$1.1 million
Total development costs (planning and construction)	\$22.7 million

- 34. The "Neighborhood Access" section in alternative 1 has been revised, and neighborhood access points have been removed from the map.
- 35. The preferred alternative provides for the passive, city-proposed Homestead Circle Park improvements.
- 36. This is the only boundary addition recommended in the preferred alternative. Inclusion of these lands within the monument would protect the views and character of Boca Negra Canyon, which is currently and proposed to be the most intensive visitor use area in the monument.

COMMENTS

RESPONSES

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These costs and staffing levels appear extreme for adequate operation of the Monument. Law enforcement, maintenance, and visitor services now take approximately 20% of the City Open Space Division's budget, at a cost of \$250,000 per year. Staffing for new facilities, more extensive programs, and upgraded resource protection would increase these costs, but it is not clear why more than 80 employees, with over \$4 million in operating expenses and over \$22 million are needed for carrying out a successful Monument program.

While approving the management plan does not represent a commitment of City funds for the Monument, the plan still sets out an extensive program that would require future funding approval. To date there has been no formal discussion or acceptance by the City regarding the appropriate level of staffing and facilities. There is no clearly identified source for the City's costs activities within the monument. Any commitment by the City to undertake the recommended actions should include a careful analysis of the estimated costs and identification of potential long-term funding sources.

NONFEDERAL PROTECTED AREA (Page 78)

In Alternative 2, the plan recommends a public/private partnership for protection of 475 acres west of the Monument, north of Boca Negra Canyon and east of the proposed Unser alignment. Details of the proposed protection method are not provided, other than suggesting that a portion could be developed as a clustered, planned community, with significant portions set aside as open space. As with potential boundary additions discussed elsewhere, funding for protection of this property unclear. It is also not clear how the owners feel about alternative development schemes, or if some form of public subsidy would be required to offset losses to the owners. The City objects to any additional loss of private land in the Monument area and would not support any revision of the preferred alternative to include this option.

BOUNDARY ADDITIONS (Page 80)

Alternative 2 also includes a potential addition of 289 platted lots in the Volcano Cliffs subdivision, between the current Monument boundary and City Open Space land. As with the boundary addition proposed in Alternative 1, the City is concerned that additional land be added to the Monument without adequate resources for timely acquisition. The City is currently working with Volcano Cliffs property owners to resolve development issues in this area and cannot support this proposed boundary addition if it is considered as part of the preferred option.

ENVIRONMENTAL CONSEQUENCES (Page 139)

The National Park Service identifies Paseo del Norte and Unser as impact topics dismissed from further analysis (page 141). The City of Albuquerque disagrees with the Park Service rationale for this approach. The Albuquerque City Council at a public hearing held June 7, 1993, on the Unser Middle Transportation Corridor, adopted the WM1 alternative, which includes Unser Boulevard (a four-lane major arterial parkway) and Paseo Del Norte (a four- to six-lane major arterial) - both of which are proposed to be extended through the monument. Given that the impacts of both development corridors has been fully analyzed through the city's Corridor location and environmental process, of which the National Park Service served as a cooperating agency, both roads were dismissed as impact topics. The impact analysis for both roads and associated mitigation measures applied to minimize harm to the Monument, is documented in Unser Middle Transportation Corridor - Record of Decision, dated December 1993, and applicable documents, and by reference, is made a part of this General Management Plan.

Based on the extensive analysis of the environmental consequences of constructing the Unser Middle project (Unser from Dellyne north to Paradise and Paseo del Norte from Golf Course west to Unser), the City has serious concerns about the National Park Service's dismissal of the Paseo del Norte extension. These concerns focus on issues of transportation conformity, air quality, and noise impacts as noted below.

37. NPS staffing estimates have been reduced, and the National Park Service has worked with city staff to revise city staffing estimates. See table 2, appendix N, and response #6.

COMMENTS

RESPONSES

TRANSPORTATION CONFORMITY

No mention is made in the National Park Service Plan about the need for Transportation Conformity, or the requirement that any proposed addition or deletion from the approved local Transportation Plan be analyzed for its impact on air quality. The Unser/Golf Course connection of Paseo del Norte is a part of the Long Range Transportation Plan (LRTP) and is a link scheduled to be added to the roadway network by 2005. A variety of activities and strategies which will reduce single-occupancy vehicle travel, relieve congestion, and contribute to improved air quality are contained in the LRTP. The deletion of this link in the scheduled road system will likely lead to worsening air quality due to increased traffic congestion. This is a major change in the proposed road network and its consequences have not been considered by the National Park Service.

AIR QUALITY (Page 139)

The National Park Service Plan did not include an Air Quality Impact Study. An emissions inventory included in the plan concluded that the monument's selected development alternative would have a minimal effect on air quality. Indeed, if few roads are built through the monument, it could be concluded that air quality would not be degraded. However, as the Unser Middle Transportation Corridor Study Final Environmental Impact Statement points out, "Failure to implement proposed transportation improvements... would result in an increase in carbon monoxide concentrations throughout the project area because of increased congestion, decreased traffic movement and reduced average speed." The conclusion that localized air quality is cleaner under the Park Service alternative is undermined by the reality of worsening regional air quality caused by significant gaps in the overall transportation system.

Air quality within the Monument should not approach or exceed the State or Federal guidelines for carbon monoxide (CO) for either the one-hour or eight-hour standard for any of the Paseo/Unser build alternatives based upon air-quality modeling. Any of the build alternatives would likely not result in a general increase in CO concentrations throughout the Monument area because of more efficient traffic flow and increased average speed.

NOISE (Page 140)

The Park Service plan cites a November 1993 noise study conducted by monument staff which measured 21 sites within the monument for noise sources and levels. Qualitative judgments are made about noise levels at several areas within the monument. However, no data relative to noise is provided in the text. No scientific methods of testing or data gathering are noted. The only quantitative noise data presented is that gathered for the Unser Middle Project.

Similarly, the National Park Service makes a qualitative determination that constructing Unser Boulevard through the existing gas line right-of-way will reduce the noise and visual impacts of the current two-lane road through Boca Negra Canyon. It is claimed that this road will serve a park purpose. On the other hand, the Park Service has determined that the extension of Paseo del Norte over the escarpment will create unacceptable noise impacts and negatively affect the monument in a variety of other ways. The Park Service plan claims that Paseo will cut off the Piedras Marcadas area from the remainder of the monument, despite plans for continuous pedestrian/bicycle trail connections. Yet no such claim is made for the Unser escarpment crossing creating discontinuity between Rinconada Canyon and Boca Negra Canyon.

A noise-impact analysis has been carried out by the City using receptors within Petroglyph National Monument. The Monument was evaluated under the Activity Category A as defined by the Federal Highway Administration Noise Abatement Criteria. This category includes extra sensitive areas where the preservation of serenity and quiet are essential. Receptors outside the Monument were evaluated under Category B, which includes residences, churches, parks, libraries, and schools. With the mitigation measures proposed for each of the build alternatives, the predicted year 2010 noise levels at each receptor location was within the federal noise abatement standards. Measures applied to mitigate noise impacts include noise walls (Taylor Ranch neighborhood), shifts in roadway alignment (near the head of Piedras Marcadas Canyon), and the incorporation of earthen berms/jersey barrier walls (within the Monument).

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- 38. The management plan alternatives do not address city and regional transportation planning and air quality issues. The management plan does not propose any actions that would affect regional transportation. Air quality conformity has been evaluated for management plan actions. See "Impacts on Air Quality" sections for each alternative.
- 39. This comment appears to address the noise sections of the November preliminary plan. The August *Draft General Management Plan / Environmental Impact Statement* sections on noise was revised to include a discussion of the baseline noise information that has been gathered.
- 40. The distinction between the authorization of Unser Boulevard and the lack of authority for Paseo del Norte is that the new Unser Boulevard replaces the existing Unser Boulevard. Thus the monument purpose for Unser Boulevard is that it removes and eliminates a source of noise and destruction of the natural context of Boca Negra Canyon, which is a sensitive resource area and an area with high potential for increased visitor use. See response #3.

COMMENTS

RESPONSES

ENVIRONMENTAL COMPLIANCE

The Environmental Impact Statement for the Unser Middle Corridor was consistent with Federal Highway Administration guidelines and provisions of the National Environmental Policy Act (NEPA). Development of the project would comply with the standards of these regulations, as well as with the requirements of the New Mexico State Highway Department Action Plan relating to provisions for Pedestrian, Bicycle and Equestrian Traffic and the New Mexico Prehistoric and Historic Sites Act of 1989.

The project's impact on cultural and natural resources would be carefully monitored. Project actions would include data recovery, recording of scientific data, and potential relocation of affected petroglyphs and archeological sites as necessary. Qualified personnel will be selected by the City, in consultation with the State Historic Preservation Office and the National Park Service, to provide on-site monitoring of cultural resources during construction. These same agencies would provide consultation on specific methods of mitigation.

Pedestrian, bicycle and equestrian recreational trails will be provided within the road right-of-way. A below grade pedestrian crossing will be provided at the Piedras Maradas Arroyo with access to the monument. Monitoring for wildlife and endangered species will be conducted during construction. If any are located within the roadway alignment, such as the great horned owl, burrowing owl or grama grass cactus, they will be relocated to suitable habitat elsewhere within the monument or on adjacent Open Space land.

COMMENTS

RESPONSES



City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 30, 1995

Douglas Eury
Acting Superintendent
Petroglyph National Monument
5001 Unser NW
Albuquerque, NM 87120

Dear Mr. Eury:

The attached comments have been prepared by the City's Environmental Health Department regarding the August 1995 draft of the General Management Plan for Petroglyph National Monument. They are similar to those written in response to the November 1994 draft which were transmitted to you earlier this year. These are being transmitted as an addendum to our comments on the August draft and should be made part of the official record of comments for that draft.

Please contact Sandy Fish (768-3282) or Dan Warren (768-2637) if you have any questions concerning this material.

Sincerely,

Ronald N. Short, AICP
Planning Director

cc: Lawrence Rael, Chief Administrative Officer
Jay Czar, Deputy Chief Administrative Officer
Sarah Kotchian, Director, Environmental Health Department
Larry Beal, National Park Service

==== THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER =====

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COMPLIANCE / CONSULTATION AND COORDINATION

COMMENTS

RESPONSES

CITY OF ALBUQUERQUE
Albuquerque, New Mexico

ENVIRONMENTAL HEALTH DEPARTMENT

October 25, 1995



PLANNING
DEPARTMENT
OCT 16 9 25 AM '95

TO: Ron Short, Director, Planning Department
FROM: Sarah Kotchian, Director, Environmental Health Department

SUBJECT: UPDATED COMMENTS ON THE DRAFT GENERAL MANAGEMENT PLAN/DEVELOPMENT CONCEPT PLAN AND ENVIRONMENTAL IMPACT STATEMENT FOR THE PETROGLYPH NATIONAL MONUMENT

We have received the most recent draft of the General Management Plan/Development Concept Plan and Environmental Impact Statement for the Petroglyph National Monument. Since your office has been designated as the central location for transmittal of City comments to the National Park Service, we are sending updated comments on the referenced documentation to you. Our understanding is that the comments we submitted to your office last January were received by the National Park Service in July. Due to this timing, apparently little could be done to address our comments prior to release of latest draft in early August. Therefore, our earlier comments addressing air quality and noise (see attachment) essentially remain applicable to the current Petroglyph National Monument documentation. The deadline for final comments is November 6; please advise me once our comments have been forwarded to the National Park Service.

After closer examination of the most recent draft, we feel it is appropriate to take advantage of this final opportunity to comment. Therefore, the attached comments serve to update and elaborate on our earlier concerns. If you have questions or would like to discuss our comments in more detail, please let me know. At a meeting held October 18, we informed the National Park Service that we continue to have concerns, principally focusing on the issues of General Conformity and possible changes to the transportation system caused by the Monument. They expressed an interest in meeting at the end of October to discuss our concerns.

cc: Alana Eager, Air Pollution Control Division, Environmental Health Department
Richard Mitzelfelt, Consumer Protection Division, Environmental Health Department

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UPDATED COMMENTS ON THE DRAFT GENERAL MANAGEMENT PLAN/DEVELOPMENT CONCEPT PLAN AND ENVIRONMENTAL IMPACT STATEMENT FOR THE PETROGLYPH NATIONAL MONUMENT

The following discussions have been prepared by the Environmental Health Department's Air Pollution Control Division (APCD) and are intended to update our earlier comments and concerns. The APCD is the designated Air Agency for Bernalillo County. We have five primary concerns related to air quality which are discussed in detail below.

1. GENERAL CONFORMITY ANALYSIS

Air Quality Control Board Regulation No. 43, General Conformity, (just recodified as 20 NMAC 11.04 will become effective on December 1, 1995), states that the assumptions, technical information, and analyses serving as the applicability analysis "shall be made available for review by the air agency." As indicated in our January comments, there appear to be technical errors with the analysis. For example, vehicle emission factors seem unrealistically low and travel distances for visitors and employees also seem low. A thorough analysis of all reasonably foreseeable direct and indirect emissions is necessary. As the local Air Agency having jurisdiction over air quality in Bernalillo County, we request that the applicability analysis leading to the conclusion that *de minimus* levels are not met be provided to our office for review and comment at the earliest opportunity.

2. IMPACTS TO THE REGIONAL TRANSPORTATION SYSTEM

During the last year and a half we have expressed concerns about potential impacts to the regional transportation system that may be caused by the implementation of Petroglyph National Monument. In particular, the Paseo del Norte escarpment crossing and surrounding roadways are of special concern:

Our understanding of events and factors associated with the monument and transportation facilities is as follows:

- The Petroglyph National Monument boundary map approved by congress shows the Paseo del Norte escarpment crossing as a transportation study corridor.
- The Urban Transportation Planning Policy Board and the City of Albuquerque have established policies calling for the construction of Paseo del Norte through Petroglyph National Monument.
- The current Petroglyph National Monument General Management Plan and Environmental Impact Statement strongly suggests that the Paseo del Norte escarpment crossing will adversely affect the Monument.
- The potential negative air quality impacts caused by alternatives lacking the Paseo del Norte linkage have not been technically evaluated by the current EIS.

1. The city's Environmental Health Department has been provided with documentation of the air quality analysis, and the final plan has been revised to include this analysis. Specific information was not available when the draft plan was printed, so conservative estimates were used.
2. The management plan alternatives do not address city and regional transportation planning and air quality issues. The management plan does not propose any actions that would affect regional transportation. Air quality conformity has been evaluated for management plan actions. See "Impacts on Air Quality" sections for each alternative.
3. A map depicting Paseo del Norte extension does not constitute congressional authorization. Agreeing to put the Paseo del Norte alignment on a map does not constitute an NPS position or endorsement for the road.
4. See response #2.

COMMENTS

RESPONSES

UPDATED COMMENTS ON THE DRAFT GENERAL MANAGEMENT PLAN/DEVELOPMENT CONCEPT PLAN AND ENVIRONMENTAL IMPACT STATEMENT FOR THE PETROGLYPH NATIONAL MONUMENT

5

Our understanding of the National Park Service's position is that the Petroglyph National Monument Environmental Impact Statement will not serve as an instrument to make a decision on the Paseo del Norte roadway within the Monument. Because a comprehensive assessment of positive and negative impacts for all potential alternatives has not been completed, we are unable to adequately evaluate impacts of associated with implementation of the Monument and related roadways. As the Air Agency, we need a more complete analysis to understand possible adverse air quality impacts. If such an analysis will not be part of the current environmental impact statement process, we would appreciate a clarification by the National Park Service regarding when the Paseo del Norte alternatives will be analyzed.

6

It is unfortunate that resolution of the critical Paseo del Norte issue is not aided by the long and difficult General Management Plan and Environmental Impact Statement process. Our preference would be to see the Monument's General Management Plan take a firm position on the Paseo del Norte escarpment crossing. We feel the documentation would best serve the overall community from an air quality perspective by helping to resolve this question as soon as possible.

The National Park Service has included numerous discussions about Paseo del Norte's impacts in the environmental documentation. To provide a more complete picture, we ask that an analysis of traffic and air quality impacts be undertaken before a record of decision or finding of no significant impact is completed. Our office requests adequate opportunity to review any such analysis, including accompanying traffic analyses (just received) serving as assumptions in the air quality evaluations.

We are concerned that in the past years, many land use decisions in this part of the community have relied on the locally-adopted policies identifying the ultimate existence of the Unser Boulevard and Paseo del Norte facilities. Irreversible land use development continues to occur in this area at a very rapid pace. The longer this question remains unresolved, the more troubled we are about land use and transportation decisions that are affecting the surrounding areas.

7

We note that the alternative descriptions still refer to Paseo del Norte as a "study corridor" even though our understanding is that the study for this facility was completed several years ago. This designation on the maps is confusing and/or misleading. We suggest the maps be changed to reflect current conditions, i.e. "locally-approved Paseo del Norte corridor".

- 5. It is not the purpose of this management plan to analyze Paseo del Norte alternatives. See response #4.
- 6. The purpose of the monument is a determination made by the National Park Service. The monument purpose is determined by assessing the legislation and the legislative record with the proposed action. It has been determined as stated on page 22, that Paseo del Norte does not serve a monument purpose. There is no mention of Paseo del Norte in Public Law 101-313 establishing the monument or in the legislative record.

No monument purpose can be found for a six-lane 50 mph road through the monument. Unser Boulevard has been determined to have a monument purpose because it would relocate the current Unser Boulevard, which goes through the center of Boca Negra Canyon. The existing Unser Boulevard has an adverse effect on current (and future) visitors. The new alignment for Unser Boulevard does not adversely affect monument resources. Furthermore, Unser Boulevard was mentioned in the legislative record.

It is not the purpose of the general management plan to resolve citywide and regional transportation issues. The Unser Middle Project has been discussed as an issue beyond the scope of this plan.

There is no authorization for the Paseo del Norte right-of-way. The entire Unser Middle Project is an issue beyond the scope of this plan.

The transportation zone does not include Paseo del Norte. Paseo del Norte does not serve a monument purpose, is not authorized, and is an issue beyond the scope of this plan.

The Draft and Final General Management Plan / Environmental Impact Statements are consistent with federal law and policy. Paseo del Norte was identified on page 21 of the draft plan as an issue beyond the scope of this general management plan. Therefore, further analysis as cited in 1502.9(a) is not required.

COMMENTS

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3. GENERAL AIR QUALITY DOCUMENTATION

To date, the environmental documentation has not provided any site specific air quality evaluations. We just received the traffic information we had requested earlier and have not had adequate time to review the technical report. Therefore, we are unable at this time to determine whether the technical information is adequate to support conclusions of the National Park Service regarding air quality impacts. As the designated Air Agency, we believe the document's conclusions regarding the significance of impacts to air quality and the health of affected individuals may be premature. We request additional time in the comment period to review the traffic information and other related air quality information.

Furthermore, if adverse health effects are potentially evident, the National Park Service has a responsibility under NEPA to consider ways to mitigate these effects.

Little distinction is made between the various "build" alternatives. It would appear that more vehicle travel would be involved in alternative 3 which has more internal roadways than alternatives 1 and 2.

Proposed accesses into the monument should not be permitted to adversely affect existing and proposed bicycle facilities such as the one along Unser Boulevard. Maintaining the integrity of these facilities is important since bicycles provide one of the best alternatives for eliminating motor vehicle trips.

4. TRANSPORTATION CONFORMITY

The responsibility for performing regional transportation conformity analyses lies with the Middle Rio Grande Council of Governments. Should the adoption of the Petroglyph National Monument Management Plan and Record of Decision for the EIS result in major changes in the area's transportation system, a new transportation conformity analysis will be needed.

While a certain amount of flexibility exists within the current transportation conformity results to achieve compliance with federal regulations, it is prudent to consider potential effects to the regional conformity determination that might result from substantial changes to the transportation system. Major changes affecting key linkages in the transportation system can affect air quality and need to be considered. Concerns could occur in relation to increases in vehicle congestion and out-of-direction travel.

5 PARTICULATE MATTER (DUST)

Air Quality regulations apply to earth disturbing activities in Bernalillo County. Topsoil Disturbance Permits may be required for various activities associated with implementation of the Management Plan. Westside soils are particularly difficult to stabilize and special measures will be needed to reduce fugitive dust in this area.

7. The approval of the Unser Middle Project, which includes Paseo del Norte, is subject to assurance that there are no legal impediments to proceeding with the project.
8. NPS staff and city staff have discussed and resolved the city's request for background information and detailed air quality and traffic related calculations.
9. This plan has documented that adoption of this plan does not result in major changes to the area's transportation system and is exempt from the Environmental Protection Agency's general conformity regulations because total projected emissions are below de minimus levels.

COMMENTS

RESPONSES



City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

RS

RECEIVED N.P.S.

October 2, 1995

OCT 10 1995

Douglas Eury
Acting Superintendent
Petroglyph National Monument
6001 Unser NW
Albuquerque, NM 87120

Petroglyph National Monument

Dear Mr. Eury:

Albuquerque's Environmental Planning Commission reviewed the General Management Plan for Petroglyph National Monument at a September 28, 1995, public hearing. At the hearing, the Commission found, on a vote of four in favor and one opposed, that, "Preparation of the General Management Plan/Development Concept Plan for Petroglyph National Monument is premature until the issue of the construction of Paseo del Norte has been resolved."

In addition to Paseo del Norte, Commissioners expressed concerns over the need to address issues related to storm water management in and near the Monument, the design of neighborhood access points, potential impacts on Double Eagle II Airport, and not limiting the City's ability to charge fees for use of portions of the Monument. The Commission also asked that the Park Service consider the comments of the Open Space Advisory Board and Greater Albuquerque Recreational Trails Committee, which are attached.

We will also make this material available to the Petroglyph National Monument Advisory Commission for use in their deliberations concerning the Management Plan.

Sincerely,

Ronald W. Short, AICP
Planning Director

cc: Martin J. Chavez, Mayor
Lawrence Rael, Chief Administrative Officer
Jay Czar, Deputy Chief Administrative Officer
P.R. Grant, Chairman, Petroglyph Monument Advisory Commission
Members of the Petroglyph Monument Advisory Commission

== THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER ==

1. See previous comments and responses to city mayor's letter.

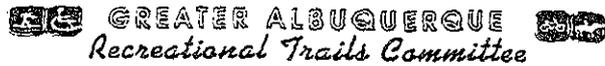
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1

Local Governments

COMMENTS

RESPONSES



September 22, 1995

Adele Hundley, Chair
Environmental Planning Commission
c/o Planning Department
P.O. Box 1293
Albuquerque, NM 87103

Dear Ms. Hundley and Members of the Environmental Planning Commission:

Please consider the following comments on the National Park Service's draft General Management Plan for the Petroglyph National Monument. The remarks are similar to those that we are making to the National Park Service on the Plan.

The Greater Albuquerque Recreational Trails Committee (Trails Committee) supports the Preferred Alternative. We believe it strikes a good balance between preservation of the resource, while acknowledging its urban setting and providing for a variety of user groups. The Trails Committee has tremendous respect for this land and believes that any use must recognize its rich cultural heritage. We believe the preferred alternative preserves and protects the Monument's cultural resources while providing reasonable public access to the area's vast acreage.

We believe the proposed trails in the preferred alternative permit various types of access without the intrusiveness of an automobile. By permitting other forms of non-vehicular transportation, such as horseback or bicycle, more people will have the opportunity to experience this vast unique area. These trails should be planned to avoid petroglyph concentrations and other sensitive resource areas. We feel that the proposed alignments, most of which follow existing dirt roads, should remain dirt with stabilized soils where necessary. Other existing roads should be closed and revegetated. We are pleased to see that opportunities for people with disabilities will be provided at locations throughout the Monument.

The Committee endorses the Park Service's concept of a permit system for multi-use trail users on the mesa top. Perhaps permits should be required of all those who wish to visit the monument unescorted, especially in sensitive areas with high concentrations of petroglyphs. This would not only provide an opportunity to educate users, but it would provide additional protection to the Monument's most sensitive areas. Furthermore, visitation should be limited to daylight hours, with strict enforcement through the use of locked gates and posted signs.

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Letter to EPC
September 22, 1995
Page 2

We also support the proposed neighborhood access points and we would like to see a combination of seating areas and pedestrian trails in and around Homestead Park. Trailhead locations should be large enough to accommodate equestrian trailers. We agree with the proposed location of the visitor's center at the Boca Negra and support the protection afforded the geologic windows. The map on page 60 should be consistent with the text which mentions a trail from the Piedras Marcadas contact station to the Taylor Ranch area. We unanimously oppose a loop road as depicted in Alternative 3. We believe a roadway on the mesa top would destroy the Monument's goals to preserve and protect a critical link with the community's cultural and natural heritage.

1

We are very interested in linking the City's multi-use trail system to the Monument and to other regional trails beyond the Monument. Alternate 1 fails to show a crossing of the escarpment in the northern portion of the Monument. Calle Nortena may be appropriate for bicycles and pedestrians, but a crossing in the vicinity of Paseo del Norte is needed for horses. Additionally, a multi-use crossing at Boca Negra is needed. Finally, the map showing the City existing and proposed trails is inaccurate. We have offered to work with the with National Park Service staff to correct it.

We believe that the preferred alternative provides the community an unprecedented opportunity to preserve and protect an important cultural resource that will be an invaluable asset to both the community and the nation.

Very truly yours,

Sam Adamo
Sam Adamo, Chair
Greater Albuquerque Recreational Trails Committee

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- 1. The alternative 1 map has been revised to indicate multiuse trail crossings at Boca Negra Canyon and Calle Nortena.

COMMENTS

RESPONSES



OPEN SPACE ADVISORY BOARD
City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 22, 1995
Adela Hundley, Chair
Environmental Planning Commission
PO Box 1293
Albuquerque, NM 87103

Dear Ms. Hundley and Members of the Environmental Planning Commission:

Albuquerque's Open Space Advisory Board held a special meeting on September 21, 1995, to discuss the National Park Service's draft General Management Plan for Petroglyph National Monument. Four members of the seven-member board were present. The Board did not formally endorse any of the alternatives presented in the Park Service plan. Some members favored Alternative 1, in part due to the degree of interaction it offered with the community. Others favored Alternative 2 due to the level of resource protection it provided. A majority of the Board members present favored pedestrian-only use of the mesa top.

Board members raised the following issues and questions:

- What plans has the City made to provide the additional staffing necessary to carry out the programs called out in the management plan?
The Park Service was asked to explain the recommendation for a boundary adjustment adding 10.5 acres on Mojave Street south of Boca Negra Canyon.
Concerns were raised regarding parking, loading, and transportation issues, particularly the impacts of parking at trail heads and effects on nearby neighborhoods.
More detailed information should be provided regarding projected visitor counts.
The Park Service was asked to explain the rationale for recommending extension of Unser Boulevard through the Monument.
How would the area around the intersection of Unser and First be designed?
Why was the proposal for a boundary addition of 129 acres in Volcano Cliffs and non-federal protection of 475 acres north of Boca Negra Canyon included only in Alternative 2?
What, if any, improvements would be done at the neighborhood access points?
The National Park Service was asked to explain how it proposes reducing vandalism within the Monument.
What are the Park Service's expectations of obtaining funding for desired improvements; if funding is not available, is Alternative 4 (no action) the most feasible option?

... EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER ...

- 1. The final plan has been revised to address parking and access concerns in neighborhoods.
2. See the draft plan, appendix O, page 281.
3. See previous comments and responses to city mayor's letter.

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COMPLIANCE / CONSULTATION AND COORDINATION

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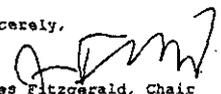
Letter--Adele Hundley/EPC
September 22, 1995
Page 2

- 4 • There is a need to provide for upstream drainage as the area beyond the Monument develops; this should be addressed in the management plan.
- 4 • Areas described as places of solitude for viewing petroglyphs are only accessible on soft-surfaced trails, limiting their availability to those with physical handicaps.
- 4 • It may not be necessary to open every portion of the monument to everyone; bicycle and horse riding may not be appropriate on the mesa top.
- 5 • How does the management plan relate to the City's West Side Strategic Plan and the fact that land to the north and west will develop in the future; how would neighborhood access from currently undeveloped land be handled?
- 5 • There are special concerns for issues related to the cultural heritage of the area's pueblos.

Open Space Division staff noted three concerns that they have expressed to the Park Service: 1)the need to clarify ownership issues, particularly related to the City Open Space lands within the Federally managed Atrisco Unit of the Monument; 2)concerns over the Park Service recommendation to eliminate Monument fees, since the City currently charges fees for use of some open space facilities to help offset operational costs; 3)the City's interest in deleting the Coors Boulevard "visitor center" property from the Monument in order to allow for development of a visitor facility for the Piedras Marcadas Pueblo ruin at the Roberson Ranch property south of the pueblo. The Board noted that it has already taken action supporting the City's acquisition of the Roberson Ranch property for this purpose.

I hope that this summary is helpful to the Commission as it reviews the General Management Plan.

Sincerely,


James Fitzgerald, Chair
Open Space Advisory Board

- 4. Accessibility for people with disabilities is addressed the "Actions Common to All Alternatives" section of the plan.
- 5. Access to the monument from currently undeveloped areas would be addressed on a case-by-case basis with residents of new neighborhoods.

COMMENTS

RESPONSES



City of Albuquerque

P.O. BOX 1322 ALBUQUERQUE, NEW MEXICO 87102

Albuquerque Public Art Program/CIP Division
Office of the Mayor
Office of Management & Budget

6 November 1995

Mr. Doug Eury
Asst. Superintendent
Petroglyph National Monument
6001 Unser NW
Albuquerque, New Mexico 87120

RE: ARTWORK PLANNED FOR HOMESTEAD CIRCLE PARK

Dear Mr. Eury:

The Albuquerque Public Art Program has reviewed the summary of alternatives of the Master Plan for the Petroglyph National Monument. We support the development concepts for Homestead Circle Park as described in Alternative #1. This decision is based on neighborhood input and meetings with environmental artists which have resulted in site improvements designed as a 1% for Art Project.

We are concerned about the timing of the project. If the General Management Plan is not approved in a timely manner, we would like to conduct the necessary environmental compliance and proceed with this project. We would be willing to work with you on any environmental documentation.

Thank you for including our interests and plans in the plan for the development of Petroglyph National Monument. You have incorporated the concepts and objectives of the Public Art Program in this document.

We look forward to hearing from you at your earliest convenience. If you would like additional information, please call, 766-3629. Thank you very much.

Sincerely,

Gordon M. Church

Gordon M. Church
Coordinator,
Public Art Program/CIP

cc: Diane Boulder, Petroglyph National Monument

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COMPLIANCE / CONSULTATION AND COORDINATION

COMMENTS

RESPONSES



**Middle Rio Grande Council of Governments
of New Mexico**

317 Commercial N.E., Suite 300 • Albuquerque, NM 87102-3429 • (505) 247-1750 • Fax: (505) 247-1753

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Toscani Company

October 10, 1995

Mr. Doug Eury, Acting Director
National Park Service and
Mr. Bob Grant, Chairman
Petroglyph National Monument Advisory Committee
6001 Unser Boulevard, NW
Albuquerque, NM 87120

SUBJECT: Comments on the Draft General Management
Plan/Development Concept Plan/Environmental Impact State-
ment for the Petroglyph National Monument

Dear Mr. Eury and Mr. Grant:

Thank you for the opportunity to comment on the Draft Management Plan for the Petroglyph National Monument. We appreciate the substantial effort by the National Park Service in developing the draft Plan. However, the Document raises a number of concerns regarding issues that impact the region as a whole as well as the Monument, the neighborhoods immediately adjacent to it, and the entire West Side. The Urban Transportation Planning Policy Board's Transportation Coordinating Committee and the staff of the Middle Rio Grande Council of Governments (MRGCOG) has addressed these issues in detail in their attached letter. Our primary concerns are as follows:

First, the draft Document does not fully comply with the provisions of the National Environmental Policy Act (NEPA). Specifically, it is the implementing agency's responsibility to address issues that may result from Congressional action, including the effect those actions may have on the human environment.

Second, the draft Document does not address the importance of Paseo del Norte as a regional facility or the effect on the neighborhoods near the Monument and the region as a whole if it is not constructed. The lack of regional perspective that is displayed in the draft Document is a serious flaw.

ASSOCIATE MEMBERS
AMREP S.W. Inc.
Valley Improvement
Association Inc.
N.M. State Land Office

Dennis R. Poirer
Executive Director

795

An Association of General and Special Purpose Units of Local Governments
within New Mexico State Planning and Development District III

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1. The management plan is in compliance with the National Environmental Policy Act (NEPA). The legislation that resulted in the creation of Petroglyph National Monument was proposed by members of Congress, not the National Park Service. It is not the purpose of the management plan to analyze past congressional actions. The National Park Service only does environmental analysis on legislation that the agency proposes or actions that the agency proposes. The NEPA process is intended to provide information so that the decision makers can make informed decisions. The decision to create the monument has been made, and it would serve no purpose to analyze past legislation.
2. The general management plan addresses Paseo del Norte as an issue beyond the scope of this plan. See "Issues Beyond the Scope of This General Management Plan" section for a discussion on Paseo del Norte. The establishment of the monument by Congress and the signing of the binding agreement resulted in the conflict of federal law and local and regional policy, not any action recommended in this general management plan. It is not the purpose or intent of the National Environmental Policy Act or this management plan to resolve citywide and regional transportation issues. The purpose of the management plan is to set forth the basic management philosophy of the monument and the overall approach to resource management, visitor use, and facility development that would be implemented over the next 10-15 years.

COMMENTS

RESPONSES

COMPLIANCE / CONSULTATION AND COORDINATION

Mr. Eury and Grant

-2-

October 10, 1995

3

Third, the draft Document does not fully explore the potential that Paseo del Norte may have for serving one or more Park purposes, including drainage issues.

4

If this document is to serve its stated purpose and fully comply with the NEPA, these issues must be resolved. The Draft Management Plan must recognize that the size, location, and nature of the Park will have a major negative impact on the region if it is not properly developed and managed from the perspective of an urban environment.

To move forward with the Draft Management Plan without resolving these issues would be detrimental both to the region and the National Monument. Given our concerns, we concur with the TCC's recommendation that the National Park Service withdraw this document and undertake the studies necessary for resolving these issues that have been raised.

The staff of the MRCCOG is available to discuss these comments at your convenience. Please feel free to contact Mr. Dennis R. Foltz, Executive Director, or Mr. Ron Forte, Director of Transportation at 247-1750 for clarification of these comments or for any other assistance.

Sincerely,

Barbara J. Seward

Barbara J. Seward, Chairman
Urban Transportation Planning Policy Board
Commissioner, Bernalillo County

Enclosure: Letter Dated October 2, 1995 to Mr. Eury and Mr. Grant from Mr. John Castillo, Chairman, Transportation Coordinating Committee and Mr. Dennis R. Foltz, Executive Director, MRCCOG

- cc: Honorable Pete Domenici, U.S. Senator (w/enclosures)
- Honorable Jeff Bingaman, U. S. Senator (w/enclosures)
- Honorable Steve Schiff, U. S. Representative (w/enclosures)
- Honorable Joseph Skeen, U. S. Representative (w/enclosures)
- Honorable Bill Richardson, U. S. Representative (w/enclosures)
- Petroglyph National Monument Advisory Commission c/o National Park Service
- Jaime Chavez
- Joe S. Chavez
- Gerry Falls
- Rosemary Harris
- Ray B. Powell, Jr.
- Coda Roberson
- William F. Weahkee

- 3. A 50 mph, 4- to 6-lane roadway is not needed to provide improved stormwater drainage.

The purpose of the monument is a determination made by the National Park Service. The monument purpose is determined by assessing the legislation and the legislative record with the proposed action. It has been determined as stated on page 22, that Paseo del Norte does not serve a monument purpose. There is no mention of Paseo del Norte in Public Law 101-313 establishing the monument or in the legislative record.

- 4. See response #2 to this letter.

COMMENTS

RESPONSES



**Middle Rio Grande Council of Governments
of New Mexico**

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October 2, 1995

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Mr. Doug Eury, Acting Director
National Park Service and
Mr. Bob Grant, Chairman
Petroglyph National Monument Advisory Commission
6001 Unser Boulevard, NW
Albuquerque, NM 87120

SUBJECT: Comments on the Draft General Management
Plan/Development Concept Plan/Environmental Impact State-
ment for the Petroglyph National Monument

Dear Mr. Eury and Mr. Grant:

Thank you for the opportunity to comment on the Draft Management Plan for the Petroglyph National Monument. While it is obvious that the Draft Management Plan entailed a substantial effort by the National Park Service, we feel there are several areas where the document is substantially insufficient. Our specific comments are as follows:

National Environmental Policy Act

The overall provisions of the National Environmental Policy Act (NEPA) have not been followed throughout the development of this Environmental Impact Statement. In particular, we note that it is the responsibility of the implementing agency to address issues that may result from Congressional action. The impact of a Congressional designation of a roadway corridor or an amusement park must still be evaluated for its affect on the environment, both human and natural. The draft Document contains no acknowledgement of this responsibility on the part of the Park Service.

The Draft Management Plan states on page 23 that,

"It is beyond the scope of this plan to resolve conflicts with the Long Range Major Street Plan and Federal law and policy."

This statement represents a serious flaw in the document, since the NEPA 40CFR, Section 1506.2(d) specifically states that:

An Association of General and Special Purpose Units of Local Governments
within New Mexico State Planning and Development District III

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5. See response #1 to this letter.
6. The Draft and Final General Management Plan / Environmental Impact Statements are consistent with federal law and policy. Paseo del Norte was identified on page 21 of the draft plan as an issue beyond the scope of this general management plan. Therefore, further analysis as cited in 1502.9(a) is not required.

The plan does not contain any actions that conflict with city policy that did not already conflict with city policy with the establishment of the monument. Establishing the monument and signing the binding agreement are the actions that put city policy in conflict with the monument, not any actions in the general management plan. The National Park Service does not have the authority under current law and policy to allow development that would derogate the values and purposes for which the monument was designated.

As stated on page 23 of the draft plan, the plan is consistent with the City and County Comprehensive Plan, the Northwest Mesa Area Plan, and the Northwest Mesa Escarpment Plan. We look forward to working with the city staff to identify the specific conflicts, other than Paseo del Norte, that may exist.

It is not the purpose or intent of the National Environmental Policy Act or the general management plan to resolve all these conflicts. Rather, the National Environmental Policy Act requires the consideration of conflicts resulting from a proposed agency action.

On page 23, the National Park Service clearly states that there are conflicts with federal and city policy; however, these conflicts are not a result of the management plan but they are a result of legislation creating the monument. However, the National Park Service also states that we are working with the city to resolve these conflicts. We state those plans that we know we are generally consistent with, and we identify the one plan with which we are in conflict.

Also see response #2 to this letter.

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"(d) To better integrate environmental impact statements into State or local planning processes, statements shall discuss any inconsistency of a proposed action with any approved State or local plan and laws (whether or not federally sanctioned). Where an inconsistency exists, the statement should describe the extent to which the agency would reconcile its proposed action with the plan or law."

Paseo del Norte (PDN)

The above comments relate directly to the Document's discussion regarding Paseo del Norte (PDN). The impacts that not constructing PDN may have on the neighborhoods near the Monument and on the region as a whole are not addressed.

It must be noted that the Long Range Major Street Plan (LRMSP) which contains the PDN corridor through the Monument, is a regional policy that has been approved and adopted through mandated Federal requirements. The Unser Middle Transportation Corridor Study Final Environmental Impact Study, November 1992 (Unser Middle EIS), which specifies the alignment for both Unser Middle and PDN through the Monument, is a locally adopted non-Federal statement. Given that the draft Management Plan does not incorporate or address the findings of the Unser Middle EIS, adopted local policies, or the provisions of the LRMSP, it is not in compliance with NEPA requirements.

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The Draft Management Plan consistently underestimates the importance of PDN as a regional transportation facility which in our opinion, will have a significant negative impact to the region and the National Park if it is not constructed.

The importance of PDN as a regional facility can be seen by a review of the following facts:

1. If PDN were removed from the LRMSP, it would be necessary to reevaluate the current Transportation Program as well as the Long Range Transportation Plan to determine whether the area would continue to be in conformity with the air quality standards for Bernalillo County.
2. This facility has been an integral component of transportation planning on the West side for over ten years
3. PDN provides the shortest route for vehicles travelling west from I-25 to the Double Eagle II Airport
4. This facility is designed to remove the heavy commercial traffic from the residential areas in the northern section of the West Side
5. This corridor will be a vital link for long range commuting traffic in the final buildout of the LRMSP
6. This facility is a vital component for maintaining a better living environment for West Side residents
7. PDN between I-25 and Paseo del Volcan is a part of the proposed National Highway System

7.

It is not the purpose of the management plan to incorporate by reference city-proposed actions that have no authorization and that are not directly related to resource protection and visitor use of the monument. See response #6 above.

The purpose of the monument is a determination made by the National Park Service. The monument purpose is determined by assessing the legislation and the legislative record with the proposed action. It has been determined as stated on page 22, that Paseo del Norte does not serve a monument purpose. There is no mention of Paseo del Norte in Public Law 101-313 establishing the monument or in the legislative record.

No monument purpose can be found for a six-lane 50 mph road through the monument. Unser Boulevard has been determined to have a monument purpose because it would relocate the current Unser Boulevard, which goes through the center of Boca Negra Canyon. The existing Unser Boulevard has an adverse effect on current (and future) visitors. The new alignment for Unser Boulevard does not adversely affect monument resources. Furthermore, Unser Boulevard was mentioned in the legislative record.

It is not the purpose of the general management plan to resolve citywide and regional transportation issues. The Unser Middle Project has been discussed as an issue beyond the scope of this plan.

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- Carbon monoxide pollution of approximately 2/3 a ton per day will occur
- An additional 27,000 miles of vehicle miles travelled per weekday
- Continuing high accident rate on Coors Boulevard
- An additional 10,000 hours of vehicle operation time per weekday
- Need to construct additional through lanes on intersections throughout the Unser/PDN study area

The Unser Middle EIS clearly shows the importance of PDN between Golf Course Road and Universe, to the region in which the National monument exists.

Additionally, the following passage from the Draft Management Plan is indicative of this Document's inadequate compliance with the NEPA in that it raises many issues that are either not addressed or substantiated.

"The National Park Service, the State Historic Preservation Officer, the State Attorney General, and numerous other national and local groups have stated that (1) monument resources would be significantly impacted, (2) there is not a monument or visitor-related purpose for such a 50-mph freeway-type road, and (3) there are other prudent and feasible alternatives that would meet the transportation needs of the city without extraordinary costs and disruption and that are feasible from a design and engineering standpoint" (page 22).

In response to this statement, we would like to note the following:

First, it has not been demonstrated in the Draft Management Plan that PDN will negatively impact monument resources to a significant extent. In fact, the Document does not specify any direct impacts, how they were determined, or how they were evaluated. The NEPA Section 1502.1 states that:

"It shall provide full and fair discussion of significant environmental impacts and shall inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment. Agencies shall focus on significant environmental issues and alternatives and shall reduce paperwork and the accumulation of extraneous background data. Statements shall be concise, clear, and to the point, and shall be supported by evidence that the agency has made the necessary environmental analyses."

This Document does not comply with the above NEPA provisions since no specifics are included as required. This is also contradictory to the findings of the Unser Middle EIS,

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This Document does not comply with the above NEPA provisions since no specifics are included as required. This is also contradictory to the findings of the Unser Middle EIS,

8. The Paseo del Norte corridor has been identified as an issue beyond the scope of this plan. It is not the purpose of the management plan to analyze the impacts of city-proposed actions. Monument purpose is a determination made by the National Park Service based on monument significance and the legislation. See first paragraph of response #6 and the second and third paragraphs to response #7 above.
9. The impacts of Paseo del Norte are beyond the scope of this plan / environmental impact statement. See first paragraph of response #6 above. It is not the purpose of this plan to analyze the impacts of unauthorized city-proposed actions. The National Environmental Policy Act requires the agency to analyze the environmental impacts of actions that the agency proposes, not actions proposed by others.

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9 which identified the extension of PDN through the Monument as the preferred alternative and the alternative with the least regional environmental impact.

10 Second, PDN has the potential to serve a Park purpose in the same manner and to the same extent that Unser Boulevard does. We feel that the Document's conclusion that PDN and Unser Boulevard are substantially different types of facilities is not supported by fact. Their impacts and benefits to the Park are comparable. Both facilities share the following characteristics:

- They are high capacity, limited access principal arterials
- They provide needed corridors for utilities and stormwater
- They serve as recreational trails corridors - bicycle, pedestrian
- Noise mitigation measures are associated with them
- Native landscape berms are planned along each corridor
- They are major regional transportation facilities

11 Third, the Unser Middle EIS concludes that the extension of PDN through the National Park was the preferred alternative and had the least environmental impact. For the Draft Management Plan to state the opposite without specific documentation and study is inappropriate and, again, contrary to the NEPA requirements.

Fourth, the MRGCOG provided the National Park Service with comments on the issue of PDN in a letter dated February 2, 1995 (see ATTACHMENT A). That letter was drafted after a review of the preliminary draft of the current report. The current draft of the Management Plan does not address any of MRGCOG's comments in that letter. A quick summary of the issues addressed in the February letter is as follows:

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1. The LRMSF is mandated by ISTEA and is approved by policy.
 2. Air quality and transportation issues are dismissed by the Park Service document with little discussion
 3. PDN does have a "monument purpose" that it provides better access.
 4. Prohibiting construction of PDN raises concerns about Albuquerque's traffic congestion and the related air quality conformity issues.
 5. There is no real difference in facility type or mitigation measures between Unser and PDN.
 6. Unser may not be sufficient to handle the additional traffic demands.

14 Fifth, we note that the draft Document assumes the completion of Unser Middle with a connection to Paradise Boulevard. Given the current opposition and environmental impact associated with this opinion and the fact that the Unser Middle EIS recommended construction of both Unser and PDN through the Monument, it may be doubtful whether the Unser portion will be completed anytime in the foreseeable future. The Park Service has not addressed this issue or the impact such a scenario might have on the Monument in terms of access, air quality, and so forth. Additionally, this scenario will generate severe impacts to the adjacent areas, particularly in Paradise Hills, and these impacts are not addressed.

10. See the second and third paragraphs in response #7 above. The distinction between the authorization of Unser Boulevard and the lack of authority for Paseo del Norte is that the new Unser Boulevard replaces the existing Unser Boulevard. Thus the monument purpose for Unser Boulevard is that it removes and eliminates a source of noise and destruction of the natural context of Boca Negra Canyon, which is a sensitive resource area and an area with high potential for increased visitor use. The National Park Service has determined that Paseo del Norte does not serve a monument purpose and that a 4- to 6-lane, 50 mph roadway is not required to: (1) provide utilities or stormwater drainage; (2) provide recreational trails; or (3) mitigate noise.

11. See first paragraph of response #6 to this letter. It is not the purpose of the management plan to analyze the impacts of unauthorized city-proposed actions. This management plan states under the topic of "Issues Beyond the Scope Of This General Management Plan" that the National Park Service, the state historic preservation office, and others have stated that Paseo del Norte would have adverse impacts on monument resources and that there are alternatives. The action to build Paseo is not proposed by the agency and is an issue beyond the scope of this plan. This plan analyses impacts for actions that are proposed in the plan.

12. See "Impacts on Air Quality" and "Impacts on Local Visitors and Adjacent Landowners" sections. Air quality and traffic issues are discussed for actions proposed in the plan. The presence or absence of Paseo del Norte is not analyzed in the plan because it has been addressed as an issue beyond the scope of this plan.

13. See response #10 to this letter. There are no actions proposed in this plan that prohibit the construction of Paseo del Norte. There is no authorization for Paseo del Norte. It is not the purpose of the this management plan to resolve citywide and regional transportation issues.

14. It is not the purpose of the this plan to analyze environmental impacts of actions proposed by the city and others. These regional transportation issues must be addressed by the city and regional transportation agencies. See first paragraph of #6 above.

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14 Again, Section 1502.1 of the NEPA requires the National Park Service to address these issues in a clear, to the point manner, supported by evidence. This has not been accomplished in this document.

Unser Boulevard Access Provision

In addition to our major concerns about the Document's discussion regarding PDN, we also have noted several issues related specifically to Unser Boulevard.

Two of these items are related to the LRMSF for the Albuquerque Metropolitan Planning Area. The LRMSF is the approved policy document which defines the access policies for transportation facilities throughout the Planning Area, including Unser Boulevard. The Draft Management Plan identifies numerous Development Zones. These Development Zones are areas that contain improvements such as the Visitor Center, Research Center, Visitor Contact Center, and Parking Facility. Two of these zones appear to require access points to Unser Boulevard that are inconsistent with or in violation of existing policy.

First, the map and discussion of the "preferred alternative" indicate that the entrance to the Rinconada Canyon Visitor Contact Center will be just north of St. Joseph's Drive. This access is identified as right-in, right-out only and is less than 100 feet north of St. Joseph's Drive. This access is not consistent with the LRMSF and would appear to create a substantial safety and operational problem along Unser Boulevard.

Second, the Draft Management Plan indicates that "preferred alternative" access to the Main Visitor's Center, Research and Administration Facility would be from Santo Domingo Street. The LRMSF does not provide for an access point to the west at that location.

In addition to these specific concerns, we note that the Draft Management Plan provides little or no information on the impact of park traffic and additional access to Unser Boulevard. It does not seem prudent to assume that access and traffic modifications will not adversely affect Unser Boulevard, which is a major regional transportation facility. Since Unser Boulevard has been planned as a high capacity, limited access principal arterial, any access modifications have the potential to degrade the facility and limit its ability to function as planned. Therefore the impacts of such modifications must be fully evaluated. Also, the Document does not address the issue of the cost of providing these access modifications and who will finance them.

Systems Development

Because drainage facilities throughout the urban area often either bisect or run parallel to transportation facilities, the MRGCOG coordinates closely with the Albuquerque Metropolitan Flood Control Authority and the Middle Rio Grande Conservancy District. Both agencies are represented on the Transportation Coordinating Committee as well as the Urban Transportation Planning Policy Board. It is with this close relationship of transportation and

15. First, the plan has been revised to state that the National Park Service would work with the city and the Middle Rio Grande Council of Governments to determine the most efficient access from Unser Boulevard to Rinconada Canyon.

Second, the *Unser Middle Transportation Corridor Study / Final Environmental Impact Statement*, Appendix A "Access Control Maps, Sheet 1" indicates a proposed signalized access at Santo Domingo Street and Unser Boulevard. We would expect that this signalized intersection would provide access to the former Unser Boulevard and to Boca Negra Canyon, the location of the proposed visitor center. The *Unser Middle Final Environmental Impact Statement* does not address closing vehicular access to Boca Negra Canyon — the site of the greatest visitor use in the monument with more than 80,000 visitors annually.

In addition, the "Impacts on Local Visitors and Adjacent Landowners" section in the draft plan cites the 1994 study by consulting traffic engineers Balloffet and Associates, Inc., "Petroglyph National Monument Traffic Impact Evaluation, Technical Memorandum." This study documents that there would be minor increases in traffic and no adverse effects from monument visitation. Because the visitor facility at Boca Negra Canyon exists, we assume that cost estimates for Unser Boulevard include the provision of continued access.

16. Page 43 of the draft management plan discusses stormwater management and states that the National Park Service will work with the Albuquerque Metropolitan Arroyo Flood Control Authority and the city Hydrology Division to study stormwater flows, characteristics of the drainage basins that affect the monument, and alternative management approaches. The management plan does not preclude the potential for drainage improvements as long as there is no derogation of the values and purposes for which the monument was established.

It is not the responsibility of the National Park Service to undertake a comprehensive drainage study. Drainage management is a regional issue that is the responsibility of the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA), the city's Hydrology Division, and the Bernalillo County Public Works Department. As stated in the draft plan, the National Park Service would work with the flood control authority and others to identify ways to manage drainage so that there

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drainage facilities in mind that we note that the draft Document does not adequately address the storm drainage.

Land developers are required by State law and local policy to complete Drainage Management Plans for their sites. As a landowner, the National Park Service is required to complete a Plan for the Monument. Such a plan must analyze upstream fully developed conditions and provide for the conveyance of storm water flows through the property in such a way to ensure 1) that other properties will not be damaged and 2) that the capacity of downstream facilities will not be overwhelmed.

Again, the document has failed to comply with NEPA and has made no attempt to comply with State and local laws or policies. It must be noted that the National Park Service is one of the largest land owners/developers in the region. The monument will ultimately consist of over 7,160 acres and will be 17 miles in length. We should note that Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) raised similar comments in a position statement adopted by the AMAFCA Board of Directors on September 28, 1995 (see ATTACHMENT B).

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We also note that the Legislation that created the National Park requires that the existing utility facilities in the Park be allowed to remain and be maintained. The Draft Management Plan requires that the dirt maintenance roads to these facilities, particularly to the Rinconada Canyon Area, be removed. Therefore, the question arises as to how these major regional utility facilities will be maintained.

18

The draft Document states that there are no proposed right-of-ways across the Monument identified by other parties. We would point out that although the Park Service has stated that the PDN roadway would serve no park purpose, the PDN corridor also serves as a corridor, for storm water runoff, sewer, and other utilities needed for servicing areas west of the Monument. The document does not address this utility use nor the impact if use of this corridor for these purposes is denied.

Existing and Proposed City Trails

Finally, there are some minor issues we would like to address in connection with the bicycle and pedestrian trails as shown in the draft Document.

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First, the map on page 12 of the Document includes proposed and existing on-street bicycle facilities (lanes, routes) as well as proposed and existing trails (physically separated from motorized vehicle traffic). Modifications to the map symbols to differentiate on-street facilities from trails would more accurately portray the bikeways and trails system.

Second, map data for on-street facilities does not seem to be complete. Please refer to the Bikeways Master Plan (Middle Rio Grande Council of Governments, 1994) and to the Trails and Bikeways Facility Plan (City of Albuquerque, Bernalillo County; adopted July 1993).

is no derogation of monument values. The National Park Service has worked with the flood control authority and the city's Hydrology Division in the past and has volunteered to participate in drainage management plans that affect monument resources. The flood control authority and the city's Hydrology Division must take the lead in preparing regional drainage studies.

- 17. The plan has been revised to clarify that existing dirt roads required to access existing utilities and existing utility rights-of-way for maintenance and operations of utilities would remain as required by the monument legislation section 107 that specifically provides for the continued operation and maintenance of existing transmission and distribution facilities.
- 18. See the "Stormwater Management" and "Utility Rights-of-Way" sections in the "Actions Common to All Alternatives" section; these sections address the mechanisms and authorities to provide for utility corridors.
- 19. The map has been revised.

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Third, the Bikeways Master Plan (Page 253) is incorrectly identified as a City of Albuquerque document. The Bikeways Master Plan is a plan document of the MRGCOG and is reviewed annually by the Urban Transportation Planning Policy Board (UTPPB).

Conclusion

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This letter contains a number of concerns regarding issues that impact the region as a whole as well as the Monument, the neighborhoods immediately adjacent to it, and the entire West Side. If this document is to serve its stated purpose and fully comply with the NEPA, these issues must be resolved. The lack of a regional perspective that is displayed in the Document is a serious flaw. To move forward with this Draft Management Plan without resolution of these issues would, in the long and short term, prove to be detrimental both to the region and the National Monument.

To summarize, the Draft Management Plan has focused only on the impacts within the Park boundaries and has failed to recognize that the actions proposed in the Document have impacts that are far reaching and regional in nature. The Draft Management Plan must recognize that the size, location, and nature of the Park will have a major negative impact on the region if not properly developed and managed from the perspective of the urban environment.

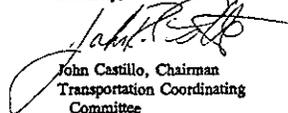
22

Given that the Draft Management Plan does not fulfill its stated purpose, does not resolve the issue of how or if PDN will be developed and does not address access issues related to Unser Boulevard or drainage and utility right-of-way issues, we recommend that the Document not be approved or implemented at this time. We would suggest that the National Park Service withdraw the document and undertake the appropriate traffic, access, drainage, and transportation studies necessary to resolve these issues. In particular, the negative impacts that not completing PDN will have on the National Monument and the region must be addressed and mitigated.

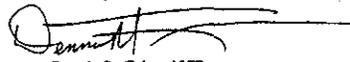
These comments have been prepared by the MRGCOG staff and were endorsed by the Transportation Coordinating Committee (TCC) at the September 22, 1995 meeting.

The staff of the MRGCOG is available to discuss these comments at your convenience. Please feel free to contact Mr. Ron Forte, Director of Transportation at 247-1750 if we can help clarify our comments or assist you in any way.

Sincerely,


John Castillo, Chairman
Transportation Coordinating
Committee

Sincerely,


Dennis R. Foltz, AICP
Executive Director

- 20. The final plan has been revised.
- 21. The intent of the National Environmental Policy Act has been met. All actions proposed by the management plan have been analyzed for their environmental impacts on affected resources, including adjacent landowners and local visitors. See "Derivation of Impact Topics" and "Impact Topics Dismissed from Further Analysis" sections. Also see response #2 to this letter and paragraphs 2-5 of response #6.
- 22. See response #6 to this letter. See "Stormwater Management" and "Utility Rights-of-Way" sections in the "Actions Common to All Alternatives" section. See also first paragraph of response #16 to this letter.

The National Park Service does not have the authority to accept financial responsibility for all drainage improvements in the monument or proposed for the direct benefit of the monument. As stated in the "Actions Common to All Alternatives" section, the city would have the primary responsibility for managing the Piedras Marcadas and Boca Negra units. This management responsibility would include drainage management. If detailed drainage studies are conducted that include compliance with the National Environmental Policy Act and section 106 of the National Historic Preservation Act, the National Park Service could request funds for drainage improvements that would protect monument values.

The plan has been revised to indicate the need to provide access approval by Urban Transportation Planning and Policy Board. It would be the city's responsibility to make such requests because the proposed access is in the city-managed Piedras Marcadas Unit.

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- Enclosures: 1. Letter dated February 2, 1995 to Mr. Stephen E. Whitesell, Superintendent, U. S. National Park Service from Dennis R. Foltz, Executive Director, MRGCOG
2. Stormwater Management Paper Provided by AMAFCA

- xc: Honorable Pete Domenici, U. S. Senator (w/enclosures)
Honorable Jeff Bingaman, U. S. Senator (w/enclosures)
Honorable Steve Schiff, U. S. Representative (w/enclosures)
Honorable Joseph Skeen, U. S. Representative (w/enclosures)
Honorable Bill Richardson, U. S. Representative (w/enclosures)
Petroglyph National Monument Advisory Committee c/o the
National Park Service:
Jaime Chavez
Joe S. Chavez
Gerry Falls
Rosemary Harris
Ray B. Powell, Jr.
Coda Roberson
William F. Weakke

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**Middle Rio Grande Council of Governments
of New Mexico**

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February 2, 1995

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Mr. Stephen E. Whitesell, Superintendent
U.S. National Park Service
Petroglyph National Monument
123 4th Street SW
Albuquerque, NM 87102

**SUBJECT: Comments on the Draft General Management
Plan/Development Concept Plan/Environmental Impact
Statement for Petroglyph National Monument**

Dear Mr. Whitesell:

The staff of the Middle Rio Grande Council of Governments, the designated Metropolitan Planning Organization (MPO) for the Albuquerque Metropolitan Planning Area (AMPA), is offering several comments on the subject document related to transportation issues. In short, we were concerned that several serious transportation and air quality issues were dismissed with very limited discussion. In the interest of interagency cooperation, we believe the National Park Service (NPS) should attempt to be responsive not only to Congressional actions pertaining to the Park Service but also Congressional actions pertaining to other departments; in this case, the Department of Transportation (DOT) and the Environmental Protection Agency (EPA). The issues raised by these comments are based on the Long Range Transportation Plan mandated by the Intermodal Surface Transportation Efficiency Act of 1991. The Long Range Transportation Plan has been approved by the U.S. Department of Transportation. The following are our specific comments.

- 1) On page 21, the subject of visitor access is raised. However, the question of access by visitors to the Monument itself is not entirely considered. On page 173, an estimate is made that "up to 500,000 visitors may visit the Monument annually by the year 2010..." On page 141, Paseo del Norte, which could also provide access to the Monument, is dismissed as having "no monument purpose". This means that the majority of visitors to the Monument will have to use a City of Albuquerque arterial, Unser Boulevard, to reach the Monument. As the MPO, we are concerned with the traffic impact on Unser Boulevard. The NPS does not offer any mitigation proposals or traffic studies to address the potential congestion on Unser Boulevard.

An Association of General and Special Purpose Units of Local Governments
within New Mexico State Planning and Development District III

A

COMMENTS

RESPONSES

Mr. Whitesell

-2-

February 2, 1995

2. As noted, Paseo del Norte, is dismissed as having "no monument purpose" on page 141. On the contrary, Paseo del Norte is ideally suited to provide direct access to the Monument from I-25. If Paseo del Norte were built, it would provide the most efficient access for visitors coming from I-25 or from the most populous part of the region, the northeast part of Albuquerque. Paseo del Norte would also allow Monument visitors from the north to avoid the already congested "Big I" interchange of I-25 and I-40. Paseo del Norte would also reduce adverse impacts of Monument traffic on adjacent neighborhood. Without the Paseo del Norte link, Monument visitors coming from the east will be travelling through the Taylor Ranch and Ladera neighborhoods.
3. On page 173, the NPS states that the Monument would not affect the air quality conformity for Albuquerque. This is not necessarily correct. If Paseo del Norte is not built, all Monument visitors would have to use Unser Boulevard and the conformity issue would have to be resolved by modeling the revised situation. The current conformity findings for Albuquerque were based on Paseo del Norte as an alternate access to the Monument.
4. On page 23, the NPS incorrectly describes Unser Boulevard as a four-lane parkway and Paseo del Norte as a "50 mph-freeway-type road". The fact is that both Unser and Paseo del Norte are being proposed initially as four-lane limited access principal arterials. Unser Boulevard and Paseo del Norte could both be built to the same design standard. It should also be noted that Unser is proposed as a four-lane facility in a network which also contains a proposed four-lane Paseo del Norte. If Paseo del Norte is not built, four lanes for Unser may not be sufficient to handle the additional traffic demands.
5. The Trails and Bikeways Facility Plan was adopted as an integral part of the Long Range Transportation Plan. Based on this Plan, we support retaining the multi-use (bicycle and equestrian) mesa-top trails in alternative 1, the proposed action. These mesa-top trails provide important linkages with multi-use trails surrounding the Monument as shown on the Trails and Bikeways Facility Plan.

In summary, Paseo del Norte serves a Monument purpose by

- a) improving the access to the Monument;
- b) by distributing both Monument traffic and other regional traffic so that there is less noise from Unser Boulevard affecting those areas of the Monument adjacent to Unser; and
- c) by improving the efficiency of the transportation system so that Monument traffic is not adversely affecting air quality in the Albuquerque area.

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COMMENTS

RESPONSES

Mr. Whitesell

-3-

February 2, 1995

We appreciate the opportunity to briefly comment on the Draft Plan. We would be happy to discuss any of these issues in greater detail. We look forward to being part of the planning process as the Monument Plan continues to be developed.

Sincerely,



Dennis R. Foltz
Executive Director

cc: Mr. Lawrence Rael, Chief Administrative Officer, City of Albuquerque

DRF/DA/ljh

cc:rapo@whitesell.de/jh

COMMENTS

RESPONSES

STORMWATER MANAGEMENT

The GMP/EIS states that "Stormwater would continue to be allowed to enter the monument provided that the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) and the City's Hydrology Division use their authorities to regulate development and drainage improvements upstream of the monument that ensure stormwater coming into the monument does not derogate the values and purposes for which the monument was established." (p43)

Stormwater will enter the monument whether or not AMAFCA and the City exercise their authorities.

Ensuring that "stormwater coming into the monument does not derogate the values and purposes for which the monument was established" requires that a Drainage Report be developed to define, in precise terms, what derogation of values and purposes means, and then define what measures are needed to accomplish that end. This Report should be the responsibility of the NPS.

Local policy requires that construction, plating, or other development convey 100-year flows through the property, based on fully developed conditions upstream; or based on available downstream capacity (most existing downstream facilities were built to accept 100-year fully developed flows). This policy is to prevent "the first come, first served" approach where downstream development unduly constrains upstream development.

In the eyes of local agencies, the GMP represents a development plan. Any other agency or private entity proposing a plan, whether for public infrastructure (such as a highway) or private development, would be required to prepare a Drainage Report which would address both on-site flows, and how they would be managed.

Under AMAFCA, Bernalillo County, and City of Albuquerque drainage policies, a landowner who plans to develop his property would be required to prepare a drainage report, which would address, as a minimum, the following:

- Off-site (upstream) flows, for existing and fully-developed conditions.
- Flows generated on-site, both existing condition (pre-development) and developed condition.
- Downstream or on-site constraints which could place limits on flows passing through, or generated on-site.
- Proposals to manage stormwater flows, given the above analysis, and any controls the developer wants to impose. For example, if a developer wants to limit flows entering his development, he might have to build detention ponds on or upstream of his property.
- Easements, and/or constructed facilities would be provided, and normally conveyed to a local public agency (AMAFCA, City, or County) to provide for conveyance of flows through the property.

Because the GMP proposes to build facilities (except for the no-action option), AMAFCA, the City, and the County view the GMP as a development plan, and the NPS as a developer. As such, the NPS should comply with local drainage policies, lest it be in violation of N.E.P.A. 40 CFR Section 1506.2 (d).

Restricting upstream flows may mean significant costs for engineering and environmental analyses, right of way, and structures. Because no Drainage Report exists, how these restrictions will be accomplished, and what they will cost, is unknown. However, dealing with stormwater flows from approximately 45 square miles of area west of the monument will be no easy task.

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SEP 28 1995

COUNCIL OF GOVTS

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23. The National Park Service would work with the Albuquerque Metropolitan Arroyo and Flood Control Authority, the city, and the county to resolve drainage management issues. See "Stormwater Management" section in the "Actions Common to All Alternatives" section.

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COMMENTS

RESPONSES



The Archaeological Conservancy

5301 Central Ave. NE, Suite 1218
Albuquerque, New Mexico 87108-1517
(505) 266-1540

November 3, 1995

Superintendent
Petroglyph National Monument
4735 Unser Blvd. NW
Albuquerque, NM 87120

Dear Sir:

The Archaeological Conservancy is a national non-profit organization dedicated to acquiring and preserving archaeological sites on private land. Our national headquarters is here in Albuquerque. Over the past 15 years we have acquired and protected 110 archaeological sites in 23 states including 12 in New Mexico.

We have had an opportunity to review the draft General Management Plan for Petroglyph National Monument, and we are taking this opportunity to offer our comments.

With regard to research:

* We urge the National Park Service to allow research to be conducted at Piedras Marcadas Pueblo under controlled conditions, following the principles of "Conservation Archaeology." This important pueblo holds many of the keys to the unanswered questions about the people who produced the petroglyphs. It may also contain invaluable information about the Coronado Expedition of 1540-42 and its impact on the local Tiguex people. While we agree that a major portion of this site should remain undisturbed and should be reserved for future study, we feel that qualified researchers with institutional affiliation operating with federal permits should be encouraged to conduct research at this site.

* We feel that rock art research would best be conducted on a contract basis with the University of New Mexico following the highly successful model of the Chaco Culture research project. This strategy would save the cost of constructing a rock art research facility on the monument and allow research to begin almost immediately.

With regard to the management alternatives presented in the plan:

* We favor a modified alternative #2. Based on our experience in protecting archaeological sites, we have found

Preserving the past...for the future.

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COMMENTS

RESPONSES

Page 2.

that rock art is the most difficult of all Southwestern cultural resources to protect because it is so exposed and vulnerable to vandalism. For this reason, we feel that staffed contact stations at access points are essential. If an access point cannot be staffed by employees or volunteers, it should be temporarily closed.

* We feel that especially sensitive sections of the monument be reserved for escorted groups. This should allow occasional visitors to view beautiful rock art panels on a self guided trail while reserving the truly spectacular petroglyph galleries for guided groups. Since the more spectacular galleries tend to be deeper into the monument, farther away from access points, these destinations lend themselves to guided group tours which require a longer stay.

* We do not favor inviting horses and mountain bikes into the monument. We feel that their presence would infringe upon the sacred landscape of the monument's petroglyphs. In addition, we feel that despite signs and enforcement policies it would be very easy for horseback riders and mountain bikers to leave the established trails and endanger native plant and animal habitats.

* We favor unlimited unescorted access by Native Americans for religious purposes.

Thank you for allowing us to express our comments about the management of Petroglyph National Monument.

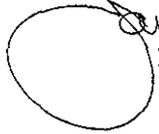
Sincerely,



Mark Michel
President



James B. Walker
Southwest Regional Director



313

COMMENTS

RESPONSES

ATRISCO LAND RIGHTS COUNCIL

P.O. BOX 12056 ATRISCO, NM 87195
TEL. (505)-243-0224 FAX: (505)243-2288

October 18, 1995

Mr. Bob Grant, Chairman
Petroglyph National Monument
HAND DELIVERED

RE: Draft General Management Plan/Environmental Impact Statement
Petroglyph National Monument

Dear Chairman Grant,

The Atrisco Land Rights Council is a community based organization dedicated to preserving the traditional lands of the Atrisco Land Grant as was intended in the 1905 patent signed by President Theodore Roosevelt recognizing the grant claim:

To have and to hold the same together with all the rights, privileges, immunities and appurtenances of whatsoever nature thereunto belonging unto the said Town of Atrisco in trust for the use and benefit of the inhabitants of the said original and additional grants as their respective interests may appear, and to their successors in interest and assigns forever.

According to Atrisco traditional elder Rosa Moya, the Petroglyph National Monument (Atrisco Unit, Rinconada Canyon and Mesa Prieta) are extremely important to maintaining the cultural and spiritual integrity of the Atrisco people. "Los volcanoes estan muy valoristas por la razón de que hay muchas piedras escritas...(translation) "The volcanoes are very valuable because of the many stone writings made by the ancestors of the Indians and ourselves. We are Spanish, Indian, and Mexican. The petroglyphs have power, and how! Over there, we used to collect many remedies handed down by our ancestors. We collect herbs for healing, for teas, for everything there. We are part of the land. I don't want to see a road through the petroglyphs, because I'm already sick and tired of how noisy it is. We can't rest. Before you used to go sit on the side of one of the volcanoes, well you had to be careful of the snakes and other animals, but you used to rest for a while. And now, no, because wherever you go, beep beep, honk honk!

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COMMENTS

We need to insure that the Management Plan reflects the full commitment of the National Park Service to its central responsibility to "Preservation, research and education" as described in the 1994 Report by the Humanities Review Committee of the National Park System Advisory Board. This commitment should emphasize educating the public, nourishing scholarly research and preserving the integrity of historic, archaeological, and other cultural properties so they may continue to inform future generations.

This Report's recommendations speak directly to the unique role of Petroglyph National Monument statutory purpose of preserving the Native American and Indo/Hispano Land Grant heritage that has been expressed so beautifully in the petroglyphs themselves, and that continue as strong living cultures today. This heritage should be more fully developed and described in the Management Plan and the Plan should identify actual "partnerships and cooperative agreements with Native Americans and... (other groups at PNM, Atrisqueños in particular) to involve them actively as valuable sources of historical perspective on their ancient homelands and on the creation of national park areas," as recommended in the 1994 report.

The Management Plan should explicitly reconfirm the mission identified in PNM's founding statute - PL 101-313- regarding the "national significance of the West Mesa Escarpment and the petroglyphs and the urgent need to protect cultural and natural resources of the area from urbanization and vandalism" and "preserve for the benefit and enjoyment of future generations, the West Mesa escarpment... (including) a portion of the Atrisco Land Grant and other significant natural and cultural resources, and to facilitate research activities associated with the resources." This mission should set the tone for the administrative and "on the ground" management strategy for PNM, and to clarify the basis for asserting that PNM is for preservation and education, not high speed transit corridors. (Paseo del Norte)

Based on this foundation the Management Plan should include a substantially wider background discussion of historical and cultural activities in the area by specifically characterizing the heritage of the park's historical users: medicinal use of plants, traditional and spiritual relationships to the land, sheep-raising

RESPONSES

1. The plan recommends continued consultation with Atrisco land grant heirs and American Indians to implement a variety of programs for managing cultural resources. See "Cultural Resource Management" under the "Actions Common to All Alternatives" section on page 30 of the draft plan, the "Petroglyph Research Center" section on page 36, and the "Atrisco Land Grant Heirs" section on page 40.

COMMENTS

RESPONSES

cultural phase, intercultural trade, social exchange, race and ethnic mixture among Indo-Hispano cultures/mestizaje, land tenure struggles, and technology of the cultures.

*Identification of the diversity within the historic cultures of the area provides a basis for management activities, in the research and education area in active cooperation with Atrisqueños and Native Americans which should include:

- *inventorying traditional use and relationship to plants, animals and the landscape;
- *images of culture, photos, previous generations, technology and household relics, and oral histories;
- *cultural elements such as literature, indigenous artwork;
- *library/database of social science literature, land tenure documentation, legal history and arts of indigenous communities;
- *recognition of Atrisco Land Grant (Town of Atrisco) boundaries on all plan maps.

We suggest stronger protection measures be applied at Mesa Prieta in order to preserve the fragile hawk population in the area. No Mesa top road or view sites that will disturb their relationship to this pristine area of the monument. No parking sites south of Mesa Prieta. Orientation to Mesa Prieta should be coordinated with Native/Atrisqueño interpretive programs and guided tours from the water tower south of Rinconada Canyon and east of Mesa Prieta. This area is still an active spiritual landscape and pilgrimage destination point for Atrisqueños-we continue to rekindle our ancestral ties.

Although these comments represent some of our concerns related to PNM General Management Plan, others are sure to follow, particularly regarding the need for buffer zones as a management strategy, and fees reasonable to support heritage education programs and needed acquisitions. We thank you for your interest in our concerns and remain dedicated to the preservation of our traditional homeland and our relationship to the power that resides here.

COMMENTS

RESPONSES

Sinceramente,
Maria D. Elizondo ALRC V.P.
to Debra Lett-Nuanes
Debra Lett-Nuanes
ALRC President

*Bay Area Rock Art Research
Association*

August 25, 1995

*Per
Jan T*

Superintendent
Petroglyph National Monument
4735 Unser Boulevard NW
Albuquerque NM 87120

Re: Comments on "Draft General Management Plan/Development
Concept Plan/Environmental Impact Statement"

Dear Sir,

I have reviewed the four alternative management plans in the above mentioned draft planning for Petroglyph National Monument and would like to offer the following personal comments which do not reflect an official opinion of the Bay Area Rock Art Research Association.

Petroglyph National Monument is an unique resource on many counts. Not the least of these are its abundant petroglyph/cultural resources, it's mission to capitalize on these resources to interpret the local Pueblo and Spanish cultures, and its proximity to a major metropolitan center.

The cultural groups who have historically made use of the West Mesa continue on in the present area, and are alive and vibrant cultural groups today. Any development of the Monument should put its first priority on protecting the historic-religious use of the land that continues from the distant past into the current day. Let us not mislead the public in believing that these petroglyphs of the Rio Grande have only a historic interest. Let us respect the place that these places and images hold in the contemporary sacred life of the Pueblo peoples.

1289 Holman Road · Oakland CA 94610 · 510-268-8794 · Fax: 510-531-7722

COMMENTS

RESPONSES

Bay Area Rock Art Research Association
Page: 2
August 25, 1995

It should therefore follow that development should be held away from all areas identified by Pueblo people as sacred. Bike and horse trails should not be allowed on the mesa top. Remote areas should be valued and retained within the monument to allow for personal, respectful and meditative experiences for those who seek them.

The public should be invited to visit interpretive centers and drive-in petroglyph viewing areas in concentrated locations as has been proposed under the auspices of Alternative #2.

It also seems to me that spending 5 million dollars less than has been proposed for the preferred Alternate #1, and thereby gaining a more appropriately and sensitively scaled development lends considerable fiscal sense to the argument for adopting Alternative #2.

Thanks for your attention.

Sincerely,



Leigh Marymor
Co-Chairman

COMMENTS

RESPONSES



Central New Mexico Audubon Society

POST OFFICE BOX 30002 - ALBUQUERQUE, NEW MEXICO 87190

October 27, 1995

Red Petzl
OCT 29 1995

Superintendent, Petroglyph National Monument
4735 Unser Boulevard NW
Albuquerque, New Mexico 87120

Re: Draft General Management Plan
Development Concept Plan
Environmental Impact Statement

Dear Sir:

The Central New Mexico Audubon Society provides this letter in comment on the Draft General Management Plan / Development Concept Plan / Environmental Impact Statement for the Monument dated August 1995. The Central New Mexico Audubon Society and National Audubon Society are organizations devoted to the protection of birds, other wildlife, and their habitats

From this focus, the Proposed Action (Alternative 1) will continue the disastrous fragmentation of the monument and the adjacent areas by roadways and intensively used trails of all types. Multi use trails, particularly on the escarpment top will disrupt nesting and feeding activities of breeding birds, both threatened and endangered (ferruginous hawk) and "regular" birds, such as the canyon wren, horned lark, and loggerhead shrike. Furthermore, unrestricted public access to all areas of the park will result in continued formation of un-official trails by locals, heavy pedestrian and dog disruptions of nesting sites in and below the escarpment, and concomitant increased breeding failures of all nesting species in and below the escarpment.

Accordingly, the Central New Mexico Audubon Society favors Alternative 2 Modified for Protective Use, as proposed by the Friends of the Albuquerque Petroglyphs. It has the principal advantages of: (1) minimizing further fragmentation of the habitats provided by the Monument; (2) permitting only pedestrian traffic; (3) eliminating unrestricted access to the Monument; and (4) reducing construction in zones not already impacted. The Alternative also is significantly less costly than all but the No

- 1. The plan does not propose any new roadways that would fragment the monument. Mitigation measures to protect listed species would be implemented; see the impact analysis on birds. Birds as well as other resources would be inventoried and monitored. Mitigation measures would be developed where needed to protect resources. See the "Natural Resource Management" section under the "Actions Common to All Alternatives" section.

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COMPLIANCE / CONSULTATION AND COORDINATION

COMMENTS

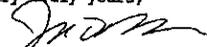
RESPONSES

Superintendent, Petroglyph N.M.
October 27, 1995
Page 2

Action Alternative, which will help to maximize the likelihood that the Monument will not be eliminated by a cost-conscious Congress in the future.

Thank you for your attention to these comments and your work to protect the unique cultural and natural resource you watch over.

Vary truly yours,



Jeffrey D. Myers,
President

JDM/jdm

COMMENTS

RESPONSES

C.H.A.M.P.
Corrales Horse and Mule People
c/o Post Office Box 2758
Corrales, New Mexico 87048

Secretary
Melissa Hill

Chairperson
Susan Bell

Treasurer
Vicki Scott

November 20, 1995

Mr. Larry Beal
Chief of Planning
Petroglyph National Park Headquarters
6001 Unser Blvd., NW
Albuquerque, New Mexico 87120

Re: Petroglyph National Park Draft General Management Plan & EIS dated August 1995

Dear Mr. Beal:

C.H.A.M.P. is a newly created community organization dedicated to promoting the use and enjoyment of equines, including horses, ponies, mules and donkeys, in the Village of Corrales and in adjoining communities where many Corrales equestrians ride. We had our first organizational meeting to form the group and elect a first Board of Directors in August 1995. Our first Board of Directors meeting following election of officers was held on November 9, 1995, several days after your November 6th deadline. We hope you will consider what we have to say despite our tardy response because we represent a large group of local citizens who have done much recreational trail riding in the greater Albuquerque area.

C.H.A.M.P. views the Petroglyph National Monument as a valuable natural resource which must be preserved for the enjoyment of future generations. We do not feel that preservation of the area should preclude enjoyment by responsible equestrians of today.

C.H.A.M.P. supports Alternate #1 with no modifications. It is our understanding that the Petroglyph National Monument Advisory Committee has modified the original Alternative #1 plan by eliminating the 15.6 mile mesa-top trails. We disagree with the decision to eliminate virtually all recreational usage of the mesa area by equestrians. The protection and preservation of the mesa area can be adequately accomplished by providing better security for the mesa trails, such as increased patrolling, and by facilitating and encouraging reporting of serious infractions observed by law-abiding citizens. C.H.A.M.P. believes the escarpment and petroglyphs should be protected due to their historical and cultural significance without adversely affecting equestrian use of the mesa top area.

C.H.A.M.P. represents a large number of men and women who own or use horses in this region whose voices should be heard. Please do not hesitate to contact our organization in the future if additional input is desired.

Very truly yours,

Melissa Hill
Melissa Hill
Secretary

COMMENTS

RESPONSES

FOTAP Friends' Box Petros 585 885 3775 P. 62

FRIENDS OF THE ALBUQUERQUE PETROGLYPHS (FOTAP)
2020 Carlisle NE, Albuquerque, NM 87104 (505) 885-3775



November 8, 1995

Doug Eury, Superintendent
Petroglyph National Monument
6001 Unser Boulevard, NW
Albuquerque, NM 87120

By FAX & 1st Class Mail
RE: FOTAP Comments, Draft GMP/DCP/ES
for Petroglyph National Monument

Dear Mr. Eury,

The attached map and legend present for your consideration Alternative #2, Modified for Protective Use, a new GMP alternative based on three years of effort from the Blue Ribbon Panel of Resource and Planning Experts. We have assembled this alternative for two primary legal reasons: first, with the exception of the No Action alternative, all the GMP alternatives are skewed toward excessive development and, therefore, do not represent a full spectrum of reasonable alternatives as required by the NEPA; and, secondly, the excessive recreational and road development emphases of alternatives #1 and #3 have no statutory basis in the plain language and legislative intent of Public Law No. 101-313, the Petroglyph National Monument Establishment Act, and therefore are not available to the NPS.

By using the remaining alternative #2 as a framework, and selecting certain components from the other three, we have assembled a plan which is consistent with PL 101-313, provides for diverse visitor experiences while protecting the cultural and natural resources, and is about 50% less expensive than the NPS Preferred Alternative 1.

We therefore ask the NPS to formally analyze this Alternative #2, Modified for Protective Use. There is no impediment under NEPA to the NPS adopting this alternative if it wished, since its overall framework and individual components already have been addressed in the DEIS analyses of one or another of the four existing alternatives. It is only necessary for the NPS to assemble existing analyses in a single, new alternative for purposes of comparison. If these analyses in the DEIS are adequate, no new NEPA documentation or public comment would be required. The new proposed action could be adopted in the FEIS. The FOTAP strongly recommends your adoption of Alternative #2, Modified for Protective Use, or at least use of major portions in your final plan. We would be happy to work with you in the months to come to answer any questions, and to fine tune the recommendations of this new alternative.

"To protect, understand, and enjoy the petroglyphs, conserved within their natural landscapes and cultural traditions."

page 2 - Modified Alternative 2
FOTAP - November 8, 1995

A few key advantages of the new Alternative 2, Modified for Protective Use, follow:

1. EXISTING STRUCTURES AND PREVIOUSLY IMPACTED AREAS ARE ADAPTIVELY REUSED TO MINIMIZE ENVIRONMENTAL DISTURBANCE.

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Organizations

COMMENTS

RESPONSES

FOTAP=Friends ABO Petros 505 889 3779

P.02

page 2 - Modified Alternative 2
FOTAP - November 6, 1995

A few key advantages of the new Alternative 2 Modified for Protective Use follow.

1. EXISTING STRUCTURES AND PREVIOUSLY IMPACTED AREAS ARE ADAPTIVELY RE-USED TO MINIMIZE ENVIRONMENTAL DISTURBANCE.

- At Lava Shadows, the existing Las imagines Interim Visitor Center, ranger headquarters, and Cohen residence can, with remodeling and expansions, accommodate heritage education and rock art research functions, and also serve as an assemblage point for guided tours of the Inner Rinconada Canyon (PC:10A:14 to PC:7B:2) and clifftop Lava Shadows (PC:12B:2 to PC:10A:5) petroglyph areas. Construction of a hardened self-guiding trail can access petroglyph locales on the Abertee road cut (PC:12B:2), along the escarpment base going south toward Rinconada (P:11B:15 to PC:11B:6), and into the mouth of Rinconada Canyon (PC:10A:2) by following an old existing road.
- At south of Boca Negra, the existing administrative and maintenance headquarters using the former offices of Roberson Construction can remain at the northwest corner of Unser Blvd. and Montano Road.
- At Boca Negra Canyon, the new Visitor Center and complex of hardened self-guiding interpretive trails will be sited in the areas previously impacted by the former Indian Petroglyph State Park.
- At Piedras Marcadas, the hardened self-guiding trail going from the contact station to access major petroglyph locales just north of the Arroyo (PC:28A:2 to PC:28B:8) will follow an old existing road.
- At the volcanoes, the existing road and parking area would be used for a trailhead to the Black Volcano overlook. No other trails would traverse the remaining volcanoes, or come in close proximity, in order to respect Pueblo Indian religious values and uses.
- At the Mesa Prieta, the contact station and parking would be sited in a previously disturbed borrow and fill area south of the training dike.
- All other pedestrian trails in the Monument, with one significant exception, will follow either old existing roads or trails. The exception is the "natural history trail" on the mesa top which will follow a branch of Rinconada Arroyo most of the way to Black Volcano. All trails are related to the significance of the natural and cultural history of the Monument.

page 3 - Modified Alternative 2
FOTAP - November 6, 1995

II. CONTROL OF ACCESS AND USE PROTECTS MONUMENT RESOURCES

To protect adjacent neighborhoods, maximize opportunities for interpretation, provide for visitor safety, and protect park resources, the eleven largely uncontrolled "parking" and "neighborhood access" points shown in alternative #1 would be deleted and replaced in the Modified Alternative #2 by allowing access to petroglyph locales only through staffed contact stations, the visitor center, or other facilities. Lack of volunteer or staff presence would temporarily close that access point. The Las Marcadas II parking access would be limited to persons with disabilities as originally intended.

A tiered approach to visitor use would complement control of visitor access:

1) Guided tours would offer the visitor with more time and interest an unparalleled experience of isolation and remoteness from urbanization in settings of high environmental integrity, and encourage a deeper understanding of the Monument as a sacred landscape.

2) A system of hardened self-guiding trails would offer the visitor with less time easy access to three varied petroglyph locales. Trailwatch volunteers or staff would roam these high-use trails as a precondition to their being open.

- Hardened self-guiding interpretive trails out of the Visitor Center will be provided into Boca Negra Canyon and Staghorn Drive escarpment areas; from the Contact Station on Paseo del Norte extension into the mouth of Piedras Marcadas Canyon; and from the Lava Shadows Heritage Education Center along the escarpment into the mouth of Rinconada Canyon. These three complexes of trails access areas containing about 3000 petroglyphs. The majority of these hardened trails would be accessible to persons with disabilities.
- Guided tours by trained docents and/or park staff will be offered to visitors who have more time and interest to seek out a higher quality experience. The natural topographic seclusion of the Mesa Prieta, inner Rinconada Canyon, and inner Piedras Marcadas Arroyo creates a cathedral-like space largely isolated from the surrounding urban environment. This unique feeling of being in a sacred space can be maintained when used by guided groups, but is quickly lost when used by a steady stream of dispersed visitors. Also, all three of these areas are too large to protect with even large numbers of trailwatch volunteers and/or park staff. Limiting access to guided tours can assure very high confidence levels of resource protection, quality interpretation, and visitor safety.
The mesatop pedestrian trail system also lends itself well to guided tour access of cliff-edge petroglyph locales, archaeological features, and

COMMENTS

RESPONSES

FOTAP=Friends ABQ Petro 505 889 3779

P.03

page 4 - Modified Alternative 2
FOTAP - November 6, 1995

areas important to the interpretation of the Monument's natural history.

Access to the volcanoes, other than Black volcano, to the geological windows, and to the Piedras Marcadas ruin mounds would also require the control possible only through trained docents and/or park staff.

III. ALLOWING ONLY PEDESTRIAN ACCESS, INCLUDING ACCESS FOR PERSONS WITH DISABILITIES, MINIMIZES IMPACTS, REDUCES COSTS, AND ENHANCES THE UNIQUE CHARACTER OF THE CULTURAL LANDSCAPE

Respecting the religious character of the Monument to Pueblo Indian tribes^{*}; protecting the biological diversity, fragile archaeology, and untrammeled character of the mesa top; eliminating \$1.7 million in construction costs for 15.6 miles of horse and mountain bike trails; and saving staff time otherwise committed to regulation and monitoring of recreational use are a few of the reasons to manage Petroglyph National Monument through the pedestrian access allowed in Alternative #2 Modified for Protective Use.

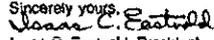
IV. OTHER ADVANTAGES: SIGNIFICANT OVERLOOKS, BOUNDARY ADDITIONS

Since views would be dominated by the rooftops of Santa Fe Village and Rincon subdivisions, the 81st Street overlook fails to relate meaningfully to the significance of Petroglyph National Monument and, therefore, is eliminated from the Modified Alternative #2, saving \$1,072,200.

The overlook at Black Volcano, by contrast, presents the visitor with sweeping views of the Monument's sublime volcanic landscape, the Rio Grande rift, and surrounding mountains, all of which are important to interpreting the geology of the region and the significance of the larger sacred landscape for Pueblo Indian tribes.

The Modified Alternative #2 recommends the 10.5 acre boundary addition at Boca Negra Canyon, and location of the Visitor Center there, for the reasons given in Alternative #1. Also recommended are the 81st Street boundary addition and the non-federal 472 acres in the juniper savannah grassland on the mesa top between Boca Negra and Piedras Marcadas. Both areas would eliminate demand for drainage and utility crossings of the escarpment if these portions of Volcano Cliffs were developed.

Finally, the return trail for guided tours into the inner Rinconada Canyon would follow the old road through the stabilized dunes, allowing for interpretation of the rich animal and plant life found there, and separating guided groups enough to maintain the untrammeled, cathedral-like character of the Canyon.

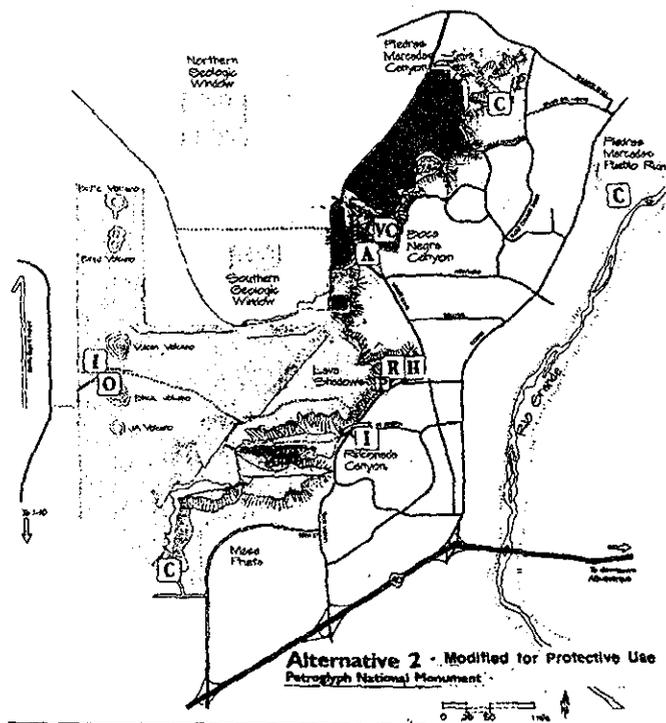
Sincerely yours,

Isaac C. Eastvold, President

^{*} Cf. attached letters: Sandia Pueblo, March 4, 1994; and AIPC, May 17, 1994.

COMMENTS

RESPONSES

FDAP=Friends ABQ Petros 505 869 3779 P.04



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COMMENTS

RESPONSES

FOTAFriends ABQ Petros 505 869 3779

P.03

Modified
Alternative 2

- Lava Shadows
- continuing heritage education functions
 - petroglyph research center
 - trailhead and parking
 - occasional guided tours

Piedras Marcadas Pueblo Ruin

- visitor contact facility
- education facility

Mesa Prieta

- visitor contact facility
- occasional guided tours

Boca Negra Canyon

- visitor center
- improved trails/shade structure/parking

Rinconada Canyon

- foot trail-improved trail
- occasional guided tours

South of Boca Negra Canyon

- administration

Volcanoes

- visitor information
- overlook and parking

Geologic Windows

- no development; limited use
- occasional guided tours

Piedras Marcadas Canyon

- visitor education facility
- parking and trail
- occasional guided tours

Homedead Circle Park

- restored to natural conditions

- 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
-  Petroglyph National Monument
-  escarpment
-  foot trail
-  boundary addition
-  nonfederal protected land
-  proposed paved road study corridor

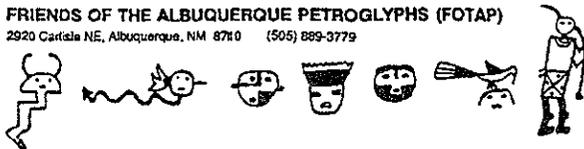
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COMMENTS

RESPONSES

FOTAP FRIENDS NBO Petros 505 889 3779 P. 02

FRIENDS OF THE ALBUQUERQUE PETROGLYPHS (FOTAP)
2920 Carlisle NE, Albuquerque, NM 87110 (505) 889-3779



November 6, 1995

Doug Eury, Superintendent
Petroglyph National Monument
6001 Unser Boulevard, NW
Albuquerque, NM 87120

By FAX

RE: Addendum to FOTAP Comments,
Draft GMP/DCP/EIS for Petr. Nat. Mon.

Dear Mr. Eury:

Our new GMP alternative, the *Alternative #2 Modified for Protective Use*, has been submitted for easier reference as a separate letter of comment. This addendum letter of comment serves a different, but complementary, function: to critique the assertions and factuality of the draft GMP document. Taken together, the two letters constitute the FOTAP's comments on the draft General Management Plan/Development Concept Plan/ Environmental Impact Statement.

Dog walking: Page 44 states that, "Horses, bicycles, and dogs would not be allowed near petroglyph viewing areas in the canyons below the escarpment (except in escarpment trail crossings) because they could impair the experiences of other visitors, degrade the quality of the contextual landscape, and adversely affect sacred areas." Page 68 states that, "Dogs on leashes would be allowed only in designated areas near existing neighborhoods."

These statements indicate the NPS' intent to allow dog walking at different places in the Monument, but it is unclear where that will be. The EIS needs to clarify this, perhaps with a map, and analyze the impacts of dog walking on wildlife, the character of the cultural landscape, and Monument visitors. This hasn't been done.

Our experience has been that more than half of the growing number of dog walkers ignore even posted signs, and allow their dogs to roam off leash, harassing or harming wildlife, and intimidating visitors. In light of this acute problem, the EIS should address how the Park Service and City plan to enforce restrictions, how scarce staff resources will be diverted from other statutory obligations, and whether allowing dog walking at all is advisable.

Currently, the City Open Space Division, with the knowledge and consent of the Park Service, has signed Rinconada Canyon, Lava Shadows, and other Monument areas to allow walking of dogs on leashes. A sizable constituency of dog walkers is

"To protect, understand and enjoy the petroglyphs, conserved within their natural landscapes and cultural traditions."

- 1. The draft plan has been revised to clarify that dog walking would not be allowed in petroglyph viewing areas. We do not have any evidence that dogs on leashes (as is required by city and county ordinances as well as NPS regulations) would result in adverse impacts on wildlife, other visitors, or the cultural landscape greater than would result from visitor use without dogs.

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FOTAP Addendum NPS Petros 303 889 3779 P. 03

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November 8, 1995

being created which will make it difficult to implement the above policies. In order to avoid the inevitable outcry from dog walkers, we would recommend immediately amending the Superintendent's Compendium to prohibit dog walking in conformity with these proposed policies; or to close completely the Monument to dog walking until these policies can be properly clarified and analyzed, and an informed decision made.

Jogging: Page 3 of the draft GMP states, "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." This statement is inappropriately wedged in the middle of a paragraph describing the present inadequacy of facilities.

The draft document fails to address jogging. Like dog walking, the appearance of sweat-suited joggers with walkman headsets is another suburban intrusion which detracts from the visitor's experience, and can cause damage to soils, vegetation and other resources. The EIS should clarify the status of jogging in the Monument, analyze its impacts, and decide where and to what degree it should be allowed, or disallowed completely. This hasn't been done.

2

On Saturday and Sunday afternoons, the Pecos Canyon currently is a veritable zoo of dog walkers, joggers, and off-trail users with little apparent interest in the petroglyphs. Elsewhere in the City, neighborhood streets accommodate these types of activity, but here Unser Boulevard even has a special recreational trail along its length specifically to provide for these suburban activities such as jogging, dog walking, bike and horseback riding, and exercise walking. As a start, we would recommend immediately amending the Superintendent's Compendium to prohibit jogging in petroglyph areas just as bicycle and horse use are prohibited.

Bicycle and horse use: The NPS Preferred Alternative #1 recommends construction of 15.6 miles of 8' wide hardened gravel "multiuse" trails on the mesa top at a cost of \$1.7 million. It is stated on page 250, Appendix C: Development of Alternatives, that, "The Greater Albuquerque (sic, Recreational) Trails committee strongly advocated that horse and bicycle use should be allowed on top of the mesa and wanted multipurpose trails." "After analysis of public comment, consideration of political realities..." Appendix C concludes, "the alternatives were revised to what appear in this management plan."

Thus the impression is created that an appointed City advisory committee of volunteers with City staff support was largely responsible, sometime between October, 1993, and January, 1994, for inclusion of this extensive system of recreational trails in the Preferred Alternative #1. The November, 1993, minutes of this City committee state that the NPS Planner in fact proposed the system of trails to them for their endorsement.

3

The draft GMP lacks any factual documentation of current levels of mountain bike and horse use in the Monument as a foundation for evaluating the need for such

2. We do not have any evidence or precedent to regulate jogging within the monument. If it is determined that "sweat-suited joggers with walkman headsets" have adverse impacts on monument visitors or resources, appropriate management actions would be taken.
3. NPS management policies state that the National Park Service will encourage recreational activities that are consistent with applicable legislation. The National Park Service will not allow a recreational activity in a park or in certain locations within a park if it would involve or result in (1) inconsistency with the park's enabling legislation, (2) unacceptable impacts on visitor enjoyment due to interference or conflict with other visitor use activities, (3) consumptive use of park resources, (4) unacceptable impacts on park resources or natural processes, or (5) unacceptable levels of danger to the welfare or safety of the public, including participants.

COMMENTS

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FOTAF Friends NEQ Petros 505 887 3775 P.04

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November 6, 1995

3 an extensive network of trails, or such a huge expenditure of scarce funds. The draft GMP must provide such a factual basis in order to establish some level of need beyond the desires of a City advisory committee, or the proposal of a NPS Planner.

Furthermore, the statement on page 3 that, "The public lands within the Monument have many abandoned roads and trails that are used by walkers, joggers, bicycle and horseback riders," creates the impression that a great deal of such use takes place. The map entitled, "Monument Roads and Trails," on page 13 shows that, in reality, most of these abandoned roads and trails are classified as, "narrow, rocky, or overgrown routes," showing slight if any use. Left alone, many are being reclaimed through natural processes to become an indistinguishable part of the mesa top grassland.

4 instead of restricting horse and mountain bike use to a portion of the roads and trails shown on page 13, the NPS Preferred Alternative #1 would in fact induce and provide for increased levels of use. The draft GMP fails to analyze the impacts of attracting significantly increased levels of mountain bike and horse use onto the mesa top.

This network of trails would also include an undefined number of horse tie-ups and bicycle rack areas for spur trails, "designed so that bicyclists and horseback riders could leave their bicycles and horses and walk on trails to see the petroglyphs and overlooks (page 68)." The impacts of these tie-ups, racks, spur trails, and overlooks are not analyzed, nor are their locations shown in the draft GMP. This scheme would expose an undefined number of cliff-top petroglyph localities - some of the most pristine sites in the Monument - to totally uncontrolled use. Although the draft GMP admits that, "Activities not directly related to petroglyph viewing may be linked to increased vandalism, as indicated by experience at other petroglyph areas in the Southwest (page 44)," the potential adverse impacts of this exposure are not mentioned or analyzed in the draft GMP.

6 Also, visitors to petroglyph localities in the canyons below would look up to see other users peering over the cliff edge at them, thereby adversely impacting those visitors' solitude or experience of isolation from the surrounding urban area. This degradation of the quality of visitors' experience is neither mentioned or analyzed in the draft GMP. Instead, the draft GMP limits its discussion to conflicts among different trail users on the system of multiuse trails, and concludes without documentation, "Visitor use levels would not be expected to result in user conflicts (page 68)." The draft GMP fails to indicate, as a precondition to evaluating potential user conflicts, the actual or even approximate number of people who would be given permits to use the multiuse trail system for horse and bicycle recreation.

Page 69 assures the reader that, "The National Park Service would monitor use and impacts in the monument to ensure that no damage occurs to monument resources from bicycle and horse use." Spreading this type of recreational use over 15.6 miles of trails on thousands of acres of a volcanic landscape virtually guarantees that, short of helicopter monitoring, such a promise could not be kept.

- 4. The "Carrying Capacity and Visitor Impact Management" section in the draft plan (page 47) addresses the process that would be used to evaluate and manage the type of visitor use that can be accommodated without adverse impacts on other visitors or resources. These impacts are addressed in several impact topics in the "Environmental Consequences" section of the environmental impact statement. Horse and bicycle use would require a special use permit, and the resources would be monitored to identify changes in condition.
- 5. This is a general management plan, not a site-specific design detail. The impacts of tie-ups, racks, and spur trails would be evaluated as more specific designs are developed.
- 6. See responses #4 and #5.

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FOURTEENTH AND NINTH STREETS SWS 009 3779 P.01

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November 6, 1995

Finally, although the draft GMP at pages 159 and 185 suggests that mitigation measures for protection of the Ferruginous hawk might include closure of this multiuse trail system during breeding season between February 1st and July 1st, it fails to observe that this closure would eclipse 5 of the 8 months of peak visitation. The expenditure of \$1.7 million to provide for a small number of horse and bike permittees for only 3 months of the main visitor use period is not justified by the draft GMP.

Unser Boulevard: The draft GMP creates a special "transportation zone" to allow the construction of Unser Boulevard, a four-lane major arterial proposed to eventually carry over 30,000 vehicles a day through Petroglyph National Monument. The NPS has determined that the construction of Unser in the vicinity of a gas pipeline cut would serve a "park purpose" by removing the present alignment of Unser from the more sensitive Boca Negra Canyon area. However, the draft GMP fails to point out that the present alignment is only two lanes, has little chance for expansion due to facilities built with Land and Water Conservation fund monies, and currently carries a very small number of vehicles--perhaps fewer than 500 daily--over the escarpment. The draft GMP fails to provide current and projected traffic volumes for these roads, and compares apples to oranges in determining a "park purpose" in this way.

The draft GMP also fails to mention potentially severe impacts to important petroglyph locales very close to its "transportation zone" for Unser. The southern branch of Boca Negra Arroyo has its head on the immediate north edge of the zone, and has already been adversely impacted by the blasting for the gas pipeline: some of the petroglyph panels evidently were dislodged by shock waves carried in the basalt, broke away from the cliff face, and were scattered when the rocks tumbled to the bottom of the Arroyo. The remaining eastern cliff face of the Arroyo leans precariously, and might suffer a massive collapse during any blasting or hammering for the Unser construction. The draft GMP should analyze fully the potentially severe impacts to this petroglyph locale from Unser construction. The City's Unser Middle Project EIS failed to analyze this problem as well.

Also, the northern branch of San Antonio Arroyo makes a small canyon in the escarpment just south of the Unser transportation zone, and has many fine petroglyphs remaining. Although dumping of construction wastes and other vandalism have degraded the vicinity, the Arroyo could be restored. The draft GMP fails to mention or analyze the acute increases in noise, degradation of visual quality, and other impacts which construction of Unser would cause in the northern branch of San Antonio Arroyo. The City's Unser Middle Project EIS failed to discuss these impacts as well.

Cumulative Impacts to Pueblo Indian Religious Uses: In assessing the continued viability of Pueblo Indian religious uses of the Monument, the draft GMP fails to add together all the external and internal impacts caused by both surrounding external developments (e.g., Double Eagle II airport expansion, Westland Sector Development Plan approval, Unser Boulevard, etc.) and internal developments proposed in the

- 7. These impacts are addressed in the cumulative impacts of several impact topics. Further analysis is beyond the scope of this plan / impact statement.

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COMPLIANCE / CONSULTATION AND COORDINATION

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FOIA b 7 - DATED 08/06/95 BY SP5 BJS/STP P. 02

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November 6, 1995

Preferred Alternative #1 (multiuse trail system, facilities construction, multiple access points, etc.). When all these impacts are looked at cumulatively, the future of these sensitive religious uses appears bleak indeed. Pueblo leaders already have stated that certain portions of the escarpment, and even the volcanoes, are becoming more and more difficult to use in privacy due to the pressures of new adjacent development, and increasing numbers of uncontrolled Monument visitors. These cumulative impacts need to be analyzed in detail to determine if some of the more impacting proposals in the Preferred Alternative #1 might just be, "the straw that breaks the camel's back," and should be abandoned by the NPS.

8

Guided tours: At pages 31 and 143, the draft GMP's discussion of establishing what it calls management "presence" omits or gives little attention to the important management tool of limiting access to certain special petroglyph locales to guided tours. The discussion and analysis of guided tours in special areas needs to be given much greater scope in the draft GMP. In providing high confidence levels for resource protection, visitor safety, and in-depth interpretation, there is no substitute for the guided tour.

Use of Volunteers: Even though the Monument is adjacent to the largest metropolitan area in this part of the Southwest, and Albuquerque is recognized for its volunteerism, the draft EA has no discussion or analysis of establishing a program of volunteer docents and trailwatchers to assist staff in providing that all-important management "presence." The Albuquerque Museum, Zoo, Natural History Museum, Indian Pueblo Cultural Center, and other institutions all have prestigious volunteer docent programs with waiting lists for participation. There is no reason why Petroglyph National Monument also couldn't become a prestigious facility attracting volunteers. Other park units near urban areas have succeeded tremendously in developing trained

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volunteer help for most of their programs. The draft GMP needs to have added an in-depth section discussing how volunteers can become integral to successfully realizing the purposes for which the Monument was established.

Blue Ribbon Panel Alternative: Although the Blue Ribbon Panel of Resource and Planning Experts met for over three years to advise the NPS and City on the GMP, it isn't mentioned once in the draft document, and its recommendations are so garbled in Alternative #2 as to be unrecognizable and unsupportable by the Panel members themselves. We hope this deficiency will be remedied by full consideration in the FEIS of the Alternative #2 Modified for Protective Use assembled from the Panel's outstanding work.

Sincerely yours,
Isaac C. Eastvold
Isaac C. Eastvold, President

- 8. See "Impacts on Values Held by Culturally Affiliated Groups" in the "Impacts Common to All Alternatives" section.
- 9. Volunteer programs are being implemented by the monument staff. It is not necessary to address such a program in this plan.

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Organizations

POSITION PAPER

GREATER ALBUQUERQUE CHAMBER OF COMMERCE BOARD POSITION

Action: Approved Date: October 12, 1995

CHAMBER SUPPORTS REVISIONS TO PROPOSED PETROGLYPH PLAN POSITION

The Board of Directors of the Greater Albuquerque Chamber of Commerce urges the Petroglyph National Monument Advisory Commission to support Alternative I, with certain qualifications, described in the Draft General Management Plan for Petroglyph National Monument issued August, 1995.

The overall approach of Alternative I provides various ways for visitors to see and appreciate many of the Monument's significant resources. The alternative provides for a visitor center at Boca Negra Canyon. Horseback and bicycle riding would be permitted on designated mesa-top trails. A new petroglyph research center would be built south of Boca Negra Canyon, along with a new administrative headquarters. There would be a city-owned and city-managed visitor contact facility outside the monument south of the Piedras Marcadas Pueblo Ruin.

The Chamber believes that Alternative I strikes a reasonable balance between resource preservation and the ability of citizens to access and enjoy the Monument. The Chamber urges the Commission to recommend that the Management Plan include the following:

- 1. The extension of Paseo del Norte, through the Monument, should be specifically addressed. At a minimum, the plan should protect this corridor. The Paseo extension is crucial to the overall transportation infrastructure of Albuquerque's West Side and can be constructed in an environmentally sensitive manner.
- 2. An overall infrastructure strategy for the Monument and the City of Albuquerque should be addressed. Utility easements (water, sewer, telephone, gas, electricity) and flood control measures within the Monument or adjacent to the Monument should be addressed.
- 3. Double Eagle II Airport should be allowed to expand to serve increased general aviation and freight traffic as well as serve as an industrial development complex.

ALBUQUERQUE

GREATER ALBUQUERQUE CHAMBER OF COMMERCE • (505) 764-3700

- 1. The Draft and Final General Management Plan / Environmental Impact Statements are consistent with federal law and policy. Paseo del Norte was identified on page 21 of the draft plan as an issue beyond the scope of this general management plan. Therefore, further analysis as cited in 1502.9(a) is not required.

There is no authorization for the Paseo del Norte right-of-way. The entire Unser Middle Project is an issue beyond the scope of this plan.

- 2. See "Utility Rights-of-Way" section in the "Actions Common to All Alternatives" section.
- 3. Double Eagle II Airport is addressed as an issue beyond the scope of this plan. This plan / environmental impact statement is prepared for general management plan proposals. None of the general management plan proposals would affect the Double Eagle II Airport.

COMMENTS

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4. Access routes through neighborhoods adjacent to the park should be eliminated or severely restricted.

The Chamber believes that adoption of Alternative I, with the changes recommended above, provides the best opportunity for managing a Monument located in a fast-growing, urban environment. The Chamber supported creation of the Monument and believes that it adds unique dimensions to the area's quality of life. With careful planning and cooperation, the City and the National Park Service can strike a balance between protection of the resource and solving the city's critical West Side infrastructure needs.

BACKGROUND

The Chamber has been involved in issues relating to the development and management of the Monument since its inception. The Chamber has participated in hearings and meetings involving the National Park Service, the state's Congressional delegation, City of Albuquerque officials, West Side neighborhood groups, and others. The Chamber's current position is consistent with its previous positions enunciated through correspondence with the U.S. Department of the Interior and National Park Service in 1992, 1993, and 1994.

4. The "Neighborhood Access" section in alternative 1 has been revised, and neighborhood access points have been removed from the map.

COMMENTS

RESPONSES

COMPLIANCE / CONSULTATION AND COORDINATION



LADERA HEIGHTS NEIGHBORHOOD ASSOCIATION
3301-R Coors Blvd., N. W., 1277
Albuquerque, New Mexico 87120



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November 1, 1995

RECEIVED N.P.S.

NOV 0 8 1995

Petroglyph National Monument

Superintendent
Petroglyph National Monument
6001 Unser Blvd., N. W.
Albuquerque, New Mexico 87120

Dear Sir:

The Ladera Heights Neighborhood Association is located between the Ladera Golf Course, Western Trails, Coors Blvd., and Unser Blvd. Rinconada Canyon is right in our "back yard".

Our association would like to make the following comments on the Draft Management Plan.

- We are very much opposed to Alternative No. 3.
- We are in favor of Alternative No. 2.

We make these comments based on our concern for the neighborhood and the preservation of those qualities that make this "place" so distinctive. Thank you for the opportunity to express our concerns.

Sincerely,

KENNETH C. BERRY, President
Ladera Heights Neighborhood Association

COMMENTS

RESPONSES

LAS COLINAS
Realty and Development Co.

RECEIVED N.P.S.

OCT 13 1995

Petroglyph National Monument

October 6, 1995

Mr. Bob Grant, Chairman
Petroglyph National Monument Advisory Commission
9720-D Candelaria Rd. N.E.
Albuquerque, NM 87112

RE: The Draft Management Plan for the Petroglyph National Monument

Dear Mr. Grant:

I am a native New Mexican, born and raised on a ranch that now constitutes a portion of the land that is proposed to be a part of the Petroglyph National Monument (hereinafter referred to as the "Park"). The Peidras Marcadas Canyon-Alameda Land Grant area, which the City of Albuquerque currently owns, was once our property. My family preserved the petroglyphs in this area from 1929 to 1960 as a part of our fenced, private ranch. As you know, this area of the Petroglyph has been recognized as one of the best preserved area of the Park. My family, which includes three Native Americans, has a proud heritage in this Park and were supportive in the original efforts to preserve the escarpment, as well as the Volcanos to the west of the escarpment where the Petroglyphs are located.

In the early to mid-1980's my family was actively involved in the location of the extension of Paseo del Norte and Unser Boulevard through the Park (see history attached). Several previously existing roads that were in the area of the Park were taken out and consolidated into these two highways to preserve and protect the Park as much as possible and still not create a negative environmental impact on the surrounding neighbors of the Park. These new highway alignments were a product of many public meetings involving representatives of the City Open Space Division (the originators of the Park), Ike Eastvold of FORAP, the Sierra Club, the All Indian Tribes (their MEGCOG member), Paradise Hills, Taylor Ranch, the National Park Service, and all of the adjacent land owners and governmental agencies. In the final conclusion, all of the above representatives agreed that the extensions of Unser Blvd. and Paseo del Norte Blvd. were the most environmentally sensitive transportation solutions for the Park, the neighborhoods, and the other adjacent land holders surrounding the Park. The Park and the Community were all together on these transportation planning issues until the National Park Service took over the management of the Park (see recent alternative Paseo del Norte/Unser Blvds. alignments map enclosed).

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I am disappointed to see in the most recent draft of the Park Plan (August 1995), that the National Park Service continues to refuse to honor the Park's original obligations to cooperate with our Community regarding the transportation network everyone originally agreed to, as well as other vital issues such as regional drainage, location of Park visitor and access locations outside of the Taylor Ranch neighborhoods (which should in my opinion be located above the escarpment as a part of the 4,000+ acres the Park owns that have no Petroglyphs on it), etc.

As far as I can tell, very little, if any, input from the Community (see page 107 of the Draft Plan for instance), and the City of Albuquerque Planners has been incorporated into this Draft Management Plan for the Park. If this attitude had existed in the late 1980's when the Park supporters had envisioned a National Monument, this Park would not have gone into federal ownership. No one involved in the early planning stages of this Park ever imagined the National Park Service would be so irresponsible and uncooperative to our Community.

The August 1995 Draft Management Plan, as proposed, has some merits. But in light of the above referenced problems with transportation, drainage, and parking issues, please send this proposed plan back to the National Park Service and ask them to review the plan in consideration of the original commitments made to our Community and to restore the peace that was originally negotiated when this great Park was created.

Sincerely Yours,



John F. Black
Representing the Black Ranch Family

cc: Mayor Martin Chavez
Congressman Bill Richardson
Senator Pete Domenici (Attention Tony Gallegos)
Douglas Eury, Acting Superintendent, Petroglyph National Park
Petroglyph National Monument Advisory Commission

encl:

COMMENTS

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THE HISTORY OF THE PLANNED PASEO DEL NORTE HIGHWAY EXTENSION WEST OF COORS BOULEVARD CONNECTING TO FUTURE PASEO DEL VOLCAN

I. THE HISTORY OF THE RIGHT OF WAY OWNERSHIP OF PASEO DEL NORTE EXTENSION

The current plans for the Paseo del Norte Boulevard extension west of Coors Boulevard lies within the historic Alameda Land Grant; the land grant immediately north of the Atrisco Land Grant.

The Alameda Land Grant was established in 1710 by a grant from the King of Spain to Francisco Montes Vigil and his heirs. Later on in that same year, the Alameda Grant was sold to Juan Gonzales, a Captain in the Spanish army.

In 1713, the transfer of the Alameda Grant to Juan Gonzales was approved by the Governor of the Province of New Mexico.

The title to Mr. Gonzales for the Alameda Land Grant was also referred to as perfected title in the treaties between the King of Spain and the Mexican Republic in 1821 and, the Treaty of Guadalupe of Hildalgo and the United States in 1848.

In 1848, the Treaty of Hildalgo and the United States set out the Native American Indian Reservation claims in the adjacent areas, including the Sandia Indian and Isleta Indian Reservations. There were no claims made at this time by any of the local Native American Indian tribes of any interest in the Alameda Grant properties for worship purposes or any other reason.

On December 16, 1892, in accordance with the Act of Congress dated March 3, 1891, entered into a written decree that confirmed the legal ownership status with the heirs of Juan Gonzales.

In 1920, the United States issued a patent to the heirs of Juan Gonzales and Francisco Montes Vigil.

In 1919, the Alameda Grant was sold to the San Mateo Land and Cattle Company.

In 1929, the Albert F. Black Family acquired title to 20,500 acres of the Alameda Land Grant. This portion of the Alameda Land Grant extended from the west bank of the Rio Grande River to the "Ceja" area or the west boundary of the Alameda Grant which lies approximately four miles west of the small portion of Alameda Grant

COMMENTS

RESPONSES

property that is being acquired for the Petroglyph Park. The original holding of the Alameda Land Grant extended east to the base of the Sandia Mountains, just south of the Sandia Indian Reservation. The 20,500 acres of the Alameda Grant purchased by the Black Family was completely fenced and maintained as private ranch land prior to and subsequent to its purchase. This land had been under continuous private ownership and ranched by private interests since 1710, including the Piedras Mercedas Canyon area of the Black Ranch.

In 1960, the Albert F. Black Family sold 8,500 acres of the Black Ranch in the Alameda Grant to U.S. Land Corporation, the parent company of Horizon Corporation, which developed Paradise Hills. The Black Family reserved one-half of the mineral and access rights to its remaining properties in the Alameda Grant through the entire 8,500 area tract sold to U.S. Land Corporation for the benefit of the remaining undeveloped portions of the Black Ranch.

In the mid to late 1980's, the Bellamah Corporation purchased land in the Alameda Grant from Horizon Corporation and dedicated portions of the planned right-of-way for Paseo del Norte to the City of Albuquerque as a platting requirement. This land was east and west of the existing Golf Course Road.

In 1990, the City of Albuquerque and the National Park Service began to acquire a portion of the Alameda Grant property formerly owned by the Black Family for the northern portion of the proposed Petroglyph National Monument in this area.

II. THE HISTORY OF THE APPROVALS OF THE ALIGNMENT OF PASEO DEL NORTE WEST OF COORS BOULEVARD

1961 - Paradise Boulevard was built as the principal access from Coors Boulevard west to Paradise Hills and other Alameda Grant lands west of Paradise Hills in the Alameda Land Grant area.

1980 - Hearings begin at the Middle Rio Grande Council of Governments ("COG") and its Urban Transportation Planning Policy Board ("UTPPB") to study the potential of moving the Paradise Boulevard principal arterial west of Coors Boulevard (NMSH #448) to the south boundary of the Alameda Grant. COG is the federally mandated, regional transportation board that approves all major highways in this region.

No opposition was recorded to this move of the principal east-west arterial from Paradise Boulevard to the currently proposed Paseo del Norte location through the narrowest portion of the Petroglyph Park.

COMMENTS

RESPONSES

Endorsing the current planned move of the principal east-west access from Paradise Boulevard to the currently proposed alignment of Paseo del Norte during the COG/UTPPB Hearings were:

1. Ike Eastvoid - Friends of the Albuquerque Petroglyphs (FOTAP)
2. The Albuquerque Chapter of the Sierra Club
3. The COG representative of the All Indian Council, Edward Parsano of the Pueblo of Sandia.

1981 - On March 20, 1981, the UTPPB adopted resolution R-81-5, which designated the study area to officially relocate Paradise Boulevard, which included an area between Paradise Boulevard and the south boundary of the Alameda Land Grant.

In this same resolution, Calle Nortena was also proposed to be an east-west crossing through the northern portion of Petroglyph Park on the official 1981 Long Range Major Street Plan ("LRMSP").

1985 - The UTPPB committee of COG passed resolution R-85-3 which deleted Paradise Boulevard as the official principal arterial west of Coors Boulevard and officially designated Paseo del Norte in its currently planned alignment through the Petroglyph Park as the new east-west principal arterial on the LRMSP of COG.

The Calle Nortena east-west road remained as another east-west road through the Petroglyph Park in the Atrisco Land Grant area.

1986 - The Environmental Planning Commission approved the formal Federal Environmental Impact Study for the currently planned Paseo del Norte Boulevard.

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COMMENTS

RESPONSES



*Deiq Eury, Acting Superintendent
Petroglyph National Monument*

League of Women Voters of Albuquerque/Bernalillo County

October 19, 1995

TO: PHILLIP R. GRANT, CHAIRMAN, AND MEMBERS
OF THE PETROGLYPH NATIONAL MONUMENT
ADVISORY COMMISSION

SUBJECT: PETROGLYPH NATIONAL MONUMENT
DRAFT GENERAL MANAGEMENT PLAN

The League of Women Voters of Albuquerque/Bernalillo County has reviewed the August 1995 Draft General Management Plan/Development Concept Plan, Environmental Impact Statement which was prepared by the National Park Service for the *Petroglyph National Monument*.

In considering the four Alternatives presented, we found many problems with Alternatives 3 and 4. Alternative 3, which seems to promote access to every area of the Monument, does not do enough to protect sensitive petroglyph/archeological sites or environmental areas. We are particularly in opposition to the loop road proposed for the mesa in the southern part of the Monument and the roads leading to the northern and southern geologic windows. Alternative 4 does not provide adequate protection for the Monument due to the limited improvements and supervision of the area. We could not support the adoption of either Alternative 3 or 4.

Alternatives 1 and 2 are, in general, both good plans. Alternative 2 does, of course, provide the most protection for the Monument, but may limit visitor access more than necessary. Alternative 1 has many good features but may provide open access to some areas where limited access is more appropriate.

(505)884-8441 - 5015 Prospect NE Albuquerque, NM 87110

COMMENTS

RESPONSES

We recommend that the final plan be a combination of Alternatives 1 and 2 with attention to the following features:

VISITOR CENTER - It is important that the main visitor center be located where visitors have ready access to good petroglyph viewing areas. Trails to these areas should be of different lengths and different levels of difficulty. There should be a trail which would allow persons with physical problems to proceed directly from the visitor center to a viewing area. Families with young children could also benefit from this arrangement. It seems that the Boca Negra site may have these advantages. The Lava Shadows site appears to be some distance from areas with a concentration of petroglyphs.

It may also be prudent to have the Heritage Education Facility at the main Visitor Center so that those inclined to do so may learn more about the petroglyphs, other archeological sites and the geology and ecology of the volcanoes and the mesa. If the facility is located at a different site, many may never go there.

Consideration must be given to the route by which most visitors will arrive at Petroglyph National Monument. If it is probable that most tourists will be coming on I-40, it would seem advisable to locate the main center on a route that is as convenient as possible to that freeway. The route chosen should disrupt local traffic as little as possible.

Transportation - In addition to transportation for guided tours, some type of shuttle service should be available between the main visitor center, other petroglyph viewing areas, the Piedras Marcadas site and the Overlook areas. This would not only assist the visitors but help reduce traffic problems in the area. A reasonable fee could be charged for the shuttle.

Trails - Multi-use trails on the mesa should avoid the volcanos and entry into the geologic windows. Permits should be issued to horseback and bicycle riders for use of these trails. Trails designated for the mesa top should follow existing roads, trails or pathways wherever possible and should remain soft-surfaced. In areas where multi-use trails may negatively impact the resource, pedestrian only access may be appropriate. In other sensitive areas, access by guided tour only seems to be the best way to protect the Monument.

COMMENTS

RESPONSES

Geologic Windows - These areas are too fragile for general public access but are of special interest to certain groups. Access should be by guided tours or special permits.

Overlooks - The Overlooks shown in Alternative 1 provide ample opportunity for the visitor to view the volcanos, the mesa, the escarpment and the Rio Grande River. Activities at the volcano Overlook should be restricted to the viewing area.

Ranger Presence - Areas designated for visitor contact facilities or information should have a ranger present if at all possible.

Night Closing - All entrances to the Petroglyph National Monument should be closed at night. This action may not prevent all illegal intrusion, but should discourage casual, opportunistic entry. It would also clearly establish the policy that unauthorized persons should not be in the Monument at night. It would also make it easier for neighbors or other observers to know that any activity seen in the monument after dark may be cause to notify the Monument's ranger station.

Thank you for giving us the opportunity to comment on the Draft Management Plan. We shall follow the progress of the Plan with great interest.



Sandra Browne
President

Copy to:

Doug Eury, Acting Superintendent
Petroglyph National Monument

COMMENTS

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Thank you for giving us the opportunity to comment on the Draft Management Plan. We shall follow the progress of the Plan with great interest.



Sandra Browne
President

Copy to:

Doug Eury, Acting Superintendent
Petroglyph National Monument

COMMENTS

RESPONSES

National Parks and Conservation Association

SOUTHWEST REGIONAL OFFICE

November 6, 1995

Mr. Doug Eury, Acting Superintendent
Petroglyph National Monument
4735 Unser Blvd. NW
Albuquerque, NM 87120

Dear Superintendent Eury:

The National Parks and Conservation Association (NPCA) appreciates this opportunity to comment on the draft General Management Plan/Environmental Impact Statement for Petroglyph National Monument. NPCA is a 450,000-member, nonprofit citizens organization dedicated to the protection and enhancement of the National Park System.

Petroglyph National Monument is a wonderful place, a complex of natural and cultural resources that should be carefully protected, managed, and nurtured. A rich, multi-cultural heritage, much of which is still a *living* heritage, is present. The monument is a "sacred landscape" because of its significance to the Pueblo community, and it also has tremendous value to the Atrisco heirs. By virtue of its inclusion in the National Park System, however, Petroglyph National Monument is truly sacred to all Americans. The partnership between various agencies on which monument management is based is also a partnership with the public, and contract with present and future generations. Located in such close proximity to a large urban area, in a state in which the number one industry is presently tourism, the monument offers tremendous opportunities for education and inspiration.

While the NPS has been present at Petroglyph National Monument for over five years, completion of the monument's first General Management Plan (GMP) will more formally launch the National Park Service and the City of Albuquerque on a course for the future, and set a vision and challenge before the public. As such, it is extremely exciting to have the monument's first GMP out in draft form. While we differ with some of NPS's preferred actions, NPCA believes that, overall, the draft GMP does an excellent job of framing the major planning and management issues affecting the park; it is packed with useful information, discussion, and references.



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NPCA supports a modification of Alternative 2. While our preferences are outlined below, some of the major points we raise in these comments have also been transmitted in various forms to the National Park Service over the past three years. NPCA notes at least four other formal communications that we essentially consider input to the GMP, including: our "Newsletter Response Form (March, 1993), and three letters to Superintendent Stephen E. Whitesell (February 9, 1994; March 15, 1995; and June 9, 1995). In addition, NPCA testified about the draft GMP before the Petroglyph National Monument Advisory Commission on October 19, 1995.

Before discussing our preferred alternative for facilities and management, NPCA has the following comments on other sections of the draft GMP/EIS:

Introduction

NPS sets the tone for monument management early in the document. In particular, NPCA commends NPS for explaining the decision not to use the term "rock art" (p. 4), since the petroglyphs and their context are much more than visual art. We are pleased to see the statement that "The entire west mesa landscape. . . is considered sacred and significant to the Pueblo people" (p. 3) up front in the document as a reference point for NPS proposals. Likewise, it is important to establish the fact that the monument's natural resource values go beyond the "ordinary," since the "microhabitats along the escarpment that retain warmth and moisture. . . provide shelter for a greater variety of species than the surrounding terrain." (p. 10) As some of the last remaining "upland" habitat in this part of Albuquerque, the monument is likely to become even more significant ecologically as surrounding lands are extensively modified and ecologically degraded.

NPCA also basically agrees with the statements of purpose and significance for the monument. (p. 16) The monument's enabling legislation (P.L. 101-313) also suggests another important purpose, which we recommend be added to this section. One of the main purposes of the monument is "the urgent need to protect the cultural and natural values of the area from urbanization and vandalism." [P.L. 101-313, Section 101(b)(9)].

Planning Issues and Concerns

NPCA supports most of the discussion in this section (p. 19-25) that were identified through the planning process. Under the heading "Federal and City Policies," we support the statement that "where local laws and policies conflict with federal laws, federal laws take precedence" (p. 23) as it is clear from Section 105 of P.L. 101-313 that this was the intent of Congress. Regarding the brief description of the Double Eagle Airport (p. 23), NPCA suggests the adding a statement at the end of the second paragraph to clarify that

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the required environmental impact analysis documents have not yet been prepared. Under the heading of "Summary of Related Plans and Projects," NPS should reference and summarize the City of Albuquerque Westside Strategic Plan, which was recently adopted by the City and County Environmental Planning Commissions, and should be adopted by the City Council prior to the completion of the monument's GMP.

Actions Common to All Alternatives

Partnership Jurisdiction, Roles and Responsibilities (p. 30): Management of Petroglyph National Monument is based on partnership concepts. NPCA generally supports the thrust of the GMP's description in this section. Coordination. Federal laws that generally apply to units of the National Park System shall apply to the monument. (p. 30) NPCA believes the City of Albuquerque Open Space Division should ultimately assign specific personnel and resources to Petroglyph National Monument. (p. 30) While the City has been a tremendous partner in the acquisition of the monument area, a much more steady and dedicated presence will be necessary on City-owned lands within the monument. The final GMP may need to list the Intermountain Field Director instead of the Southwest Regional Director as the Secretary of the Interior's designated representative.

2

Cultural Resource Management (p. 30-31): NPCA strongly supports the goal of managing to "provide the greatest degree of protection and preservation and to make all possible efforts to ensure that archaeological resources would not be disturbed or removed." (p. 31) We agree that because "cultural resources are nonrenewable resource, any degree of degradation is considered unacceptable." (p.32) A basic point that is not emphasized enough here, or elsewhere in the GMP, is the importance of the resource condition inventories and the damage assessment survey that are essential steps in cultural resources management. Appendix G and the final GMP should make some effort to emphasize certain actions as priorities for cultural resources management. Moreover, NPCA believes that the above quotations from the GMP, which set the highest standard for cultural resources management, actually tend to support our preferred alternative for monument development and management, instead of the NPS's preferred alternative.

Piedras Marcadas Pueblo Ruin (p. 33): NPCA agree with the NPS's basic approach of proceeding with extreme care with this resource. Further study is necessary and a ruins stabilization plan should be prepared to address issues such as drainage and vegetation. Although NPS states that non-invasive research techniques and no excavation are favored treatments, NPCA reads this section as still permitting some consideration of excavation research, if it can be conducted in such a way that is acceptable to Pueblo community and without unacceptable resource impacts. While the wording of this section is acceptable for

1. A summary of the *Westside Strategic Plan* is in appendix E.
2. The final plan has been revised.

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future considerations of all approaches, we do wish to underscore the importance of unlocking some of what could be a vast interpretive potential at this site.

Directing Visitor Use/Designing and Locating Facilities (p. 37-38): NPCA favors the NPS goal of directing visitors to areas that best accommodate use, requiring visitors to stay on trails, and other direct and indirect measures to protect petroglyphs (low barriers, viewing areas, etc.). We also support a spectrum of visitor use/experience approaches, including exhibits, ranger presence, permits, and guided tours. It should be stated that NPS will strive to match an appropriate technique to each area in the monument.

American Indian Relationships (p. 39): NPCA supports a strong, cooperative program with Indians and other culturally affiliated groups. The statement that "All monument programs should reflect informed awareness, sensitivity, and serious concern for the traditions, cultural values, and religious beliefs of American Indians who have ancestral ties to the monument" (p. 39) is an essential guiding principle for management, yet we feel that the NPS preferred alternative conflicts with this goal. We favor free, unescorted access for Native Americans, special provisions to protect religious uses, and provisions for the appropriate collections of medicinal plants and herbs

Natural Resources Management (p. 40-42): This section is a good summation of the appropriate management approach and some of the needs in this area. As for cultural resources management, however, NPS needs to give the public some sense of priority for projects listed in Appendix H.

Stormwater Management (p. 43): NPCA supports the proposed approach suggested by the NPS, and sees no need for major changes to this section. NPCA does not characterize this issue as one in which the monument will represent a six-mile "obstacle" to managing stormwater in an urban environment. But there are clear responsibilities of all parties, particularly those that surround the monument, to take monument values into account. A strong partnership between NPS, the City, AMAFCA, and private parties is needed. We also recommend development of adequate information and education materials that will assist the private sector to comply with monument goals for stormwater management.

Interpretation and the Visitor Experience (p. 43-44): As stated above, NPCA supports a range of visitor experiences as outlined here. We are concerned, however, that this statement of intent will not match the outcomes from the NPS's preferred alternative, which will tend to erode or eliminate the higher-quality experiences. NPCA supports an integral role in interpretation for the Pueblos and Atrisco land grant heirs. The GMP should be revised, however, to clarify that such involvement should not be constrained by the assumption that everyone who might contribute to the interpretive program needs to be NPS "staff." Volunteer docents and other fee-for-service arrangement have excellent

- 3. The relative priorities for further studies (in appendix H in the draft plan) are not identified in the plan so that priorities can be adjusted to address both immediate and long-range management needs and to be able to respond to the changing availability of funds and creative approaches to combine projects.
- 4. Volunteer docents and other fee-for-service arrangement are approaches that are being evaluated and will be used where appropriate.

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4 potential at the monument. In fact, it may be more cost-effective to develop more partnership services in this area.

NPCA is concerned that NPS may fail to take advantage of the perfect opportunity to design the visitor experience and interpretive experience around an effective shuttle system from the very start. NPCA also supports concepts for linking the Indian Pueblo Cultural Center and City transportation networks to the monument. If the monument experiences anything like the predicted visitation, such systems will be extremely useful and could help NPS avoid the classic problems that gradually emerge at developing parks with growing visitation, namely congestion, excessive reliance on the private automobile, incremental expansion of development in response to demand, and deterioration of the visitor experience. NPCA believes that NPS should commit much more firmly to some of the concepts discussed under this heading, and that the final GMP should include a supplement that focuses on some preliminary shuttle scenarios and how they might fit in with monument development. This might reduce difficulties of adapting a shuttle system to monument operations in the future.

Carrying Capacity and Visitor Impact Management (p. 47): Dealing with visitor impact management concerns (VIMS or VERP) is a legislative mandate for the National Park Service (P.L. 95-625), one that was reiterated in the enabling legislation for Petroglyph National Monument. Section 108(a)(1) of P.L. 101-313 requires the GMP to include "a statement of the number of visitors and types of public use within the monument which can be accommodated in accordance with protection of its resources." This was the very first required component of the GMP. NPCA is pleased to see that the NPS has moved away from a pattern of largely dismissing this issue in planning documents. However, judging from our review of several NPS planning documents within the last six months (including this one), NPS has simply developed standard boilerplate language that attempts to meet these legal requirements, largely by relying on preliminary management zoning and concluding that "an approved carrying capacity methodology is several years away." NPCA commends NPS for identifying zone categories and undertaking some preliminary zoning in Alternative 1, though we see the need for some adjustments, the possibility for which the GMP should recognize. We are more confused, however, as to why none of the other Alternatives include VIMS zoning; they clearly should.

5 The larger problem is that the current NPS approach pushes VIMS decisions off to the indefinite future, with essentially no firm commitments to address the issue. NPCA recognizes that deploying a VIMS methodology is not an easy task, nor can it be accomplished overnight, but addressing VIMS is a clearer legislative requirement and a higher priority than constructing a single building in the monument. Yet the carrying capacity study is buried in Appendix H and line item needs in this area appear nowhere in

5. The final plan has been revised to indicate that the description of zones applies to alternatives 1, 2, and 3. The relative changes in zones for each alternative do not require additional maps.

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the draft GMP. This is in a draft GMP in which the NPS has a preferred alternative with a price tag over \$22 million! VIMS is not even part of the Phase I priorities for the monument. In fact, no resource studies at all are even included in the \$22 million list of projects that comprise the preferred alternative. This is unacceptable and probably guarantees that NPS will remain in violation of the law for years. Some significant changes to the final GMP are needed to elevate NPS's commitment.

Boundary Adjustments (p. 48-50, p. 81): NPCA supports the draft GMP recommendations in this section. NPCA also supports the addition of 10.5 acres south of Boca Negra Canyon to better accommodate the visitor center complex and protect views, and the addition of 129 acres between 81st Street and the present monument boundary. Both of these additions are critical for the effective management of the monument, and the protection of sensitive resources. We support minimum cluster development for Volcano Cliffs.

Monument Fee Determination (p. 51): The final GMP should reverse the draft's proposal not to charge fees at Petroglyph National Monument. NPCA understands the criteria for charging fees, but this is one of the most contrary recommendations in the entire draft GMP. The trend nationally, and across the National Park System, is toward more fee collection, particularly as federally-appropriated operating funds are in question. There are legislative changes most certainly in the offing for the NPS that will promote this even further, and NPS leadership is pushing hard for new authorities to collect fees. There are plenty of places in the monument that easily lend themselves to fee collection. The American public actually does not mind paying reasonable park entrance fees. The concept of an entrance fee discouraging use of the visitor center is absurd, since similar fees are collected at dozens of NPS visitor centers. Clearly, there is a need to arrive at a common and equitable fee collection and distribution arrangement with the City, not to drop the issue and simultaneously deprive NPS of an important revenue source.

Planning and Technical Assistance for Adjacent Lands (p. 51): This is a critical program for the monument. NPCA is concerned, however, that commitment to it is contradicted by recent NPS actions, which have largely eliminated this function at the monument. This activity is a top priority for NPS to restore now, with or without a GMP.

Access for Visitors With Disabilities (51-52): NPCA supports NPS access policy for disabled visitors, who should have plenty of good opportunities to experience the monument. Some access points could be dedicated specifically to persons with disabilities, such as the access point to Piedras Marcadas unit between the Las Marcadas I and II subdivisions.

- 6. See comment #3. Resource studies will be conducted as funds and staffing are available.
- 7. The "Monument Fee Determination" section (under "Actions Common to All Alternatives") has been revised to allow for fees to be collected.

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The Alternatives, Including the Proposed Action

8 Despite a rather extensive effort by NPCA, Friends of the Albuquerque Petroglyphs, a Blue Ribbon Panel of experts (which included an ex-NPS director and regional director), NPCA is not satisfied that the draft GMP/EIS presents an acceptable range of alternatives. With the exception of the "No Action" alternative, all of the alternatives are weighted too heavily toward development. The inadequate range of alternatives presents problems with NEPA, plus some specific proposals (such as recreational trails) lack statutory basis in the enabling legislation.

NPCA instead supports a modified Alternative 2, which we refer to as a "Protective Use" option, and is generally outlined on the enclosed map. This is not to say that NPS has not presented some good planning concepts and made some meaningful decisions in terms of preserving this sacred landscape (e.g. location of the major visitor center, treatment of the volcanoes and the geological windows). NPCA just does not find all the pieces in an arrangement that fits. We believe that by selecting and combining certain components from all of the alternatives, our proposal is consistent with P.L. 101-313 and provides better protection for natural and cultural uses, all at a greatly reduced cost to the public. Most of the recommendations made by the Petroglyph National Monument Advisory Council at their meeting of October 20, 1995 generally parallel NPCA's recommendations. NPCA requests that our recommendations be evaluated as a package, or another alternative. Since most of its components have already been addressed as part of the draft GMP/EIS, this should not involve an undue burden on the NPS.

The major principles guiding our recommendation are as follows:

1. Existing structures and previously disturbed areas should be used (and adaptively reused) to minimize environmental disturbance.
2. Major facilities and developed areas should be combined wherever possible to minimize impacts and reduce construction and long-term maintenance costs.
3. Access to petroglyph areas should be carefully controlled, and should include pedestrian access only, except for persons with disabilities.
4. The overall management approach should be consistent with NPS's stated intentions to respect this sacred landscape and the wishes of the Indian community, and other culturally-affiliated groups.

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8. The alternatives presented do provide an adequate range to allow for the evaluation of impacts and, if necessary, the selection of various alternative components in the final plan or record of decision.

NPS management policies state that the National Park Service will encourage recreational activities that are consistent with applicable legislation. The National Park Service will not allow a recreational activity in a park or in certain locations within a park if it would involve or result in (1) inconsistency with the park's enabling legislation, (2) unacceptable impacts on visitor enjoyment due to interference or conflict with other visitor use activities, (3) consumptive use of park resources, (4) unacceptable impacts on park resources or natural processes, or (5) unacceptable levels of danger to the welfare or safety of the public, including participants.

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5. NPS should establish a management framework that "provides the greatest degree of protection and preservation and to make all possible efforts to ensure that archaeological resources would not be disturbed or removed" (p. 31) and offers a similarly high standard for natural resource protection.

The major components of the "Protective Use" alternative are as follows:

Major Facilities and Developed Areas (North to South)

NPCA favors consolidating the three major proposed developments (visitor center, heritage education center, and rock art research center) into two locations.

Piedras Marcadas: NPCA recommends a hardened, self-guiding trail from a contact station to the major petroglyph concentrations north of the arroyo. This could follow an old existing road. A connecting trail from the access point between Las Marcadas I and II could provide convenient access for persons with disabilities. Solitude subzone designation is appropriate for the inner canyon.

Boca Negra Canyon: NPCA supports location of a new visitor center at Boca Negra Canyon that would serve as the NPS's prime facility. An expanded complex of hardened, self-guided trails with wayside exhibits (supplemented by ranger presence when available) could be sited in this area (formerly Indian Petroglyph State Park). NPCA favors closure of Unser Blvd. through Boca Negra Canyon. South of Boca Negra, NPS should utilize the existing facilities at the intersection of Unser Blvd. and Montano Road. This location will be very close to the main visitor center, yet will reduce intrusions from maintenance activity and vehicles, while still being within easy distance of Lava Shadows, Rinconada, and Mesa Prieta.

Lava Shadows: The existing interim visitor center and other properties at this location provide a great deal of space that could accommodate a variety of functions. NPS has already refurbished a ranger headquarters here, and the Cohen residence could be utilized as the heritage education center and petroglyph research center. With construction of suitable parking, the Las Imagines area should be used as a trailhead/staging point for Rinconada Canyon. Self-guiding trails along the base of the escarpment toward Rinconada, and up the Aberlee road cut could access petroglyph locales. An overlook point north of Lava Shadows as outlined in Alternative 1 and 2 serves no useful purpose, as visitors would be primarily viewing the Santa Fe Village development. Another possibility, dependent on achieving a successful partnership/cooperative agreement between the parties, is to locate the petroglyph research center completely off-site, perhaps in affiliation with a university such as the University of New Mexico. The Chaco Center presents a successful model. This type of arrangement would also save development costs.

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Rinconada Canyon: Rinconada Canyon should be treated as the "refugium" and most sanctuary-like portion of the monument. We support the "solitude subzone" designation, but favor extending the zone to the mouth of the canyon, instead of including only half. NPCA does not support parking and a visitor contact station at Rinconada, but favors a information kiosk located sensitively on the land. (See NPCA letters to NPS re: Rinconada Canyon, March 15, 1995 and June 9, 1995) The EA for the proposed parking area at Rinconada was never formally approved, yet an information kiosk was installed. We favor relocation of the kiosk to a location less visible from Unser Blvd.

Mesa Prieta: NPCA supports a contact station as outlined by NPS in Alternative 2.

Volcanoes: NPCA supports a visitor information kiosk and overlook as outlined in Alternatives 1 and 2.

Trails and Visitor Access

NPCA recommends hardened, self-guided trails at Boca Negra Canyon, in portions of the Piedras Marcadas unit, and from Lava Shadows to the mouth of Rinconada Canyon. On the mesa-top, we support a limited system of linked trails circling the major canyons, a single cross-mesa trail between Rinconada and Black Volcano, and a trail skirting the south end of the Southern Geologic Window.

NPCA has previously addressed in detail our objections to multi-use (equestrian and mountain-bike) trails on the mesa top. (See letter from NPCA to NPS, February 9, 1994) Our principle objections remain: these trails conflict with the wishes of the Pueblo Indians to minimize intrusions into this sacred landscape, and uses could result in natural and cultural resource degradation. In addition, these 8-foot wide, hardened gravel trails would cost over \$1.7 million to construct. This money would be better spent on resource programs, instead of resulting in committing the NPS to a permanent dedication of resources and staff to controlling and monitoring these uses. NPCA believes that mountain bike/equestrian uses conflict with the purposes of the monument as identified by NPS in the draft GMP, and have no statutory basis in the enabling legislation, since the word "recreation" was specifically omitted from the legislation and the Senate report language.

NPCA believes that access to all petroglyph areas should be carefully controlled, and access to a few special areas in the monument should be controlled even more rigorously. This will help to provide a nice spectrum of experiences that NPS seeks. We oppose NPS proposals for eleven largely uncontrolled neighborhood access points, favoring instead the plan in the "Protective Use" alternative that would establish major access points, closely staffed. NPCA recognizes that a strong partnership between the NPS and nearby

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NPCA Comments on Petroglyph NM draft GMP/EIS
November 6, 1995
Page 10 of 10

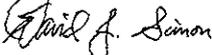
residents is key to the monument's future. We believe, however, that allowing indiscriminate access at this point, when NPS still lacks adequate staff and volunteer programs are just beginning, will establish use patterns that will be difficult to change and will increase the likelihood of new vandalism and resource impacts. There may be the possibility of revisiting this issue in the future.

NPCA favors an approach that makes extensive use of visitor orientation, NPS staff, volunteer docents, Native American, and other guides wherever possible. It is difficult or nearly impossible for the average visitor, who may be completely uninformed about the area's resources or the religious values of the monument, to have a truly high-quality experience and be respectful of the monument without adequate orientation. Access to the dense concentrations of petroglyphs at Mesa Prieta, and to the inner portions of Rinconada Canyon and Piedras Marcadas Canyon, must be the most carefully controlled. NPCA favors a permit system to regulate and monitor use in these three areas, and preserve high-quality, uncongested conditions. NPCA also recommends guided access in the main to these areas. However, in order to preserve opportunities for more self-discovery and solitude experiences, we could foresee a program by which some first-time visitors and some repeat visitors get a "certification" to visit these areas unescorted (in conjunction with a strict permit system limiting numbers). This would necessarily involve a credible orientation and training program that would guarantee a certain basic understanding and level of respect for the monument.

Managing Petroglyph National Monument will be a continuing learning experience for the National Park Service and the public, NPCA included. We feel, however, that choosing the "Protective Use" alternative will allow the NPS the best opportunity to learn, while not committing the agency to overdevelopment and uses that compromise resources before we understand them, or it is too late entirely.

Thank you for considering the association's views.

Sincerely,



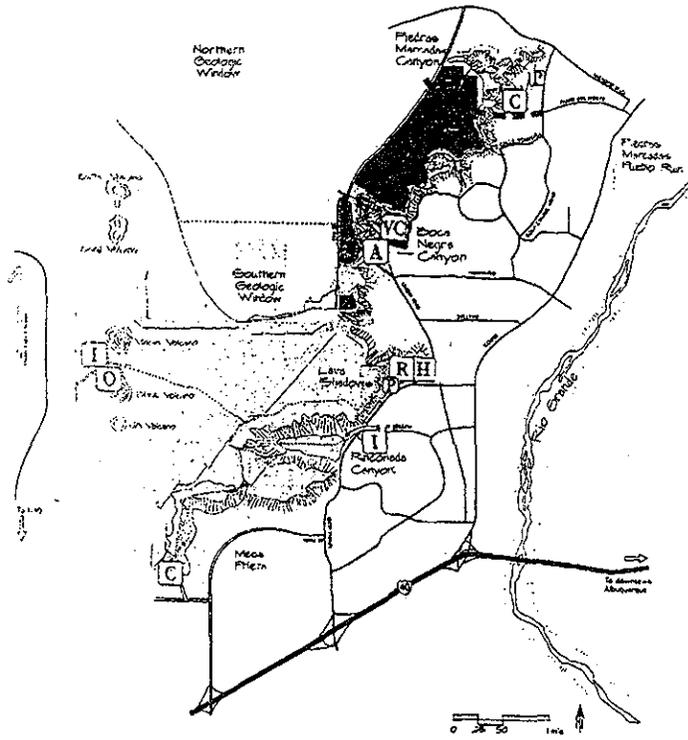
David J. Simon
Southwest Regional Director

attachment

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Alternative 2 - Modified for Protective Use
 Petroglyph National Monument
 United States Department of the Interior
 National Park Service
 2007, revised 11/11/2008

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Al



**Paradise Hills
Civic Association, Inc.**
5901 Paradise Blvd. NW
Albuquerque, New Mexico 87114

September 29, 1995

Superintendent, Petroglyph National Monument
4735 Unser Boulevard NW
Albuquerque, NM 87120

Dear Sir:

The comments listed below were approved by the Paradise Hills Civic Association at a General Meeting on September 28, 1995. I was instructed to forward them to you as soon as possible.

Sincerely,

William W. Fuller

William W. Fuller, President
Paradise Hills Civic Association

COMMENTS ON AUGUST 1995 DRAFT MANAGEMENT PLAN
PETROGLYPH NATIONAL MONUMENT

COMMENT 1. Page 4, para. 1 - "Congressional acts are exempt from compliance with the National Environmental Policy Act".

Page 141, para. 6 - "Congressional actions are not subject to the National Environmental Policy Act."

RESPONSE: This statement is in error. The Council on Environmental Quality's (CEQ) Regulations for implementing the procedural provisions of the National Environmental Policy Act are very explicit on this point. Para. 1502.3 covers the statutory requirements for statements. This para. states: "As required by sec. 102(2)(C) of NEPA environmental impact statements are to be included in every recommendation or report". It goes on to list several categories of actions, one of which is for legislation. Para. 1508.17 covers Legislation. "Legislation" includes a bill or legislative proposal to Congress developed by or with the significant cooperation and support of a Federal agency". Para. 1506.8 covers Proposals for legislation. This para. states: "A legislative environmental impact statement shall be considered part of the formal transmittal of a legislative proposal to Congress". It

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also states that "The statement must be available in time for Congressional hearings and deliberations." and "The legislative statement shall be prepared in the same manner as a draft statement, but shall be considered the "detailed statement" required by statute".

However, it goes on to list several exceptions where the legislative statement is not allowed, and where the full EIS procedure is required. One of these exceptions covers the formation of the Petroglyph Monument. That is, "Legislative approval is sought for Federal or federally assisted construction or other projects which the agency recommends be located at specific geographic locations". Since the National Park Service recommended the specific geographic location of the Monument, it appears that the full EIS procedure should have been followed before formation of the Monument was even allowed. The Park Service did not even file a legislative EIS, and consequently is presently operating in violation of Federal law.

If the above items are not sufficient to prove the statements on pages 4 and 141 in error, para. 105(e) of the Act forming the monument states that "Federal laws generally applicable to units of the National Park System, including but not limited to, the National Environmental Policy Act of 1969 and the Archeological Resources Protection Act of 1979, shall apply to the monument." Consequently, the impacts of designation of the monument should be covered in the current document, particularly since they have never been previously discussed as required by the above laws.

An internal NPS memo, dated February 2, 1993, was obtained under the Freedom of Information Act. The memo was written to the Southwest Regional Director from Gayle E. Manges, SW Region Field Solicitor, and on page 2 references Section 105(e) as pertaining to the Monument, and on page 3 states, "---in accordance with the organic laws relating to the Park Service including NEPA and certain other Federal laws." Page 3 also contains the statement that, "The Enabling Act specifically incorporates NEPA which became as applicable to actions affecting the Unit as to actions affecting federal lands within other parts of the Monument."

From all of the above information, there is no question that the Petroglyph National Monument is required by law to follow the provisions of the National Environmental Policy Act.

COMMENT 2. Page 4, para. 3 - "---the more than 15,000 prehistoric and historic petroglyphs ---"

Page 114, para. 6 - "-- of the more than 15,000 petroglyphs---"

Page 118, para. 5 - "--- more than 15,000 petroglyphs---"

RESPONSE: The only definitive study of which we are aware which counts the petroglyphs is Las Imagines, which shows that there are less than 12,500 petroglyphs. If there is additional information available to show the presence of another 2,500

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1. The management plan is in compliance with the National Environmental Policy Act (NEPA). The legislation that resulted in the creation of Petroglyph National Monument was proposed by members of Congress, not the National Park Service. It is not the purpose of the management plan to analyze past congressional actions. The National Park Service only does environmental analysis on legislation that the agency proposes or actions that the agency proposes. The NEPA process is intended to provide information so that the decision makers can make informed decisions. The decision to create the monument has been made, and it would serve no purpose to analyze past legislation.
2. Please refer to the legislation establishing the monument, Public Law 101-313, section 101, (b)(1). The description of more than 15,000 petroglyphs is based on an estimate and represents the knowledge of the monument and the difficulty in counting individual petroglyph images.

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petroglyphs it should be so noted in the document, if the 15,000 is an estimate, this too should be noted.

COMMENT 3. Page 14, para. 2 - "With the signing of a binding agreement in March 1992 by the city, the state, and the National Park Service, the monument was expanded -".

Page 141, para. 6 - "---and the signing of the binding agreement in 1991."

3

RESPONSE: The National Park Service, city and state have never signed a legal binding agreement as required by the enabling legislation. A SUBSTITUTE JOINT POWERS AGREEMENT signed by the three entities went into effect on 4-15-91 with the final required signature. The provisions of this agreement have to do with the responsibility of each of the three entities for the acquisition and purchase of various sections of land which were intended to be included in the monument and some other standard contract clauses such as Equal Opportunity and Conflict of Interest.

An undated letter from John Cook, NPS Southwest Regional Director, to representatives of the State and City addresses this subject. The letter states that "Prior to this date, we anticipated the need to create a specific, stand-alone document for this purpose. However, separate legal opinions rendered by the State and Federal government's legal counsels indicate that we have already created this needed binding agreement when we signed the Joint Powers Agreement (JPA) establishing land purchase programs for the monument last year. Accordingly, assuming that each party to that JPA agree, we need not complete a separate binding agreement." The letter goes on to say that if all of the parties agree that the JPA meets the requirement then by signing this letter they accept the JPA as the binding agreement required by the enabling legislation. The signatory for the state signed this letter on 3-16-92, however, the NPS and City signatures were undated. Since the NPS was attempting to use this letter to supplement the JPA, it would be classified as an amendment to the JPA. An amendment to the JPA does not become legal unless approved by the New Mexico Department of Finance and Administration, a signature which is not on the letter. Para. 11 of the Substitute JPA signed on 4-15-91 requires this approval by DPA. Consequently, the amendment to the JPA, which the NPS is trying to claim is the binding agreement required by the Enabling Act, is not legal.

It is assumed that both the City and State representatives who signed this document did so because of the statement in the letter that legal opinions by both state and federal legal counsel had determined that the binding agreement had already been accomplished.

A Freedom of Information Act request for a copy of these legal opinions from the NPS, resulted in a letter dated July 19, 1994 which stated that, "There was no written record of a legal opinion from our counsel that the Joint Powers Agreement (JPA) was the same as the binding agreement."

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3. The city's Legal Department and the New Mexico Office of the Attorney General have affirmed the validity of the binding agreement.

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Another Freedom of Information Act request resulted in the discovery of a NPS letter to the State dated April 9, 1991. This letter incloses a copy of the true binding agreement which has been signed by John Cook, NPS Southwest Regional Director. This agreement is totally different from the JPA discussed above. In fact it even discusses the JPA as follows, "— have signed a joint agreement, JPA—, to clarify capabilities and responsibilities for acquiring land to be within Petroglyph National Monument." No other signatures were obtained on this document.

COMMENT 4. Page 22, para. 5 - "However, under the federal laws that apply to the monument, there is no legal authority to allow Paseo Del Norte to cross the monument."

Page 141, para. 5 - "Therefore, according to the laws that apply to units of the national park system, there is no authority to allow Paseo del Norte to be constructed through the monument."

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RESPONSE: If there are federal laws which prohibit this action, please list the specific laws and sections that pertain. We know of no such laws. The prohibition is strictly NPS local policy.

COMMENT 5. Page 22, para 5 - "there are other prudent and feasible alternatives that would meet the transportation needs of the city without extraordinary costs and disruption and that are feasible from a design and engineering standpoint."

Page 169, para. 3 - "Reasonable and viable alternatives exist to the Paseo del Norte extension."

5

RESPONSE: This statement is in error. The Long Range Major Street Plan and the Unser Middle Project EIS made this fact very clear. The agreements made during the monuments formation resulted in at least 3 other roads crossing the escarpment being eliminated from the long range street plan, and being replaced by Paseo. As explained in the above listed EIS, the only other alternative would be to widen Paradise Boulevard. This alternative was dropped because of the almost 400 % increase in cost and the major disruption of the Paradise Hills community. The loss of the two largest churches in the community, the effects on the elementary schools, the increase in traffic near the park and recreational complex, the loss of over 50 single family dwellings and the 15 businesses in the small shopping complex would have major cultural and economic impacts on the community. These points have not even been mentioned in the present document.

The study of the Calabacillas Alternative to Paseo del Norte showed that 37,000 vehicles per day would cross the county line on Unser Boulevard. The NPS's Preferred Alternative calls for the construction of Unser Boulevard without the construction of Paseo del Norte. The document fails to discuss the impacts on Paradise Hills and Taylor Ranch of having

- 4. Refer to 16 USC 1a-1; 1978 that states: "The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the national park system and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress."
- 5. It is not the purpose of this plan / environmental impact statement to evaluate alternatives to the construction of Paseo del Norte because the issue of Paseo del Norte is beyond the scope of this plan. Alternatives have been proposed as part of the *Draft Unser Middle Environmental Impact Statement* and the *Final Unser Middle Final Environmental Impact Statement*. This NPS plan / impact statement does not address city and regional transportation planning issues and does not propose any actions that have an adverse effect regional transportation.

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this many additional vehicles per day using Irving, Paradise and Montano Boulevards to go east to Coors; or for those who continue south past Montano, the effects on the neighborhoods to the south of Taylor Ranch.

We would like for the document to specifically state what other "prudent and feasible alternatives" there are, and to provide a cost estimate for each of the alternatives so that an individual unfamiliar with the area could make a determination whether the costs were "extraordinary" or not. Also, the full impacts of the additional 37,000 vehicles per day traveling on Unser should be addressed. The document also fails to discuss the transportation effects of already approved subdivisions west and north of the Monument. The vehicles from these approved subdivisions, some of which are already under construction, would also use Unser as the preferred route. When the number of vehicles from these areas are added to the current "normal" traffic and the extra 37,000 vehicles from Rio Rancho, a really significant impact will occur. The document should show the estimated numbers which would use the above routes both with and without Paseo del Norte in place.

COMMENT 6. Page 30, para. 5 - "As previously stated, federal laws that generally apply to units of the national park system shall apply to the monument. If there are differing interpretations of the applications of federal laws, the NPS Southwest Regional Director (the secretary of the interior's designated representative to manage the monument) would determine the proper interpretation of federal law and policy."

RESPONSE: This is a Conflict of Interest. If there were a conflict in interpretation, it would be with the National Park Service. Conflicts should be resolved by the General Council or the Courts, not one of the principals involved.

COMMENT 7. Page 105, IMPACTS ON LOCAL VISITORS AND ADJACENT LANDOWNERS

RESPONSE: This section does not even begin to address the impacts of not allowing Paseo del Norte to go through the monument on the community of Paradise Hills. Earlier in the document, on Page 23, the NPS states, "The establishment of the monument by Congress and the signing of the binding agreement created the problems with the Paseo del Norte road corridor - not any actions recommended in this management plan." Since there are no federal laws which prohibit the Paseo roadway, and it is merely a matter of NPS wishes, then this is a management item. The full economic and cultural impacts on the Paradise Hills community as well as the Double Eagle II airport, and the additional costs to the City of Albuquerque in moving the roadway to Paradise Boulevard should be fully evaluated. By not allowing the construction of the Paseo roadway, and by forcing it to be built up Paradise Boulevard, the only way to get to developing areas west of the monument, the NPS will be responsible for all of the impacts caused by this decision. Without the monument in place, Paseo would have been built as shown on the long range

6. The general management plan addresses Paseo del Norte as an issue beyond the scope of this plan. See "Issues Beyond the Scope of This General Management Plan" section for a discussion on Paseo del Norte. The establishment of the monument by Congress and the signing of the binding agreement resulted in the conflict of federal law and local and regional policy, not any action recommended in this general management plan. It is not the purpose or intent of the National Environmental Policy Act or this management plan to resolve citywide and regional transportation issues. The purpose of the management plan is to set forth the basic management philosophy of the monument and the overall approach to resource management, visitor use, and facility development that would be implemented over the next 10-15 years.

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major street plan and none of these impacts would have occurred. The EIS is incomplete without this information.

COMMENT 8. Page 105. - IMPACTS ON ENERGY CONSUMPTION

7

RESPONSE: This draft differs significantly from the earlier drafts in that it fails to discuss how a park visitor will get to the park in the first place. We assume that this was because so many adverse comments were received on this topic in the earlier draft that the NPS hoped that if the topic was avoided completely in this document, they could eliminate these adverse comments. It appears that the Park Service expects all visitors to approach from I-40. If one makes a very basic assumption, that 1/4 of the visitors will approach from each of the 4 major directions, then the visitors arriving from the north will have to drive an additional 10 miles to get to the visitor center. This is the difference in going across Paseo del Norte from I-25 to Unser and then to the visitor center. The Park Service has estimated that 500,000 visitors per year would be using the park by 2010 (page 174). Figuring two people per vehicle, the mileage required in going around the monument to the southern approach would amount to an extra 620,000 miles per year, one way, driven by the 125,000 visitors coming in from the north. If they exited the monument the same way, this figure would rise to 1,240,000 miles per year. This is a major energy consumption which should be listed as an adverse impact as well as the damages to air quality which also ignore this issue in the discussion on page 106, although "Albuquerque is currently not in conformity for carbon monoxide according to the Environmental Protection Agency's new regulations" (page 139).

There has also been no discussion of the mileage driven by visitors after they leave the Visitor Center. A certain number of visitors could be expected to only visit the immediate center area. However, an even larger group could make one or more stops at the points described by the orientation at the Center. No estimate is given of these numbers, miles driven, etc.. These factors should also be considered.

COMMENT 9. Page 107 - WEST SIDE ACTION COUNCIL PROPOSAL

RESPONSE: This alternative plan to the earlier NPS draft alternatives is listed under a section called ALTERNATIVES AND OTHER ACTIONS CONSIDERED AND REJECTED. The West Side Action Council plan is summarized in 8 short paragraphs and then the NPS briefly discusses each of the 8 points.

The failure to fully analyze the West Side proposal is contrary to both the CEQ Regulations and NPS - 12, the National Environmental Policy Act Guideline, published by the National Park Service. Para. 1502.14(c) of the CEQ Regulations states, "Include reasonable alternatives not within the jurisdiction of the lead agency." This is one of the reasons the NPS uses for not considering the West Side proposal.

On page 1, Chapter 4, of NPS-12, the Guideline states, "The introduction is followed by a full range of reasonable alternatives designed to resolve pertinent issues and reach the

7.

It is not assumed that 25% of all visitors would arrive from each of the four major directions. Experience in other units of the national park system has shown that visitors follow signs directing them to visitor centers. The route identified in the plan, Unser Boulevard from I-40, is the route that is the most direct and has the least impact on west side traffic patterns. It is also assumed that far more traffic coming to the monument would be from I-40 than from the north and I-25. For further information regarding traffic impacts, see the "Traffic Impact Evaluation" by Balloffet and Associates, August 8, 1994.

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objective of the proposed action. These may include alternatives requiring legislation or actions beyond the ability of the National Park Service to accomplish."

On page 2 of this chapter, NPS-12 states, "Each alternative should be a distinctly different approach to addressing important issues, and may thus emphasize the achievement of some objectives at the expense of others." It also states, "Any reasonable alternative with anticipated environmental consequences that differ significantly from those of the proposed action, should be considered a major alternative and analyzed fully." (bold is ours)

Based on not only National Regulations but also its own Guidelines, the NPS must fully evaluate the West Side Action Council's proposal and list the impacts of this plan rather than summarily dismissing the proposal with the brief discussion in the current document.

COMMENT 10. Page 109, para. 2 - "mesa-top visitor center locations were rejected for several reasons: difficulty in interpreting the primary petroglyph resources of the monument to visitors, difficulty in getting large numbers of visitors to petroglyph viewing areas, compatibility of adjacent land uses, additional boundary adjustments and land acquisition would be required, and there would be increased construction expenses due to the difficulty of providing utilities in areas with shallow basalt."

RESPONSE: None of these objections is valid. We fail to understand how the location of the center could result in difficulties in interpreting the petroglyph resources. Visitors will be inside a room at the center either viewing graphic materials or listening to some type of audio and visual presentation. The room could be in a downtown hotel and the presentation would be the same. The location of the visitors has nothing to do with how the petroglyph materials are interpreted.

It would also be much easier to get large numbers of visitors to petroglyph viewing areas if roads and parking areas were developed on the mesa top and the petroglyph concentrations approached from the mesa top. Trails would be much shorter. Mesa Verde is a perfect example of trails down a steep slope to viewing areas on the other side of steep canyons. In addition, the NPS has made no comments on the difficulty in getting 500,000 park visitors a year from one end of the 17 mile long monument to the other. Since, without mesa top access, all traffic will have to follow city streets through the neighborhoods adjoining the monument, the impacts of this group of "visitors" on neighborhood congestion should be addressed more fully than in the current document.

The park is currently trying to raise \$3 million for additional land acquisitions. If this money is acquired, land could be acquired to fully implement a mesa top alternative with much of the access to the monument from above rather than below the escarpment. This would alleviate much of the neighborhood traffic problem discussed above.

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Additional construction costs due to installing utilities in "shallow basalt" areas are also questionable. The visitor location in the West Side Action plan is within 1/2-3/4 of a mile from two planned major subdivisions and an apartment complex whose construction is planned for the near future and whose builders anticipate no major problems with the "shallow" basalt. A suitable site should be easy to locate where utility installation costs would not be excessive. The NPS should provide additional proof of this comment if it remains in the document.

COMMENT 11. Page 121, para. 2 - "—, stationary sources account for about 5% of the air pollution in this air quality control region, and automobile and other mobile sources account for the rest."

Page 121, para. 3 - "The street system near the monument currently does not allow efficient traffic movement, resulting in increased auto emissions and higher ozone concentrations."

RESPONSE: These statements provide a very compelling reason for considering an alternative with Paseo del Norte going through the monument and for developing mesa top approaches to petroglyph viewing sites. Traffic could be channeled straight to a viewing area in much more direct routes and without interfering with local traffic. Waiting at stop signs, or moving slowly through already crowded streets, would only add to the air pollution, which is already a very difficult problem for the entire Albuquerque airshed.

COMMENT 12. Page 163, para. 1 - "Positive impacts from extending Unser Boulevard would include--"

RESPONSE: What about the negative impacts of extending Unser Boulevard without having Paseo del Norte in place. A recent study has shown that within 7 years 37,000 cars a day will cross the Bernalillo County line on Unser. Without Paseo del Norte in place, the only way these vehicles can go east is down Irving, Paradise and Montano boulevards, or continue south to I-40. In any of these scenarios, a tremendous adverse impact will be felt in Paradise Hills, Taylor Ranch, and the several other communities which are south of Taylor Ranch and north of I-40. If this traffic is added to that from the over 15,000 increase in population expected to occur west of the monument within the next 10 years, from already approved subdivisions, the adverse impacts of building Unser without Paseo del Norte would be catastrophic. These negative impacts should be fully documented in the final document. Also see Response to Comment 5 above.

COMMENT 13. Page 166, para. 1 - "Keeping parking areas, visitor contact stations, and access points closely associated to city streets would minimize incursions into the monument and have less adverse impacts." This is in the discussion of the impacts to Scenic Resources.

Page 47, para. 4 - "—a shuttle bus system would be considered for connecting the visitor center, in whatever location, with other facilities/areas of interest to visitors."

8. It is not the purpose of this plan to analyze environmental impacts of actions proposed by the city and others. These regional transportation issues must be addressed by the city and regional transportation agencies.

The Draft and Final General Management Plan / Environmental Impact Statements are consistent with federal law and policy. Paseo del Norte was identified on page 21 of the draft plan as an issue beyond the scope of this general management plan. Therefore, further analysis as cited in 1502.9(a) is not required.

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Page 47, para. 5 - "--tours given by the Indian Pueblo Cultural Center. Guided tours from the center in Albuquerque would encourage cultural center visitors to go visit the monument and learn more about past and present American Indian cultures."

RESPONSE: See responses to Comments 11 and 12. Scenic resources might benefit but traffic congestion and air quality would deteriorate because of parking areas adjacent to the neighborhoods and which must be reached from neighborhood streets.

The number of tours from the Indian Cultural Center should also be estimated and the total annual miles driven. The negative impact on air quality should be included in the other negative air quality impacts caused by the formation of the monument. The adverse neighborhood traffic impacts from these tour buses as well as the shuttle buses planned for use by the NPS should be fully evaluated.

COMMENT 14. Under IMPACTS ON LOCAL VISITORS AND ADJACENT LANDOWNERS

Page 171, para. 2- "There would be some increased traffic from visitors on Unser Boulevard, but there would be no adverse impacts on residents who use this road for access to their homes. Although parking would be provided for visitors, increased traffic could occur on neighborhood streets, adversely impacting residents in adjacent neighborhoods, including Santa Fe Village, Taylor Ranch, and Laurelwood."

Page 171, para. 9 - "There would be minor increases in traffic and no adverse effects from monument visitation (Balloffet 1994a). This alternative would have 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."

Page 54, Map of Alternative 1 - Seven neighborhood access points are shown on this map. One at the southern end of the monument, four in the Taylor Ranch area and two in the Paradise Hills neighborhood.

Page 173, para. 7 - "Traffic volumes expected to and from the monument would be small compared to forecasted travel on the street system resulting from residential and commercial sources"

RESPONSE: See responses to Comments 5, 11, 12, and 13. In addition, we would find it extremely doubtful that any adjacent landowner would consider the extra traffic beneficial because of "greater protection of monument resources". Many of the people who would use the neighborhood access points would drive from their homes to the

9. Increases in local traffic resulting from monument visitors would not be significant. See "Impacts on Local Visitors and Adjacent Landowners" sections. This plan has documented that adoption of this plan does not result in major changes to the area's transportation system and is exempt from the Environmental Protection Agency's general conformity regulations because total projected emissions are below de minimus levels. Detailed impacts of the possible shuttle bus system cannot be evaluated at this time. For further information see "Transit System Evaluation" (Balloffet and Associates, 1994b). As visitation increases, detailed feasibility studies would be conducted.

The management plan is in compliance with the National Environmental Policy Act (NEPA). The legislation that resulted in the creation of Petroglyph National Monument was proposed by members of Congress, not the National Park Service. It is not the purpose of the management plan to analyze past congressional actions. The National Park Service only does environmental analysis on legislation that the agency proposes or actions that the agency proposes. The NEPA process is intended to provide information so that the decision makers can make informed decisions. The decision to create the monument has been made, and it would serve no purpose to analyze past legislation.

10. The "Neighborhood Access" section of the proposed plan has been revised to eliminate specific access points from the map (and future monument brochures). Designation access points would be determined only through consultation with neighborhoods and adjacent residents.

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access point. Since there are no parking areas designated near these points, the cars would be parked on neighborhood streets while the individuals were inside the monument. There would probably be a constant disturbance in neighborhoods surrounding these access points. These adverse impacts should be more fully investigated, including the decrease in property values of nearby homes due to this excess traffic.

The fact that traffic volumes to and from the monument are small compared to forecasted traffic from residential and commercial sources is immaterial. It is the additive effect of these extra vehicles, including tour buses and shuttle buses, which could be the "straw that breaks the camels back" and turns what is barely acceptable neighborhood traffic volumes into unacceptable numbers.

In the document, these generalized statements are not acceptable. Where numbers are currently shown as "some increased traffic" (page 171 para. 2), or "Traffic volumes -- would be small--" (page 173 para. 7), the actual estimates per hour, per day or per year should be listed. The reader can then decide for themselves whether the impacts are beneficial or detrimental.

COMMENT 15. Page 233, para. 6 - "The National Park Service has attempted to work with the city to resolve issues that were unclear or contrary to NPS policies. The mayor of Albuquerque was not interested in discussing comments on the preliminary draft and indicated that the city would prepare its own plan. The Mayor has invited the National Park Service to cooperate in the preparation of a city plan. The National Park Service will attempt to work with the city in the preparation of all monument-related plans."

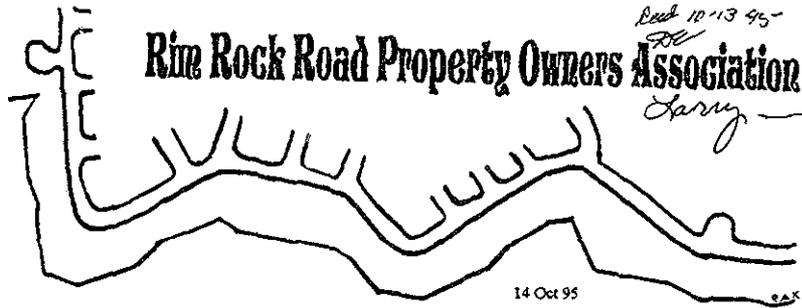
RESPONSE: The NPS has invested \$19.3 million in the monument while the City and the State have invested \$26 million. The comment about the mayor not being "interested in discussing comments" is not true. The city took this approach because the city's comments made by their representatives on the planning team were ignored by the NPS when the draft plan was written.

We think it is outrageous that a Federal agency would be so unyielding in its attitudes that an equal partner would have to develop a completely separate plan for development and management of the monument. From the monument's inception, the NPS has developed an attitude of "We will make all of the decisions. If you don't like it, there is nothing you can do about it because we are the Federal Government and you can't stop us." Their shameful actions reflect poorly on local park officials, their regional and national supervisors and the Federal Government as a whole.

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Petroglyph National Monument Advisory Commission,

In response to public comment on the Draft General Management of the Petroglyph National Monument, the following is offered:

1. The future development of the Petroglyph National Monument (PNM) must be taken in the larger context of our federal, state, and city governments—their politics and their financial status. The direction and philosophy of our federal government is in the initial stages of a radical change for the first time since its inception late in the 18th century. This new federalism was brought upon by a majority of citizens in this country who felt they had lost total contact with government and its spending. Incumbents will continue to be replaced until the citizens are satisfied that government spending is under reasonable control. Citizens will not allow any new taxes at any level until they believe their money is being wisely spent. The most recent city voting reflects this mood. It is, in fact, a matter of money and trust.

2. After being expanded twice since its approval in June 1990, The Petroglyph National Monument now consists of 7,244 acres; however, only 5,928 acres have been purchased by the city, state, and federal governments, leaving 1,316 acres in limbo since 1990. The estimate provided by Superintendent Steve Whitesell to purchase this land is about \$17 million dollars. As of this date, the federal government has only allocated \$49 million dollars for land acquisition in FY 96 throughout the entire United States. The National Park Service budget will be reduced somewhere between 10-30 percent this year with more to follow for the next 7-10 years. The NPS is currently in arrears close to \$6 billion dollars for land acquisition, infrastructure requirements, and park maintenance. Ladies and gentlemen, there is virtually no more federal money. The NPS is entering an era where they must become much more self sufficient by increasing park entrance fees, negotiating much better concessionaire contracts, reducing hours and staff, reducing or closing parks and monuments, and seeking private funding. If parks and monuments are not reduced or closed by the NPS, there will be a closure commission established in 1996 to do it for them. None of this is pleasant and will, unfortunately, adversely affect the nature of our entire national park system that we have all enjoyed so much. It is, simply, the result of the new fiscal federalism.

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3. Clearly, this predicament will directly affect the future of the Petroglyph National Monument and it is wise to deal with it now.

A. Definitely, none of the alternatives selected should include the seizure of more land by the National Park Service since the money does not exist to pay for what has already been taken. This is a very important point as it violates the Fifth Amendment which states, "...the government shall not take private property without just compensation." As you are aware, the Rim Rock Road Property Owners Association is a collection of property owners who would like to see the government comply with the Fifth Amendment --or return our 95 lots to us by removing them from the boundary of the monument. We have waited five years for settlement, but none has come forth. I'm sure Doctor Cohen, and The Westland Corporation also have comments on this issue as they are in the same situation.

B. The lack of public funds for land acquisition, monument construction and infrastructure plus the general public support (and congressional support) for the passage of Paso del Norte through the monument are issues that put some or all of the Petroglyph National Monument at risk for survival. We suggest these issues must be resolved before any alternative can intelligently be selected.

C. American Indian Pueblos and Tribes who so strongly believe in the historical and spiritual sacredness of this land might be approached to finance the purchase of the private lands from their casino profits until the federal government appropriates sufficient land acquisition funds within the next 10 years. With land values increasing on the West Side, it may be an excellent investment for them and an excellent solution for us.



Rod Koutny
Executive Officer
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Copy:

National Park Service
Albuquerque
Santa Fe
Wash DC
Senators
Domenici, Bingaman
Gorton
Representatives
Schiff, Skeen,
Richardson, Hansen
American Land Rights
Assn.

COMMENTS

RESPONSES

11/06/95 15:54 JACOBVITZ,ROYDRL & THLPR PC + 5058998207

NO. 052 002



SIERRA CLUB

Albuquerque Group
207 San Pedro Avenue NE
Albuquerque, NM 87108
Phone (505) 265-5506

November 6, 1995

BY FACSIMILE AND
~~FIRST-CLASS MAIL~~
Mr. Doug Eury
Superintendent
Petroglyph National Monument
4735 Unser Boulevard NW
Albuquerque, NM 87120

Dear Superintendent Eury:

The Albuquerque Group of the Rio Grande Chapter of the Sierra Club has approximately 3,000 members. Members of our Group volunteer their time to promote responsible management of federal public lands. Members of the Group also engage in numerous types of outdoor recreation on the public lands, including hiking, camping, mountain-biking, horse back riding and technical rock climbing. Petroglyph National Monument is very dear to us because of its outstanding natural and cultural resources and its proximity to Albuquerque, where many of us live.

Petroglyph National Monument contains a concentration of more than 15,000 petroglyphs, unique geologic features including the geologic windows and volcanoes, the largest known unexcavated pueblo in the Middle Rio Grande Valley, and habitat for many wild creatures. These resources are nationally significant and are of substantial cultural importance to several Indian Pueblos.

The proximity of the National Monument to Albuquerque is both a blessing and a curse. The Monument is adjacent to the developing West Mesa area of Albuquerque, one of the most rapidly growing areas in the nation over the last several years. This location has posed a grave threat to the Monument's resources through graffiti and other forms of vandalism and encroachment by roads, homes and other types of development. On the other hand, the location and accompanying accessibility of the Monument increase the Monument's value as a place where people can learn about the historic and cultural significance of the Monument's resources. Proximity to the largest metropolitan area in this part of the southwest also offers the Park Service an outstanding opportunity to involve volunteers in all aspects of its programs, especially in monitoring resources, assisting with tours and school groups, and providing invaluable presence at visitor use areas.

Congress recognized both the national significance of the Monument's natural and cultural resources and the threats to those resources attributable to the proximity to Albuquerque. Congress

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11/26/95 15:54 JACOBWITZ, ROYER, & TAMPA PC + 5058996207 NO. 052 063

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established the Monument in 1990 for the express purpose of protecting the nationally significant cultural and natural resources of the area from urbanization and vandalism. Public Law 101-313, 104 Stat. 272 § 101 (June 27 1990) ("Enabling Act"). Congress specifically directed the National Park Service to administer, manage and protect the Monument in order to preserve its cultural and natural resources and provide for interpretation and research on those resources. Enabling Act § 105(a).

The Act makes no mention of managing the Monument to accommodate infrastructure for continued growth of the Albuquerque metropolis. The Act also makes no mention of managing the Monument to provide for recreational opportunities such as mountain biking or horse back riding.

The Park Service is bound to manage the Monument in accordance with Congress' directives. Several components of the Park Service's Preferred Alternative 1, including a proposed mesa top trail system for pedestrian, horse and mountain bike use, numerous uncontrolled neighborhood access points, a stated intent to consider proposals for extension of utilities through the Monument, unnecessary development of facilities and roads in currently undisturbed areas and a failure to adequately provide for monitoring and control of visitors in order to assure resource protection, are inconsistent with Congress' management directives, would derogate preservation, protection and enjoyment of the Monument's natural and cultural resources, and, therefore, are prohibited by law.

These components of the Preferred Alternative are not only unlawful, but also are contrary to the stated desires of area pueblos, threaten the Monument's Resources, and contribute unnecessarily to the projected expense of managing the Monument. For these reasons we are unable to support the Preferred Alternative.

Beginning around the time that work on the Draft General Management Plan/ Development Concept Plan/ EIS for the Monument ("Draft GMP") began and continuing throughout the planning process, Friends of the Albuquerque Petroglyphs ("FOTAP") and the Sierra Club Native American Sites Committee presented to the Park Service the recommendations of a Blue Ribbon panel of prominent experts, including a former director of the National Park Service. The recommendations included a proposed management alternative. The recommendations were given short shrift by the Park Service. Although various proposed actions recommended by the Blue Ribbon panel are discussed at various places in the GMP a comprehensive alternative designed to maximize protection of the Monument's resources along the lines of the Blue Ribbon alternative is not presented in the GMP. By failing to consider such an alternative the National Park Service has violated its obligation under the

1. Resources would be inventoried and monitored, and mitigation measures would be taken to ensure that resources are not derogated. These issues have been specifically addressed in the plan. See impact sections on and "Natural Resource Management" and "Cultural Resource Management" sections under the "Actions Common to All Alternatives" section.
2. A reasonable range of alternatives has been considered. Various elements and plan actions are discussed under different alternatives in this management plan. The National Environmental and Policy Act requires a range of alternatives be considered, not that a specific combination of actions be packaged into a single alternative.

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11/06/95 15:55 JACOBWITZ,ROYBA, & THUR PC - 505599207 NO. 052 DB4

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National Environmental Policy Act ("NEPA") to consider a reasonable range of alternatives.

2

Alternative 3 emphasizes intensive development to an even greater degree than Alternative 1 and, therefore, also is not available to the Park Service, leaving only two of the Park Service's alternatives, 2 and 4, available. Consideration of FOTAP's Modified Alternative 2 is therefore necessary to ensure that the National Park Service meets its obligations under NEPA to consider an adequate range of alternatives.

In contrast, a proposed alternative presented by the West Side Action Coalition, which contains numerous blatantly unlawful provisions is discussed at length in the GMP.

Based on the recommendations of the Blue Ribbon Panel and subsequent discussions with Park Service Personnel and members of the public, FOTAP has developed and presented a modified version of NPS' Alternative 2 entitled "Modified Alternative # 2 for Protective Use." We urge NPS to adopt Modified Alternative 2 presented by FOTAP. This alternative best meets Congress' management directives by emphasizing protection of the Monument's resources. At the same time it allows adequate public access and enhanced opportunities for viewing and learning about the historic and cultural significance of the petroglyphs. It also would result in substantial cost savings by eliminating unnecessary, unattended access points and the mesa top loop trail, and by consolidating most facilities and parking areas in areas that are currently in use.

3

Mesa top trails for joint use by hikers, mountain bikes and horse back riders should not be included in the GMP. The Enabling Act does not authorize management for such intensive recreation use. Such use would detract from meaningful visitor experience of the petroglyphs and other cultural resources, including the mesa top as a scenic and sacred landscape, and is strongly opposed by representatives of area pueblos whose views are entitled to the utmost respect. The loop trail also was rejected by the Petroglyph National Monument Advisory Board. The Board's recommendations must be given substantial weight by the Park Service.

The Sierra Club's national office also opposes the proposed mesa top trails. (See December 8, 1994 letter from Dr. Robert Cox, President, attached).

The proposed multi-purpose loop trail presents a difficult issue for a group such as ours. We lead mountain bike rides, but we would not even consider leading a mountain bike trip into the Monument. Intensive recreational use, including mountain biking and

3. NPS *Management Policies*, chapter 8.2, states that "The NPS will encourage recreational activities that are consistent with applicable legislation, that promote visitor enjoyment of park resources through a direct association or relation to those resources, that are also consistent with the protection of resources, and that are compatible with other visitor uses." NPS *Management Policies*, chapter 9.10, addresses equestrian trails and bicycle trails stating that they may be provided.

Use of a permitting system, designated routes, and monitoring system and mitigation will prevent derogation resources.

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11/06/95 15:56 JACOBUITZ,ROYBAL, & THURA PC - 5858990207 NO. 852 P.85

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horse back riding, is wholly inappropriate in a National Monument established to preserve and protect natural and cultural resources and is strongly opposed by native Americans.

4

Furthermore, the proposed single trail for simultaneous use by bikers, mountain bikers and horse back riders presents management difficulties which NPS does not meaningfully address. Experience in other urban areas such as Boulder, Colorado has demonstrated that trails designated for such multiple uses present serious management challenges. Horses, mountain bikes and pedestrians are not compatible uses on a single designated trail likely to receive heavy use. The Park Service should not squander its limited resources on building and managing such a trail.

5

The numerous unattended neighborhood access points included in the Preferred Alternative would allow visitors to wander into the Monument without any guidance or supervision and would cause increased and unwelcome traffic and parking in local neighborhoods near the trailheads. It is important that visitors be directed to the visitor center or other attended access points where they can gain information about the Petroglyphs which is necessary for meaningful visitor experiences. It is difficult to locate many of the petroglyphs, let alone learn anything about them, without such guidance.

We support NPS' finding that there is no legal authority for allowing construction of Paseo del Norte through the Monument. NPS has properly interpreted the Enabling Act. The Act specifically states that the Monument should be established because of the urgent need to protect the cultural and natural resources of the area from urbanization and vandalism. We can conceive of no more clear, definite and unambiguous statement of Congressional intent to prohibit construction of roads and other infrastructure through the Monument.

Both the express language of the Enabling Act and the legislative history indicate it was Congress' intent to protect the resources of the monument from the threats of urbanization, including development and intensive recreation use.

Senator Domenici in introducing the legislation creating the Monument on the Senate floor stated that the legislation was "needed to protect the escarpment and the thousands of ancient petroglyphs it contains from being destroyed by rapidly encroaching development." 134 Cong. Rec. 88711 (June 28, 1988) Senator Domenici further stated:

Unfortunately, the escarpment currently is being threatened by development as Albuquerque spreads to the west. Buildings have been constructed at the base of the escarpment, and hundreds

- 4. Monitoring and permitting these activities will prevent derogation of resources and will provide a quality visitor experience.
- 5. The final plan has been revised. See "Neighborhood Access Trails" section.

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11/06/95 15:57 JACOBUITZ, ROYBAL & THAYER PC - 5058998027 NO. 052 DB6

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of petroglyphs have already been destroyed. In order to prevent any further destruction of the escarpment and the petroglyphs, we must act to preserve this area soon. If we delay, this magnificent resource, which forms a scenic boundary and contains an important part of the city's history, may be lost.

Id.

Furthermore, a Senate Committee in commenting on a draft of the Enabling Act noted that the City of Albuquerque was moving an equestrian complex adjacent to but not within the Monument "in order to assure that the lands within and adjacent to the monument are utilized in ways that are compatible with the monument." S. Rep. No. 101-230, 101st Cong., 1st Sess. 7-8 (Dec. 20, 1989). This is a clear statement that horse back riding and other intensive recreational uses are not compatible with the Monument.

We recognize that the National Park Service is receiving intense pressure from the City of Albuquerque and some developers to authorize extension of Paseo through the Monument. We urge the National Park Service to resist these greedy and inappropriate demands.

The Enabling Act directed the City of Albuquerque to cooperate with the National Park Service in developing a general management plan for the Monument consistent with the purposes of the Act to preserve and protect the Monument's cultural and natural resources from the threats of urbanization and vandalism. § 105(a). In a Joint Powers Agreement, the City specifically agreed to participate in managing the Monument in accordance with the Enabling Act. The City recently has taken the position that none of the Park Service's alternatives are acceptable because they do not contain a clearly unlawful provision authorizing extension of Paseo through the Monument. The City's irresponsible insistence on inclusion of a proposal in the GMP which clearly is prohibited by the Enabling Act is a blatant violation of the City's statutory and contractual obligations to cooperate with the Park Service in developing a GMP in accordance with the Act.

Certain parties also have suggested that the GMP be delayed pending further discussion of the Paseo issue. The Park Service has not met its statutory obligation to prepare a GMP within three years that funding becomes available (Enabling Act § 106(a)), and should delay no further. While we always welcome efforts to resolve matters through negotiation, the Park Service cannot lawfully authorize extension of Paseo through the Monument. The City appears willing to accept nothing less. There is no good reason to delay the GMP, and such a delay would violate Section 106(a).

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11/06/95 15:59 JACOBUITZ,ROYBIL & TRUMP PC + 5059992207

NO.052 007

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The position of the City administration is at odds with the views of the citizens of Albuquerque. The last poll taken by the Albuquerque Journal showed overwhelming opposition to extension of Paseo through the Monument.

The Albuquerque area is privileged to have a National Monument on its Western boundary. The area will gain substantial economic benefit from the Monument through expenditures by tourists. The Monument will enhance both the property values and the quality of life of nearby residents.

Uncontrolled sprawl development is ruining many of Albuquerque's special places, thereby threatening the quality of life of which so many Albuquerque residents are so proud. The Park Service's protection of the Monument in accordance with its statutory mandate will allow the Monument to remain a refuge from urban life for enjoyment of an enchanted landscape, rock art and wild creatures. This will help maintain the quality of life in a burgeoning, metropolitan area. We are prepared to assist the Park Service in resisting the greedy, short-sighted demands of those who do not share this vision.

For these reasons, we urge the National Park Service to adopt the Modified Alternative 2 presented by POTAP and to continue to resist demands to subjugate the Monument to speculative and unsustainable, sprawl development.

Respectfully submitted,

Susan Gorman by N.P.
Susan Gorman
Chair

Nicholas F. Persampieri
Nicholas F. Persampieri, Esq.
Vice Chair and Legal Advisor

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**SIERRA CLUB LEGAL
DEFENSE FUND, INC.**

The Law Firm for the Environmental Movement

1631 Glenasm Place, Suite 300, Denver, CO 80202

November 6, 1995

VIA FAX AND FIRST CLASS U.S. MAIL

Doug Eury, Superintendent, Petroglyph National Monument
4735 Unser Blvd N.W.
Albuquerque, New Mexico 87120

Petroglyph National Monument, Administrative Offices
6001 Unser Blvd. N.W.
Albuquerque, New Mexico 87120

Re: Draft Environmental Impact Statement for the
General Management Plan/Development Concept Plan,
Petroglyph National Monument.

Dear Mr. Eury:

Thank you for this opportunity to provide comments on the Draft General Management Plan/Development Concept Plan Environmental Impact Statement ("DEIS") for Petroglyph National Monument ("PNM"). The Sierra Club Legal Defense Fund supports the positions of the Sierra Club and Friends of the Albuquerque Petroglyphs ("POTAP") on this issue, and so endorses and incorporates the comments submitted by the Club's and POTAP's representatives. Since the Club and POTAP will discuss the factual issues raised by the DEIS, SCLDF will focus on the legal issues raised by the DEIS and its conclusions.

These comments will focus on Alternatives 1 and 2. Alternative 4 does nothing to address the problems currently existing at PNM, and properly is rejected by the DEIS. Alternative 3, with its extensive development proposals, suffers from the same inadequacies as Alternative 1, only even more so. The legal deficiencies discussed below regarding Alternative 1 apply to Alternative 3 as well.

Alternative 1 suffers from several legal flaws. First, the plain language of the statute which created Petroglyph National Monument provides no basis for the emphasis Alternative 1 places on recreation at the expense of cultural resource protection. In addition, Alternative 1 goes against the legislative intent of the creating statute. Finally, Alternative 1 contradicts common sense, since it increases unmonitored recreational use after citing vandalism as a major threat to the Monument. While not a technical legal argument, the "straight face test" is pertinent

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GMF
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Petroglyph National Monument
(505) 643-9466 FAX (505) 643-8081

1. NPS *Management Policies*, chapter 8.2, states that "The NPS will encourage recreational activities that are consistent with applicable legislation, that promote visitor enjoyment of park resources through a direct association or relation to those resources, that are also consistent with the protection of resources, and that are compatible with other visitor uses." NPS *Management Policies*, chapter 9.10, addresses equestrian trails and bicycle trails stating that they may be provided.

Use of a permitting system, designated routes, and monitoring system and mitigation will prevent derogation resources.

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to the question of whether the National Park Service is making reasonable conclusions or is being arbitrary or capricious.

Alternative 2 suffers from some of the same flaws as Alternative 1, but these are easily corrected. With a few minor modifications, none of which should require new NEPA analysis, a modified Alternative 2 would serve the purposes of NPS, and preserve the resource in accordance with applicable law.

- A. There is no statutory basis for Alternative 1 in the plain language of Pub. L. No. 101-313, which created Petroglyph National Monument.

An elementary principle of administrative law is that an agency can only act within the limits of the authority granted to it by its enabling legislation. In this case, the pertinent statute is the Petroglyph National Monument Establishment Act of 1990 ("PNM Act" or the "Act"), passed by Congress on June 27, 1990. See Pub. L. No. 101-313, 104 Stat. 272, as amended Pub. L. No. 103-50, 107 Stat. 252, codified at 16 U.S.C. § 431 note (Supp. 1995); The Act contains clear standards and mandates to guide NPS's management of the Monument. NPS has no discretion to authorize uses of PNM lands that do not comply with its statutory mandate. Unfortunately, the Proposed Action violates both the clear language and the legislative intent of the PNM Act.

- 1. The express purpose of PNM is to protect the cultural and natural resources of the West Mesa and the Escarpment, not to provide recreation opportunities.

When Senator Domenici originally introduced the Act, see 134 Cong. Rec. S8711 (June 28, 1988), he made no mention of recreation. Instead, he talked about the need to "protect the [West Mesa] escarpment and the thousands of ancient petroglyphs it contains from being destroyed by rapidly encroaching development." *Id.* As described by the Senator,

the escarpment currently is being threatened by development as Albuquerque spreads to the west. Buildings have been constructed at the base of the escarpment, and hundreds of petroglyphs have already been destroyed. In order to prevent any further destruction of the escarpment and the petroglyphs, we must act to preserve this area soon. If we delay, this magnificent resource, which forms a scenic boundary of Albuquerque and contains an important part of the city's history, may be lost.

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Id. This concern is specifically addressed in the Act, which cites the "national significance of the West Mesa Escarpment and the petroglyphs and the urgent need to protect the cultural and natural resources of the area from urbanization and vandalism" as the purpose of PNM. PNM Act § 101(b)(3) and (9).

PNM was created as a response the threats posed by Albuquerque's sprawl and degradation caused by uninformed visitors. It was not intended to be a city park, neighborhood jog track and dog walk, or mountain bike loop. While NPS may arguably have discretion to permit some of these recreational uses in the Monument, according such use a higher priority than the statutorily mandated protection of the West Mesa's cultural and natural resources is a violation of the plain language of the PNM Act. Since Alternative 1 consistently favors recreational use, trails, road building, and other development over protection of the cultural and natural resources of the West Mesa, it is an illegal alternative not available to the NPS.

2. The management standards set in the statute do not provide for recreation that impacts PNM's cultural and natural resources

Section 105(a) of the Act dictates the standard for management of PNM. Not only is there absolutely no mention of recreation, but the section specifically orders that the Secretary "shall administer, manage, and protect the monument . . . in such a manner as to preserve, for the benefit and enjoyment of present and future generations, its cultural and natural resources, and to provide for interpretation and research on such resources." See also H.R. Rep. No. 101-491, 101st Cong., 2d Sess., at 10 (May 21, 1990). The mandatory "shall" eliminates any discretion to allow uses that degrade the petroglyphs and the landscape important to the interpretation or research of the petroglyphs. The object of "preserve for the benefit and enjoyment" is "cultural and natural resources," and therefore the phrase cannot be interpreted as meaning recreation.

It is important that the word "recreation" does not appear in connection with "cultural and natural resources," because it does appear connected to those words earlier in the Act, when Congress recognizes that "Albuquerque has played a significant role in the preservation of the natural, cultural, and recreational resources" of the West Mesa. PNM Act § 101(b)(5). The word appears nowhere else in the Act, although the "cultural and natural resources" of the area are referred to several times, including in § 105. This exclusion has legal meaning.

2. See response #1 above.

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A traditional canon of statutory construction holds that if a statute designates certain items, all omissions should be understood as exclusions. (If you enjoy Latin, courts refer to this canon as "expressio unius est exclusio alterus."). Therefore, the fact that the word "recreational" is used once in connection with the words "cultural and natural resources" in § 101(b)(5), but nowhere else, indicates that Congress was aware of the recreational value of West Mesa, but chose not to make recreation a primary purpose for PNM. The "expressio unius" maxim is especially applicable to situations like this one, where something is listed in one part of the statute and omitted in another. See 2A Sutherland Statutory Construction § 47.23 n.17.

3

The Proposed Action violates this intent by making recreation a primary purpose for PNM, even where recreational use will cause the degradation and destruction of PNM's cultural and natural resources. This is an abuse of discretion and not in compliance with applicable law.

This analysis applies to all lands within PNM's boundaries, not just land owned by the federal government. Even though Albuquerque and the state of New Mexico own some of the land within PNM's boundaries, they are not free to ignore the statute, and give recreation a higher priority, on those lands. Section 104(a) of the Act mandates that certain lands would be included in the Monument only if the city, state, and Secretary entered into a binding agreement that those lands be subject to the management standards of the PNM Act § 105. This section was specifically intended to avoid "patchwork" management of PNM based on land ownership. Congress was "concerned that all units of the monument be managed in a consistent manner," and it "therefore made establishment contingent upon a binding agreement which will ensure that the lands within the boundary of the Petroglyph National Monument will be managed in accordance with the National Park Service Organic Act of 1916, the Archeological Resources Protection Act of 1979, and other appropriate legislation." H.R. Rep. No. 101-491, 101st Cong., 2d Sess., at 9 (May 21, 1990).¹ The city and state voluntarily entered into such an agreement, the Substitute Joint Powers Agreement, JPA No. 78-521.81-277 A (March 1991), and lands owned by them were added

¹ This quote is discussing an earlier version of the Act, which would not have created PNM at all if there was no binding agreement for city and state land. The version of the Act that passed Congress instead created PNM on lands controlled by NPS. The statute was changed to require a binding agreement only for city and state land later added to PNM.

3. Horse and bicycle use on selected, designated trails does not constitute a primary purpose for the monument. Restricting use to designated trails and implementing a permitting and monitoring system will prevent derogation of resources.

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to PNM. Therefore the city and the state are limited in the same way as NPS, and they cannot give recreation a higher priority than preservation of the petroglyphs and the natural resources of the West Mesa.

B. The emphasis on recreation in Alternative 1 is against the legislative intent of Pub. L. No. 101-313.

The legislative history of the Act supports the conclusion that preservation takes precedence over recreation. Congress specifically rejected making recreation a primary purpose for creating PNM. An earlier version of the Act, introduced in the 100th Congress, would have provided for the preservation of the "natural, cultural, and recreational resources of the West Mesa and its environs." See 100th Cong., 2d Sess., S. 2580 and H.R. 4930, as introduced June 28, 1988 (emphasis added). In other words, recreational resources would have had equal status with cultural and natural resources. However, the reference to recreation in the parallel section of S. 286, the version of the Act introduced in and passed by the 101st Congress, was eliminated. Clearly Congress considered and rejected the alternative of creating a recreational park.

There are other indications in the legislative history that Congress did not see high-impact recreational uses as compatible with the purposes of PNM. As one example, the Senate Committee noted that an equestrian complex had operated in La Boca Negra Park for fifteen years, and that the city of Albuquerque,

in order to assure that the lands within and adjacent to the monument are utilized in ways that are compatible with the monument, has proposed relocating the equestrian complex on non-Federal lands in the city. The Committee supports this effort and directs the National Park Service to work with the City and the New Mexico Horse Council to assist in the relocation of this facility on non-Federal lands.

S. Rep. No. 101-230, 101st Cong., 1st Sess., at 7-8 (Dec. 20, 1989) (emphasis added).

It is clear that Congress did not see horseback riding as a use "compatible with the monument." Otherwise, there would be no reason to encourage moving the equestrian center. Congress clearly expected that horseback riding, mountain biking, and other activities that would minimize or destroy the value of PNM's cultural resources would be either prohibited or permitted only in areas that would not threaten those resources. The Proposed Action flies in the face of this expectation and intent.

4. See response #1 above.

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C. NPS Limits Recreation at Similar Sites

NPS clearly is aware that it has the authority to limit recreation to protect cultural resources. For example, mountain bikes don't tear through Civil War battlefields, and rock climbers don't rappel down the sides of Independence Hall. In New Mexico, recreation is limited and closely managed at other NPS sites preserving cultural resources, e.g. El Malpais, Chaco Canyon, and Bandelier. NPS should similarly give resource preservation a higher priority than permissive recreation at PNM, especially in view of the language of the PNM statute, and the intent expressed in the legislative history.

The fact that PNM is in an urban area does not change the standards applicable to protecting the resource. There are numerous NPS sites in urban areas that protect cultural resources, and NPS manages to prohibit damaging recreational uses in those areas.

Of special concern in this case are the expectations of local interests, such as neighborhood groups, who seem to think they have more rights to PNM than other citizens. Unfortunately, NPS is encouraging such misguided thinking. Congress knew that PNM would be in an urban area with a variety of existing uses in surrounding lands, and the designation of the national monument [was] not intended to deprive landowners of those existing uses. S. Rep. No. 101-230, 101st Cong., 1st Sess., at 10 (Dec. 20, 1989). Accordingly, Congress encouraged NPS to "afford individuals and entities that have interests in surrounding lands the opportunity to participate in the development of the general management plan." *Id.* In other words, the interests of local property owners were a factor for NPS to consider.

However, there is absolutely no indication in either the Act or the legislative history that Congress intended to give the local neighborhoods special use rights, to sanction existing trespasses onto PNM lands, or to allow NPS to disregard its preservation mandate to help private businesses. Yet NPS has expressed its intent to do exactly these things. For example, NPS has indicated it would consider creating trails from the nearby neighborhoods, and then either not permit public use or not put those trails on maps. In essence, these would be private trails for nearby land owners. This goes beyond NPS's authority. Any trails created by NPS and paid for by taxpayer dollars would be subject to public use. It would be illegal to exclude the public from these trails. Not acknowledging this reality now will create management problems later. Such claims to special rights should not effect NPS's decision making.

5. The final proposed plan has been revised. See "Neighborhood Access Trails" section.

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- D. NPS has limited discretion to upgrade Unser Blvd and permit the Paseo del Norte extension.

SCLDF encourages NPS to continue resisting efforts to run major roads through PNM. Not only is this the right thing to do, but NPS has limited discretion to do otherwise. NPS's authority to authorize the proposed relocation and expansion of Unser Blvd, and the extension of Paseo del Norte (the "Paseo"), is limited by the terms and intent PNM Act. Transportation needs are addressed in section 106 of the Act, which states:

The Secretary may participate in land use of transportation planning conducted by appropriate local authorities for lands adjacent to the monument and may provide technical assistance to such authorities and affected landowners for such planning.

(emphasis added). It seems odd that Congress would mention adjacent transportation projects but not roads within PNM, unless Congress did not expect roads in PNM to be an issue because there would be no large roads.

Clearly the Paseo would not be authorized by the Act. However, the relocation of Unser Blvd may similarly be unauthorized, and may not be saved by the fact that it is an existing use. Congress granted only one exception for current existing uses in PNM, for electrical transmission or distribution facilities. PNM Act § 107. Since Congress made one exception, the *expressio unius canon* discussed earlier indicates that no other exceptions would be within Congress' intent. In fact, even for the power line exception, Congress encouraged the NPS to "pursue long range planning with affected utilities to examine the possibility of relocating power transmission facilities in anticipation of the time when the existing facilities need to be replaced." S. Rep. No. 101-230, 101st Cong., 1st Sess., at 10 (Dec. 20, 1989). Obviously, Congress did not see electrical power lines as compatible with the monument. If that is true, how could a large highway be compatible? It seems unlikely that Congress simply overlooked or was unaware of the Unser/Paseo issue, since it was already a controversy when PNM was created.

NPS should continue to resist the intimidation tactics used by organizations which see PNM's land as an easy way to increase profits by reducing the costs of accessing and providing services to new development. If this land was private rather than public, the developers would find a way around it, even if that increased their costs. They can also find a way around the cultural

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Comments, PNM DEIS
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resources within PNM's boundaries. NPS's mandate is to protect those resources, not make life easier for private business.

E. Impacts on Native American uses must be addressed.

The petroglyphs are not remnants of a lost culture, but part of the living tradition of the Pueblo people, who still consider this area sacred and still perform services at PNM regularly. Congress recognized that protection of the cultural resources of the West Mesa included preservation of Pueblo religious sites still used today, and required NPS to adhere to the principles of the American Indian Religious Freedom Act ("AIRFA"), 42 U.S.C. § 1996. Specifically, the Act requires the General Management Plan for PNM to include a "plan to implement" the provisions of AIRFA and which would "protect and preserve [for the Pueblo] their inherent right of freedom to believe, express, and exercise their traditional religions . . . including but not limited to access to the sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites."

The DEIS recognizes these duties and acknowledges the religious privacy rights of the Pueblo people. For example, the DEIS indicates that NPS will allow temporary closure of certain areas to prevent non-Indian interference with ceremonies, and will provide for joint consultation between the NPS and Pueblo authorities concerning minimization of adverse impacts on religious practices by development and visitor use.

Despite this, the DEIS identifies alternatives that favor increased recreation use, including opening new trails horseback riding and mountain biking, and excessive construction of trails and roads. Because protection of cultural resources includes protecting the living tradition of Pueblo religious practices at PNM, alternatives that unnecessarily interfere with those practices violate NPS's statutory mandate for the same reasons explained above.

In addition, the DEIS does not analyze the differing impacts of the four alternatives. Alternative 1 will have different effects on Pueblo worship than Alternatives 2, 3 or 4, yet these differences are not addressed. NEPA requires this analysis of impacts.

Finally, NPS must remember that it may not violate the protections afforded the Pueblos by the First Amendment to the U.S. Constitution and the Religious Freedom Restoration Act of 1993 ("RFRA"), 42 U.S.C. § 2000bb et seq., which prevents NPS

- 6. See "Impacts on Culturally Affiliated Groups" sections for each alternative and Table 9: Summary of the Impacts of the Alternatives.

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7 from placing an undue burden on the free exercise of religion within PNM's boundaries by the Pueblo people. Each of the four alternatives significantly impairs the Pueblo's ability to continue religious practices by, e.g., increasing recreational use, expanding roads, and providing private, unmonitored access to neighboring land owners. NPS has not offered any compelling government interest requiring such impairment, and has not considered proposals using means of accommodating non-religious visitor use that more fully protect the needs of the Pueblo people. NPS should consider management options which will least restrict Pueblo religious use while allowing a well-managed increase in non-religious uses.

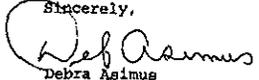
F. Conclusion

For all the reasons stated above, the DEIS violates NPS's statutory mandate and the requirements of NEPA. POTAP has offered NPS with a modified Alternative 2 that eliminates those deficiencies and would comply with the law. This alternative protects the historic and natural resources of PNM, and accommodates Pueblo religious practices, while still achieving NPS's goals for PNM. POTAP's modified Alternative 2 does what the DEIS's alternatives do not: it minimizes environmental and cultural resource damage by reducing uncontrolled access and inappropriate uses.

Each of the components of the modified alternative are analyzed somewhere in the DEIS. Accordingly, NPS could adopt the modified alternative in the FEIS without further analysis. If, however, NPS believes further analysis or public comment would be helpful, a short supplemental EIS could meet that need without placing an undue burden on agency resources. SCLDF encourages NPS to consider POTAP's modified alternative, and so avoid the problems which would be created by adoption of one of the alternatives discussed in the DEIS.

Thank you for this opportunity to provide comments. Please do not hesitate to contact me if I can be of any further assistance in this matter.

Sincerely,


Debra Asimus
Associate Attorney
Rocky Mountain Office

7. See previous response and page 39 in the draft plan — "American Indian Relationships, American Indian Religious Freedom Act, and Traditional Uses."

COMMENTS

RESPONSES



TAYLOR RANCH NEIGHBORHOOD ASSOCIATION INC.

November 16, 1995

Superintendent
Petroglyph National Monument
4735 Unser Boulevard NW
Albuquerque NM 87120

Dear Superintendent,

After the public meeting on October 26th discussing the Draft General Management Plan/Development Concept Plan for the Petroglyph National Monument, the Taylor Ranch Neighborhood Association Board of Directors voted that no General Management Plan for the Petroglyph National Monument is acceptable until it includes a provision for the extension of Paseo Del Norte westward through the monument to join Unser.

We are concerned that the various alternatives in the draft route national traffic through west side residential neighborhoods. The only way to avoid this disruption of neighborhoods is to route traffic on major commuting routes such as the Interstate highways and Paseo Del Norte. A short entrance road from Paseo to the Monument would provide minimum disruption to the surrounding neighborhoods.

We encourage you to suggest a way to resolve the impasse over the completion of Paseo Del Norte so that we can move beyond the current stalemate. As traffic continues to increase along Coors and Unser, a relief valve via Paseo Del Norte becomes more and more essential. If that relief valve is provided, the west side will be able to host national visitors to the Monument.

Sincerely,

Cecil van Berkel
President
Taylor Ranch Neighborhood Association

Exceptional Service in the National Interest

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Rec. PETE
NOV 06 1995

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As immediate neighbors of the proposed parking lot for neighborhood access to Petroglyph Park at Calle Norteña and Taylor Ranch Road, the undersigned oppose any such enhancements for reasons including, but not limited to:

- 1) a paved overlook at this site would not provide a view of any petroglyphs, only roof tops of neighboring houses;
- 2) a paved parking area at this site would increase the potential for graffiti and trash in the neighborhood (in fact, there are already 59 separate graffiti tags in a 100 foot radius of the proposed site, and almost daily drops of alcohol bottles in the immediate median);
- 3) since the unimproved acreage is primarily privately owned, a parking lot would only increase the ease of access to this private land for further dumping of trash, walking of pets and other recreational activities - in essence, the National Park Service would be providing a parking lot for people to trespass onto private property.

<u>John Block</u>	<u>[REDACTED]</u>	<u>10-4-95</u>
Name	Address	Date
<u>Joan Block</u>	<u>[REDACTED]</u>	<u>10-4-95</u>
Name	Address	Date
<u>Marion Kiefer</u>	<u>[REDACTED]</u>	<u>11-4-95</u>
Name	Address	Date
<u>Willy Bellinger</u>	<u>[REDACTED]</u>	<u>11-4-95</u>
Name	Address	Date
<u>Melanie Bellinger</u>	<u>[REDACTED]</u>	<u>11-4-95</u>
Name	Address	Date
<u>Maureen Thomas</u>	<u>[REDACTED]</u>	<u>11-5-95</u>
Name	Address	Date
<u>Ally White</u>	<u>[REDACTED]</u>	<u>11-5-95</u>
Name	Address	Date
<u>Richard White</u>	<u>[REDACTED]</u>	<u>11-5-95</u>
Name	Address	Date

- 1. The final plan has been revised to remove the proposed parking area at Calle Norteña.

COMMENTS

RESPONSES

Cherisse Webb	[Redacted]	15 Nov 95
Name	Address	Date
McCann, Antoinette	[Redacted]	11/5/95
Name	Address	Date
McCann, Alonzo	[Redacted]	11/5/95
Name	Address	Date
McCann-Walls, Kristen	"	11/5/95
Name	Address	Date
Walls, Daniel	"	11/5/95
Name	Address	Date
Hekina Torregano	[Redacted]	11/5/95
Name	Address	Date
Brandy Butler	[Redacted]	11/5/95
Name	Address	Date
[Signature]	[Redacted]	11/5/95
Name	Address	Date
Monty Sobieski	[Redacted]	11/6/95
Name	Address	Date
Peter Rydy	[Redacted]	11/6/95
Name	Address	Date

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RESPONSES

 Westland Development Co., Inc.

401 Coors Blvd. N.W.
Albuquerque, New Mexico 87121
(505) 831-9600
FAX (505) 831-4865
1-800-726-3250

RECEIVED N.P.S.

October 19, 1995

OCT 23 1995

Mr. Douglas Eury, Acting Superintendent
Petroglyph National Monument
6001 Unser Blvd. NW
Albuquerque, New Mexico 87120

Petroglyph National Monument

Re: August 1995 Draft General Management/Development Concept
Plan and Environmental Impact Statement for Petroglyph
National Monument.

Dear Mr. Eury:

The management staff of Westland Development Co. Inc. has recently completed its review of the August 1995 draft. The purpose of this letter is to document our comments and concerns regarding that document for the public record. I will express our concerns in two parts, but the underlying issues are common to both. First I will address those issues that are specific to Westland Development Co. and its lands which abut the southern end of the Monument. Secondly I will discuss those concerns which are more general in nature and impact the surrounding area on a regional scale.

ISSUES OF SPECIFIC CONCERN TO WESTLAND DEVELOPMENT CO.

The NPS preferred (Alternate #1) plan shows two facilities at the south end of the Monument, near the base of the Mesa Prieta, adjacent to Westland's property. They are a heritage education center and an overlook and public parking facility. Public access for these facilities is shown across Westland's property to the south. As we have indicated numerous times to the NPS, public access for monument visitors through this area is inconsistent with Westland's future development plans for the area, which we envision as a low density residential resort area.

We believe that the heritage education center would be much more appropriately located at the mouth of Rinconada Canyon adjacent to the proposed visitor contact center. In these times of tight federal budget constraints, this would make a lot more sense because of economies of scale that could be realized by combining the two facilities, both at the time of initial construction and over the life of the facility with regard to management, maintenance, operations, staffing and security. The Monument has extensive major arterial street frontage there, on

- 1. The proposed plan has been revised. See alternative 1, "Visitor Center — Boca Negra Canyon" section. The development of a facility for heritage education has been eliminated, but the function of heritage education is emphasized. The function may be included at the proposed visitor center, or the National Park Service could cooperate with the city and/or others to share the function of this facility outside of the monument boundary.

The plan has been revised to include a visitor contact facility at the southern end of Mesa Prieta and a parking area at or near the southern portion of the monument. The National Park Service will continue to work with Westland Development Co., Inc., and the city to explore access options that are agreeable to the affected parties.

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1

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Mr. Douglas Eury
October 19, 1995
page 2

Unser Boulevard, and there is an approved access point at St. Joseph Street. This site has the added benefit of being much more convenient to monument visitors via Interstate-40 and Unser Boulevard, and it will never disturb the tranquility of, or ~~create a nuisance within the future residential neighborhoods~~ that are planned for the area south of the Mesa Prieta. Likewise, the proposed overlook and public parking area would be much more appropriately accessed from the existing Paseo del Volcan near Double Eagle II Airport, across National Monument property (once they have completed purchasing it) on top of the mesa, rather than through the planned future residential areas from below.

2

A second area of concern that we have involves the National Park Service proposed policy regarding rights-of way for stormwater drainage control and detention facilities. There is an existing storm drainage control structure located on the Mirehaven Arroyo at the south end of the Mesa Prieta. In addition, the April 1987 Northwest Mesa Drainage Management Plan calls for future construction of a storm water detention facility in the same general area as future development warrants it. Both of these facilities are located just inside the southern boundary of the Monument on Westland property that has not yet been purchased by the National Park Service. These facilities are needed to protect development in areas southeast of the Monument and to accommodate future developed flows generated above the Monument in the area of the Double Eagle II Airport.

On page 51, the Draft NPS Management Plan states, "As lands adjacent to the Monument are developed, . . . Requests for rights of way for water, sewer, . . . and stormwater control structures will be reviewed on a case by case basis. However, there must be specific statutory authority for granting such rights-of-way and there must be no feasible or practicable alternative, even if the costs are higher." The Management Plan further states, "Rights-of-way issued by the National Park Service permit access for construction, operation and maintenance of facilities but do not grant any interest in land and are revocable at the discretion of the director." This language concerns us greatly because in our view "feasibility" means the best possible engineering solution to a problem which can be constructed for the least possible expenditure of the citizens dollars. It is clear from the language in the Plan that the National Park Service does not care how poorly an alternative engineering solution works, how much it costs to construct or how much it will cost to operate and maintain it once it is built. The result of these policies will be to force us to spend a lot more money to construct inferior solutions to the stormwater drainage problem. The protection of our citizens and their property should have priority.

3

- 2. The National Park Service will continue to work with Westland Development Co., Inc., and the city to identify an appropriate access to the monument from the south. The environmental impacts and the cost of building a road from Paseo del Volcan would outweigh the benefits of building such a road.
- 3. The National Park Service does not have the authority to negotiate regarding developments that would result in a derogation of the values for which the monument was established. The National Park Service does not have the authority to deviate from federal policy. The National Park Service will continue to work with Westland Development Co., Inc., to develop alternatives and to resolve the stormwater drainage issues.

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Mr. Douglas Bury
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Both the preferred alternative #1 and alternative #2 in the plan call for the expansion of the Monument boundaries in certain areas. ~~Although these proposed expansion areas do not impact~~ Westland's property directly, we are not in favor of them. The National Park Service has been very slow in purchasing private land that is within the original monument boundaries. Although the National Park Service has purchased about 1,300 of the nearly 2,000 acres of Westland's property that were within the original boundary, there are still almost 700 acres that have not yet been purchased. It now appears that additional federal dollars for acquisition of Monument land may not be approved by Congress. To take additional private property without having the funds available to pay for it is wrong.

ISSUES OF GENERAL CONCERN REGARDING THE PROPOSED MANAGEMENT PLAN

The General Management Plan is also identified as the Development Concept Plan Environmental Impact Statement. It addresses at length the impacts that the surrounding community may have on the Monument. It does not however, address the impacts that the Monument is causing to the surrounding community. According to the 1993 book titled "Environmental Assessment" by R.K. Jain et. al., the purpose of an "environmental impact statement" is to assess the impacts of a proposed federal action on the surrounding environment, including both the natural environment (biophysical) and the human environment (socioeconomic). Socioeconomic attributes include items such as land use patterns, lifestyles, psychological needs, physiological systems, community needs, regional economic stability, public sector review, per capita consumption and fuel resources.

Obviously, blocking the Paseo del Norte crossing of the Monument will seriously impair the long range viability of this community's arterial transportation network and generate serious negative socioeconomic impacts. Undermining the future development potential of the Double Eagle II Airport and adjacent employment and commercial centers associated with it will generate serious negative socioeconomic impacts. Not allowing easements across the Monument to accommodate the storm drainage and utility systems necessary to support future community development will generate serious negative socioeconomic impacts. Creating access points to the Monument that will bring outside traffic through residential neighborhoods will generate serious negative socioeconomic impacts to those neighborhoods.

With a little cooperation and reasonableness on the part of the National Park Service, all of these issues could be resolved

- 4. The National Park Service can only purchase lands with funds authorized and appropriated by Congress. The National Park Service has been in the process of negotiating the purchase of lands from the Westland Development Co., Inc., each year since the monument was established. The National Park Service will continue to acquire private lands within the monument boundary as funds are available.
- 5. The issue of Paseo del Norte has been identified as an issue beyond the scope of this plan.

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Mr. Douglas Eury
October 19, 1995
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in ways that would minimize negative impacts to the natural environment of the Monument. By taking the hard line that it has, the Park Service has created perhaps the greatest negative impact of all on Petroglyph National Monument, the loss of the good will of many of the people who supported the Monument and helped to make it a reality with the understanding that it was intended to be an "Urban Park" that would coexist within a dynamic metropolitan community.

Finally, we feel that the proposed alternative #1 is too restrictive in providing access for the general public to major portions of the Monument area which includes the very best views of the City, the Sandias and the Rio Grande Valley below. Our elderly, handicapped and very young citizens who are not able to endure the long trek that will be required to access these areas on foot will not have an opportunity to experience some of the prettiest places within their Monument.

Thank you for allowing us this opportunity to express our thoughts and concerns regarding the August 1995 Draft General Management Plan/Development Concept Plan Environmental Impact Statement for the Petroglyph National Monument.

Sincerely,

Fred Ambrogi
Project Coordinator

- cc: Mr. Bob Grant, Chairman, Petroglyph National Monument Advisory Commission
- Mr. Joe Chavez, Petroglyph National Monument Advisory Commission
- Mayer Martin Chavez, City of Albuquerque
- Mr. Alan Armijo, Albuquerque City Council
- Mr. Al Valdez, Chairman, Bernalillo County Commission
- Mr. Ken Sanchez, Bernalillo County Commission
- Senator Pete Domenici
- Congressman Steve Schiff

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October 19, 1995

Petroglyph National Monument Advisory Commission
Chairperson Bob Grant
8001 Unser Blvd. NW
Albuquerque, NM 87120

Re: Westside Action Council Comments Regarding Petroglyph National Monument Draft General Management Plan EIS

Dear Commissioners:

On behalf of the Westside Action Council, I am pleased to forward the attached information concerning the Petroglyph Monument Draft General Management Plan. The Westside Action Council is comprised of representatives from the:

- ✓ Greater Albuquerque Chamber of Commerce
- ✓ Economic Forum
- ✓ National Association of Industrial and Office Parks (representing the development community)
- ✓ Paradise Hills Neighborhood Association
- ✓ Black Ranch
- ✓ Volcano Cliffs Property Owners Association
- ✓ Sandia Properties Limited Co.

While we recognize that there are other major issues dealing with the draft management plan, we have elected to focus on the single significant issue of the Paseo del Norte Crossing. The Paseo del Norte Crossing is necessary as a matter of fairness, common sense, history, and law. We have attempted to provide a comprehensive view of why this roadway crossing should be included in the final masterplan document.

I also call your attention to another important document for your review. Attached is a recent petition signed by representatives of 19 neighborhood groups. Over 90,000 citizens are represented by these neighborhood leaders. Also included are positions of support for the Paseo del Norte crossing by various groups, including the Bernalillo County Commission. This type of support again points to the fact that much of Albuquerque's west mesa is united on this important issue.

We respectfully request that you adopt a position that includes the Paseo del Norte Crossing in the Final Management Plan. We believe that such a decision will be fair, display common sense, and be a sound compromise to the many perspectives that have been shared on this topic.

Best wishes on your deliberations. Thank you for your time.

Sincerely,

Brian G. Burnett, P.E.
Chair
Westside Action Council

BGB/dc
Enclosures

PTMANS0110MONUMENT.DRAFT-101995

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1

1. The Paseo del Norte corridor is an issue beyond the scope of this plan.

The Draft and Final General Management Plan / Environmental Impact Statements are consistent with federal law and policy. Paseo del Norte was identified on page 21 of the draft plan as an issue beyond the scope of this general management plan. Therefore, further analysis as cited in 1502.9(a) is not required.

The purpose of the monument is a determination made by the National Park Service. The monument purpose is determined by assessing the legislation and the legislative record with the proposed action. It has been determined as stated on page 22, that Paseo del Norte does not serve a monument purpose. There is no mention of Paseo del Norte in Public Law 101-313 establishing the monument or in the legislative record.

No monument purpose can be found for a six-lane 50 mph road through the monument. Unser Boulevard has been determined to have a monument purpose because it would relocate the current Unser Boulevard, which goes through the center of Boca Negra Canyon. The existing Unser Boulevard has an adverse effect on current (and future) visitors. The new alignment for Unser Boulevard does not adversely affect monument resources. Furthermore, Unser Boulevard was mentioned in the legislative record.

It is not the purpose of the general management plan to resolve citywide and regional transportation issues. The Unser Middle Project has been discussed as an issue beyond the scope of this plan.

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JUSTIFICATION FOR INCLUDING THE PASEO DEL NORTE CROSSING IN THE MASTER PLAN FOR PETROGLYPH NATIONAL MONUMENT

INTRODUCTION

Incorporating the Paseo del Norte Crossing in the master plan is a significant proposal that not only benefits the community, but will benefit the monument as well. Outlined below is a series of points which highlight the benefits of this important roadway.

BENEFITS TO THE MONUMENT

- > The Paseo del Norte crossing was an essential part of this urban Monument from the inception of the planning/lobbying process. If the Park Service and the present opponents had argued in 1990 that the crossing would not be acceptable, the Monument would not have been created. This crossing benefits the Monument because without the crossing, no Monument would be in existence.
- > Paseo del Norte crossing the Monument south of the Piedras Marcadas Canyon can be used to limit access to this north area and better protect the Piedras Marcadas petroglyphs, which represent the second best concentration in the Monument. The Rock Art Research Center could also be successfully integrated on this north end.
- > The long-planned Paseo del Norte crossing provides more appropriate access to many areas of the Monument and would help eliminate neighborhood parking and future trespass issues. The current plan for visitor parking in existing neighborhoods east of the Monument will be a disaster. This has not worked in the Sandia foothills and it will not work adjacent to the Monument.
- > The Paseo del Norte route will provide better access to the sacred volcanoes for Native Americans from the northern pueblos. It enhances their opportunity to conduct traditional ceremonies in that area.
- > Paseo del Norte provides better access to the Monument for visitors. We understand that the Park Service yearly visitor estimates used to justify the Monument were based upon the Paseo del Norte crossing and a convenient location for the Visitor Center.
- > The depressed roadway section through this area will significantly limit noise impacts. It will not disrupt the Piedras Marcadas Canyon to the north.

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BENEFITS TO THE NATIVE AMERICAN COMMUNITY

We recognize the spiritual significance of the area to the Native American Community. However, the Monument's size was established to take into account this issue and afford the Park Service the ability to adequately preserve and protect. Several key points should be considered:

- > The Paseo del Norte alignment only directly impacts 3-5 petroglyphs. The Monument's size and geographic shape allow for the proper protection of the other 16,900 petroglyphs.
- > The roadway provides better access to the sacred volcanoes area. The facility enhances opportunities to conduct traditional ceremonies in the area.

BENEFITS TO ACHIEVING LONG TERM REGIONAL PLANNING OBJECTIVES

The planning for Paseo del Norte has been thorough, comprehensive, and has included equitable compromises throughout the entire process. (See Attachment A outlining key steps in the process). It is time to move on with plans developed years ago. Listed below are several highlights of the process which support these perspectives:

- > The decision making process followed all local and legal procedures and included extensive, public dialogue among all impacted parties.
- > Acquisition for the Paseo del Norte right-of-way has been extensive and systematic over the past several decades.
- > Appropriate legal provisions have been established to insure the construction of the roadway (see Attachment A for more detail).
- > In the long course of compromise and public input, four major east-west roadways were eliminated from future consideration as thoroughfares: Kimmick, Atrisco, Calle Norteña, and Montaña. The elimination of these major roadways was based upon alleged significant impacts to the Monument. Paseo del Norte was the preferred alternative because of the minimum impacts to the Monument.
- > A major opponent to the roadway construction, "The Friends of the Albuquerque Petroglyphs," supported the Paseo del Norte alignment throughout the long planning process. As late as 1990, FOTAP committed, in writing, to lobby in favor of the present proposed alignment.
- > As part of the Citizens Advisory Group in 1987, the Sandia Pueblo, the All Indian Pueblo Council, Sierra Club, FOTAP and many other environmental representatives participated in the approval process of the Paseo del Norte crossing.
- > Prior to the enactment of the legislation creating the Petroglyph National Monument, the National Park Service acknowledged and agreed to honor the City's plans for the construction of Paseo del Norte. The Park Service drafted a map incorporating Paseo del Norte and the map was enacted into law. Several years after passage of the law, the Park Service has decided to attempt to get out of its commitment.

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- Y Alternative routes to the extension are prohibitably expensive, and will not efficiently address transportation needs or environmental concerns.
- Y The cost for alternative routes ignores the existing infrastructure investment along the corridor. In essence, alternative routes lose aside millions of dollars of existing infrastructure.

BENEFITS TO THE SURROUNDING NEIGHBORHOODS

- Y As stated above, the roadway would help eliminate neighboring parking and future trespass issues. To repeat, the current plan for visitor parking in existing neighborhoods east of the monument will be a disaster. The current parking strategies are not effective or fair to the surrounding neighborhoods.
- Y Based on current developments, the only alternative to a Paseo del Norte crossing is to reroute the roadway through the Paradise Hills neighborhood. Rerouting Paseo del Norte through Paradise Hills would require the destruction of at least 54 homes, 10 townhouses, a Texaco station, an Allsup's convenience store and gas station, a rest home, a shopping center with approximately 15 operator-owned businesses, a Catholic Church and its educational building, and force a dozen or more street closures. The roadway would also be adjacent to a community park, the community center and gym, the center's annex, a swimming pool, two soccer fields, another church, and the school affiliated with it. The Methodist Church would be affected. It would probably require relocation. Finally, the children of Petroglyph Elementary School would be exposed to high concentrations of carbon monoxide generated by the 30,000 cars passing just a few feet from the campus.
- Y Clearly, a Paseo del Norte escarpment crossing has the least overall environmental impact. Is it really necessary to destroy significant portions of Paradise Hills and adjoining neighborhoods to "preserve" petroglyphs that are not endangered?

BENEFITS TO RESPONSIBILITY MEETING GROWTH AND SAFETY CHALLENGES ON ALBUQUERQUE'S WEST MESA

- Y The Paseo del Norte right-of-way through the Monument not only provides for the roadway, but also provides for a corridor for utility extensions as well as necessary drainage facilities. The corridor will save enormous efforts and a significant amount of public funds versus going around the Monument. The corridor provides for a conduit for all utilities to pass through the Monument at a point that is least intrusive to all parties involved.
- Y Alternate roadway alignments do not address the long range transportation network. It is an extremely expensive solution to avoid the Monument which does not benefit the long term strategies already in place.
- Y Over 60,000 vehicles utilize the Coors Boulevard/40 interchange. There must be relief provided for this facility. Some will argue that expanding Coors Boulevard is acceptable. It is not. Simply expanding Coors Blvd. alone does not meet long-term capacity and safety issues.

THE HISTORY OF THE LONG-PLANNED PASEO DEL NORTE EXTENSION

I. THE ORIGINS AND OWNERSHIP OF THE PASEO DEL NORTE EXTENSION RIGHT-OF-WAY.

The long-planned Paseo del Norte extension west of Coors Boulevard lies almost entirely within the historic Alameda Land Grant, the land grant immediately north of the Atrisco Land Grant.

The Alameda Land Grant was established in 1710 by a grant from the King of Spain to Francisco Montes Vigil and his heirs. Later on in that same year, the Alameda Grant was sold to Juan Gonzales, a Captain in the Spanish Army.

In 1713, the transfer of the Alameda Grant to Juan Gonzales was approved by the Governor of the Province of New Mexico. The title to Mr. Gonzales for the Alameda Land Grant was also referred to as perfected title in the treaties between the King of Spain and the Mexican Republic in 1821 and the Treaty of Guadalupe of Hidalgo and the United States in 1848.

In 1848, the Treaty of Hidalgo and the United States set out the Native American Indian Reservation claims in the adjacent areas, including the Sandia Indian and Isleta Indian Reservations. There were no claims by any of the local Native American Indian tribes of any interest in the Alameda Grant properties for worship purposes or any other reason.

On December 16, 1892, in accordance with the Act of Congress dated March 3, 1891, a written decree was entered, confirming the legal ownership status with the heirs of Juan Gonzales. In 1919, the Alameda Grant was sold to the San Mateo Land and Cattle Company. In 1920, the United States issued a patent to the heirs of Juan Gonzales and Francisco Montes Vigil.

In 1929, the Albert F. Black Family acquired title to 20,500 acres of the Alameda Land Grant. This portion of the Alameda Land Grant extended from the west bank of the Rio Grande River to the "Ceja" area of the west boundary of the Alameda Grant, approximately four miles west of the small portion of the Alameda Grant property that is being acquired for the Petroglyph Monument. The original holding of the Alameda Land Grant extended east to the base of the Sandia Mountains, just south of the Sandia Indian Reservation. The 20,500 acres of the Alameda Grant purchased by the Black Family was completely fenced and maintained as private ranch land prior to and subsequent to its purchase. This land had been under continuous private ownership and ranched by private interests since 1710, including the Piedras Marcadas Canyon area of the Black Ranch.

In 1959, the Albert F. Black Family sold 8,500 acres of the Black Ranch in the Alameda Grant to U.S. Land Corporation, the parent company of Horizon Corporation, which developed Paradise Hills. Certain mineral rights and easement rights were reserved to the Black Family.

ATTACHMENT A

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In the mid- to late-1980's, portions of the planned right-of-way for Paseo del Norte to the City of Albuquerque were dedicated as a platting requirement.

In 1990, the City of Albuquerque and the National Park Service began to acquire portions of the Alameda Grant property, formerly owned by the Black Family, for the northern portion of the proposed Petroglyph National Monument.

II. THE HISTORY OF THE APPROVALS OF THE ALIGNMENT OF PASEO DEL NORTE WEST OF COORS BOULEVARD.

1961:

Paradise Boulevard was originally the principal access from Coors Boulevard west to Paradise Hills and other Alameda Grant lands west of Paradise Hills in the Alameda Land Grant area.

1980:

Hearings began at the Middle Rio Grande Council of Governments ("COG") and its Urban Transportation Planning Policy Board ("UTPPB") to study moving Paradise Boulevard, the principal arterial west of Coors Boulevard (NMSH #448) to the south boundary of the Alameda Grant. COG is the federally mandated, regional transportation board that approves all major highways.

1981:

On March 20, 1981, the UTPPB adopted resolution R-81-5, which designated the study area to officially relocate Paradise Boulevard. The study area was between Paradise Boulevard and the south boundary of the Alameda Land Grant. The official 1981 Long Range Major Street Plan ("LRMSP") identified Paseo del Norte.

1983:

The Final Environmental Impact Statement for the North Valley River Crossings Study, released in September 1983, proposed the Paseo del Norte alignment (El Pueblo).

1985:

The UTPPB committee of COG passed resolution R-85-3, deleting Paradise Boulevard as the principal arterial west of Coors Boulevard and officially designated Paseo del Norte through the Petroglyph Park as the east-west principal arterial on the LRMSP of COG.

1986:

The Environmental Planning Commission approved the formal Federal Environmental Impact Study concerning Paseo del Norte Boulevard.

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1987:

The UTPPB established the present right-of-way location with mitigation measures for the protection of the Petroglyph National Monument in the Shennandoah Subdivision at the Paseo del Norte escarpment crossing. This action was the result of the efforts of a special advisory committee consisting of representatives of the City of Albuquerque, Beliamah Community Development (developer of Shennandoah subdivision), FOTAP, Open Space Task Group and the Albuquerque Conservation Association.

All involved endorsed this move of the principal east-west arterial from Paradise Boulevard to the currently proposed Paseo del Norte location through the narrowest portion of the Petroglyph Park.

Proponents of moving the principal east-west access from Paradise Boulevard to the currently proposed alignment of Paseo del Norte during the COG/UTPPB hearing included:

1. Ike Eastvold - President of the Friends of the Albuquerque Petroglyphs (FOTAP).
2. The Albuquerque Chapter of the Sierra Club.
3. The COG representative of the All Indian Pueblo Council, Edward Palsano of the Pueblo of Sandia.

1987:

The Northwest Mesa Escarpment Plan was completed -- the culmination of a planning effort by public sector officials, property owners and conservation groups for the protection and preservation of the cultural resources within an area subsequently designated the Petroglyph National Monument. Of particular significance in the plan is the recognition of the need for the Unser Blvd. and Paseo del Norte, as recommended in the final EIS for the Unser "Middle" project.

The Park Service endorsed the Plan, specifically commending the Paseo del Norte crossing.

1988:

The Albuquerque City Council adopts Resolution R-339 approving the Northwest Mesa Escarpment Plan, which included Paseo del Norte and addresses drainage improvements, water and sewer lines, bikeways and private utilities to be located within the right-of-way.

A Congressional Advisory Committee was formed. FOTAP, the Park Service, Sierra Club, the All Indian Pueblo Council, the Albuquerque Conservation Association, private property owners and city officials considered and agreed upon boundaries and acquisition priorities. The Paseo del Norte crossing

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was recognized and included as an important boundary in the maps and the text of the report. The present preferred route for the Paseo del Norte crossing was specifically recommended by the Sierra Club, Friends of the Albuquerque Petroglyphs, the All-Indian Pueblo Council and other environmental groups as a demarcation road between top priority 1 acquisition area (Piedras Marcadas) and a low priority "linkage" acquisition to the south. The Congressional Advisory Committee brought together many diverse views, and a compromise of political, religious and economic interests was negotiated. Private property rights of individuals, ~~development~~ companies and the City were compromised in exchange for limitations upon the creation and development of the Monument. The report of the Congressional Advisory Committee prominently incorporates the Paseo del Norte crossing in maps and the text of the report, which was used to lobby Congress for the creation of the Monument. FOTAP widely disseminated a map specifically listing the Paseo del Norte crossing.

1989:

The City Council passed R-455 which established standards for Unser Boulevard and specified the need to expedite construction of the Paseo del Norte crossing to mitigate potential traffic congestion and associated impacts within the Paradise Hills area. The Park Service, by its Regional Director, endorsed the expedited construction of the Paseo del Norte crossing.

The Congressional hearings on Senate Bill 286 to establish the Petroglyph National Monument included a statement from the National Parks and Conservation Association which recognized the need for a Paseo del Norte crossing. At the same hearing, Ike Eastvold, president of FOTAP, lauded the relocation of Paseo del Norte to its present alignment.

1990:

The Park Service prepared draft legislation referencing and incorporating a map rather than a metes and bounds description of the acreage, easements and right-of-ways to be acquired. On the eve of consideration by Congress, the Park Service omits Paseo del Norte from the map which is to be enacted into law. On May 24, 1990, the Public Works Department of the City of Albuquerque requests that the map specifically identify Paseo del Norte. Without hesitation, the Park Service incorporates the Paseo del Norte crossing into the legislation enacted into law by Congress.

The Senate Report accompanying the legislation establishes that the Monument "will be an urban park with a variety of existing land uses and surrounding lands, the designation of a national monument is not intended to deprive landowners of the existing uses"

As part of the lobbying effort, Ike Eastvold, president of FOTAP, writes to residents of Paradise Hills and endorses the Paseo del Norte crossing and

COMMENTS

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provides his written commitment to lobby the "decision makers" for the construction of the Paseo del Norte crossing.

Public Law 101-313.
Establishes Petroglyph National Monument on June 27, 1990. The statute specifically incorporates a Park Service map listing the Paseo del Norte crossing: "The Secretary shall include 1,778 acres ... as depicted on the map"

The Park Service provided separate, written guarantees that the City, not the Park Service, would manage all of the City lands within the Piedras Marcadas portion of the Monument and that the Park Service would not attempt to "veto" Unser Blvd., Double Eagle II "or other proposed developments".

The Park Service analyzed the National Environment Policy Act (NEPA) and assured the City and everyone else that it does not apply to the Paseo del Norte crossing.

1991:
City Council passes R-470 and refused federal funds in order to avoid any question about the application of NEPA. The bikeways master plan establishes provisions for bicycles on Paseo del Norte. Drainage, utility lines, and other infrastructure plans were finalized based on the Paseo del Norte crossing.

The Park Service again assures the public in writing that it does not oppose the Paseo del Norte crossing and NEPA does not apply.

The Park Service continues to take the logical position that the "Unser Boulevard and Paseo del Norte escarpment crossings are consistent with future roadway locations generally identified in the boundary map established by Congress."

1992-1993:
The Park Service changes its position and announces that it will not support the long-planned extension of Paseo del Norte and NEPA does apply to all City plans that are contrary to the Park Services' new position.

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Petroglyph Politics: The Park Service Should Honor Its Representations

The Park Service was an active participant in the City/County planning process for the Paseo del Norte crossing. The Park Service organized and led the political process to obtain a public consensus concerning the creation of the Petroglyph Monument. The Congressional Advisory Committee was formed, through the efforts of Senator Domenici and the Park Service. This Committee, including FOTAP, the Sierra Club, Park Service and the All Indian Pueblo Council, specifically agreed and adopted the Paseo del Norte crossing as the southern boundary of the Piedras Marcadas unit. The Park Service then drafted the federal legislation which incorporated the map (also drafted by the Park Service) and specifically listed the Paseo del Norte crossing.

A. Congress Has Already Authorized the Paseo del Norte Crossing.

The legislation creating the Petroglyphs Monument included the Paseo del Norte extension. An additional "Act of Congress" is redundant. The map prepared by the Park Service specifically designating the Paseo del Norte crossing was enacted into law and the language of the law is specific concerning the possible expansion of the Monument into the Piedras Marcadas Unit. The statute provides for a possible expansion to include "the approximately 1,779 acres generally known as the Piedras Marcadas Unit as depicted on the map" Section 104(a)(1) PL 101-313 June 27, 1990. See, also, § 105 which provides that the City of Albuquerque shall manage and develop the general management and operational plans for the Piedras Marcadas Unit.

Through 1992, the Park Service and Friends of the Albuquerque Petroglyphs and other groups never disputed the obligation to build the long-planned Paseo del Norte crossing. The Park Service affirmatively stated it was not opposed.

Today's politically expedient argument by the Park Service politicians, that the map drafted by the Park Service which shows Paseo del Norte does not provide sufficient authority, is contrary to the position and interpretations of the law by the Park Service in 1991. In comments on the Paseo del Norte Corridor Analysis Report the Park Service stated that "Both the Unser Boulevard and Paseo del Norte escarpment crossings are consistent with future roadway locations generally identified in the boundary map established by Congress."

Sometime in 1992, apparently as a result of pressure by extreme special interest, environmental groups, the Park Service embraced a newly discovered, unprecedented loophole: it was argued for the first time in 1992 that the specific and literal language of the statute which adopted the map depicting the Paseo del Norte crossing was not

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RESPONSES

sufficient, that only a written text and the map together could create sufficient authority for this crossing. No legal precedent for this new position has been identified at any time. Nor has the Park Service sufficiently explained why this new theory does not apply to the Unser Boulevard crossing.

As a matter of law and common sense words are given an ordinary, everyday meaning and the statute cannot be construed to make words superfluous, void or insignificant. See e.g., U.S. v. Austin, 614 F. Supp. 1208, 1218-19 (D.N.M. 1985). Basic black letter law concerning the conveyance of property provides that a map or a document referencing a deed is perfectly acceptable. The map drafted by the Park Service depicting the Paseo del Norte crossing along with the specific text of the statute also drafted by the Park Service establishes the Monument "as depicted on the map." See generally, 23 Am.Jur.2d § 61 (1983). Paseo del Norte is part of the enabling legislation and an additional metes and bounds or other property description in the text of the legislation to be superfluous. See 26 C.J.S. Deeds, § 101(b) at 887-888 (1958) and 25 Am.Jur.2d, Easements and License, § 26 (1966).

- B. The Secretary of the Interior Should Exercise Administrative Authority and Authorize the Paseo del Norte Crossing.

Even without either of the separate specific authorities for construction of the crossing noted above, the Park Service has the administrative authority and, under the circumstances, is required to allow the long-planned crossing. The Paseo del Norte Crossing is consistent with the values and purposes of this urban monument and the Park Service must approve the extension. The Park Service's position that it can not administratively authorize the crossing is not accurate as a matter of law or equity. For precedent for the authority to administratively authorize a crossing, we need not look farther than the Park Service's decision to administratively authorize the Unser Boulevard crossing. Paseo del Norte is an essential part of the urban monument, from the very inception of the planning/lobbying process. If the Park Service or the present opponents had argued in 1990 that the crossing would be opposed in 1995, the Monument would not have been created. The crossing benefits the Monument because without the crossing the Monument would not exist. As noted in the legislative history, Paseo del Norte is an urban park not a wilderness area. Paseo was planned prior to the legislation, the legislation specifically identifies the Paseo del Norte crossing, in 1991 the Park Service interpreted the law as authorizing it, and the only reasonable conclusion that can be drawn is that Paseo del Norte is a part of the urban park from the Monument's inception and therefore obviously serves a park purpose.

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The crossing benefits and enhances the purposes of this urban monument. The body of the Chamber's transmittal letter, as well as the City of Albuquerque's submittal, summarizes the benefits.

Contrary to the dis-information campaign of the opponents of the extension, roads pass through many national monuments and parks including Jewell Cave National Monument in South Dakota, Joshua Tree National Monument in California (three roads), Death Valley National Monument (four highways), the Petrified Forest National Park in Arizona, Olympe National Park, Yosemite (three highways), Yellow Stone (three highways), Grand Teton (two highways) and Acadia National Park (four highways).

The authority and precedent the Park Service argues is now missing with regard to Paseo del Norte and can be located in a Park Services' decision concerning this very monument. Another road bisecting Paseo del Norte, Unser, is "lawful" and acceptable. The Park Service's public position that Unser is somehow lawful but Paseo del Norte is not, is mere double-talk.

*The construction of Paseo del Norte through the monument is based on other sound legal grounds. See *Sierra Club v. Hickie*, 433 F.2d 25 (9th Cir. 1970) *aff'd on other grounds* 405 U.S. 727, 731, 92 S.Ct. 1361 (1972). In this landmark case, the State of California proposed a new road through Sequoia National Park, part of a 20 mile road project between two points outside of the park. The Secretary of Interior determined that the proposal advanced by a private developer, Walt Disney Productions, was an appropriate use. The Ninth Circuit upheld the Secretary of Interior's decision. *Id.**

*The legislation authorizing and creating the Sequoia National Park did not expressly provide for construction of the roads through the park or include as part of its enabling legislation a map depicting the road in question. The Park Service pulled no "bit and switch" on the California locals. The Walt Disney road approved in the *Sierra Club* case was not planned until well after creation of the park; yet, the *Secretary of the Interior found that the 9.2 mile road did not impermissible derogate the purposes of Sequoia National Park.**

By contrast, the Petroglyph Monument was created pursuant to a map expressly depicting Paseo del Norte, the property is subject to an easement for a road and Paseo del Norte was planned many years. Paseo del Norte cannot possibly derogate the values and purposes of this urban park. The Park Service needs to honor its word with the City, local planning entities, the neighborhood associations, the impacted public and private developers and assist in the construction of the Paseo del Norte crossing.

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NEIGHBORHOOD ASSOCIATION
SUPPORTING THE CONSTRUCTION OF
PASADENA DEL NORTE ACROSS
PETROGLYPH NATIONAL MONUMENT

▼ Taylor Ranch	29,700
Paradise Hills	16,500
Westgate Heights	10,000
▼ Alameda/North Valley	7,500
▼ Alameda Alliance	7,000
▼ Vista Hills	5,000
▼ River's Edge One	2,400
▼ Ladera Heights	2,000
▼ Corrales Heights	2,000
▼ Tanoan East	1,800
▼ Ladera East	1,600
▼ Eagle Ranch	1,500
▼ The Ridges of High Resort	1,500
▼ Eagle Ridge	510
▼ High Resort Village	375
▼ Saragossa	250
▼ Western Meadows Areas	250
▼ The Islands	150
▼ San Blas	125
TOTAL RESIDENTS	90,160

COMMENTS

RESPONSES

April 30, 1995

TO: The New Mexico Congressional Delegation

FROM: Representatives of the Rio Rancho, North Valley and West Side Neighborhoods

~~SUBJECT: A request related to the extension of Paseo del Norte through Petroglyph National Monument~~

We the undersigned, representatives of the following neighborhood associations, hereby request that the New Mexico delegation seek to amend the Petroglyph National Monument enabling legislation to provide for the extension of Paseo del Norte and Unser Boulevard through the Monument.

The failure of the Congress to provide for the extension of these roadways when the Act was passed has posed a unique and unintended burden on not only the neighborhoods adjacent to the monument but also to the Cities of Albuquerque and Rio Rancho. Without these roadways, the neighborhoods of Paradise Hills and Taylor Ranch will bear the full brunt of traffic burdens due to Monument visitors and the tremendous population growth in Rio Rancho and on Albuquerque's West Side. There would also be a large ripple effect particularly damaging to Rio Rancho and neighborhoods in the North Valley.

We believe that both the Delegation and the City of Albuquerque share the responsibility for correcting this deficiency in the legislation. We do not believe that it was the intent of Congress to expect the residents of local neighborhoods to sacrifice either their safety or their quality of life due to formation of the Monument.

We also point out to you, as neighbors of the Monument we supported its creation, and without that support, the Monument could very well never have been created. We also contend that the Monument still needs the support and good will of the Neighborhoods if it is to be a viable and functional part of Albuquerque.

We further believe that reasonable accommodation with respect to Native American concerns can be made to happen, and urge the delegation to aggressively pursue whatever methods, measures, and assistance may be necessary to secure their support for the roads.

While we respect your value in Washington on matters of National interest, we request that you adopt a time table for accomplishing what we are asking. We believe that a reasonable deadline for getting the legislation through Congress is December 31, 1995.

NOTE: The numbers in parenthesis in the signature blocks refer to the approximate number of individuals living within the boundaries of the association.

William W. Fuller
William W. Fuller, President
Paradise Hills Civic Association
(16,500)

D. Otto
Dave Otto, President
Taylor Ranch Neighborhood
Association (29,700)

COMMENTS

RESPONSES

The New Mexico Congressional Delegation May 1, 1995 Page 2

SUBJECT: Extension of Paseo del Norte

Steve Wentworth
Steve Wentworth, President
Alameda/ North Valley
Associaton (7,500)

Jim Hunter
Jim Hunter, President
Saragossa Homeowners
Association (250)

Margaret Lilley
Margaret Lilley, President
Western Meadows Area
Civic Association (250)

Ramona Torres-Ford
Ramona Torres-Ford, Pres.
Westgate Heights Neighbor-
hood Association (10,000)

Janie Shumway
Janie Shumway, President
Eagle Ranch Neighbor-
hood Association (1,500)

Henry E. Thiery
Henry E. Thiery, President
Alameda Alliance Neighbor-
hood Coalition (7,000)

Bill Murray
Bill Murray, President
Ladera Heights Neighbor-
hood Association (2,000)

Pam Micker
Pam Micker, President
Ladera East Neighbor-
hood Association (1,600)

Nancy Jenkins
Nancy Jenkins, President
Eagle Ridge Neighborhood
Association (510)

Earl Hobbs
Earl Hobbs, President
San Blas Homeowners
Association (125)

Norman L. Churchill
Norman L. Churchill,
President, Tanosn East
Neighborhood Association
(1,800)

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Organizations

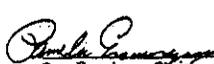
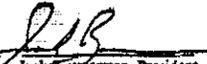
COMMENTS

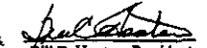
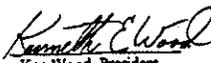
RESPONSES

The New Mexico Congressional Delegation April 30, 1995 Page 3

SUBJECT: Extension of Paseo del Norte

RANCHO ASSOCIATIONS

		
Pam Ensminger, Chairperson, Corrales heights Awareness Team (2,000)	Jack Zupansky, President Rever's Edge One Neighborhood Association (2,400)	Gary Wood, President The Ridges of High Resort Neighborhood Association (1,500)

		
Deborah M. Eggleston, President, Vista Hills Neighborhood Association (5,000)	Bill E. Hooten, President High Resort Village Neighborhood Association (375)	Ken Wood, President The Islands Homeowners Association (150)

COMMENTS

RESPONSES

RESOLUTION

of the

BOARD OF DIRECTORS

of the

PARADISE HILLS CIVIC ASSOCIATION

Objective: The purpose of this resolution is to clarify the position of the Board of Directors of the Paradise Hills Civic Association relating to an earlier resolution dated April 4, 1995.

(1) Be it known that the Board of Directors does NOT support a general moratorium against development on the Albuquerque West Side, NOR does it endorse the actions of individuals calling for a moratorium.

(2) The Board is particularly concerned that infrastructure has been unable to keep pace with the rapid development of the Albuquerque West Side.

(3) Because of the lack of supporting infrastructure, the Board may request that a specific project in the immediate vicinity of Paradise Hills be delayed or modified due to significant adverse impacts or consequences triggered by the development.

(4) The Board erred in stating that the City of Albuquerque had not established a need for the Montano and Paseo del Norte projects and wishes to compliment the efforts of Mayor Chavez and the Public Works Department in their aggressive pursuit of these projects.

(5) The Board has worked, and will continue to work, with developers in the pursuit of mutually satisfactory solutions to problems.

(6) The Board is supportive of the vision of the West Side Strategic Plan and wants to emphasize its intention to remain pro-active with the City of Albuquerque.

(7) The Board will notify in writing and in person as appropriate, the following agencies and officials who received notice of the April 4, 1995 resolution: Albuquerque City Attorney, Albuquerque City Council, Albuquerque Public Works, Albuquerque Environmental Planning Commission, Albuquerque Mayor's Office, Bernalillo County Commissioners, Bernalillo County Parks and Recreation, Federal Offices, and members of the media.

PASSED: May 2, 1995, 8 For, 0 Against, 1 absent.

Handwritten signatures and printed names of William W. Fuller (President), Lawrence D. Weaver (Vice President), and Michael W. Bergschneider (Secretary).

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Organizations

COMMENTS

RESPONSES

Resolution May 2, 1995

Page 2

Robert V. Blodine
Robert V. Blodine
Member

John Anders
John Anders
Member

Joseph Dardic
Joseph Dardic
Member

Stanley Schmokel
Stanley Schmokel
Member

Kathy Prangley
Kathy Prangley
Member

COMPLIANCE / CONSULTATION AND COORDINATION

COMMENTS

RESPONSES

1. NOW THEREFORE, BE IT RESOLVED by the Board of County
2. Commissioners, County of Bernalillo that it respectfully
3. requests Congressman Bill Richardson, Congressman Steven
4. H. Schiff and Senator Jeff Bingaman to immediately
5. join with Senator Pete Domenici in proposing the
6. expansion of Paseo del Norte through the Petroglyph
7. Monument in support of the constituents' interests and
8. they and us represent, and
9. BE IT FURTHER RESOLVED, that a copy of this Resolution and
10. AR 10-93 be transmitted to Senator Jeff Bingaman,
11. Senator Pete Domenici, Congressman Bill Richardson,
12. Congressman Steven H. Schiff, the Superintendent of the
13. Southwest Region of the National Park Service, the
14. Governor of the State of New Mexico, the Albuquerque City
15. Council and the Secretary of the Highway and
16. Transportation;
17. DONE, this 21st day of February 1995, by the Board of
18. County Commissioners, State of New Mexico.

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BOARD OF COUNTY COMMISSIONERS

ALBERT "AL" VALDEZ, CHAIRMAN

KEJI SANCHEZ, VICE-CHAIR

E. M. Gilbert
EUGENE M. GILBERT, MEMBER

COMMENTS

RESPONSES

RESOLUTION

WHEREAS, the City of Albuquerque has concluded that it is in the public interest that construction of the long planned Paseo del Norte Blvd. between Golf Course Road and Unser Blvd. be commenced recognizing that approximately 1.14 miles of such alignment will cross through the northern edge of the Petroglyph National Park, and

WHEREAS, the proposed alignment of Paseo del Norte through the northern edge of the Petroglyph National Park has caused to prior to the passage by Congress of the Federal Antiquities Act, such alignment having been concurred in by the proponents of the Petroglyph National Park, and

WHEREAS, the present boundaries of the Petroglyph National Park encompass more than fifteen thousand (15,000) petroglyphs and only three (3) of such petroglyphs are within the proposed right-of-way of Paseo del Norte within the Petroglyph National Park, and

WHEREAS, at the request of the supporters of Petroglyph National Park various alternate routings of Paseo del Norte have been explored and studied, and

WHEREAS, the alternatives for an alternate route for Paseo del Norte are not feasible due to the substantial additional costs that would be incurred to construct Paseo del Norte in a northwesterly direction to bypass the Petroglyph Park, the additional air pollution that will be caused by automobiles traveling the additional miles each day, the inconvenience and time cost to the users of Paseo del Norte, and the very minimal impact on the Petroglyphs within the Petroglyph National Park,

NOW THEREFORE BE IT RESOLVED, that the City Council of Albuquerque, the Mayor of Albuquerque, the City Council of Rio Rancho, the Mayor of Rio Rancho, the New Mexico State Legislature, the Governor of New Mexico, New Mexico's Senators and New Mexico's Congressmen, as individually and collectively make every effort to cause the commencement of the construction of Paseo del Norte between Golf Course Road and Unser Blvd. upon and within the long planned alignment of Paseo del Norte at an early date, and

FURTHER RESOLVED, that the Economic Forum endorses the present alignment of Paseo del Norte and requests that construction of the westerly portion of Paseo del Norte be commenced forthwith.

POSITION PAPER

ALBUQUERQUE

**GREATER ALBUQUERQUE
CHAMBER OF COMMERCE
BOARD POSITION**

*Action: Approved
Date: October 12, 1995*

**CHAMBER SUPPORTS REVISIONS TO
PROPOSED PETROGLYPH PLAN**

POSITION

The Board of Directors of the Greater Albuquerque Chamber of Commerce urges the Petroglyph National Monument Advisory Commission to support Alternative I, with certain qualifications, described in the Draft General Management Plan for Petroglyph National Monument issued August, 1995.

The overall approach of Alternative I provides various ways for visitors to see and appreciate many of the Monument's significant resources. The alternative provides for a visitor center at Boca Negra Canyon. Horseback and bicycle riding would be permitted on designated mesa-top trails. A new petroglyph research center would be built south of Boca Negra Canyon, along with a new administrative headquarters. There would be a city-owned and city-managed visitor contact facility outside the monument south of the Piedras Marcadas Pueblo Ruin.

The Chamber believes that Alternative I strikes a reasonable balance between resource preservation and the ability of citizens to access and enjoy the Monument. The Chamber urges the Commission to recommend that the Management Plan include the following:

1. The extension of Paseo del Norte, through the Monument, should be specifically addressed. At a minimum, the plan should protect this corridor. The Paseo extension is crucial to the overall transportation infrastructure of Albuquerque's West Side and can be constructed in an environmentally sensitive manner.
2. An overall infrastructure strategy for the Monument and the City of Albuquerque should be addressed. Utility easements (water, sewer, telephone, gas, electricity) and flood control measures within the Monument or adjacent to the Monument should be addressed.
3. Double Eagle II Airport should be allowed to expand to serve increased general aviation and freight traffic as well as serve as an industrial development complex.

GREATER ALBUQUERQUE CHAMBER OF COMMERCE • (505) 764-3700

COMMENTS

RESPONSES

NEW MEXICO CHAPTER
NATIONAL ASSOCIATION OF INDUSTRIAL AND OFFICE PROPERTY
THE FORUM FOR COMMERCIAL REAL ESTATE
BOARD POSITION

The New Mexico Chapter of NAIOP supports a legislative solution to the extension of Paseo Del Norte through the Petroglyph National Monument.

The New Mexico Chapter of NAIOP strongly encourages federal legislation to break the impasse over the extension of the Paseo Del Norte through a small portion of the Petroglyph National Monument. The Chapter has long supported the extension of Paseo Del Norte through the Monument as the most feasible and cost effective option. The proposed alignment of Paseo Del Norte is consistent with the Long Range Major Street Plan which includes long range planning decisions that significantly predate the creation of the Park. The mitigation of impact on the Petroglyphs can be achieved in an acceptably sensitive manner. It now appears that legislative action is the only solution to the issue. The construction of Paseo Del Norte through the Petroglyph National Monument is critical to Albuquerque's transportation network.

COMMENTS

RESPONSES

November 1, 1996

Lawrence Beal
Chief Of Planning
& Superintendent
Petroglyph National Monument
4736 Unser Boulevard NW
Albuquerque, New Mexico 87120

RE: Draft General Management Plan / Development Concept Plan
Environmental Impact Statement

Dear Sir:

In review of the published document by the aforementioned name, I still have great areas of confusion. Being a visual, i.e. graphic learner, I always look to the diagrams and maps within a document before I read the print. I was relieved to see the Paseo Del Norte Study Corridor on the graphics, only to be outraged, once again, by the language of this and previous documents.

This document can clearly define any use of the land within the park boundaries. I have noticed that this document also requests the permission to have input regarding adjacent lands. Isn't that the purpose of all public hearings? Allowing the public to comment would include the Park Service. I do not believe that would give the Park Service jurisdiction over these lands. The acquisition of adjacent lands to suit the monument's management can be addressed in this document, but not the possible use of a planned roadway? The Park Service certainly plans to use the existing residential roads to access the monument. But why has the impacts to those residents not been addressed in this or previous documents?

Although it may be true that acts of Congress are not subject to NEPA guidelines and standards, the management of those acts certainly is subject to those standards. I agree wholeheartedly with the specific comments of William Fuller, Ph.D. The National Park Service is certainly not outside of the law. Impact guidelines must follow the letter of the law and include the impacts upon human living beings as much as other fauna.

I have a real aversion to being excluded as a cultural resource. As an educator of young children, I constantly remind all of the children at my school that they are the future. Environmentally, if they pollute their current surroundings, they will have to live with their own thoughtlessness. Culturally, if they choose to live outside of the laws, they will be answerable to those laws. The cultural studies on the escarpment include both the Indigenous and Spanish influences upon the rock art. Are the current residents not the current cultural resources? In another forty years will the current residents be more significant than they are at this moment in time? How many of our elders will have to feel insignificant at public hearings when their comments get rebuffed by commission members? Is not what happened to the rock art fifty years ago also significant to those viewing it in the present? Will the limits that you impose upon this monument not alter what would have been its history without the Park Service's intervention?

- 1. As stated in the plan, the primary access to the monument will be from Unser Boulevard. Access to the Piedras Marcadas unit is recommended to be from Paseo del Norte. Visitors to the monument will be directed to access the monument from arterial and collector streets, not from neighborhood streets.

1 [Redacted]

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COMMENTS

RESPONSES

Comments from Anders
November 1, 1985
PNM, New Mexico 89120
Page 2.

The local residents should have access to the park. However, why are our pathways to be altered to suit the vision of one preservationist. Does that not make this person an alterationist? If hundreds of years ago some explorer had insisted that humans only use the sand crossings of the escarpment would we have the significant rock art that we have today? Is the solution mentioned at the public hearing, that only park personnel or registered volunteers be allowed access to the park, really a fair solution? We already have that kind of selective access. Anyone claiming to have an acceptable purpose may enter, local neighborhood residents may not. The special interest groups bring hundreds of strangers through our neighborhoods to get to what they deem significant locations. Yet we have to put our cultural traditions on hold until we are acceptable registered volunteers with the Park Service. I have been accused of cultural genocide for trying to preserve the current cultural resources of the mesa, the current mesa dwellers. Can you realistically weigh those of us living here now as less significant than those who lived here before?

The Northwest Mesa Escarpment Plan of 1966 clearly aligns Paseo Del Norte along the Atrisco Land Grant Line. The State funded the construction of a bridge over the Rio Grande river and an overpass crossing Coors Boulevard to align with this real line. That document clearly states that Paradise Boulevard is not an acceptable alternative. It does not support this management plan as stated in this document. The Unser Middle Project Final Environmental Impact Study clearly states that the environmental and cultural changes necessary to allow Paradise Boulevard to carry the responsibility for the traffic of the future, or for that matter the present, are unconscionable. I state that in the face of the retired Park Service employees who threatened seizure by right of eminent domain as a solution to the road issue. Neither of these studies took in account the future traffic burden of a National Monument. That, Sir, is the responsibility of the monument planners and this document. If these impacts were not submitted to Congress, then they are not a part of the act. They need to be addressed in the management plan.

Therefore, even though I mostly agree with the concepts of Alternative 1, I cannot approve of it. The Visitor Contact Center at the end of Paseo Del Norte clearly defines a park purpose for the road across the monument, so does the parking lot on the mesa top just north of the study corridor. My neighborhood is cognizant of the inevitable impacts we need to reluctantly accept regarding the monument. However, bearing the burden of the monument's visitors' traffic load is not one we can healthily entertain. If the monument wants to get visitors from the top to the bottom of the escarpment, build a road within the monument or allow the City of Albuquerque to continue with its plans for Paseo Del Norte. The Park Service needs to accept some inevitable impacts too. Keep in mind that forty-two other alternatives for the Paseo Del Norte Corridor have been rejected with just cause, quite significant and quite inevitable. Let the road go through.

Most Sincerely,
John H. Anders
John H. Anders
Board Member and Past President PHCA

- 2. The issue of Paseo del Norte has been identified as an issue beyond the scope of this plan.

The Draft and Final General Management Plan / Environmental Impact Statements are consistent with federal law and policy. Paseo del Norte was identified on page 21 of the draft plan as an issue beyond the scope of this general management plan. Therefore, further analysis as cited in 1502.9(a) is not required.

The purpose of the monument is a determination made by the National Park Service. The monument purpose is determined by assessing the legislation and the legislative record with the proposed action. It has been determined as stated on page 22, that Paseo del Norte does not serve a monument purpose. There is no mention of Paseo del Norte in Public Law 101-313 establishing the monument or in the legislative record.

No monument purpose can be found for a six-lane 50 mph road through the monument. Unser Boulevard has been determined to have a monument purpose because it would relocate the current Unser Boulevard, which goes through the center of Boca Negra Canyon. The existing Unser Boulevard has an adverse effect on current (and future) visitors. The new alignment for Unser Boulevard does not adversely affect monument resources. Furthermore, Unser Boulevard was mentioned in the legislative record.

It is not the purpose of the general management plan to resolve citywide and regional transportation issues. The Unser Middle Project has been discussed as an issue beyond the scope of this plan.

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Individuals

COMMENTS

RESPONSES

September 21, 1995

Mr. Lawrence Beal
Chief of Planning
c/o Superintendent
Petroglyph National Monument
4735 Unser Blvd. NW
Albuquerque, New Mexico 87120

Dear Mr. Beal:

This is my response to the Draft General Management Plan/Development Concept Plan, Environmental Impact Statement. These comments are due by November 6, 1995.

As a former employee of the National Park Service and a member of the Blue Ribbon Panel that studied the Petroglyph National Monument, I find all the proposals in the subject document to be out of tune with today's fiscal climate as defined by the Congress of the United States. Given the demands of a National Park System of 368 areas, this plan proposes costs that are unrealistic within the time frame of even the most far-reaching master plan. Practically speaking - with an urban population that is virtually hemming in the northern portion of the monument with all its accouterments of roads, housing and shopping development, it is difficult to see how the NPS can hope to provide protection of the monument resources. With the existing propensity of vandalism already evident in the monument and with fewer personnel to protect the park the issue becomes even more unwieldy.

I believe it behooves the National Park Service to take a more realistic approach to this monument. That would include the following:

(1) Existing structures - visitor center, ranger office and administrative office buildings - are sufficient for the foreseeable future - beyond the time of the current general management plan. The NPS must give its attention to the existing resource as opposed to focusing so much attention on new facilities. An 8.5 million dollar visitor center is simply not needed, nor is a 4 million dollar research, administrative and maintenance center required. What would a 2.8 million dollar cultural education center add to the Monument? To be sure, it all sounds very good until the question of where the funding will come from. That along with the feeling that exists in much of Albuquerque that the NPS is being an obstructionist to demands made by many people who live in the Monument's vicinity make this document seem ludicrous. I recognize that the national interest is to prevail - but even Yosemite has to recognize its local and California visitors are going to be its principal users and therefore their needs must be kept in mind.

(2) The National Park Service could very well find this Congress de authorizing some parks to the extent that the controversy that surrounds the Petroglyph NM could result in its falling prey to those who see the NPS position locked in stone. I honestly feel the NPS would do well to do some real soul searching - and that has NOT been done in the document before us - as to the real future of this monument. There were some very obvious good reasons for establishing the monument in the first place - but, unfortunately some of those reasons have been overtaken and many see the monument simple as an obstruction. The Service cannot expect to have community support by continuing to advocate a position that many see as ridiculous under today's conditions. This means the Service has to develop a more all-encompassing position on the Petroglyphs that serves

- 1. The proposed plan has been revised to eliminate new structures that would serve as the heritage education center, the petroglyph research center, and administrative offices. The costs of new construction and trail facilities have been reduced.

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COMMENTS

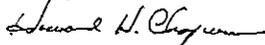
RESPONSES

ALL people instead of only certain groups. This means not only costs but the philosophy associated with a park and how it affects the lives of the people.

(3) If the forces in Washington, D.C., remain through the foreseeable future, then I believe the Service must react *differently* towards the Paseo del Norte Road, as well as the boundary in the northern part of the Monument that seems to be determined by development, instead of the resource. The issues of dog walking, cycling and horseback riding pale in comparison to whether or not the NPS can realistically protect the resource and provide the kind of experience it wants the visitor to have. Just as the North American wilderness seen by Lewis and Clark no longer exists, in a similar way the Petroglyphs are not the same today as when they were pecked out and became a part of each Native American life.

(4) Finally, the time taken to prepare this document is far in excess of what it should have taken. This contributes to a very costly product - both in terms of money as well as time. There is an increasing number of people today that take a dim view of the government always making purses out of sow's ears!! The Service must control better the time it takes to meet deadlines and take a less than chauvinistic approach to directives it is required to follow.

Sincerely,



Howard H. Chapman

COMMENTS

RESPONSES

RUSSELL E. DICKENSON
[REDACTED]

September 13, 1995

Superintendent, Petroglyph National Monument
4735 Unser Blvd., NW
Albuquerque, NM 87120

Dear Superintendent:

Having been involved virtually from the beginning in reviewing plans for Petroglyph National Monument, I wish to offer the following comments on the Draft General Management Plan, issued August, 1995:

The National Park Service preferred alternative #1 plans far too many multiuse and foot trails, and of too high a standard, for this type of cultural landscape. Many are in inappropriate locations. I believe that locations shown for some trails ignores the Native American community's description of important religious areas and cultural sites.

1 I believe there are too many neighborhood access points. Controlled access is one of the keys to protection of the petroglyphs. Neighborhood cooperation must be sought and promoted as part of the protection strategy.

Locating the visitor reception and information and information center at the already impacted Boca Negra site is a good idea.

All in all, I would prefer Alternative 2, with the exception that the Visitor Center should be located at Boca Negra. Above all, in the administration and development of the Monument, protection of the petroglyphs and the interpretation of their significance and meaning must remain paramount.

Lastly, I feel I must comment on the complexity of the current planning process and the extraordinary length of time required by the NPS to produce a plan. It is far too expensive as well and not cost effective.

Thank you for the opportunity to comment.

Sincerely,

Russell E. Dickenson

1. The "Neighborhood Access Trails" section of the final proposed plan has been revised.

COMMENTS

RESPONSES

RECEIVED N.P.S.

NOV 24 1995

Petroglyph National Monument

November 24, 1995

Superintendent, Petroglyph National Monument
4735 Unser Boulevard N.W.
Albuquerque, NM 87120

I want to thank the National Park Service and the Petroglyph National Monument (the "Monument") for this opportunity to again provide comments to the General Management Plan (the "GMP"). The fact that the preferred alternative includes multiple-use of the Monument is encouraging to me in that public comments such as mine are being considered. I apologize for these comments being submitted past the deadline, and I hope they can still be useful to Monument planners.

I would also like to go on record as supporting the preferred alternative 1. I strongly support multi-use trails, especially a trail system which extends throughout the entire length of the Monument. I feel that the Visitor Center and possible Heritage Education Center should be accessed off I-40 and Unser Boulevard, thereby making Boca Negra Canyon and Rinconada Canyon ideal sites. I also agree that horseback and bicycle access should avoid petroglyph viewing areas. These uses are primarily more recreational in nature, and are not usually intended for viewing petroglyphs. Consideration should be given to separating horses and bicycles from pedestrians due to their conflicting nature.

I am very much against the overall approach of alternative 2, except I favor the potential boundary addition on the mesa top between Unser Boulevard and the escarpment which provides a more secure and reasonable boundary for the Monument. I also favor the continuous foot trail proposed in alternative 2, if a multi-use trail is not constructed. This Monument was created, with much public support, to be an urban educational park *not* a wilderness area to be used only by archaeologists and Native Americans. Alternative 3 also does not meet the intent of the Monument purpose, but for the opposite reasons as for alternative 2. This alternative provides a drive-through theme park for out-of-town visitors.

As one of only two residents whose property backs up to the proposed trailhead at Calle Nortena, I am very concerned about the design of this trailhead. First, the parking symbol (P) should be removed from all future alternative considerations and be replaced with a neighborhood access arrow (N). I was informed by Larry Beal at a meeting of the Greater Albuquerque Recreational Trails Committee that neighborhood access locations will not be shown on the official Monument maps. I concur with Mr. Beal's statements, but this must be published in writing in the plan now to avoid a misunderstanding years from now. If the Calle Nortena access is published on future maps, it will be unnecessarily overrun with out-of-town visitors, even though there is little worth seeing in the Monument within one-half mile from this location. In fact, all of the current use at Calle Nortena is not even Monument bound. As the Monument boundary is 100% wire-fenced at this location, all present users are going west into private lands within the Volcano Cliffs subdivision (which is the same area proposed as a boundary addition in alternative 2). If Volcano Cliffs is developed in this area, it

- 1. The "Neighborhood Access Trails" section of the final proposed plan has been revised.

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is questionable to me whether a Calle Nortena access and parking lot will then be needed, especially if a trailhead is provided near the Paseo del Norte crossing. I strongly disagree with a parking lot large enough to accommodate 5 to 10 vehicles, including horse trailers. A maximum of five vehicles (without any trailers) is sufficient to meet Monument and neighborhood access needs. This trailhead should be used for neighborhood users *only*, and all other users should be guided to the proposed trailhead at Paseo del Norte which is only one-half mile away. Due to security problems, I agree with a statement made by Larry Beal that this trailhead (and all others) will be gated and locked at dusk everyday. Again however, I could not find this statement included in the Draft Plan. In order to avoid future misunderstandings, the GMP should clearly state which gates are to be locked, and when.

Larry Beal also stated that neighborhoods would be extensively coordinated with in the design and location of specific improvements such as trailheads. I concur with Mr. Beal, and request that I be consulted with in the design and management of the Calle Nortena trailhead.

In previous discussions with employees of the Monument and the City's Open Space Division, I've been given the run-around on mitigating erosion problems at the Fairmont Court cul-de-sac. I was told that nothing could be done until the GMP came out. As stated in appendix H of the GMP, the areas at the end of Fairmont Court and Calle Nortena need to be included in the inventory of disturbed areas, and have restoration plans prepared. Both of these areas are in critical need of an immediate plan.

Sincerely,

J. D. Luehring
 Joe D. Luehring



COMMENTS

RESPONSES

[103] From: Richard Mooney [REDACTED] at NP--INTERNET 11/3/95 11:19PM (4 220 bytes: 84 ln) To: ROCK-ART@ASUVH.INRE.ASU.EDU at NP--INTERNET bcc: Larry Beal Subject: PETROGLYPH NATIONAL MONUMENT ----- Message Contents -----

Text item 1: Text Item

Larry Beal Chief of Planning Petroglyph National Monument 6001 Unser Blvd. NW Albuquerque, NM 87120 (505) 899-0205 ext. 224 larry_beal@nps.gov

November 3, 1995

Subject: Petroglyph National Monument Draft Plan and Environmental Impact Statement

Thank you for this opportunity to comment on your draft General Management and Development Concept Plan. I was able to visit the Monument this summer and was surprised to find your Draft Plan made no reference to the concept of Archaeoastronomy. Within a short, two day study of the area, I concluded that there is a high probability that the horizon features (volcano cinder cones to the west to southwest and the Sandia mountains to the east) will prove to be markers for celestial alignments on specific days or seasons to local shrines located within the Monument area. If these features prove to be of celestial importance, the petroglyphs themselves may demonstrate a similar alignment potential on a more localized scale for shadow or light play. Both the horizon and localized alignments have been thoroughly documented throughout the West and at sites very close to the Monument. Your references to Cultural/Ethnographic Landscape may hint at an insight toward preservation of these features, but the detail in appendix G and H does not present the idea that special care will be required to identify these features to ensure that the small, benign stone in the path of the heavy equipment is not the stone that throws the shadow on a nearby petroglyph on the equinox.

Specifically, the following text is suggested for inclusion in ACTIONS COMMON TO ALL ALTERNATIVES, page 32, Archeological Sites:

In the earliest stages of planning, the local terrain will be evaluated for the potential for archeological and natural features important to celestial alignments. A thorough survey will be made once a feature is suspect and surrounding features/petroglyphs reevaluated for more complicated interpretations. These evaluations will include considerations for long range, horizon alignments and close range shadow alignments or light play. Final documentation of these features will include a highly accurate, three dimensional map of the feature details with the exact orientation identified.

Page 34, Protecting the Cultural Landscape and/or Appendix G:

Prominent horizon features, skyline profiles, boulders close to petroglyphs, and the petroglyphs themselves, will not be disturbed unless thoroughly evaluated not to be an alignment feature or properly documented by three dimensional mapping for future restoration.

- 1. Preserving opportunities for archaeoastronomical research would be part of cultural resource protection and research programs. Further detail regarding future research projects would be addressed in specific research proposals.

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Individuals

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Appendix G:

1
Scientist with familiarity in the field of Archaeoastronomy may be required to evaluate these features since the contemporary groups may no longer be familiar with all of the special features used long ago to mark the celestial movements or be knowledgeable of the modern techniques to verify these features. Once identified, the contemporary groups will be instrumental in evaluating the ethnographic interpretation of these features.

My specific observation was the potential for an alignment from the walled-in area atop the West Mesa at Boca Negra Canyon to the Vulcan Volcano in the southwest and past to the setting sun on the winter solstice. Other alignments are possible to the adjacent volcanoes, including the potential for a lunar alignment at minimum or maximum extreme standstill, approximately 5 degrees either side of the winter solstice sun position. Observation of the actual event is the most convincing method to confirm these alignments.

Thanks again for this opportunity. I can provide references for the material mentioned if needed.

Richard M. Mooney



cc
ROCK-ART@ASUVM.INRE.ASU.EDU
HAstro-L@WVNM.WVNET.EDU

COMMENTS

RESPONSES

Law Offices
MODRALL, SPERLING, ROEHL, HARRIS & SISK, P.A.



Las Cruces, New Mexico

Santa Fe, New Mexico

Patrick J. Rogers



October 23, 1995

Mr. Larry Beal
6001 Unser, S.W.
Albuquerque, NM 87120

Dear Mr. Beal:

Enclosed please find a copy of the written presentation to the Advisory Commission along with an additional copy of the history and legal precedence cited by the Chamber. I anxiously await answers, particularly to my questions about the public documents destroyed and withheld.

Yours truly,

Patrick J. Rogers

PJR/lmj
Enclosures
33710

OCT 26 1995
Rec. PETR

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COMMENTS

RESPONSES

Law Office
MODRALL, SPERLING, ROEHL, HARRIS & SISK, P.A.

Alan C. Owen, Jr.
John E. Cooper
Kenneth L. Morrison
James M. Pugh
Dorcas J. Pugh
Arthur J. Magallon
James P. Hougham
July A. Ky
Paul J. Pugh
A. E. Thompson
Curtis W. Schwaner
Thomas J. Johnson
Lynn H. Slade
Douglas A. Bugar
Dorothy J. Johnson
Lynn F. Anderson
J. Douglas Foster
Douglas R. Vignone
Kendall J. McDonald
William E. Smith, III
Patrick J. Rogers
John A. Davidson III
Diane E. Brown
Martha G. Brown
Robert E. Brannon
George F. Kowal
Kevin T. Madala
Bryan Katsenuev Drayton
William C. Zeeb
Tim L. Finkle
Douglas G. Spawenck
Eric H. Winkler
Charles A. Arnsperck
Timothy S. Van Vleet
Earl E. DeBrow, II
Timothy C. Hight
George A. McNeil
Bryan J. Finley
Jay Francisco
Roberto Gomez Jasso
Suzanne M. Barby
William Kenny Ziskind
Lyn Marie Biele
Michael D. Hughes
Andrew D. Leary
Susan F. Rogers
Donald A. DeCarolis
R. Alford Walker
Tamara J. DeYoung
Margaret L. Sawyer
Michael L. Carnot
Joseph Carverton
Angela J. Armes
Christopher A. Ewald
Gregory C. Frazier
James T. Cook
Danae Wang
Max J. Meador
Christopher C. Farach
John E. Dale
F. Berry McCabe
Jennifer A. News

October 19, 1995

On behalf of the Black Ranch and other property owners to the west of the long-planned Paseo del Norte extension, these comments are directed at the draft General Management Plan for the Petroglyph National Monument. We generally agree with the comments of the City of Albuquerque as well as the Albuquerque Chamber of Commerce and our comments are directed at the failure to include and incorporate the long-planned Paseo del Norte extension.

In 1929, the Albert F. Black Family acquired title to 20,500 acres of the Alameda Land Grant. This portion of the Alameda Land Grant extended from the west bank of the Rio Grande River to the "Ceja" area of the west boundary of the Alameda Grant, approximately four miles west of the small portion of the Alameda Grant property that is being acquired for the Petroglyph Monument. The original holding of the Alameda Land Grant extended east to the base of the Sandia Mountains, just south of the Sandia Indian Reservation. The 20,500 acres of the Alameda Grant purchased by the Black family was completely fenced and maintained as private ranch land prior to and subsequent to its purchase. This land had been under continuous private ownership and ranched by private interests since 1710, including the Piedras Marcadas Canyon area of the Black Ranch.

The excellent condition of the Piedras Marcadas petroglyphs, all located to the north of the proposed extension, are largely the result of the conservation efforts of the Black family over many years. The Black family has been active in the local planning process and participated in various efforts that have resulted in the elimination of many separate proposed east-to-west crossings of the Petroglyphs in reliance upon representations as to the ultimate construction of the Paseo del Norte extension. The support of the Black family and other private property owners, neighborhood associations, and the City for the creation of this national park was critical and necessary, and should not be subject to the cavalier disposal now proposed by the Park Service.

As indicated in the presentation by the Chamber of Commerce, explicit and implicit authority of the Paseo del Norte crossing exists in the map drafted by the Park Service and enacted into law. The Park Service specifically assured John Black, the Black family and many others that the Park Service was not opposed to the Paseo del Norte extension. The Park Service provided to the public its interpretation of the authority contained in the 1990 enactment in the Park Service comments to the Paseo del Norte Corridor Analysis Report: "Both the Unser Boulevard and the Paseo del Norte Escarpment

- 1. The Draft and Final General Management Plan / Environmental Impact Statements are consistent with federal law and policy. Paseo del Norte was identified on page 21 of the draft plan as an issue beyond the scope of this general management plan. Therefore, further analysis as cited in 1502.9(a) is not required.
- 2. A map depicting the Paseo del Norte extension does not constitute congressional authorization. Agreeing to put the Paseo del Norte alignment on a map does not constitute an NPS position or endorsement for the road. Federal laws and NPS policies apply to all units of the national park system, including units in urban areas. The purpose of the monument is to protect resources from urbanization.

See response #3 below; monument purpose is a determination made by the National Park Service.

In reference to the city's proposed benefits, the National Park Service has determined that (1) a 4- to 6-lane roadway is not needed to provide improved stormwater management, (2) a 4- to 6-lane roadway is not required to provide access to visitor centers, (3) a 4- to 6-lane roadway would not minimize noise impacts in the monument.

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Santa Fe, New Mexico 87504-9318
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COMMENTS

RESPONSES

crossings are consistent with future roadway locations generally identified in the boundary map established by Congress. Like the Chamber of Commerce, the Paradise Hills Neighborhood Association and a variety of other private property owners and citizens, the Black family and these westside property owners believe that the Park Service should honor its representations and work with its "partner", the City, to develop the Paseo del Norte crossing.

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Implicit authority for the road also exists because Paseo del Norte will serve the value and purposes of the park. The City of Albuquerque and the Chamber of Commerce has summarized some, not all of the benefits, including access to the Piedras Marcadas portion of the monument, a right-of-way/easement for drainage and utility routes, bike trails, and of course the opportunity to keep faith with the City, neighborhood associations and citizens of Albuquerque.

For Congressional and public consumption, as part of the lobbying process, the Park Service estimated future visitors for this "urban" monument. But this estimate, as much as 400,000 or more visitors, was inextricably bound to reasonable access, reasonable transportation alternatives and the construction of Paseo del Norte. After Congress and the public took the bait, the present switch to a wilderness area and reducing or eliminating access began. Even the most generous, recent high estimates of visitors by the Park Service, 50,000 to 80,000, demonstrate that the very high numbers of visitors promised to Congress and the public cannot possibly be achieved without the long-planned Paseo del Norte extension. Paseo del Norte serves a park purpose because it will allow the Park Service to approach the visitor estimate promised to the Congress and the public. Paseo del Norte will allow the Park Service to actually serve the public.

Paseo del Norte was part of the bait that attracted the support of Congress, neighborhood associations, private property owners, developers and the general public to support the new monument. The "switch" underway needs to be condemned by this Commission.

The attached cartoon by Trevor from January 13, 1995 in large part captures the frustration of many who are deeply concerned about the Park Service's new opposition to the Paseo del Norte extension and the procedures and tactics employed to achieve that end: "Well, Yes, There was a Deal to extend Paseo del Norte Across the Monument, but, hey, nothing around here is carved in stone, you know" Even assuming that the goal of eliminating Paseo del Norte was lawful and universally accepted as good policy, a good "end" does not justify the use of dishonorable means to achieve these "good ends." To achieve the new "good ends" of eliminating the long-planned Paseo del Norte, the Park Service is required to break faith with its partner, the City, neighborhood associations, and private property owners who helped create the monument, but also the Mayor of Albuquerque and the United States Senator who was responsible for introducing the legislation.

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- 3. The purpose of the monument is a determination made by the National Park Service. The monument purpose is determined by assessing the legislation and the legislative record with the proposed action. It has been determined as stated on page 22, that Paseo del Norte does not serve a monument purpose. There is no mention of Paseo del Norte in Public Law 101-313 establishing the monument or in the legislative record.

No monument purpose can be found for a six-lane 50 mph road through the monument. Unser Boulevard has been determined to have a monument purpose because it would relocate the current Unser Boulevard, which goes through the center of Boca Negra Canyon. The existing Unser Boulevard has an adverse effect on current (and future) visitors. The new alignment for Unser Boulevard does not adversely affect monument resources. Furthermore, Unser Boulevard was mentioned in the legislative record.

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I. FOIA RESPONSES: CAUTIONS REGARDING PUBLIC POSITIONS OF THE PARK SERVICE

The Park Service's public position on Paseo del Norte should be taken with several grains of salt. The Park Service has destroyed documents and withheld documents that do not support the Park Service's new position on Paseo del Norte and the Park Service has tailored its public "pronouncements" so that only supportive statements are disclosed to the public.

First, in response to an initial public inquiry via the Freedom of Information Act, an effort to determine the basis for the Park Service's failure to honor the agreement, the Park Service removed documents from its files.¹ The Park Service's "Freedom of Information Act Officer", upon receipt of information that a written Freedom of Information Act request would be filed, informed various Park Service personnel about the pending written request for information by an "opponent" of the Park Service's "position" and directed Park Service personnel to "clean out" their files.

One other document that accidentally missed the purge is a February 1993 letter from the Regional Director of the Park Service to the Regional Solicitor "requesting" the Park Service attorney delete certain City legal defenses in a memo that would be released to the public and portrayed as a neutral analysis of law. The Regional Director obviously did not want a fair analysis released to the public but rather desired a document to serve the Park Service's new found agenda. The cynical manipulation of all other public pronouncements by senior Department of Interior/Park Service personnel must be considered.

In addition to the purge, other documents were not destroyed, but were withheld. The justification employed by the Park Service for withholding important public documents is in itself revealing. The Park Service refused to disclose certain critical facts and options prepared by local Park Service personnel on the basis that a disclosure of this accurate, truthful information "could confuse the public and seriously impede a frank discussion of issues...."

¹ Cf. President William I. Clinton's October 4, 1993 directive to department and agency heads concerning the Freedom of Information Act. Attorney General Reno's memo of October 4, 1993 directed all agencies (including the Park Service) to apply a presumption of disclosure rather than the previous standard of withholding documents on the basis of a conclusion that a "substantial legal basis" existed. According to Secretary Reno, the public interest is achieved only by the maximum reasonable disclosure of government information.

II. TAXPAYER FUNDED PARK SERVICE LITIGATION

The present situation is well summarized in the attached Trevor cartoon of June 15, 1993, entitled "Future Paseo del Norte Alignment." The Park Service's reversal of its support for the extension leads straight to the courthouse. Unfortunately, the Park Service, unless it decides to honor the letter and spirit of its representation, will be using scarce tax dollars to prop up an ill-conceived new agenda. The City, Bernalillo County and possibly Council of Governments will be forced to spend scores of tax dollars to obtain what the Park Service previously promised.

The Park Service should not burden its "partner" the City, neighborhood associations, or private developers and require a lawsuit to disclose documents improperly withheld. Nor should the Park Service require that the City, neighborhood associations or private property owners bring suit to require the Park Service to honor the letter and spirit of promises made when the monument was formed.

Justice William Douglas, a Supreme Court Justice famous as a founding father of environmental law, also remarked in a famous case about the unfortunate tendency of government to force taxpayers to litigate rather than the government sponsoring legislation to achieve a fair and equitable end. According to Justice Douglas, this tendency comes all too natural to the government because the federal government has a larger bankroll and "more endurance than any taxpayer."

The ability and tendency of the federal government to work its will through the force of its federal taxpayer-funded lawyers is not lost in this debate. While the Park Service has the power to pursue a single-minded goal of eliminating the long-planned Paseo del Norte extension, the City of Albuquerque must be more responsible. Litigation and the prospect of a 10-year or more battle serves the Park Service's interest because the City will feel tremendous pressure to abandon a lawful, appropriate, long-planned extension because of its obligations to the general welfare to the City of Albuquerque.

Presumably, the ability of the Park Service to finance litigation for delay purposes was exactly what the opponents had in mind when they requested the Park Service join in litigation. On July 25, 1993, Thomas Merlan wrote to Roger Kennedy, Director of the National Park Service, and requested that the Park Service sue the City of Albuquerque: "I am making this recommendation after close consultation with the Attorney General of New Mexico. It is also my considered opinion, and I believe the opinion of the Attorney General as well, that we are likely to have to go to Court to protect the Monument from the proposed adverse and inappropriate use, and that our likelihood of prevailing is minimal unless the National Park Service is co-plaintiff."

The Black family and westside private property owners favor a legislative fix as opposed to litigation for this very reason. We endorse *The Albuquerque Journal* editorial of July 13, 1995. We respectfully request that the Park Service honors its previous representations. As the City's "partner", the Park Service should draft legislation to

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address all of the loopholes the Park Service now claims bars the fulfillment of the Park Service's obligations to the City of Albuquerque, neighborhoods associations, private property owners and the general public. As stated in the editorial, "Scarce federal dollars could justifiably be routed elsewhere if Petroglyph National Monument were to be developed as a limited-use facility."

The Park Service has at its beck and call a legion of lawyers. More importantly, the Park Service has a legion of lobbyists. The Park Service should not force the City, neighborhood associations and private property owners to litigate these issues. The Park Service should not ignore this history, applicable law, fairness, honesty and equity; the Park Service should, if it believes that a mistake was made in the enabling legislation, draft changes to achieve the end promised the City, neighborhood associations and private property owners.

III. CONCLUSION

The new Park Service position will cause severe problems for all present and future westside residents. The new found Park Service opposition to Paseo del Norte includes a large element of bureaucratic, Luddite malice. The Park Service publicly endorsed Paseo del Norte, included it in maps, guaranteed that the Park Service would not "veto" private development efforts, previously interpreted the federal legislation it drafted as providing sufficient authority to construct Paseo del Norte, authorized another road through the monument, and yet the Park Service now refuses to address these egregious errors. The Park Service needs to honorably, equitably discharge its duties to the City, private property owners and neighborhood associations.

The Park Service has no reasonable basis in law, history, fairness or equity to now oppose the construction of the Paseo del Norte crossing. The Paseo del Norte crossing should be included in all plans prepared by the Park Service without further delay.

In September of 1993, the previous Mayor of Albuquerque requested that the Park Service "keep its part of the bargain, respect the urban nature of the park and the local planning process, and honor its commitments to the City of Albuquerque, the local planning process, the neighborhood associations and private property rights." The Park Service has taken no such reasonable steps.

The Advisory Committee should send a strong message that the local planning process, the Park Service's partner, and local citizens deserve better treatment.

The Advisory Committee should:

- (1) direct the Park Service to adopt the Paseo del Norte extension in all future plans;
- (2) direct the Park Service to prepare legislation; and

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- (3) encourage the Congressional delegation to support the legislation and link all future appropriations for general Park Service operations to passage of the legislation.

MODRALL, SPERLING, ROEHL,
HARRIS & SISK

Patrick J. Rogers

10105

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THE HISTORY OF THE LONG-PLANNED PASEO DEL NORTE EXTENSION

I. THE ORIGINS AND OWNERSHIP OF THE PASEO DEL NORTE EXTENSION RIGHT-OF-WAY.

The long-planned Paseo del Norte extension west of Coors Boulevard lies almost entirely within the historic Alameda Land Grant, the land grant immediately north of the Atrisco Land Grant.

The Alameda Land Grant was established in 1710 by a grant from the King of Spain to Francisco Montes Vigil and his heirs. Later on in that same year, the Alameda Grant was sold to Juan Gonzales, a Captain in the Spanish Army.

In 1713, the transfer of the Alameda Grant to Juan Gonzales was approved by the Governor of the Provincia of New Mexico. The title to Mr. Gonzales for the Alameda Land Grant was also referred to as perfected title in the treaties between the King of Spain and the Mexican Republic in 1821 and the Treaty of Guadalupe of Hidalgo and the United States in 1848.

In 1848, the Treaty of Hidalgo and the United States set out the Native American Indian Reservation claims in the adjacent areas, including the Sandia Indian and Isleta Indian Reservations. There were no claims by any of the local Native American Indian tribes of any interest in the Alameda Grant properties for worship purposes or any other reason.

On December 16, 1892, in accordance with the Act of Congress dated March 3, 1891, a written decree was entered, confirming the legal ownership status with the heirs of Juan Gonzales. In 1919, the Alameda Grant was sold to the San Mateo Land and Cattle Company. In 1920, the United States issued a patent to the heirs of Juan Gonzales and Francisco Montes Vigil.

In 1929, the Albert F. Black Family acquired title to 20,500 acres of the Alameda Land Grant. This portion of the Alameda Land Grant extended from the west bank of the Rio Grande River to the "Ceja" area of the west boundary of the Alameda Grant, approximately four miles west of the small portion of the Alameda Grant property that is being acquired for the Petroglyph Monument. The original holding of the Alameda Land Grant extended east to the base of the Sandia Mountains, just south of the Sandia Indian Reservation. The 20,500 acres of the Alameda Grant purchased by the Black Family was completely fenced and maintained as private ranch land prior to and subsequent to its purchase. This land had been under continuous private ownership and ranched by private interests since 1710, including the Piedras Marcadas Canyon area of the Black Ranch.

In 1959, the Albert F. Black Family sold 8,500 acres of the Black Ranch in the Alameda Grant to U.S. Land Corporation, the parent company of Horizon Corporation, which developed Paradise Hills. Certain mineral rights and easement rights were reserved to the Black Family.

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In the mid- to late-1980's, portions of the planned right-of-way for Paseo del Norte to the City of Albuquerque were dedicated as a platting requirement.

In 1990, the City of Albuquerque and the National Park Service began to acquire portions of the Alameda Grant property, formerly owned by the Black Family, for the northern portion of the proposed Petroglyph National Monument.

II. THE HISTORY OF THE APPROVALS OF THE ALIGNMENT OF PASEO DEL NORTE WEST OF COORS BOULEVARD.

1961:

Paradise Boulevard was originally the principal access from Coors Boulevard west to Paradise Hills and other Alameda Grant lands west of Paradise Hills in the Alameda Land Grant area.

1980:

Hearings began at the Middle Rio Grande Council of Governments ("COG") and its Urban Transportation Planning Policy Board ("UTPPB") to study moving Paradise Boulevard, the principal arterial west of Coors Boulevard (NMSH #448) to the south boundary of the Alameda Grant. COG is the federally mandated, regional transportation board that approves all major highways.

1981:

On March 20, 1981, the UTPPB adopted resolution R-81-5, which designated the study area to officially relocate Paradise Boulevard. The study area was between Paradise Boulevard and the south boundary of the Alameda Land Grant. The official 1981 Long Range Major Street Plan ("LRMSP") identified Paseo del Norte.

1983:

The Final Environmental Impact Statement for the North Valley River Crossings Study, released in September 1983, proposed the Paseo del Norte alignment (El Pueblo).

1985:

The UTPPB committee of COG passed resolution R-85-3, deleting Paradise Boulevard as the principal arterial west of Coors Boulevard and officially designated Paseo del Norte through the Petroglyph Park as the east-west principal arterial on the LRMSP of COG.

1986:

The Environmental Planning Commission approved the formal Federal Environmental Impact Study concerning Paseo del Norte Boulevard.

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1987:

The UTPPB established the present right-of-way location with mitigation measures for the protection of the Petroglyph National Monument in the Shennandoah Subdivision at the Paseo del Norte escarpment crossing. This action was the result of the efforts of a special advisory committee consisting of representatives of the City of Albuquerque, Bellamah Community Development (developer of Shennandoah subdivision), FOTAP, Open Space Task Group and the Albuquerque Conservation Association.

All involved endorsed this move of the principal east-west arterial from Paradise Boulevard to the currently proposed Paseo del Norte location, through the narrowest portion of the Petroglyph Park.

Proponents of moving the principal east-west access from Paradise Boulevard to the currently proposed alignment of Paseo del Norte during the COG/UTPPB hearing included:

1. Ike Eastvold - President of the Friends of the Albuquerque Petroglyphs (FOTAP).
2. The Albuquerque Chapter of the Sierra Club.
3. The COG representative of the All Indian Pueblo Council, Edward Paisano of the Pueblo of Sandia.

1987:

The Northwest Mesa Escarpment Plan was completed - the culmination of a planning effort by public sector officials, property owners and conservation groups for the protection and preservation of the cultural resources within an area subsequently designated the Petroglyph National Monument. Of particular significance in the plan is the recognition of the need for the Unser Blvd. and Paseo del Norte, as recommended in the final EIS for the Unser "Middle" project.

The Park Service endorsed the Plan, specifically commending the Paseo del Norte crossing.

1988:

The Albuquerque City Council adopts Resolution R-339 approving the Northwest Mesa Escarpment Plan, which included Paseo del Norte and addresses drainage improvements, water and sewer lines, bikeways and private utilities to be located within the right-of-way.

A Congressional Advisory Committee was formed. FOTAP, the Park Service, Sierra Club, the All Indian Pueblo Council, the Albuquerque Conservation Association, private property owners and city officials considered and agreed upon boundaries and acquisition priorities. The Paseo del Norte crossing

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was recognized and included as an important boundary in the maps and the text of the report. The present preferred route for the Paseo del Norte crossing was specifically recommended by the Sierra Club, Friends of the Albuquerque Petroglyphs, the All-Indian Pueblo Council and other environmental groups as a demarcation road between top priority 1 acquisition area (Piedras Marcadas) and a low priority "linkage" acquisition to the south. The Congressional Advisory Committee brought together many diverse views, and a compromise of political, religious and economic interests was negotiated. Private property rights of individuals, development companies and the City were compromised in exchange for limitations upon the creation and development of the Monument. The report of the Congressional Advisory Committee prominently incorporates the Paseo del Norte crossing in maps and the text of the report, which was used to lobby Congress for the creation of the Monument. FOTAP widely disseminated a map specifically listing the Paseo del Norte crossing.

1989:

The City Council passed R-455 which established standards for Unser Boulevard and specified the need to expedite construction of the Paseo del Norte crossing to mitigate potential traffic congestion and associated impacts within the Paradise Hills area. The Park Service, by its Regional Director, endorsed the expedited construction of the Paseo del Norte crossing.

The Congressional hearings on Senate Bill 286 to establish the Petroglyph National Monument included a statement from the National Parks and Conservation Association which recognized the need for a Paseo del Norte crossing. At the same hearing, Ike Eastvold, president of FOTAP, lauded the relocation of Paseo del Norte to its present alignment.

1990:

The Park Service prepared draft legislation referencing and incorporating a map rather than a metes and bounds description of the acreage, easements and right-of-ways to be acquired. On the eve of consideration by Congress, the Park Service omits Paseo del Norte from the map which is to be enacted into law. On May 24, 1990, the Public Works Department of the City of Albuquerque requests that the map specifically identify Paseo del Norte. Without hesitation, the Park Service incorporates the Paseo del Norte crossing into the legislation enacted into law by Congress.

The Senate Report accompanying the legislation establishes that the Monument "will be an urban park with a variety of existing land uses and surrounding lands, the designation of a national monument is not intended to deprive landowners of the existing uses"

As part of the lobbying effort, Ike Eastvold, president of FOTAP, writes to residents of Paradise Hills and endorses the Paseo del Norte crossing and

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provides his written commitment to lobby the "decision makers" for the construction of the Paseo del Norte crossing.

Public Law 101-313.

Establishes Petroglyph National Monument on June 27, 1990. The statute specifically incorporates a Park Service map listing the Paseo del Norte crossing: "The Secretary shall include 1,778 acres ... as depicted on the map"

The Park Service provided separate, written guaranties that the City, not the Park Service, would manage all of the City lands within the Piedras Marcadas portion of the Monument and that the Park Service would not attempt to "veto" Unser Blvd., Double Eagle II "or other proposed developments".

The Park Service analyzed the National Environment Policy Act (NEPA) and assured the City and everyone else that it does not apply to the Paseo del Norte crossing.

1991:

City Council passes R-470 and refused federal funds in order to avoid any question about the application of NEPA. The bikeways master plan establishes provisions for bicycles on Paseo del Norte. Drainage, utility lines, and other infrastructure plans were finalized based on the Paseo del Norte crossing.

The Park Service again assures the public in writing that it does not oppose the Paseo del Norte crossing and NEPA does not apply.

The Park Service continues to take the logical position that the "Unser Boulevard and Paseo del Norte escarpment crossings are consistent with future roadway locations generally identified in the boundary map established by Congress."

1992-1993:

The Park Service changes its position and announces that it will not support the long-planned extension of Paseo del Norte and NEPA does apply to all City plans that are contrary to the Park Services' new position.

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Petroglyph Politics: The Park Service Should Honor Its Representations

The Park Service was an active participant in the City/County planning process for the Paseo del Norte crossing. The Park Service organized and led the political process to obtain a public consensus concerning the creation of the Petroglyph Monument. The Congressional Advisory Committee was formed, through the efforts of Senator Domenici and the Park Service. This Committee, including FOTAP, the Sierra Club, Park Service and the All Indian Pueblo Council, specifically agreed and adopted the Paseo del Norte crossing as the southern boundary of the Piedras Marcadas unit. The Park Service then drafted the federal legislation which incorporated the map (also drafted by the Park Service) and specifically listed the Paseo del Norte crossing.

A. Congress Has Already Authorized the Paseo del Norte Crossing.

The legislation creating the Petroglyphs Monument included the Paseo del Norte extension. An additional "Act of Congress" is redundant. The map prepared by the Park Service specifically designating the Paseo del Norte crossing was enacted into law and the language of the law is specific concerning the possible expansion of the Monument into the Piedras Marcadas Unit. The statute provides for a possible expansion to include "the approximately 1,779 acres generally known as the Piedras Marcadas Unit as depicted on the map" Section 104(a)(1) PL 101-313 June 27, 1990. See, also, § 105 which provides that the City of Albuquerque shall manage and develop the general management and operational plans for the Piedras Marcadas Unit.

Through 1992, the Park Service and Friends of the Albuquerque Petroglyphs and other groups never disputed the obligation to build the long-planned Paseo del Norte crossing. The Park Service affirmatively stated it was not opposed.

Today's politically expedient argument by the Park Service politicians, that the map drafted by the Park Service which shows Paseo del Norte does not provide sufficient authority, is contrary to the position and interpretations of the law by the Park Service in 1991. In comments on the Paseo del Norte Corridor Analysis Report the Park Service stated that "Both the Unser Boulevard and Paseo del Norte escarpment crossings are consistent with future roadway locations generally identified in the boundary map established by Congress."

Sometime in 1992, apparently as a result of pressure by extreme special interest, environmental groups, the Park Service embraced a newly discovered, unprecedented loophole: It was argued for the first time in 1992 that the specific and literal language of the statute which adopted the map depicting the Paseo del Norte crossing was not

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sufficient, that only a written text and the map together could create sufficient authority for this crossing. No legal precedent for this new position has been identified at any time. Nor has the Park Service sufficiently explained why this new theory does not apply to the Unser Boulevard crossing.

As a matter of law and common sense words are given an ordinary, everyday meaning and the statute cannot be construed to make words superfluous, void or insignificant. See e.g., *U.S. v. Austin*, 614 F. Supp. 1208, 1218-19 (D.N.M. 1985). Basic black letter law concerning the conveyance of property provides that a map or a document referencing a deed is perfectly acceptable. The map drafted by the Park Service depicting the Paseo del Norte crossing along with the specific text of the statute also drafted by the Park Service establishes the Monument "as depicted on the map." See generally, 23 Am.Jur.2d § 61 (1983). Paseo del Norte is part of the enabling legislation and an additional metes and bounds or other property description in the text of the legislation to be superfluous. See 26 C.J.S. Deeds, § 101(b) at 887-888 (1956) and 25 Am.Jur.2d, Easements and License, § 26 (1966).

- B. The Secretary of the Interior Should Exercise Administrative Authority and Authorize the Paseo del Norte Crossing.

Even without either of the separate specific authorities for construction of the crossing noted above, the Park Service has the administrative authority and, under the circumstances, is required to allow the long-planned crossing. The Paseo del Norte Crossing is consistent with the values and purposes of this urban monument and the Park Service must approve the extension. The Park Service's position that it can not administratively authorize the crossing is not accurate as a matter of law or equity. For precedent for the authority to administratively authorize a crossing, we need not look farther than the Park Service's decision to administratively authorize the Unser Boulevard crossing. Paseo del Norte is an essential part of the urban monument, from the very inception of the planning/lobbying process. If the Park Service or the present opponents had argued in 1990 that the crossing would be opposed in 1995, the Monument would not have been created. The crossing benefits the Monument because without the crossing the Monument would not exist. As noted in the legislative history, Paseo del Norte is an urban park not a wilderness area. Paseo was planned prior to the legislation, the legislation specifically identifies the Paseo del Norte crossing, in 1991 the Park Service interpreted the law as authorizing it, and the only reasonable conclusion that can be drawn is that Paseo del Norte is a part of the urban park from the Monument's inception and therefore obviously serves a park purpose.

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The crossing benefits and enhances the purposes of this urban monument. The body of the Chamber's transmittal letter, as well as the City of Albuquerque's submittal, summarizes the benefits.

Contrary to the dis-information campaign of the opponents of the extension, roads pass through many national monuments and parks including Jewell Cave National Monument in South Dakota, Joshua Tree National Monument in California (three roads), Death Valley National Monument (four highways), the Petrified Forest National Park in Arizona, Olympia National Park, Yosemite (three highways), Yellow Stone (three highways), Grand Teton (two highways) and Acadia National Park (four highways).

The authority and precedent the Park Service argues is now missing with regard to Paseo del Norte and can be located in a Park Services' decision concerning this very monument. Another road bisecting Paseo del Norte, Unser, is "lawful" and acceptable. The Park Service's public position that Unser is somehow lawful but Paseo del Norte is not, is mere double-talk.

The construction of Paseo del Norte through the monument is based on other sound legal grounds. See *Sierra Club v. Hickie*, 433 F.2d 29 (9th Cir. 1970) *aff'd on other grounds* 405 U.S. 727, 731, 92 S.Ct. 1361 (1972). In this landmark case, the State of California proposed a new road through Sequoia National Park, part of a 20 mile road project between two points outside of the park. The Secretary of Interior determined that the proposal advanced by a private developer, Walt Disney Productions, was an appropriate use. The Ninth Circuit upheld the Secretary of Interior's decision. *Id.*

The legislation authorizing and creating the Sequoia National Park did not expressly provide for construction of the roads through the park or include as part of its enabling legislation a map depicting the road in question. The Park Service pulled no "bait and switch" on the California locals. The Walt Disney road approved in the *Sierra Club* case was not planned until well after creation of the park; yet, the Secretary of the Interior found that the 9.2 mile road did not impermissible derogate the purposes of Sequoia National Park.

By contrast, the Petroglyph Monument was created pursuant to a map expressly depicting Paseo del Norte, the property is subject to an easement for a road and Paseo del Norte was planned many years. Paseo del Norte cannot possibly derogate the values and purposes of this urban park. The Park Service needs to honor its word with the City, local planning entities, the neighborhood associations, the impacted public and private developers and assist in the construction of the Paseo del Norte crossing.

The Albuquerque Journal
 Albuquerque, NM
 July 13, 1995

Spending For Park Needs To Be Linked

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Editorials

Before the federal government purchases any more acreage for Petroglyph National Monument in Albuquerque a number of issues need to be resolved. These include the monument's long-term viability, its priority in the park system, and its uneasy relationship with local government.

U.S. Sen. Pete Domenici says he will seek another \$3 million so the National Park Service can acquire additional privately owned acreage in the monument. The Senate Budget Committee chairman made the proposal in the face of his own efforts to control deficit spending by the government.

Neither the White House nor House budget contained funding for that purpose. The Park Service has a \$1.1 billion backlog of private lands targeted for acquisition within parks. A recent House resolution recommended a seven-year moratorium on tapping one of the main funds that is used to acquire park lands nationwide.

Petroglyph National Monument is also among 200 of the smallest in the system that could be targeted for closure by the Department of Interior because of projected cuts in federal spending — for which Domenici is a leading proponent.

Until that threat is resolved, additional spending for land acquisition would be inappropriate.

Thus far, the Park Service has spent \$19.3 million for land acquisition for the monument. The city of Albuquerque has spent \$21.5 million so far, while the state has spent \$4.7 million.

Approximately 600 acres of the 7,244-acre monument are privately owned.

The timing of the Domenici proposal is also questionable in view of the continuing opposition by the Park Service to construction of an essential 1,200-foot extension of Paseo del Norte highway across the northern tip of the monument — an extension originally agreed to by everyone involved in planning the monument.

There's yet another reason the senator should delay. In August, the Park Service will present a draft of its management plan for the park.

Among the four alternatives to be discussed at a public meeting is a plan that would severely limit public hiking and horseback riding and close certain areas of the monument except for research and Native American traditional uses.

Scarce federal dollars could justifiably be routed elsewhere if Petroglyph National Monument were to be developed as a limited-use facility.

The senator declines to link the appropriations process to the Paseo del Norte extension or unanswered questions concerning its operation and public usage.

He should. With millions of public dollars involved, such linkage should be made a part of the process — and if New Mexico's senior senator won't bring local government back into the process of overseeing a project with a major impact on the community, who will?

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Editorials

Babbitt Backtracks
 On Petroglyph Issue

After 22 years as a U.S. senator from New Mexico, Don Domenici has plenty of experience dealing out difficult issues with other officials. A key reason Domenici has risen to national prominence is his ability to listen, and to understand what his lawmakers

He wouldn't have gained the respect of his Senate colleagues that he enjoys, if he attempted what people wanted to compromise, agree or differ on controversial issues.

So, Domenici forms an agreement when he talks it up. Interior Secretary Bruce Babbitt brought up the subject of the Petroglyph National Monument at a meeting with Domenici last month. The senator recognized what he was hearing — an agreement on an extremely controversial issue.

Domenici said Babbitt pledged to let legislative authorization such a road go through Congress, supported by the legislative secretary of his department. This would have been a breakthrough at the time, given the opportunity for it to be debated and then voted up or down in Congress.

But when word got out about the plan, groups including the Sierra Club and the National Trust for Historic Preservation greeted it with vehement criticism. Opponents for Babbitt doubted the Interior secretary had made any deal, and the Department remained silent on the road.

It appears Babbitt was ready to consider a new approach to the Petroglyph National Monument — and people got mad at him. Not groups such as the Sierra Club were already unhappy with many actions taken by the Clinton administration, so it's unlikely Babbitt's refusal to come up or what he said to Domenici will bring the administration's reputation ground with the environmental groups.

As it was, Domenici and Albuquerque Mayor Martin Chavez were being portrayed as "bad guys" by environmentalists last week, as Babbitt withdrew support of a road of steel. In the process, the U.S. Congress saw an opportunity to address the established roadway — the Petroglyph National Monument. Some who agreed to back the creation of the monument were surprised to later be told that no road could go through the area, since the legislators had the understanding that paved old roads would extend through the petroglyphs.

Even though Congress is now controlled by Republicans, it's not a foregone conclusion that the road could have won congressional approval. Perhaps the thought of setting a national precedent in the petroglyph by meeting as leaders petitioned to relieve local traffic would have been unacceptable.

But the heat from this controversial topic was too much for Babbitt, and it's less likely the issue will come before Congress any time soon. Unfortunately, it appears that Babbitt's down-to-earth assessment of the petroglyph issue in his meeting with Domenici — that an alternative route or tunnel is the expedient — wasn't reflected in the official department stance.

So Babbitt backed out of the kitchen on this hot topic leaving Domenici, Chavez — and the people of New Mexico

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COMMENTS

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Albuquerque Journal - Metro Plus
Albuquerque, NM
January 31, 1995

OPINION



Albuquerque Journal
Albuquerque, NM
February 2, 1995

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ALBUQUERQUE JOURNAL
CLM. PEPPERDAY, Publisher 1936-1938 H.P. PICKRELL, Editor 1936-1960
 (C. THOMPSON LANG, Publisher 1936-1972)
T.H. LANG, Publisher
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 Gerald J. Crowhard, Editor Kent Webb, Asst. Editor

A10 Saturday, September 18, 1993

Editorials

Petroglyph Politics

All this backing and filling on who expected what on the routing of Paseo del Norte through Petroglyph National Monument when it was just a proposal before Congress leaves a bad taste. It is clear from the record that everyone (including the environmentalists now in the forefront of the opposition) agreed back then that Paseo was a necessary and reasonable location through a monument that joyfully was to be urban in its setting. But the map accompanying the bill is less than precise in designating a road right-of-way, and other language in the bill requires that any road through the monument have a benefit for the monument.

Stephen Whitwell, monument superintendent, doesn't care what the understandings were back then; he is the keeper of the overriding power of the federal government in this matter.

So, the mistake was that it was not specifically included in the monument bill, sponsored by Sen. Pete Domenici, R-N.M. Domenici has said all along he thought the Paseo route was agreed upon, but he now says the bill he got through Congress left the question unanswered. "I personally never believed, even through final passage of it, ... that it would end up with positions as deadlocked as this," Domenici said. "I truly believed there was a way this could be worked out. I remain convinced there can be."

But it cannot, so long as a government bureaucrat and a handful of zealots hold all the trump. A bill tossed into the Senate by Domenici, authorizing the road alignment, might even be beginning field a little bit.

Sen. Rep. Bill Richardson, D-N.M., should be in Domenici's corner on this one. It is Richardson's new constituents in Paradise Hills who run the greatest risk of being victimized by the National Park Service's intransigence. Richardson needs to elevate the issue of Paradise Boulevard to the same level of problem as his concern about the rural byways leading to the Waste Isolation Pilot Plant near Carlsbad.

It's enough to make one wonder if the whole idea of a national monument within the urban confines of the metro area was a bad idea from the beginning.

ALBUQUERQUE JOURNAL
METRO PLUS EDITION
ALBUQUERQUE, NM
JUNE 15, 1993

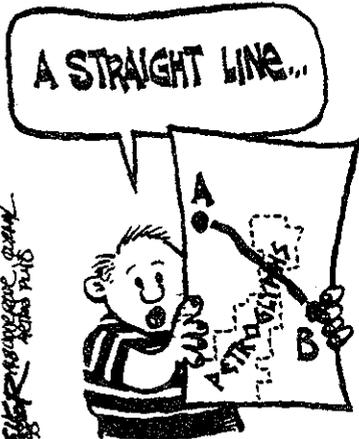
OPINIONS



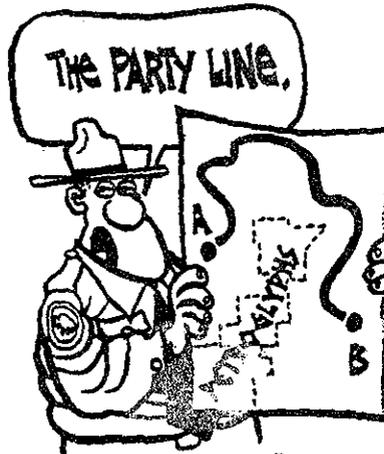
METRO PLUS / TUESDAY / MAY 18, 1993

OPINIONS

Q: WHAT IS THE SHORTEST DISTANCE BETWEEN TWO POINTS?



WEST-SIDE 3RD-GRADER



PARK SERVICE

443

COMMENTS

RESPONSES

AW

[Redacted]

September 28, 1995

Larry Beal
Petroglyph National Monument
6001 Unser Boulevard NW
Albuquerque, New Mexico 87120

Dear Mr. Beal:

1 [The Management Plan for Petroglyph National makes no mention of concessions permitted in the monument and the regulation thereof.]

To the best of my knowledge, at least one non-Native American person, on occasion, conducts tours for hire in Petroglyph National Monument. Until a management plan is in effect, I would presume that such an activity is a permissible, though unregulated, one.

I see no reason for allowing this activity to continue, regulated or unregulated. In a monument this size, that is exploitation, plain and simple. As you know, concessions, and the small return generated by them, has become a sore point in many National Parks.

There is a legislative exception which provides for participation by Native Americans. I would encourage your agency to develop a formal plan for their participation and include it in the general management plan for the monument.

The draft plan is so weak and vague in defining Native American participation in the management of the monument that I believe it fails to live up to the expectations of the legislation.

The revised plan should be specific in that it should define who is eligible to participate, i.e., Native American owned small businesses, tribal governments, etc., and whether or not the concession will be competitively bid. If there are too many interests competing for the concession, the Park Service may find itself bogged down in protests each time the concession is up for renewal.

To avoid this, I would suggest a single entity be specified. I personally think the Indian Pueblo Cultural Center is the natural choice because as an umbrella organization it is the one organization most tribes would likely approve. An umbrella organization would permit the greatest wide-spread participation. I would, however, suggest that you seek the advice and consent on this from the All Indian Pueblo Council, and, at your discretion, other Native American alliances.

Lastly, I would encourage the Park Service to adopt a plan which would eventually utilize the Indian Pueblo Cultural Center to conduct most of the guided tours. This will reduce agency personnel requirements which as you know will be difficult, if not impossible, to fill in an era of declining budgets. Secondly, it will provide a new source of income for Native Americans, something that is sorely needed.

Sincerely,

Larry Weaver

Larry Weaver

- 1. Concessions management has not been identified as an issue to be addressed by the management plan. Concessions would be regulated as part of the daily operations of the monument.

COMMENTS

RESPONSES

[Redacted]

November 2, 1995

Mr. Larry Beal
Petroglyph National Monument
6001 Unser Boulevard NW
Albuquerque, New Mexico 87120

Dear Mr. Beal:

As you know, the Petroglyph Advisory Commission has recommended a change in the Draft Management Plan with respect to neighborhood access points. Its recommendation would prohibit access to Petroglyph Monument by nearby residents unless either a park ranger, volunteer or Native American guide is present.

This recommendation was based in part, if not in whole, on objections from the Friends of the Albuquerque Petroglyphs. FOTAP argued the Park Service Plan, which the residents of my community support, would create a private right for residents of the neighborhood while denying the general public the same access rights. FOTAP is in error. The NPS plan, which keeps down tourist traffic in the neighborhood, would delete the seven neighborhood access points from maps of the monument. The fact that neighborhood access points are not on any map in no way creates a private right. The general public is not restricted from entering the monument if it happens to be in one of the neighborhoods having access. Thus, both residents and visitors have the same rights.

On the other hand the FOTAP plan creates a private right. Unless the Park Service or the City of Albuquerque Open Space Division plans on staffing the seven access points on a regular basis, residents of the neighborhoods will have no opportunity to enter the monument from those points. FOTAP, in contrast, could bring in tourists by the busload, carload, or whatever and be free to access the monument at any time. That is a private right. Furthermore, it makes no difference whether or not FOTAP has a formal or informal plan to do this or whether or not they admit to having acquired a private right. The very act of granting a right of access to volunteer groups but not to the general public (which includes residents of the neighborhoods), whether identified in advance or not, is the creation of a private right.

In case you are not aware, there is an anti-donation clause in the New Mexico Constitution which prohibits the spending of public funds (state or local), for private use. Inasmuch as the Piedras Marcadas unit, the Piedras Marcadas ruin, Boca Negra, and 2300 acres of the Atrisco unit are city or state owned lands, the anti-donation clause applies to those lands. Furthermore, the legislation which established this monument did not strip away the sovereign rights of the State of New Mexico and that those properties which the city and the state hold title to are subject to state laws.

It is my contention that the National Park Service has no legal justification for extending a private right on city or state owned property to either FOTAP or any other volunteer group, including Native American ones.

FOTAP has also suggested that neighborhood access to the monument would result in increased vandalism. Whether or not that is true I do not know. If that is the case then the Park Service must find another way of dealing with the problem. One way, of course, would be to eliminate all neighborhood access points. This way, no private right is granted. This action would, of course, alienate the neighborhoods even more against the monument as well against as the Park Service.

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Individuals

COMMENTS

RESPONSES

Instead of alienating the neighborhoods I think it would be in the Park Service's interest in cultivating neighborhood support for the monument. Paradise Hills prefers the original concept as outlined in the Draft General Management Plan. You have previously followed the lead of FOTAP before (on Paseo) and have created the situation (rightfully deserved) where the National Park Service is viewed by the neighborhoods as the heavy.

Moving on to the next point, about a month ago I recommended that Native Americans be allowed to have more involvement in the monument. I reiterated this point at the hearing on October 19. Once again, I urge you to consider this recommendation.

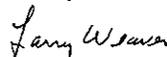
One last point: the Management Plan would restrict access to the general public in the volcano area, the geologic windows, and the Piedras Marcadas ruin. The Park Service further argues that this restriction does not lead to a religious establishment even though Native American religious activities which will ostensibly be carried out there constitutes a primary use. That argument is based on the contention that since the Native American activity is not an exclusive activity (research and guided tours being the others) nor is that use the major activity (which is questionable), the plan as such is not an endorsement of religion.

Let me point out that Native American activities in the monument are private activities as well as religious. As a religious activity (provided that is not the primary activity), it is permissible as such and is guaranteed by the American Indian Religious Freedom Act. However as a private activity, there has been an establishment of a private right. The Management Plan endorses a come-and-go-at-will opportunity that is afforded to Native Americans but not to the general public. Guided tours conducted by the Park Service for the public, which I would presume would have to be arranged in advance, not spontaneously, is not a right that is comparable to that which is to be granted to Native Americans, no matter how well the Park service dresses it.

Since the federal government does not hold title to these properties, and the city does, that makes those lands subject to the same anti-donation clause which precludes the establishment of a private right for the Friends of the Albuquerque Petroglyphs.

The Final Management Plan, if it is ever to be finished, must address how the Park Service is going to deal with this constitutional issue and how the general public is not going to be cheated by restrictions which the Park Services proposes for the areas in question. If that does not occur, the matter will be brought to the attention to the New Mexico delegation with a recommendation to reevaluate the purpose as well as need for the monument.

Sincerely,



Larry Weaver

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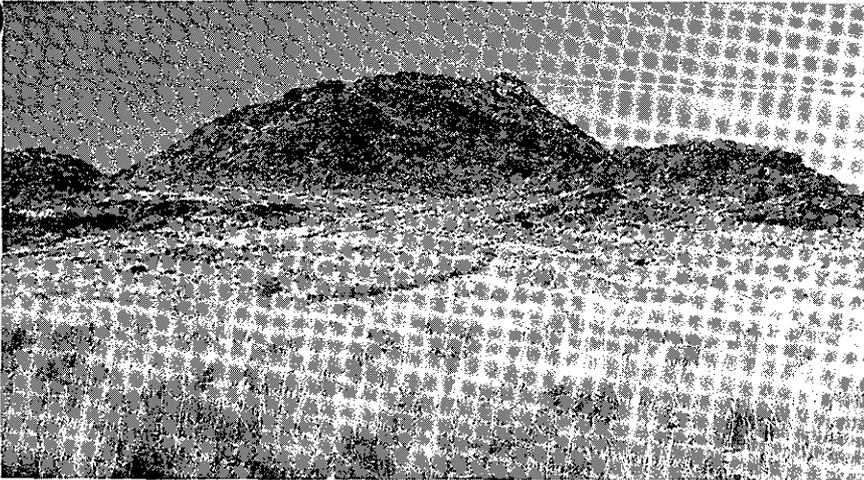
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APPENDIXES, BIBLIOGRAPHY, AND INDEX



Vulcan Volcano



Mesa top and volcanoes, looking northwest



Visitors on developed trails in Boca Negra Canyon



Piedras Marcadas Canyon, looking north

APPENDIX A: LEGISLATION

104 STAT. 272

PUBLIC LAW 101-313—JUNE 27, 1990

Public Law 101-313
101st Congress

An Act

June 27, 1990
[S. 286]

To establish Petroglyph National Monument and Pecos National Historical Park in the State of New Mexico, and for other purposes.

Public lands.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Petroglyph
National
Monument
Establishment
Act of 1990.
16 USC 431 note.

TITLE I—PETROGLYPH NATIONAL MONUMENT

SECTION 101. SHORT TITLE AND CONGRESSIONAL FINDINGS.

(a) This title may be cited as the "Petroglyph National Monument Establishment Act of 1990".

(b) The Congress finds that—

(1) the nationally significant Las Imagines National Archeological District on Albuquerque's West Mesa Escarpment contains more than 15,000 documented and prehistoric and historic petroglyphs;

(2) the district also contains approximately sixty-five other archeological sites;

(3) the West Mesa Escarpment and the petroglyphs are threatened by urbanization and vandalism, and hundreds of petroglyphs have already been destroyed;

(4) the State of New Mexico has shown great leadership by recognizing the importance of the archeological resources of the West Mesa Escarpment through the establishment of the Las Imagines National Archeological District;

(5) the city of Albuquerque has played a significant role in the preservation of the natural, cultural, and recreational resources of the West Mesa Escarpment;

(6) the Middle Rio Grande Pueblo Tribes have shown a strong and sincere interest in the preservation of their heritage through protection of the West Mesa Escarpment;

(7) the Atrisco Land Grant, now held by Westland Development Company, Incorporated, a corporation whose stock is owned primarily by heirs of the Atrisco Land Grant, has played a significant role in the settlement of the West Mesa area since 1692, and the corporation's shareholders have shown a strong interest in the preservation of their traditional lands;

(8) the National Park System has no unit established for the specific purpose of protecting, preserving, and interpreting prehistoric and historic rock art; and

(9) in light of the national significance of the West Mesa Escarpment and the petroglyphs and the urgent need to protect the cultural and natural resources of the area from urbanization and vandalism, it is appropriate that a national monument be established in the West Mesa Escarpment area, near Albuquerque, New Mexico.

SEC. 102. ESTABLISHMENT OF PETROGLYPH NATIONAL MONUMENT.

(a) In order to preserve, for the benefit and enjoyment of present and future generations, that area in New Mexico containing the nationally significant West Mesa Escarpment, the Las Imagines National Archeological District, a portion of the Atrisco Land Grant, and other significant natural and cultural resources, and to facilitate research activities associated with the resources, there is hereby established the Petroglyph National Monument (hereinafter in this title referred to as the "monument") as a unit of the National Park System. The monument shall consist of approximately 5,280 acres generally known as the Atrisco Unit, as depicted on the map entitled "Boundary Map, Petroglyph National Monument", numbered NM-PETR-80,010C and dated June 1990, which shall be on file and available for public inspection in the offices of the National Park Service, Department of the Interior, in the offices of the Department of Energy, Minerals, and Natural Resources of the State of New Mexico, and in the office of the mayor of the city of Albuquerque, New Mexico.

(b) The monument shall be administered by the Secretary of the Interior (hereinafter in this title referred to as the "Secretary") or, if the monument is expanded pursuant to section 104(a), by the Secretary in cooperation with the State of New Mexico (hereinafter in this title referred to as the "State") or the city of Albuquerque, New Mexico (hereinafter in this title referred to as the "city"), in accordance with section 105.

(c) Within 6 months after the date of enactment of this title, the Secretary shall file a legal description of the monument with the Committee on Energy and Natural Resources of the United States Senate and the Committee on Interior and Insular Affairs of the United States House of Representatives. Such legal description shall have the same force and legal description as if included in this title, except that the Secretary may correct clerical and typographical errors in such legal description. The legal description shall be on file and available for public inspection in the offices of the National Park Service, Department of the Interior, in the offices of the Department of Energy, Minerals, and Natural Resources of the State of New Mexico, and in the office of the mayor of the city of Albuquerque, New Mexico: *Provided*, That the Secretary may from time to time, after completion of the general management plan referred to in section 108(a), may make minor adjustments to the monument boundary by publication of a revised map or other boundary description in the Federal Register.

SEC. 103. LAND ACQUISITION AUTHORITY.

(a) The Secretary is authorized to acquire lands and interests therein within the monument boundary by donation, purchase with donated or appropriated funds, exchange, or transfer from any other Federal agency, except that lands or interests therein owned by the State or a political subdivision thereof may be acquired only by donation or exchange.

Gifts and
property.

(b) Where the surface and subsurface estates of private land to be acquired are separately owned, the Secretary shall acquire the subsurface estate to such land prior to or at the same time the surface estate is acquired: *Provided*, That this subsection shall not be applicable if the Secretary determines that the prior acquisition of the surface estate is necessary—

- (1) to prevent damage to the resources of the monument; or

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(2) to properly manage and interpret the monument in accordance with sections 102 and 105.

(c)(1) The Secretary is authorized to exchange Federal lands within the area described on the map referred to in section 102(a) as the Piedras Marcadas Unit for lands owned by the city within the area described as the Atrisco Unit on such map.

(2) The Secretary is authorized to exchange Federal lands within the area described on the map referred to in section 102(a) as the Boca Negra Unit for lands owned by the State within the area described as the Atrisco Unit on such map.

(3) Exchanges shall be on the basis of equal value, and either party to the exchange may pay or accept cash in order to equalize the value of the properties exchanged.

Gifts and
property.

(d) Prior to acquiring fee simple ownership of private lands or interests therein within the monument boundary, the Secretary is authorized to acquire an appropriate interest in such land by donation or for a nominal fee from the owner or owners of such lands for the purpose of providing immediate protection against trespass or vandalism or initiating any resource inventories necessary to carry out the purposes of this title.

SEC. 104. EXPANSION OF THE MONUMENT.

(a) Upon the execution of a binding agreement between the Secretary, the State, and the city that the lands identified in this subsection shall be perpetually managed in accordance with section 105, the Secretary shall include such lands, totaling approximately 1,994 acres, within the monument boundary. The lands referred to in this subsection are:

(1) the approximately 1,779 acres generally known as the Piedras Marcadas Unit, as depicted on the map referred to in section 102(a); and

(2) the approximately 215 acres generally known as the Boca Negra Unit, as depicted on the map referred to in section 102(a).

(b)(1) The Secretary is authorized to acquire, as provided in section 103(a), some or all of the approximately 95 acres of land, or interests therein, within the area identified as "Potential Addition" on the map referred to in section 102(a), if, after consultation with the Petroglyph National Monument Advisory Commission established under section 110, the Secretary determines that such acquisition would further the purposes of this title.

(2) The authority of the Secretary to make acquisitions pursuant to paragraph (1) shall expire on the date three years after the date of enactment of this Act.

(3) Any lands acquired pursuant to paragraph (1) shall be incorporated into the monument and managed accordingly.

SEC. 105. ADMINISTRATION AND MANAGEMENT OF THE MONUMENT.

(a) The Secretary shall administer, manage, and protect the monument in accordance with the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1 et seq.), the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461 et seq.), and this title, and in such a manner as to preserve, for the benefit and enjoyment of present and future generations, its cultural and natural resources, and to provide for the interpretation of and research on such resources.

(b) Units of the monument which may be added pursuant to section 104(a) shall be managed and developed in accordance with management and operational plans prepared concurrently with the

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National Park Service, consistent with section 108. Visitor use and interpretive programs within such units shall be undertaken consistent with plans developed with the assistance of the National Park Service.

(c) The Secretary is authorized to enter into cooperative agreements with either the State or the city under which the Secretary may manage and interpret any lands owned by the State or the city, respectively, within the boundaries of the monument.

Contracts.

(d) In order to encourage a unified and cost effective interpretive program of the natural and cultural resources of the West Mesa Escarpment and its environs, the Secretary is authorized to enter into cooperative agreements with other Federal, State, and local public departments and agencies, Indian tribes, and nonprofit entities providing for the interpretation of these resources. Such agreements shall include, but need not be limited to, a provision for the Secretary to develop and operate interpretive facilities and programs on lands and interests in lands outside the monument boundary, with the agreement of the owner or the administrator thereof. Such cooperative agreements may also provide for financial and technical assistance for the planning and implementation of interpretive programs and minimal development related to these programs.

Contracts.
Conservation.

(e) Federal laws generally applicable to units of the National Park System, including but not limited to, the National Environmental Policy Act of 1969 and the Archeological Resources Protection Act of 1979, shall apply to the monument. The Secretary is authorized to pursue concurrent jurisdiction of the monument for the purposes of law enforcement and implementation of Federal regulations.

SEC. 106. LAND USE AND TRANSPORTATION PLANNING.

The Secretary may participate in land use and transportation management planning conducted by appropriate local authorities for lands adjacent to the monument and may provide technical assistance to such authorities and affected landowners for such planning.

SEC. 107. EXISTING TRANSMISSION OR DISTRIBUTION FACILITIES.

Nothing in this title shall be construed as authorizing or requiring revocation of any interest or easement for existing transmission or distribution facilities or prohibiting the operation and maintenance of such facilities within or adjacent to the monument boundary.

SEC. 108. GENERAL MANAGEMENT PLAN.

(a) Within 3 years from the date funding is made available for the purposes of this section, the Secretary, in cooperation with the city and the State, shall develop and transmit to the Committee on Energy and Natural Resources of the United States Senate and the Committee on Interior and Insular Affairs of the United States House of Representatives, a general management plan for the monument consistent with the purposes of this title, including, but not limited to—

- (1) a statement of the number of visitors and types of public use within the monument which can be accommodated in accordance with the protection of its resources;
- (2) a resource protection program;
- (3) a general interpretive program;

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(4) a plan to implement the joint resolution entitled "American Indian Religious Freedom", approved August 11, 1978 (42 U.S.C. 1996);

(5) a general development plan for the monument, including proposals for a visitors' center, and the estimated cost thereof; and

(6) a plan for the Rock Art Research Center established in section 109.

(b) The general management plan shall be prepared in consultation with the Petroglyph National Monument Advisory Commission established pursuant to section 110, appropriate Indian tribes and their civil officials, the heirs of the Atrisco Land Grant, the New Mexico State Historical Preservation Office, and other interested parties.

Contracts.

(c) The Secretary shall undertake, in consultation and cooperation with appropriate New Mexico Indian tribes and their civil officials, research on other Rio Grande style rock art sites on Federal lands in New Mexico, and through cooperative agreements with State and willing private landowners, on non-Federal lands. The Secretary shall provide the Committee on Energy and Natural Resources of the United States Senate and the Committee on Interior and Insular Affairs of the United States House of Representatives within 3 years of the date funding is made available for the purposes of this section, a report that—

Reports.

(1) lists various locations of Rio Grande style rock art;

(2) identifies the ownership of the rock art;

(3) identifies the condition of the resources; and

(4) identifies the appropriate type of technical assistance needed for the protection and care of these resources.

The report shall be updated and transmitted to such committees every 2 years thereafter.

Cultural programs.
Indians.
Minorities.
Public buildings and grounds.

SEC. 109. ROCK ART RESEARCH CENTER.

(a) In order to provide for research relating to Rio Grande style rock art, undertake comprehensive evaluations of petroglyphs within the monument, prepare interpretive programs that are sensitive to the concerns of the Indian and Hispanic peoples, and relate monument resources to other styles and forms of rock art, the Secretary, acting through the National Park Service and in cooperation with the University of New Mexico, other educational institutions, foundations, Indian tribes, and private entities, shall establish a Rock Art Research Center (hereinafter in this title referred to as the "Center").

(b) The Center shall function as a focal point for the systematic and scholarly collection, analysis, and dissemination of information relating to Rio Grande style rock art, and other forms of rock art within the region.

Education.

(c) The Center shall produce research data and educational materials that will enhance public understanding of prehistoric and historic rock art.

(d) The Center shall provide for a broad program of research including ethnographic studies, resource management techniques, and comparative studies of rock art forms and styles.

(e) Research shall be primarily directed toward rock art managed by the National Park Service. The Secretary may enter into cooperative agreements with other agencies and entities as may be appropriate to carry out the requirements of the Center.

(f) The Secretary, acting through the National Park Service, is authorized to undertake research and assist in the management and protection of Rio Grande style rock art sites on public and, with the agreement of the landowner, private lands within the Galisteo Basin. The Secretary is authorized to enter into cooperative agreements with landowners of such rock art sites and expend appropriated funds for research, site protection, and interpretive programs. Research shall include the identification and mapping of rock art sites and the development of protection options.

Contracts.

SEC. 110. PETROGLYPH NATIONAL MONUMENT ADVISORY COMMISSION.

Establishment.

(a) There is hereby established the Petroglyph National Monument Advisory Commission (hereinafter in this title referred to as the "Commission"). The Commission shall be composed of eleven members appointed by the Secretary for terms of 5 years as follows:

(1) one member, who shall have professional expertise in history or archeology, appointed from recommendations submitted by the Governor of the State of New Mexico;

(2) one member, who shall have professional expertise in history or archeology, appointed from recommendations submitted by the mayor of the city of Albuquerque, New Mexico;

(3) one member, who shall have professional expertise in Indian history or ceremonial activities, appointed from recommendations submitted by the All Indian Pueblo Council;

(4) one member, who shall be a shareholder of the Westland Development Company, Incorporated;

(5) one member, who shall be an heir of the Atrisco Land Grant;

(6) one member, who shall be an affected landowner;

(7) one member, who shall have professional expertise in Indian rock art;

(8) one member, who shall have professional expertise in cultural anthropology;

(9) one member, who shall have professional expertise in geology;

(10) one member from the general public; and

(11) the Director of the National Park Service, or his or her designee, *ex officio*.

(b) Any member of the Commission may serve after the expiration of his or her term until a successor is appointed. A vacancy in the Commission shall be filled in the same manner in which the original appointment was made.

(c) Members of the Commission shall serve without pay. While away from their homes or regular places of business in the performance of services for the Commission, members of the Commission shall be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in Government service are allowed expenses under section 5703 of title 5, United States Code.

(d) The Chair and other officers of the Commission shall be elected by a majority of the members of the Commission to serve for terms established by the Commission.

(e) The Commission shall meet at the call of the Chair or a majority of its members, but not less than twice annually. Six members of the Commission shall constitute a quorum. Consistent with the public meeting requirements of section 10 of the Federal Advisory Committee Act (5 U.S.C. App.), the Commission shall, from

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time to time, meet with persons concerned with Indian history and historic preservation, and with other interested persons.

(f) The Commission may make such bylaws, rules, and regulations as it considers necessary to carry out its functions under this title. Section 14(b) of the Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to the Commission.

(g) The Commission shall advise the Secretary on the management and development of the monument, and on the preparation of the general management plan referred to in section 108(a). The Secretary, or his or her designee, shall from time to time, but at least semiannually, meet and consult with the Commission on matters relating to the management and development of the monument.

Termination
date.

(h) The Commission shall cease to exist 10 years after the date of its first meeting.

SEC. 111. AUTHORIZATION OF APPROPRIATIONS.

Reports.

There are authorized to be appropriated such sums as may be necessary for the purposes of this title. The Secretary shall prepare and submit to the Committee on Energy and Natural Resources of the United States Senate and the Committee on Interior and Insular Affairs of the United States House of Representatives, concurrently with the submission to Congress of the President's proposed budget for the second fiscal year beginning after the date of enactment of this title, and every 5 years thereafter, a report on the status of the agreement referred to in section 104(a), its associated costs, and any proposed alterations to the agreement.

APPENDIX B: PLANNING / MANAGEMENT OBJECTIVES

The Petroglyph National Monument authorizing legislation (PL 101-313) and the NPS *Management Policies* (NPS 1988) provided primary direction for monument planning. In addition, the following planning objectives were established.

Management objectives, done for each NPS unit, provide a framework for conserving monument resources, integrating the monument into its surrounding environment, and accommodating public use in accordance with NPS *Management Policies*. Based on NPS policies and direction provided in the enabling legislation, the following are the management objectives for Petroglyph National Monument. These were developed by the core team and refined through later reviews.

Overall Objectives

- To preserve monument resources, including the petroglyphs and their context, the other archeological sites, the volcanoes and geologic windows, the cultural landscape, and the views from and of the monument, and ensure that all public use of the monument is compatible with this objective.
- To provide opportunities for visitors to see and learn about monument resources, including the petroglyphs and their context, the other archeological sites, the volcanoes and geologic windows, the cultural landscape, and the views from and of the monument, in ways that show respect for the area's cultural and traditional significance and value.
- To design and locate monument facilities, roads, and trails and to limit that development to those facilities needed for management and visitor services in order to minimize impacts on monument resources and meet sustainable design goals.
- To ensure, consistent with the American Indian Religious Freedom Act, access for the traditional and cultural activities of American Indians.
- To manage the natural and cultural resources in ways that allow for the traditional use by Pueblo communities and land grant heirs to continue.
- To work cooperatively with the city and state to ensure that the monument's natural and cultural resources are managed consistently in accordance with federal law and this plan.
- To work with developers of adjacent lands so that these lands may be developed in a manner that is compatible with monument resource values.
- To protect the natural and cultural resources for research and public enjoyment.
- To encourage the participation of adjacent neighborhoods, developments, and community business leaders in the protection of monument resources.

Specific Resource Objectives

- To maintain and reclaim the natural conditions and ecological processes to the degree practicable given the urban landscape and resource preservation and protection objectives.
- To establish a comprehensive resource information base to monitor change and support scientific and educational objectives.
- To develop and maintain an open, consultative relationship with the Pueblo communities and Atrisco land grant heirs regarding uses of monument resources.

- To maintain the natural biodiversity of the monument resources and, where practicable and necessary, help reestablish this biodiversity. To make vegetated areas within developed areas of the monument be as compatible as possible with native plant communities.
- To maintain the scenic vistas to and from the monument.
- To maintain minimal noise intrusion.

Visitor Experience/Interpretation Objectives

The following visitor experience objectives define those experiences that are so central to the monument's purpose and significance that all visitors should have access to them.

- To provide the opportunity for visitors to understand, learn about, see, respect, and appreciate (1) the value and importance of the petroglyphs and their context as a cultural expression and as traditionally and culturally significant to the Pueblo culture, (2) the importance of the escarpment, volcanoes, and other archeological resources by themselves and in the continuum of American Indian and Hispanic cultures, (3) the traditional, cultural, and inspirational qualities of the monument, (4) the different cultures associated with the monument.
- To have the monument story unfold naturally as visitors encounter well-integrated facilities, interpretive media, informed staff, and monument resources.
- Because of this greater understanding and appreciation, to show respect for and want to help preserve and protect monument resources.
- To understand the reasons why the monument was set aside by Congress, which are identified in the primary interpretive themes (see the "Interpretation and the Visitor Experience" section).
- To be aware of options available to them, know where to go for assistance, and know how to visit the monument safely (orientation).
- To provide visitors with information about the petroglyphs before they actually see the petroglyphs.
- To provide a range of opportunities/interpretive experiences for all visitors, including children, and to encourage them to see and understand things in different ways. Interpretive opportunities/experiences should be meaningful, enjoyable, and theme-related and should be presented through different facilities, programs, and interpretive media.
- For schoolchildren and other organized groups to participate in theme- and curriculum-related educational activities.
- To provide programs and interpretive messages so that they will be available to all visitors, including visitors with disabilities.
- To provide opportunities for visitors to be aware of ongoing petroglyph and other types of research, which will be information that will contribute to public understanding and ongoing resource protection.
- To enjoy the natural and cultural landscape.
- To provide opportunities for visitors to experience the quiet, sense of solitude, and freedom from intrusions in a relatively natural setting, especially while seeing the petroglyphs.

APPENDIX C: DEVELOPMENT OF ALTERNATIVES

This appendix summarizes the process and information used to develop and revise the alternatives. The alternative development process is the combination of several factors including direction provided by legislation; development of purpose, significance, and interpretive themes; issues and opportunities identified through scoping; resource information and analysis; overall concepts for

visitor use and resource management; and continuing refinement through consultation with a variety of interest groups and agency staffs.

Table C-1 summarizes the basic resource and socioeconomic information that was gathered for the generation of alternatives.

TABLE C-1. RESOURCE INFORMATION

Aerial photographs Areas of geologic interest Areas suitable for development Areas with high noise levels Areas with high research potential	Landscape units Land use
Bird inventory — raptor habitat	Market study of estimated future visitation
Cultural landscape overview	Petroglyph and archeological site locations <ul style="list-style-type: none"> • integrity and context of petroglyph concentrations • areas with both archeological sites and petroglyphs Places with opportunities for solitude
Drainage patterns — arroyos	Rapid ethnographic assessment
Erosion study Existing conditions — zoning, land use, landownership, utilities, escarpment crossings, disturbed areas and dumping sites	Site analysis of specific areas Slope Soils
Floodplains	Threatened and endangered species — general survey Threatened and endangered species — specific development site survey Traffic impact evaluation Transit system evaluation
General vegetation	Views and visual intrusions Visitor access points
Habitat zones Historical photographs	Wetlands

The planning team used this information and public input to generate initial alternatives based on different overall approaches to visitor use and resource management. Some of the approaches considered were (1) primary access

to the monument from the mesa top, (2) multiple access points from below the escarpment, and (3) limiting access to various portions of the monument for research and resource protection. Concepts of the initial

alternatives were organized and presented in the February 1993 alternatives newsletter.

Below is a description of the alternatives as they were developed beginning in February 1992, why and at what point new alternatives were developed, and why certain elements changed. The various versions of the alternatives are not described in complete detail, nor are maps included for each one. The important defining elements are described.

In February 1992 the National Park Service published a newsletter that included draft purpose and significance statements for the monument and showed three alternatives for resources management and visitor use of the monument. These alternatives designated areas of the monument for varying levels and types of uses and areas where use would be limited to research, American Indian use, and occasional guided tours. One alternative showed a road on the mesa top and a visitor center at the volcanoes, while the others focused use and a visitor center in the southern or middle portions of the monument.

Between February 1993 and October 1993 the planning team considered public comments, collected further resource information, and revised the alternatives. In September 1993 alternatives were developed that included the following — alternative I located a visitor center at the Laurelwood property, which is adjacent to the monument boundary just south of Rinconada Canyon. Visitor contact facilities were proposed for Boca Negra and Piedras Marcadas and parking only at Rinconada and the volcanoes. Mesa Prieta was proposed as a remote use area and accessed only by trail from Rinconada Canyon.

In Alternative II the visitor center was at Boca Negra Canyon and focused use in the middle and northern portions of the monument. Rinconada Canyon was accessible only by trail from a parking area on the mesa top at the southern end of the 81st Street. Parking and a visitor contact facility was located at Mesa Prieta and Piedras Marcadas Canyon. Alternative III was the no-action alternative and

included small parking areas at Piedras Marcadas and Rinconada Canyons, and continued use of the current visitor center with no established access to Mesa Prieta. Boca Negra Canyon would continue as it currently operates.

In October 1993, just prior to an Advisory Commission meeting in which the alternatives to date were to be presented, the Park Service learned that the landowner was not willing to sell the Laurelwood property. At that meeting the September version of the alternatives was presented, but prefaced by saying that several areas were now being studied to determine the location for the visitor center as described in alternative I. These areas were Lava Shadows, Boca Negra and Rinconada Canyons, Mesa Prieta, and monument lands adjacent to the Laurelwood boundary. The Advisory Commission felt very strongly that one alternative should include a road on the mesa top. A group of three Advisory Commission members met to develop such an alternative that appears as alternative 3 in this document.

Additionally, an NPS landscape architect, architect, and natural resource specialist conducted a study of several visitor center sites. The analysis also identifies the pros and cons of each site including nearness to petroglyphs, soils, drainage, and aesthetics. This information is discussed in more detail in appendix L.

At the request of the Advisory Commission another meeting was held in December 1993 to give the public and advisory commission a chance to see the latest version of the alternatives and to provide additional comment. At this meeting, the revised alternatives and a "sub" alternative of I were presented. Alternative I included a visitor center and environmental education center at Boca Negra Canyon, administration and petroglyph research center at Lava Shadows, visitor contact facilities and parking at Piedras Marcadas and Rinconada Canyons, a trailhead and parking at the south end of 81st Street, interpretation and parking at the volcanoes, a visitor contact facility at Mesa Prieta, and horse

and bicycle trail access through the monument at four locations to connect with trails on open space lands. Horse and bicycle trails connected Boca Negra and Piedras Marcadas Canyons. Pedestrian-use-only trails were shown in the monument south of the Atrisco grant line. Alternative IA was developed in response to requests by the public to allow horse and bicycle use on the mesa top. Trails were shown on the mesa top and around the volcanoes. All other facilities were the same as described under alternative I. Alternative II located the visitor center and heritage and environmental education center at Lava Shadows.

Administration and the petroglyph research center were located on leased space outside the monument boundary. Visitor contact facilities were located at Piedras Marcadas, Mesa Prieta and the 81st Street overlook. No access was provided to the volcanoes. Rinconada Canyon was accessed only by trail from Mesa Prieta or 81st Street. Nonfederal land acquisition would be sought for lands west of the monument boundary between Boca Negra and Piedras Marcadas, and a multiuse trail would be developed on these lands. Alternatives III and IV were similar to alternatives III and IV in this document.

Public comment on these alternatives was generally in support of alternative I. The Greater Albuquerque Trails committee strongly advocated that horse and bicycle use should be allowed to continue on top of the mesa and

wanted multipurpose trails that did not allow motorized vehicles included in the preferred alternative. Friends of the Albuquerque Petroglyphs and Indian community members were generally in favor of alternative 1. Few people spoke in support of supported a road on the mesa top. The Westside Action Council (representing several economic development and neighborhood organizations) presented another alternative that is discussed in more detail under "Alternatives Considered but Rejected." Their alternative included a visitor center west of Piedras Marcadas Canyon, Paseo del Norte passing through the monument, a road on the mesa top and parking areas at Boca Negra Canyon and Mesa Prieta, on the mesa top (2), at the volcanoes (2), at the northern geologic window (1), and on open space lands (1). Pedestrian trails were shown around the volcanoes and in petroglyph concentrations and a multipurpose trail on the mesa top and in the northern and southern geologic windows.

After analysis of public comment, consideration of political realities, and further consultation with the city Open Space Division, the West Side Action Council, and representatives from the environmental and Pueblo community, the alternatives were revised to what appear in this management plan.

APPENDIX D: DISCUSSION OF UNSER BOULEVARD AND PASEO DEL NORTE

Unser Boulevard is segmented into three separate but related corridor study projects.

- Unser South, which runs adjacent to the monument in the Atrisco unit and north from I-40 to Dellyne, has recently been completed.
- Unser Middle, which includes Unser from Dellyne north to Paradise Boulevard as well as Paseo del Norte from Unser east to Golf Course Road, is the subject of a recent environmental impact statement that created considerable controversy. Construction has not yet begun.
- Unser North, from Paradise Boulevard to the Sandoval County line, which is an approved project with designs nearing completion. Construction has not yet begun.

The *Unser Middle Transportation Corridor Study Final Environmental Impact Statement*, (Leedshill-Herkenhoff, Inc. 1992) commonly referred to as the "Unser Middle" project, involves the construction of two principal multilane limited access arterial roadways (Unser Boulevard and Paseo Del Norte), utility lines, bicycle lanes, and recreational trails. The project proposes that both Unser Boulevard and Paseo Del Norte cross the monument. Unser Boulevard, according to City Council Resolution R-455, is to be a limited access four-lane parkway serving as a major arterial street. Paseo del Norte is intended to be a freeway-type facility to serve the northern urban area and complement the interstate system. Paseo is planned to be four lanes, with the potential for future widening to six lanes.

The city began the environmental study process for the Unser Middle Project in 1990. Due to the potential for adverse impacts associated with the roadway project, an environmental impact statement was determined to be the appropriate level of documentation. The stated purpose for the new roadway construction in the Unser Boulevard and Paseo del Norte corridors is to provide improved transportation service on the west side of Albuquerque and to relieve existing

and future (using the year 2010 as the base year) traffic congestion on Coors Boulevard and other area arterials.

The Unser Middle project is not a federal action and does not involve federal assistance, funds, or permits. At the time the EIS process began, the city lands in the Piedras Marcadas and Boca Negra units were not part of the monument. Those lands were added to the monument with the signing of a binding agreement in June 1991 by the city and the National Park Service. The enabling legislation states that all lands added to the monument be managed in accordance with all federal laws generally applicable to units of the national park system, including but not limited to the National Environmental Policy Act (NEPA).

The Unser middle project environmental impact statement (Leedshill-Herkenhoff, Inc. 1992) was not required under NEPA regulations because it is not a federal project and does not require federal permits. However, the Unser Middle environmental impact statement was intended to comply with the spirit and intent of the National Environmental Policy Act and state and Federal Highway Administration environmental impact statement procedures. The National Park Service participated in the environmental impact statement as a cooperating agency but does not agree with the findings of that document.

The *Draft Unser Middle Transportation Corridor Environmental Impact Statement* was released in March 1992. At a public hearing in April 1992, additional alternatives for constructing Paseo Del Norte, which avoided use of the monument lands, were suggested for further evaluation. The city's final environmental impact statement (Leedshill-Herkenhoff, Inc. 1992) evaluated those alternatives, but not to the same level of detail as the original alternatives. The final environmental impact statement found that alternatives to avoid the monument were neither prudent nor feasible because of extraordinary cost and community disruption and that the western alignment for Unser and the middle alignment for Paseo Del

Norte was the alternative of least harm. In approving the environmental impact statement, the City Council did not authorize the expenditure of land acquisition and design and development funds until a letter was received from the city attorney stating that there were no credible legal barriers to constructing the road through the monument. In spite of the opposition to the proposed project and questions concerning the legal authority to construct Paseo Del Norte through the monument, a record of decision was issued in December 1993 and concluded the city's environmental impact statement process.

The National Park Service has determined that Unser Boulevard could be constructed along the gas line right-of-way in a way that is consistent with protection of monument resources and purpose. The construction of Unser Boulevard along the gas line alignment would reduce the noise and visual impacts that the current two-lane road now causes on Boca Negra Canyon; thus, a monument purpose for Unser Boulevard may be served.

No such argument for Paseo Del Norte can be made. The construction of and use of Paseo Del Norte would adversely impact the cultural and natural resources for which the monument was established. Construction of a major four-to six-lane arterial roadway would effectively sever the Piedras Marcadas unit from the rest of the monument. Access to the Piedras Marcadas Canyon would be significantly reduced to auxiliary access through local subdivisions. Visitors choosing to hike the length of the escarpment would not be able to do so uninterrupted by vehicular traffic. No vehicular road currently crosses the escarpment in the vicinity, and the impact of a new 50 mph roadway would greatly decrease the overall quality of the visitor experience in areas adjacent to the road.

Seeing the petroglyphs in as close to their original context as possible helps visitors to understand and consequently respect the significance of the petroglyphs and associated archeological sites. This would not be possible adjacent to an elevated freeway. It is important to provide a sense of solitude when seeing the petroglyphs and to provide opportunities to hear interpreters who are giving guided tours. Noise generated from vehicles on Paseo Del Norte would dramatically increase the noise levels in the immediate vicinity of a large petroglyph concentration. Visitors to the 800+ petroglyphs in the area would be distracted by the constant traffic and the resulting noise and visual intrusion.

Constructing the road would require that some petroglyphs would need to be relocated or buried. The integrity of the continuous volcanic escarpment, one element in the nomination of the Las Imagines Archeological District, would be broken. American Indians have identified these lands as significant to them and their continued traditional and cultural practices. The introduction of a "freeway type facility" would significantly impact their use of the area. A 50 mph freeway-type road does not meet monument purposes. Therefore, the management plan assumes that Unser Boulevard, as a four-lane parkway, would be built but that Paseo Del Norte would not be constructed through the monument.

Although the National Park Service has determined that there is no authority and no monument purpose for Paseo del Norte within the monument, this road corridor is still under consideration by the city and unresolved issues about the road remain. Therefore, the road alignment will be shown on monument alternative planning maps as the "Paseo del Norte study corridor."

APPENDIX E: RELATED PLANS AND DOCUMENTS

"Planned Communities Criteria: Policy Element" (City of Albuquerque 1991) — Contains criteria for the adoption of other smaller-scale plans in the undeveloped or sparsely developed portions of Bernalillo County. Concepts include development standards and criteria that would identify and conserve environmental resources and provide the city with a basis to handle large-scale and or noncontiguous development.

Trails and Bikeways Facility Plan (City of Albuquerque 1993d) — This plan proposes a multiuse trail system for recreational and transportation trails, recommends development standards, specifies trail locations, and sets priorities for the use of public funds. Specific trails planned within the boundaries of Petroglyph National Monument were removed from the proposed trails map in this plan. Proposed trails outside the monument boundary run beside Unser Boulevard, the San Antonio arroyo, in Santa Fe Village at the base of the escarpment. Escarpment crossing occur at the Boca Negra Canyon and Paseo Del Norte alignments, and south along 81st Street.

Bosque Action Plan (City of Albuquerque 1993a) — This plan identifies goals, policies, and projects to ensure the survival of the Rio Grande Bosque and to provide a unique recreational and educational experience for the public. Policies address the environment/wildlife, recreation and other public use, education, and administration. The Bosque is 1-2 miles east of the monument.

Bikeways Master Plan (Middle Rio Grande Council of Governments 1992) — This plan identifies bicycle facilities, including specifically designed bicycle trails and bicycle lanes. Updated by the Urban Transportation Planning Policy Board, the plan identifies bicycle facilities along Unser and Paseo Del Norte.

Draft Open Space Facilities Plan (Southwest Land Research, Inc. 1994) — Currently in draft form, this plan establishes guidelines for the implementing the open space goals in the *Albuquerque/Bernalillo County Comprehensive*

Plan. Open space is considered relatively undeveloped land dedicated to passive and active uses not accommodated by the parks system. The open space system provides visual relief from urbanization and offers opportunities for education, recreation, cultural activities, and conservation of natural resources. The volcanoes, mesa-top lands, and escarpment were acquired for open space. Approximately 3,000 acres of land within the boundaries of Petroglyph National Monument are currently managed by the Albuquerque Division of Open Space. This plan identifies appropriate uses and management techniques for the different types of open space lands; it does not address open space lands within the monument. A draft document is expected in fall 1994.

Facility Plan for Arroyos (City of Albuquerque 1986) — This plan recognizes that Albuquerque's arroyos serve multiple purposes — such as drainage, major open space, links between open space lands, and a basis for urban trails. The San Antonio, Boca Negra, and Piedras Marcadas arroyos are identified as part of the recreational arroyo network.

Draft West Side Strategic Plan (Consensus Planning, Inc., in preparation, 1994) — The purpose of this plan is to review existing plans and policies that address the city's west side, identify infrastructure needs and available resources, and target infrastructure priorities on the west site. It is expected that this plan will result in planning strategies that guide and integrate the diverse needs of the west side.

Long Range Major Street Plan (Middle Rio Grande Council of Governments 1993) — This plan addresses the future development of the major street system for the Greater Albuquerque urban area. The plan, which is updated yearly, proposes roads ranging from limited access principal arterials to collector streets. The plan contains policies on the functional classification of streets, rights-of-way, location study corridors (where proposed alignments have not been established but are under

consideration), and access limitations. Proposed principal arterials that have an impact on the monument include the Paseo del Norte extension, Unser Boulevard extension, Paseo del Vulcan extension, and the extension of 20th Street from the Sandoval County line north into Rio Rancho. Other location study corridors with possible impacts on the monument include the Ladera Irving, Westside-McMahon extensions to the Paseo del Vulcan extension, Rainbow Boulevard northern and southern extensions, 20th Street northern extension to Northwest Loop, and the Northwest Loop.

Volcano Cliffs Conceptual Sector Development Plan (Flatow Moore et al. 1982) — A master plan for Volcano Cliffs was prepared, and the subdivision directly north of the monument on the mesa top was platted in the mid 1960s. The master sector plan was never approved. In 1993 the city Planning Department conducted a fiscal impact analysis for Volcano Cliffs, which evaluated the expected costs, both public and private, of developing the area.

Black Ranch: A Planned Community Master Plan (A. Wayne Smith & Assoc. 1990) — Black Ranch is a planned community containing approximately 6,700 acres north and west of Double Eagle II Airport, the volcanos, and the northern geologic window. The planned community has the potential to support a population of over 40,000. Access to Black Ranch may impact roads adjacent to and through the monument. The Bernalillo County Commission approved the master plan in 1990.

Draft Paseo Del Vulcan Corridor Study (Avid Engineering Inc. 1994) — The Paseo del Vulcan transportation corridor is directly west of the monument boundary and is currently under study by the State Highway and Transportation Department. Paseo Del Vulcan is intended to be a six-lane, high-capacity, limited access roadway extending north and east from I-40 and connecting with I-25. Preliminary planning and evaluation for this roadway is currently underway, and it has not been determined as to whether the road will be west of Double Eagle II Airport or between the airport and Petroglyph National Monument. Impacts on

the monument will be evaluated as part of the state's study.

Sector Plans — Sector plans provide general land use and specific zoning, including densities for a designated area. They also identify transportation and trail networks as well as park and open space requirements. Several sector plans have been developed for lands near the monument. These include the *Riverview Sector Plan* (Community Sciences Corp. 1986) (west of Coors Boulevard and north of Montañño), the *Double Eagle II Sector Plan* (Greiner Engineering, Inc. 1989a and b), the *Coors Corridor Plan* (from Central to NM 528) (City of Albuquerque 1984), the *Seven Bar Ranch Sector Plan* (Denish 1981, revised 1985), the *Lava Shadows Sector Plan* (Johnson 1984), *Draft Calabacillas Arroyo Corridor Plan* (City of Albuquerque 1989), and *Draft San Antonio Arroyo Corridor Plan* (Resource Technologies, Inc. 1988).

Drainage Master Plans — Several plans and studies concerning drainage in and around the monument have been or are being developed and approved. Among them are the *Far Northwest Drainage Management Plan* (Bohannon-Huston, Inc. 1986) defining the 100-year stormwater flows for the Westgate, Ladera, San Antonio, Boca Negra, and Mariposa watersheds), the *Draft Northwest Mesa Drainage Management Plan* (Scanlon and Assoc. 1989) evaluating and making recommendations for passing developed condition peak stormwater flows generated within the Ladera, San Antonio, Boca Negra, and Mariposa watersheds into the Rio Grande), and the *Piedras Marcadas Drainage Management Alternatives* (Easterling & Assoc. Inc. 1989c) identifying strategies for addressing runoff from existing and future westside development and determining ways to convey runoff through Petroglyph National Monument). Other drainage management plans include the *Black Ranch Drainage Management Plan* (Easterling and Associates 1989a), the *North Coors Drainage Management Plan* (Canton & Associates 1985), the *Piedras Marcadas Basin Drainage Management Plan* (Mann and Associates, Inc. 1983), and the

Draft Calabacillas Arroyo Corridor Plan (City of Albuquerque 1989).

Capital Improvement Program (City of Albuquerque 1993b) — The *Capital Improvement Program* for the city of Albuquerque provides for the purchase, rehabilitation, or development of property or systems to enhance the

physical development of the city. The plan may be used to acquire and protect lands proposed as major open space and for Petroglyph National Monument. Easements for access, trails, and buffers may be purchased. CIP planning spans a 10-year horizon, with biennial review.

APPENDIX F: NPS ARCHEOLOGICAL SITE POLICY

Excavation of the Piedras Marcadas Pueblo ruin is not recommended at this time because "according to National Park Service management policy, significant archeological resources [will] remain preserved *in situ* whenever possible." (NPS *Management Policies*, V:1-2 and NPS 28).

The Park Service recognizes that monument and public needs for development and interpretation as well as environmental processes may, upon occasion, dictate the alteration or destruction of cultural resources. NPS policies contain provisions for these adverse affects when there is an "overriding research, interpretation, site protection, or park development need" (emphasis added; Draft NPS 28).

The decision to excavate or stabilize archeological ruins or sites can only be made if all the following criteria are met (from NPS *Management Policies*):

The action is consistent with the park's purposes and applicable NPS policies and guidelines.

Cultural resource specialists have participated in planning, and sufficient data have been gathered to assess the probable effects.

Relevant sections of the National Historic Preservation Act have been complied with in accordance with the regulations of the Advisory Council on Historic Preservation (36 CFR 800) and the "Guidelines for

Federal Responsibilities under Section 110 of the National Historic Preservation Act" (FR 53:4728).

In cases involving ethnographic resources, associated American Indian and other ethnic groups have been consulted, and their concerns have been taken into account.

Historic and prehistoric burial areas, whether or not formally plotted and enclosed as cemeteries, will be identified and protected. They will not be disturbed or archeologically investigated unless threatened with destruction by park development, operational activities, or natural forces.

The NPS policies regarding excavation have been established to ensure the preservation of sites for future research. Excavation would recover information but the excavation process would destroy the ability recover further information as new techniques are developed.

The cost of excavating and stabilizing an adobe ruin would be substantial. The adobe walls would require considerable restoration and continued upkeep. Curating and storing site artifacts would represent a major investment of time and funds, which would continue into the future.

Human remains have been reported by workers at the site. If human remains are found, there must be compliance with the Native American Graves Protection and Repatriation Act (PL 101-601) and NPS policy.

APPENDIX G: DETAILED EXPLANATION OF THE CULTURAL LANDSCAPE

Through the *Cultural Landscape Overview* (NPS 1994a), done especially for this planning process, the National Park Service looked carefully at the monument's cultural landscape to ensure that these cultural resources would not be adversely impacted by proposed development. Because criteria that help define a cultural landscape are linked to National Register of Historic Places determinations, Petroglyph National Monument may include several potentially significant cultural landscapes. The final cultural landscape overview report includes determination of eligibility nomination forms for the identified landscapes.

Actually there are many types of cultural landscapes, as defined in NPS 28. Most of the monument's landscape and resources have significance and value with regard to aesthetic, scientific, educational, traditional, and cultural considerations, and the following four types of potentially significant cultural landscapes were defined in the overview as represented in the monument:

- (1) prehistoric vernacular component¹ landscape — representing the time period from roughly 6,500 B.C. to A.D. 1540.
- (2) historic vernacular component landscape — representing the Atrisco land grant and its continuum of use by the descendants of the original grantees. The time period associated with this landscape ranges from A.D. 1692 to A.D. 1944.
- (3) historic designed component landscape — representing land use practices in the open

space lands associated with the city. The time period associated with this landscape ranges from A.D. 1710 to A.D. 1944.

- (4) ethnographic landscape — representing the contemporary traditional land use practices of both the Pueblo and Atrisco land grant heir groups maintaining an association with the west mesa area. Features or areas of this landscape hold special traditional and cultural meaning for Pueblo peoples.

The *Cultural Landscape Overview* recommended the prehistoric and historic vernacular landscapes as nationally significant under national register criteria. These landscapes have retained their integrity, particularly in the areas of setting, location, association, and community organization. The historic designed landscape may be significant, but further study is needed before a recommendation can be made. The features of the ethnographic landscape need to be identified by the various contemporary groups who have maintained traditional associations with and uses of this landscape. Further ethnographic studies relating to identification of traditional cultural properties are recommended (see the list of further studies needed in the "Cultural Resource Management" section under "Actions Common to All Alternatives"). Such studies would include inquiries regarding features of the ethnographic landscape, the contemporary needs of its traditional user groups, and the traditional and cultural values these landscape features and resources hold for tribes.

1. Component cultural landscapes have been defined by the NPS servicewide Cultural Landscape Inventory Program as "a landscape unit which contributes to the significance of a landscape and itself can be further subdivided into individual features. The Component Landscape may contribute to the significance of a National Register property or, in some cases, be individually eligible for the National Register of Historic Places."

**APPENDIX H: FURTHER CULTURAL AND NATURAL RESOURCE
STUDIES/PLANS NEEDED**

TABLE H-1. FURTHER CULTURAL AND NATURAL RESOURCE STUDIES/PLANS NEEDED

FUTURE STUDIES NEEDED	STUDY COMPONENTS
<i>Cultural Resource Related Studies</i>	
Archeological inventories	<ul style="list-style-type: none"> • Cover previously unsurveyed or poorly documented areas, including an evaluation of site significance and integrity.
Petroglyph inventories	<ul style="list-style-type: none"> • Same as above.
Petroglyph/archeological site damage assessment survey	<ul style="list-style-type: none"> • Document existing damage, potential vulnerability, and threats.
Archeological overview and assessment	<ul style="list-style-type: none"> • Consolidate, review, summarize, and evaluate existing archeological data. • Identify data gaps and research needs.
Archeological evaluation study	<ul style="list-style-type: none"> • Evaluate archeological properties for national register eligibility (to be completed where such evaluations were not made as part of ongoing inventories).
Site monitoring program	<ul style="list-style-type: none"> • Monitor petroglyphs and other archeological sites for damage indicators, thresholds, and types of monitoring needed.
Data recovery plans/mitigation reports	<ul style="list-style-type: none"> • Provide context and method to guide data recovery. • Recover data from sites that face imminent destruction from natural processes or vandalism.
Restoration/conservation plan for petroglyphs and other rock surfaces	<ul style="list-style-type: none"> • Prioritize graffiti removal and repair of rock surfaces. • Identify testing procedures, techniques, materials, and professional expertise needed to restore damaged petroglyphs.
Piedras Marcadas Pueblo ruin management plan	<p>In cooperation with the Pueblo community, this study would:</p> <ul style="list-style-type: none"> • Address potential development and management of the ruin. • Develop protection strategies. • Develop research design(s).
Research design (archeological sites including petroglyphs)	<ul style="list-style-type: none"> • Guide and prioritize further archeological work in monument — e.g., examine relationships among petroglyphs, archeological sites, and cultural landscapes.
Research on Rio Grande style petroglyphs	<ul style="list-style-type: none"> • See text for description of research.
Scope of collections statement	<ul style="list-style-type: none"> • Define purpose, extent, and uses of monument collections.

Appendix H: Further Cultural and Natural Resource Studies/Plans Needed

TABLE H-1. FURTHER CULTURAL AND NATURAL RESOURCE STUDIES/PLANS NEEDED (CONT.)

FUTURE STUDIES NEEDED	STUDY COMPONENTS
<i>Cultural Resource Related Studies (cont.)</i>	
Collections storage plan/collections management plan	<ul style="list-style-type: none"> • Identify acceptable options for management and care of collections. • With scope of collection statement, provide a consistent approach among the partners to manage archeological artifacts, museum objects, records of petroglyphs, and natural resource specimens.
Cultural landscape report	<ul style="list-style-type: none"> • Continue work begun in cultural landscape overview. • Complete evaluation of the landscape for its national register values, integrity, and significance. • Include recommendations for long-term management of the landscape. • Include more specific inventory and analysis of the ethnographic landscape.
Study to identify traditional cultural properties and traditional use	<ul style="list-style-type: none"> • Identify and describe plants and other resources within the monument traditionally used by American Indian and Atrisco land grant heir groups affiliated with the monument. • Where groups are interested in sharing information to help protect sites, acquire general information regarding areas of traditional and cultural sensitivity. • Provide support data for cultural landscape report.
Comprehensive American Indian consultation plan	<ul style="list-style-type: none"> • Provide protocol for consultation (including implementation of American Indian Religious Freedom Act and Native American Graves Protection and Repatriation Act provisions, proposed development or decisions that would affect ethnographic sites and accidental discovery of burials or other traditional and cultural sites).
Cooperative ethnohistory program	<ul style="list-style-type: none"> • Monument staff, American Indian, and/or Atrisco heirs cooperate to record the monument's ethnohistory. • Through cooperative ventures with these groups, produce up-to-date ethnographic data on the uses of plants and other resources. • Provide information essential for preparation of the monument's cultural landscape report.
Native American Graves Protection and Repatriation Act implementation plan	<ul style="list-style-type: none"> • Strategies to ensure discussions with American Indians regarding archeological investigations and inadvertent discoveries
Petroglyph protection program	<ul style="list-style-type: none"> • Develop a public education program aimed at protection of petroglyphs.

TABLE H-1. FURTHER CULTURAL AND NATURAL RESOURCE STUDIES/PLANS NEEDED (CONT.)

FUTURE STUDIES NEEDED	STUDY COMPONENTS
<i>Natural Resource Related Studies</i>	
Monitor and evaluate stormwater runoff and erosion	<ul style="list-style-type: none"> • Monitor existing gullies, establish methods for measuring stormwater runoff • Identify resource threats
Develop and calibrate a runoff model for the monument using historic and present-day flows	<ul style="list-style-type: none"> • Develop in cooperation with the city, private sector developers, and the Albuquerque Metropolitan Arroyo Flood Control Authority. • Provide data needed to evaluate requests for drainage across monument lands. (As development of lands continues adjacent to the monument, the monument will continue to receive these requests. Each request will be considered on a case by case basis and may require an environmental assessment or impact statement.)
Conduct a study to identify petroglyphs and other cultural resources that are threatened by natural processes, including erosion	
Inventory and monitor biotic resources	<ul style="list-style-type: none"> • Identify plant and animal species and communities • Develop long-term monitoring program
Reclamation of disturbed areas	<ul style="list-style-type: none"> • Inventory and prioritize areas for reclamation • Evaluate native, indigenous species for use in monument • Develop reclamation plans for specific sites
Fire management plan	<ul style="list-style-type: none"> • Research fire history and role of fire in Chihuahuan grassland
Cave management plan	<ul style="list-style-type: none"> • Evaluate cave resources and management needs
Raptor protection study	<ul style="list-style-type: none"> • Monitor raptor use in the monument • Identify management strategies for their protection.
Noise monitoring and evaluation	<ul style="list-style-type: none"> • Monitor and evaluate ambient noise levels and intrusions from adjacent development
Identification of indicators to measure carrying capacity	<ul style="list-style-type: none"> • Identify resource and social indicators that can be easily measured in the field for use in identifying carrying capacity for the monument.
Trail plan	<ul style="list-style-type: none"> • Detailed site designs for trail improvement.
Development concept plans	<ul style="list-style-type: none"> • Detailed site designs for development sites. Development concept plan maps in this document are intended to eliminate the need for further development concept planning at those sites; other sites would require development concept plans.

NOTE: To maximize resource protection, natural resource studies would be integrated with multidisciplinary cultural resource studies such as the cultural landscape report.

APPENDIX I: GENERAL DESIGN GUIDELINES

INTRODUCTION

The beauty and deeply rooted cultural heritage of the monument's landscape should be complemented by a built environment (roads, trails, and other facilities) that directs the visitor's attention toward the monument's resources and away from the intrusive urban development encroaching upon the area. The goal of these guidelines is to encourage this attention with design consistency and visual quality that communicate a sense of place, including imitation of natural landscape patterns in developed areas and minimal disturbance of ecological and cultural resources during design, construction, and maintenance.

Site development and landscaping, including walkways and visitor contact areas, should be subtle and not dominate the surrounding landscape. Design should effectively link the natural and built forms by harmonizing the patterns and biotic diversities found in the landscape with the form, mass, scale, color, and textures of facilities. Visitor facilities should also reinforce interpretive themes and messages. Instilling a sense of respect and appreciation of the cultural and natural resources is an important interpretive concept that can be addressed with appropriate and subtle design elements. For example, siting trails a minimum distance from petroglyphs can help instruct visitors to view the rock images at a respectful distance and prevent damaging the resource.

The following is a series of guidelines developed to consider in the preparation of designs for park facilities.

SUMMARY OF DESIGN GUIDELINES

Planning Background and Design Values

Before the development of these guidelines, a workshop was conducted to identify visitor experience goals. Conclusions made in the workshop became the foundation for the design guideline development. Once the visitor

experience is understood, appropriate design direction for facilities can be developed. The primary goals identified in the workshop were to provide opportunities for visitors to

- respect, experience, learn about, and appreciate the cultures associated with the cultural and natural landscape of the monument
- view and appreciate petroglyphs in a variety of appropriate settings and situations
- cooperate with the preservation of cultural and natural resources
- understand primary interpretive themes

Throughout the discussions in the workshop, key elements were addressed and identified as important considerations of the planning and design of visitor facilities. These elements, which should be incorporated in design, include the following:

- **Spiritual/Respectful** — These two values are so closely related that combining them into one category seemed appropriate. They both entail creating a setting to encourage visitors to feel contemplative, accepting, and perhaps even inspired by the natural and cultural resources of the monument. Because the monument was established to recognize the heritage of the culture that created the petroglyphs, these values are of particular significance to planning and design of the monument facilities.
- **Organic** — An organic development should be nestled into the topography and blend into the landscape as if growing out of the ground. Lines and shapes are contoured and continuous. Contrast is not an aspect of organic design.
- **Unobtrusive** — Incorporating this value into the design of facilities for the monument would result in a development that avoids competition with the resource. Subdued and blending in are key phrases to express this

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value. An emphasis on this value would encourage visitors to focus on the resources and not visitor facilities.

- Decompression — The value of decompression is the process of transforming visitors experiences from the traveled urban environment to the quieter more contemplative environment of the monument.
- Comfort — The premise of this value is to provide physical as well as psychological comfort at visitor facilities. Psychological comfort would include such aspects as assurance, feelings of ease, lack of confusion, clearly defined areas, subtle transitions, easy choices, and spaciousness.
- Indigenous — Indigenous architecture in this region includes American Indian and Hispanic American architecture.

Circulation and Sequence

1. A planned sequence of experiences should be integrated into the circulation throughout the facilities.
 - Visitors should be guided from the urban environment surrounding the monument to the petroglyph concentrations with a sequence of gradual and distinctive spaces and experiences to prepare them for an increasingly contemplative focus.
 - A gateway should be incorporated to provide a subtle transition from the urban environment to a special place.
 - Circulation should be clear and easy, with not many choices. Visitors should be guided into the site — from roads to trails to the resource.
2. Parking should be located within a reasonable distance to resources and facilities to ensure universal accessibility.

3. The natural topography and vegetation should be integrated into the parking areas.
 - Terraced parking and islands of native vegetation screens are two examples of achieving this guideline.
 - Roads, trails, and parking areas should follow natural topography and landforms.
4. Meandering routes with frequent stopping and resting areas should be considered.
5. Roads and trails should be oriented to focus on views that may inspire or provide a larger contextual background.
 - Mountain and petroglyph views should be emphasized along routes.
6. Promote quiet and contemplative areas close to petroglyphs.
 - Trails close to petroglyphs should be narrow to discourage distractions from conversations and talking.
7. Trails should be well defined to discourage visitors from getting too close to rocks with petroglyphs.
 - Edges along trails should be defined.
8. Trail surfaces close to petroglyph concentrations should have soft, quiet, and distinctive surfaces.

Architectural Character

9. The architectural character should emphasize warmth and a welcoming atmosphere.
 - Colors should be warm, and materials should generate warmth.
 - A sense of entering a homelike environment should be created.

10. Structures should reflect the curvilinear, contoured environment.
 11. Structures should integrate indoor and outdoor spaces, which could be done through various means, including creating a visual connection between the outside and the inside and allowing outdoor features to continue into the inside.
 12. The scale of the development should take the resource into consideration.
 - Clustering and breaking up building masses would be appropriate.
 - Building mass should be low to the ground.
 13. Colors and materials should be compatible with the surrounding landscape.
 - Bright colors and reflective materials would be inappropriate. Native materials would be appropriate.
 14. A kiva-like space should be incorporated for storytelling, music, or other audio messages.
 15. A zoning scheme should be created to separate visitor comfort, orientation, and other services from the contemplative, interpretive areas.
 16. The human scale of space should be emphasized.
 17. Multisensory experiences should be integrated to inspire a variety of moods. Ideas to consider should include use of light and dark spaces, locating aromatic herbs close to use areas, including ceremonial gestures, such as a fire ring and music, in interpretive programs, and using inspirational audio messages.
 18. A stage-like setting should be created for visitors to participate in the experience of discovering the significance of the monument's resources on their own.
 19. Variations of height and space or moving from an open environment to a more enclosed environment should be used. This includes changes in the quality of light or from bright to more subdued light. Rhythms of spaces create decompression and progression.
 20. Materials can change from hard and reflective to softer, more organic materials.
- Design characteristics that reflect indigenous architecture should be incorporated, including the following:
- American Indian**
- local materials, including mud, plaster, stone, and adobe
 - materials that are reflective of the adjacent natural spaces, i.e., the cliffs
 - multilevel or low profile materials
 - flat roofs of logs, thatching, and dirt, which may also be used as decks
 - shade structures or ramadas constructed of logs
 - irregular massing with modular additions of rectangular rooms; circular spaces reflect traditional and cultural significance
 - contiguous additions of small rooms
 - punched window openings
 - multiple entries from a plaza or rooftop
 - use of fireplace or ovens
 - complex water drainage and storage systems
 - funnel-like entrances to subsurface areas (such as used in pithouses)
 - constructed near rivers, at the bases of cliffs; pit houses were frequently built on high ground
 - handcrafted features
- Hispanic American**
- courtyards, container gardens, water features,
 - materials are adobe, jacal (vertical logs for storage buildings)
 - contiguous rooms around courtyard with a zaguan or large gate
 - low profile

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- use of portals and open porches
- punched window openings
- garden walls
- access from plaza
- earth or plank floors
- handcrafted features such as carved doors, corbels, and zapatas or wooden braces
- protruding elements such as extended vigas or wood logs

Landscape

21. Visitor areas should be screened from the surrounding urban environment.
22. Natural areas between facilities should be retained. For example, parking areas and buildings should be separated with the existing native environment to help connect architecture with the landscape.
23. Development should be concentrated in disturbed areas if site conditions warrant.
24. Views to resource features should be preserved and enhanced.
25. Facilities should be sited judiciously to avoid impacting views of the resources; this is of critical importance.
26. All development should be minimally intrusive.
27. The natural environment should be integrated with the built environment to encourage respect for natural processes. This might include integrating the outdoors with the indoors, framing views, using native vegetation, allowing surface drainage, and avoiding underground drainage structures.

Information

28. Signs should have a low profile.
29. Low-volume sounds such as splashing or running water and music should be used.

30. Formal exhibits should be used only in orientation areas.

31. Suggestive, evocative interpretive and exhibit devices should be used. Storytelling, music, views, and display of objects should be done in simple and solitary settings to emphasize importance of each item (like an altar).

FACILITY SIZE AND FUNCTION (BUILDING AND PARKING NEEDS)

The major monument facilities were sized to determine the area needs and functional relationships. The major facilities include monument administration, visitor center, petroglyph research center, heritage education facility, and parking for each of the four functional facilities. Table I-1 below summarizes the approximate square footage needs for the buildings.

Parking needs were based on projected annual visitation of 250,000 annually (see appendix O). The greater percentage of visitors (85% used for calculation purposes) arrive between April and October. Visitors would spend about an hour at the visitor center and arrive mostly by private car. Therefore, approximately 1,020 visitors per day and approximately 128 visitors per hour could be expected. Based on these numbers, a parking area to accommodate 55 cars and 15 oversize vehicles (buses, RVs, etc.) would be required for the visitor center. Parking for the administrative facility is based on the number of staff and totals 30 car spaces. The heritage education facility would require two bus parking spaces and 10 car spaces for staff and other visitors.

TABLE I-1. SUMMARY OF APPROXIMATE SQUARE FOOTAGE REQUIREMENTS FOR VISITOR CENTER

Function	Square Feet
Public Circulation	
• Entry/Vestibule	150
• Lobby (to accommodate 40)	600
• Seating Areas	200
	950
Visitor Contact	
• Information Desk	200
• Office (adjacent)	100
	300
Exhibit Room	1,600
Audiovisual	
• Seating for 60	1,000
• Projection Room	150
	1,150
Multipurpose Room (for 40)	600
Demonstration/Storytelling Area	500
Reading Area	400
Book Sales	
• Display	250
• Storage	150
• Office	100
	500
First Aid Room	100
General Storage Room	250
Toilets (visitor and staff)	1,200
(includes janitor closet and unisex)	
Net Total	7,550
+25%	1,888
GROSS TOTAL	9,438
	(9,500) use

APPENDIX J: DETAILED DISCUSSION OF BOUNDARY ADJUSTMENT AREAS

CRITERIA

In accordance with NPS *Management Policies*, PL 101-628, sections 1216 and 1217, the criteria necessary for the boundary adjustment areas are as follows:

1. To include significant resources or opportunities for public enjoyment related to purposes of the park.
2. To address operational and management issues such as access and boundary identification by topographic or other natural features or roads.
3. To protect park resources critical to fulfilling the park's purposes.
4. To be feasible to administer in terms of size, configuration, ownership, costs, and other factors.
5. To ensure that other alternatives for management and resource protection are not adequate.

DISCUSSION AND APPLICATION OF CRITERIA

Additional Boundary Adjustment Area, Alternative 1

These five lots have been recommended for addition to the monument because of the potential that they will be developed in a fashion incompatible with adjacent monument uses. The city has zoned these lots O-1 Office and Institutional Zone. In this zone, permitted uses include offices, beauty/barber shops, churches, medical supply and services offices, photocopy stores, photographic studios, and public utility structures such as transformers, pumping stations, and electrical switching stations.

Each of the alternatives envisions the development of facilities within the former state park area, which is adjacent to this potential boundary addition. Much of the area suitable for building facilities within the state park area and the land within boundary adjustment area 1 slope toward one another. It

would be extremely difficult to minimize the visual impact of any development placed within the boundary adjustment area from visitors to the state park.

The addition of these lands to the monument would create a more identifiable boundary. Mojave Street is a fairly substantial roadway; a boundary along its northern edge versus behind office buildings or similar facilities would be much easier for visitors to identify. Adding these lands to the monument would be feasible to administer in terms of *size, configuration, ownership, and cost*. The only other feasible means to protect these lands would be to modify the existing zoning (and concurrent change in proposed land use). The change in zoning to more compatible uses such as public parks, open space, or very low density residential is not likely. Accordingly, these properties should be added to the monument.

Single-Family House and Lot, All Alternatives

This property is at the end of Creggs Street at the northern edge of the Atrisco unit. The property is less than 1/3 acre in size and includes a single-family residence. The inclusion of this property within the existing authorized boundary was an oversight in the initial boundary mapping process.

This property does not include significant resources or opportunities for the public to further enjoy monument resources. It is the last house on a street with seven houses abutting the monument. This one residential property does not aid in identifying the monument or fulfill any monument purpose. Accordingly, this property should be removed from the monument boundary.

Volcano Cliffs Units 2 and 5, All Alternatives

In drawing the existing monument boundary, a portion of Rim Rock Drive and lots on either

side of this roadway were included within the monument. The closure of Rim Rock Drive as envisioned by each of the alternatives would eliminate access to approximately 54 lots in the Volcano Cliffs community. Some of these lots must be acquired to provide access. The National Park Service will work with affected landowners, the Volcano Cliffs Property Owners Association, and the city to ensure that access will be provided to these lots. Given several alternatives and the need to bring various parties together, it is premature to recommend a specific solution or adjustment at this time.

Volcano Cliffs, Units 2 and 5 and Part of 24, All Alternatives

This adjustment area includes 289 lots within Volcano Cliffs subdivision Units #2, #5, and a portion of #24. This mesa-top land is a visual extension of the monument and open space lands with the same open space, long-distance views, high desert vegetation, and wildlife habitat resource values. Unlike the adjacent open space lands, gravel roads have been developed throughout the property as part of the subdivision process in 1966 and 1967. This area provides opportunities for visitors to enjoy the expansive views of the Rio Grande Valley and the Sandias to the east as well as the broad, undeveloped mesa top and volcanoes. The area also provides good opportunities for picnic facilities that would not have adverse impacts on monument resources.

When and if utilities are provided to this area, the private lands will be developed as single-family housing. Single-family housing on this site would separate the monument from the Open Space lands and could require additional utility crossings (water, sewer, and storm water) of the escarpment. Development of the area would increase the risk of resource damage because of nearby residences.

Inclusion of this area within the monument would provide substantial opportunities for visitors to enjoy distant views east and west

relatively unimpaired by development. Conversely, should the property be developed as currently zoned, visitors would have restricted views and they would be faced with having visually intrusive development separate existing monument lands from open space lands to the west. There is nothing to distinguish these lands from existing monument and open space lands except the relatively nonintrusive gravel roads that have already been built (but which could easily be reclaimed).

The addition of these lands to the monument is feasible in terms of size and configuration. Ownership is similar to other areas of Volcano Cliffs currently within the monument boundary — mostly .3- to .4-acre parcels. Overall cost of this acquisition would be approximately \$4.5 million.

The Volcano Cliffs subdivision was platted in 1967, but there has been no residential or commercial development to date. Generally, this is attributed to the lack of utilities. With the proposed extension of Unser Boulevard, there is some potential that this area will develop relatively rapidly. However, a recent fiscal impact analysis by the city indicates that the cost of utility/infrastructure expansion to this area may be substantially more expensive than in other areas of the city. The city's costs for providing infrastructure are estimated to be \$10,000 per lot or approximately \$2.9 million. Given the relatively small difference between the cost of providing infrastructure and the cost of acquisition as open space, it is possible that the city may decide to add this property to the city's existing Open Space network.

Addition as part of the monument is recommended only as part of alternative 2.

Cohen Property, No Action under Any Alternatives

This 2.21-acre property, within the monument, contains a single-family residence, swimming pool, a sweat lodge, a Buddhist prayer wheel, a stupa (shrine), and storage outbuildings. The

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property owners requested a boundary adjustment to exclude their property from the monument. The approved *Land Protection Plan* (National Park Service and City of Albuquerque 1991) recommends the fee simple acquisition of this property and the removal of structures to help reestablish the undeveloped character of the escarpment. Since the approval of the *Land Protection Plan* the federal

government has acquired adjacent structures and converted two of them to the interim visitor center and staff offices. Once these NPS facilities are no longer in use and are removed from the site, the structures on the boundary adjustment area would be a visual intrusion. It is recommended that a boundary adjustment not be made.

APPENDIX K: FEE DETERMINATION

The Land and Water Conservation Fund Act, as amended, provides for establishing fees within units of the national park system. Three specific types of fees are covered under the act — entrance fees, daily recreation use fees, and special recreation permit fees. The act outlines six criteria for determining if an area, facility, or service will be designated for fees. It is the superintendent's responsibility to apply the criteria and recommend, if appropriate, recreation fees for the park unit. The legislative criteria are as follows:

- **Direct and Indirect Cost to the Government** — This criterion is used to determine the government's cost of establishing and maintaining a fee collection program including direct costs — salaries, equipment (registers, safes, lock boxes), transportation, supplies (forms, tickets, register tapes), facility maintenance, and any capital improvements (entrance booths, roads, etc.), and indirect costs — primarily overhead expenses including administrative staff time to manage the fee program.
- **Benefit to the Recipient** — Generally, this is a yes/no answer. If visitors benefit from the program, service, or activity, then a fee should be considered.
- **Comparability** — If a fee is charged, it is NPS policy that fees will be set at a level that will not create unfair competition with private facilities.
- **Economic and Administrative Feasibility of Fee Collection** — Fee collection is considered feasible if the collection method is workable and cost-effective. Variables to consider include visitation level, effect of fees on visitation, number of visitor access points, ease of collection and enforcement, availability of staff, and overall revenue potential.
- **Public Policy or Interest Served** — The act established federal policy, which says that people taking advantage of facilities/ services should pay a greater share of the associated operating charges than the public as a whole. In weighing this policy, it needs to be kept in mind that the National Park Service is committed to ensuring that a full spectrum of park visitors have access to park experiences.
- **Other Pertinent Factors** — These include considering whether other park purposes are served by establishing a fee program (i.e., increased visitor contact, reduction of crime, etc.)

APPENDIX L: VISITOR CENTER SITE SELECTION CRITERIA AND ANALYSIS

The visitor center represents the focal point for visitor facilities at Petroglyph National Monument. This facility provides visitors with orientation to all of the monument's resources and a basic understanding of the petroglyphs, their meaning, and their setting as well as providing other services such as restrooms. Ideally, all visitors would come to the visitor center early in their visit to the monument to have a basic understanding of the resources and enhance their experiences. After visiting the center, visitors should also have easy access to the monument's resources. In this manner the visitor center and the monument's resources become cohesive parts of visitors' experiences. The challenge of locating the visitor center to meet this ideal goal is to select a site that provides the ease of access while also balancing the needs for protecting the sensitive resources. To accomplish this objective a systematic approach was employed to evaluate sites with the greatest development potential within the monument and select a site based on a careful consideration of its attributes.

The first step in this process was to identify the criteria for selecting an appropriate development site. The following criteria were developed:

1. Accessible to a major street — This aspect is important for visitors as well as for reducing development costs of new road construction. A major street would also handle increased traffic flows from visitors to the monument.
2. Easy Access to I-40 — Less than 1/2 mile from the southern end of the monument, I-40 is the closest interstate to the monument. Proximity to this highway would allow visitors the opportunity to visit a national monument easily and with minimal traffic conflicts.
3. Access to other portions of the monument — Because the monument is in the midst of suburban development with relatively small land base, access from one part to another relies on existing city streets. There must be clear and direct routes for visitors to travel to various portions of the monument with a minimum of conflicts with area residents.
4. Proximity to escarpment with petroglyphs — Convenience and ease of access to petroglyphs would provide visitors with a minimum of intrusions to seeing the primary monument resources. A direct, relatively short path from the visitor center allows visitors to focus on information gained in the centers and enables a better appreciation of the petroglyphs.
5. Site with dramatic setting — Many areas within the monument offer dramatic views of the Sandia Mountains, the escarpment, the Rio Grande Valley, and the city. These views not only enhance the aesthetic experiences of visitors but also provide an appropriate context for the petroglyph cultural landscape.
6. Minimal intrusions — Because the monument is near rapidly developing edges of Albuquerque, there are many adjacent land uses that detract from the natural scenery of the monument lands. Although it may be impossible to locate the visitor center completely away from the urban and suburban incursions, appropriate site selection and facility orientation can reduce the negative impacts on visitor experiences.
7. Access to utilities — While avoiding development for aesthetic purposes is appropriate, this should be balanced with practical concerns such as utility access. Public utilities are readily available to many parts of the monument, and locating facilities nearby would result in reducing construction costs and environmental impacts due to construction activities.
8. Suitable soils that avoid slope, drainage, and floodplain constraints — Most of the soils within the monument are suitable for

most types of development. However, appropriate slopes are an important consideration. Sites with slopes no greater than 10% would be appropriate. Also, potential sites should be outside of the 100-year floodplain, with minimal interference of natural drainage patterns.

9. Minimal impacts on vegetation and wildlife and their habitats — A monumentwide vegetation inventory is currently being conducted, which will provide more specific data in the future for development considerations. However, a conservative approach to site selection would be to give greater consideration to sites previously disturbed to reduce the likelihood of negative impacts on the natural environment.
10. Avoid impacts on archeological, cultural, and historical resources.
11. Minimize impacts on existing and future neighborhoods.

SITE IDENTIFICATION

An initial selection of sites was conducted based on the above criteria. Six sites were identified for potential development of monument facilities. All six sites meet all or most of the criteria. In general, they are at the base of the escarpment and close to one of the four major petroglyph concentrations (Mesa Prieta, Rinconada Canyon, Boca Negra Canyon, and Piedras Marcadas Canyon). A site considered but rejected (see "Alternatives Considered But Rejected" section) is close to Piedras Marcadas Canyon. This northern location does not meet the criteria for ease of access to the other parts of the monument.

The six sites, with the site analysis, are

1. **Mesa Prieta.** This site is within a short walking distance to the "elbow" of the canyon and the petroglyphs along the mesa escarpment. In general, it has easy slopes and is somewhat screened from

future surrounding development. Access to the site would be from the proposed 98th Street.

Benefits:

- proximity to I-40
- good southern exposure on 5% and less slopes
- dramatic views to escarpment, city and Sandias/no view to water tank
- existing topography screens majority of future development to retain natural setting of site
- easy access to abundant petroglyphs

Disadvantages:

- future access from 98th street requires cooperation from private landowner, Westland Corporation, and city; uncertain assurance that 98th will be a reality
- future surrounding residential development
- relatively undisturbed land would be impacted by development

2. **Water Tank.** The site is between the Mesa Prieta site and the existing water tank. It is on somewhat steeper northwest-facing slopes and would also be accessed from the proposed 98th Street.

Benefits:

- proximity to I-40
- views to escarpment, city, and Sandias
- access to limited number of petroglyphs
- wide variety of interpretive opportunities on the site

Disadvantages:

- located on north-facing slope of 5-10%
- same access as Mesa Prieta
- views to water tank
- future surrounding residential development would intrude on the natural setting of the site
- relatively undisturbed land

3. **Laurelwood.** This site is near the proposed property acquisition for visitor

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center development. The privately owned lots are no longer feasible for acquisition; however, a potential development site is available within the authorized monument boundary. It would be accessed from the proposed Lava Bluffs Street.

Benefits:

- proximity to I-40
- located on 2-5% slopes
- views to Sandias and escarpment

Disadvantages:

- access to limited petroglyphs
- some disturbed land
- future access from residential development
- surrounding residential development

4. **Rinconada.** This site is at the mouth of the canyon on the northern portion of the site. It is accessed directly from Unser Road. The site has been somewhat disturbed and offers ready access to abundant petroglyphs.

Benefits:

- proximity to I-40
- located on northeast-facing 2-5% slopes
- access to abundant petroglyphs
- disturbed land for development
- views to Sandias and escarpment
- easy access from Unser

Disadvantages:

- overhead power lines across site may be harmful to health and detract from views
- sensitive site

5. **Lava Shadows.** This site is also accessed directly from Unser Road on a significantly disturbed site. Although the site does not offer immediate access to petroglyphs, there are a limited number of petroglyphs available on a 15-18 minute hike. There are also opportunities for some excellent views of Albuquerque from the top of the Aberlee road cut.

Benefits:

- central location
- good exposure on southeast-facing 5% slopes
- severely disturbed land
- views to Rio Grande, Sandias, city
- access to overlooks
- easy access from Unser

Disadvantages:

- difficult access to minimal petroglyphs
- disturbed escarpment detracts from the petroglyph context

6. **Boca Negra.** This site is at the former state park and currently provides restrooms, interpretive shelters, picnicking, petroglyph viewing trails, and parking.

Benefits:

- located on level 2-3% slopes
- access to abundant petroglyphs
- previously developed land
- views to escarpment, Rio Grande, Sandias, Albuquerque
- access to overlooks
- easy access to Atrisco/Unser

Disadvantages:

- distance from I-40
- existing drainage constraint
- surrounding residential and office development

CONCLUSION

The Boca Negra location appears to have many advantages that make it the most desirable site. Its abundant and good quality petroglyphs provide the best petroglyph viewing opportunities without impacting sensitive landscapes. Although the Mesa Prieta site has a superior natural ambiance, its relatively pristine environment, vulnerable archeological sites, and uncertain future for access make it less desirable. Rinconada Canyon also has excellent petroglyph viewing opportunities; however, it would also impact a sensitive environment. Lava Shadows has the advantage of being highly disturbed but offers inferior

petroglyph viewing opportunities. Finally, both the water tank and the Laurelwood sites are not desirable because of their limited size and their future settings would be surrounded by housing developments. The water tank site also has the disadvantage of uncertain access.

BUILDING AND PARKING NEEDS

See appendix I.

SCHEMATIC SITE PLAN DEVELOPMENT

Each potential development area was evaluated by producing schematic site plans. The four primary functions — visitor center, monument administration, petroglyph research center, and heritage education facility, in addition to

parking and access — were included in the schematics. In each of the schematics, the maximum level of development appropriate for each site was incorporated. Each of these could be scaled back to further reduce impacts at the site. In this manner, a preliminary determination of natural and cultural sensitivity was identified and each site was evaluated based on maximum development to determine its suitability. Following the schematic planning, the benefits and disadvantages were identified to further evaluate the desirability of the each area.

FACILITY SIZE AND FUNCTION

See tables I-1 and I-2 in appendix I.

APPENDIX M: ABANDONED SURFACE MINES

There are three abandoned mines within the monument. Mining at site 1 (described below) and site 2 ceased at least 15 years ago, before the city bought the property for an open space park. Mining activity at site 3 continued until the mid 1980s. The main use for the mined cinder and scoria was for road surfacing, decorative rock, stormwater channel armor, and other mineral material uses.

Mine reclamation is the practice of returning disturbed sites to conditions and processes representing the undisturbed ecological zone in which the mining operation lies. Typical activities and goals for reclaiming the cinder mines include (1) reshaping waste rock piles for erosion control and establishing contours that blend with surrounding lands, (2) reducing highwalls to lessen safety hazards, and (3) reclaiming the site. All reclamation activities would focus on disturbed areas and minimize intrusion on adjacent lands. A description of the general approaches needed to accelerate the recovery process follows.

Site 1, Southeast Slope of Vulcan Volcano

Fill would be added and then graded to blend the site with the surrounding landscape. (The amount of fill required to minimize the existing steep slopes would be much less than would be required to restore original contours.) Possible sources of fill include sediment from stormwater detention basins within the Albuquerque area and scoria stockpiles from site 2 (above). The material at site 2 is similar in character to that found within site 1. After completion of the rough grading, topsoil materials would be added to provide a better environment for reclamation. The site would be revegetated with native indigenous species. The estimated cost would be \$21, 235.

Site 2, Between the Existing Parking Area and Black Volcano

Site 2 consists of two small pits where material was excavated and pushed into berms on the perimeter. It appears that little material was

removed from the site. Soils were pushed to the side and subsequently buried beneath material from the pits.

The first step would be to regrade the scoria stockpiles to the approximate original contours. Then the topsoil would be replaced, most of which is buried below the unweathered scoria. If some of the scoria is transported to site 1 for backfilling, the weathered materials would be regraded to make the site compatible with the surrounding undisturbed lands. After completion of the rough grading, topsoil would be added to provide a better environment for reclaimed. The site would be revegetated with native indigenous species. The estimated cost would be \$1,700.

Site 3, South of JA Volcano

Site 3 consists of a 125' x 175' x 15' quarry and a 175' x 165' area where fines (fine gravel and smaller material from crushing, sorting, and perhaps washing of scoria) were stockpiled. There are also three stockpiles of well-graded, cobble-sized scoria.

Reclamation plans for this site would be contingent on the final disposal of the piles of scoria onsite that may be removed by the previous owner. If left onsite, the washed/graded scoria material would be extremely difficult to revegetate because of the porous nature of the scoria itself and the uniform grade. One option would be to mix the scoria with fine material, perhaps from the sediment basins mentioned above, as part of the process of backfilling the quarry. It would be important to ensure that most voids are filled to inhibit downward washing of fines (fine gravel and smaller material from crushing, sorting, and perhaps washing of scoria) from the surface. The fines from the washing/sorting operations could be used, but there would not be enough material to regrade the entire site. After completion of the rough grading, topsoil would be added to provide a better environment for reclamation. The site would be revegetated with native indigenous species. The estimated cost would be \$6,925.

APPENDIX N: STAFFING FOR PROPOSED ACTION

VISITOR SERVICES

Boca Negra Visitor Center — shared NPS/city responsibility

Hours of operation	8 AM to 8 PM — 7 days/week — April to October
	8 AM to 5 PM — 7 days/week — Nov. to March
Daily staffing needs	2 permanent employees — year-round
	2 seasonal employees — April to October
NPS staffing needs	3 permanent employees
	3 seasonal employees — April to October
Total NPS staffing needs	= 4.5 FTEs
Total city staffing needs*	= 1 FTE

Piedras Marcadas Ruin Center — (city responsibility)

Hours of operation	9 AM to 5 PM — 7 days/week — year-round
Daily staffing needs	1 permanent employees — year-round
Total city staffing needs*	3 permanent employees — year-round
	= 3 FTEs

Piedras Marcadas Canyon Visitor Contact Facility — (city responsibility)

Hours of operation	9 AM to 5 PM — 7 days/week — year-round
	facility functions staffed or unstaffed
Daily staffing needs	1 permanent employee, year-round
	1 permanent employee
Total city staffing needs*	= 1 FTE

Rinconada Canyon Visitor Contact Facility — (NPS responsibility)

Hours of operation	9 AM to 5 PM — 7 days/week — year-round
	facility functions staffed or unstaffed
Daily staffing needs	1 permanent employee - year-round
	1 permanent employee
Total NPS staffing needs	= 1 FTE

Mesa Prieta Visitor Contact Facility — (NPS responsibility)

Hours of operation	9 AM to 5 PM — 7 days/week — year-round
	facility functions staffed or unstaffed
Daily staffing needs	1 permanent employee - year-round
	1 permanent employee
Total NPS staffing needs	= 1 FTE

Guided Interpretive Tours/Roving Assignments — (shared NPS/city responsibility)

Hours of service	9 AM to 8 PM — 7 days/week — April to October
	9 AM to 5 PM — 7 days/week — November to March
Daily staffing needs	2 permanent employees — year-round
	1 seasonal employee — April to October
Total NPS staffing needs	2 permanent employees
	1 seasonal employee — April to October
	= 2.5 FTEs
Total city staffing needs*	= 1 FTE

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Visitor Services Management/Administration

Staffing needs 1 division chief (NPS Only)
 1 heritage education program coordinator
 1 clerical assistant
Total NPS staffing needs = 3 FTEs

MAINTENANCE OPERATIONS

Workload 10,000 sq. ft. Boca Negra Canyon Visitor Center (NPS and city)
 3,000 sq. ft. Piedras Marcadas Ruin Visitor Contact Facility (City)
 1,500 sq. ft. Piedras Marcadas Visitor Contact Facility (City)
 1,500 sq. ft. Rinconada Canyon Visitor Contact Facility (NPS)
 1,500 sq. ft. Mesa Prieta Visitor Contact Facility (NPS)
 35 miles of trail (NPS and city)
 trash collection monumentwide (NPS and city)
 fence, arroyo, parking, trailhead maintenance monumentwide (NPS and city)

NPS staffing needs 1 maintenance manager (NPS only)
 1 custodial employee
 1 trails worker
 1 building/facility maintenance employees
Total NPS staffing needs = 4 FTEs
City staffing needs 1 trails worker
 1 building/facility maintenance employee
Total city staffing needs* = 2 FTEs

VISITOR AND RESOURCE PROTECTION (NPS and City Responsibility)

Hours of operation 16 hours/day, 365 days/year
Scope of operation 1 ranger roving/vehicle patrol — all times
 1 ranger on foot patrol — visitor hours
Total NPS staffing needs 2 permanent visitor protection supervisors (NPS only)
 1 permanent clerical assistant
 5 permanent visitor protection rangers
 1 permit coordinator/protection specialist
 = 9 FTEs
Total city staffing needs* 1 sergeant
 2 rangers
 1 clerical/dispatcher
 = 4 FTEs

RESOURCE MANAGEMENT (NPS and City Responsibility)

Total NPS staffing needs 1 natural resources manager
1 natural resources technician
1 cultural resources manager
1 cultural resource technician
= 4 FTEs
Total city staffing needs* 1 resources management specialist
= 1 FTE

PETROGLYPH RESEARCH FUNCTIONS (NPS Responsibility)

Total NPS staffing needs 1 director
1 petroglyph research coordinator
= 2 FTEs

ADMINISTRATION

Total NPS staffing needs 1 administrative officer
1 purchasing agent/contracting officer
1 personnel assistant
1 clerical assistant
= 4 FTEs

MONUMENT MANAGEMENT (NPS and City Responsibility)

Total NPS staffing needs 1 monument manager
1 management assistant
1 secretary
= 3 FTEs
Total city staffing needs* 1 monument manager
1 management assistant
1 clerical assistant
= 3 FTEs

TOTAL NPS NEEDS = 38 FTEs
TOTAL CITY NEEDS = 16 FTEs*

* Provided by city Open Space Division

APPENDIX O: PROJECTED VISITOR USE

THE PROCESS

Located as it is, on the west side of New Mexico's largest city, the monument has excellent potential of becoming one of the area's major visitor attractions. A significant percent of monument visitation will come from the local area because of its proximity to the large urban population of the greater Albuquerque area. Out-of-state visitation will grow as the monument becomes better known throughout the country. Access to the monument via the interstate highway system is excellent. The monument is less than 1 mile north of I-40 and about 6 miles west of I-25.

Another factor affecting the amount and type of visitor use the monument has is the level and type of visitor-related development. A park with a relatively high level of developed infrastructure (visitor center, parking areas, roads, etc.) and visitor services (interpretation, guided tours, etc.) would encourage higher levels of visitor use than one that offers minimal development and limited visitor services.

Monument visitation has grown in recent years (see "Visitor Use Statistics and Analysis" section). A period of rapid growth would be expected as visitor-related facilities are developed and the facilities become known to the public.

A user market analysis of the monument was done by the Socioeconomic Studies Division of the National Park Service. This study examined activity participation rates, population sizes, driving times, and visitor demographics.

Three general markets are identified for most units within the national park system: regional domestic, national domestic, and foreign. Potential proportions from these markets were estimated based on user surveys conducted at four nearby parks with some similar characteristics as the monument — Bandelier National Monument, Chaco Culture National Historical Park, Wupatki National Monument, and Mesa Verde National Park. These surveys

determined that the market shares (the percentage of the potential market that visited a particular park) ranged from 7.78% to 50.28%. The average for the four parks was 28.12%.

In determining the user market potential, most emphasis was placed on the regional market. A population analysis of the nine-state region — containing over 2,000 zip code areas — was conducted. Forty-four groups of similar neighborhoods were identified based on socio-economic and demographic attributes. Using participation rates, the zip code areas were matched with the 44 market segments to determine the potential user market within the regional area. These zip code areas represent the areas with the shortest drive times to the monument. It was determined that the average drive time within the regional market area is 4.41 hours. In 1990 this drive time equated to a potential regional market of approximately 312,600 persons.

Combining all three markets and using this market segmentation method to project the level of visitor use for Petroglyph National Monument for 1990 resulted in a figure of 60,000 projected visits. Actual visitor use of the Boca Negra unit (actually the Indian Petroglyph State Park) amounted to over 48,000 visits in 1990 (see table 11 in "Affected Environment" section). This use, plus the unrecorded use of the rest of the monument area, is probably very near the projected figure of 60,000 visits.

Based on the U.S. Census projections of the 44 market segment populations, the full potential for the Petroglyph National Monument region in the year 2010 will be about 1,045,684 visits. This figure and the lowest market share, 7.78%, was used to project a conservative forecast of future visitor use of the monument. A 7.78% market share was the lowest, and it is therefore the most conservative. Conservative visitor projections are called for because they are the most easily achieved and there is no reliable information upon which to base or support higher projections.

To determine the projected monument visitation, full potential of 1,045,684 visits was multiplied by the regional market share of 7.78%. This result was 81,356 visits. Prior analysis showed that this figure was 32.65% of the total domestic market. Visitors from outside the region accounted for 67.35% of the total domestic market (167,820 visits). The foreign market (33,703 visits) was an additional 11.92% of the total domestic market. These figures were then combined to determine the total potential visits (282,879 visits).

Based upon these analyses, it is projected that by the year 2000 Petroglyph National Monument should expect to accommodate about 189,000 visits. By the year 2010, nearly 283,000 visits are projected for the monument. These figures are conservative. Based on the recorded use of the monument in the last couple of years and the comparison of the expected and actual use in 1990, these are reasonable projections.

THE PROJECTIONS

It is not possible to accurately predict a pattern of use for the monument from only four years' data and the fact that there may be significant changes to visitor facilities and because of the number and nature of variables that affect visitation. These variables include national and international economic conditions that can affect family income that affects travel and tourism patterns, visitor facilities that could be visitor attractions such as a visitor center with a dynamic and popular multimedia presentation, and the ability of the region to attract tourists to related sites. Many other factors can also influence visitation. However, it is certain that reported visitation to the monument will increase once the monument is developed and facilities are fully functioning.

Visitation studies conducted in the mid 1980s before establishment of the monument projected monument visitation to range from 210,000 to 400,000 visitors per year. These studies used visitation to the Indian Petroglyph State Park, Albuquerque region visitation levels, and visitation to other federal and state parks and monuments as the basis for projections.

To better understand potential visitor impacts, a study of projected visitation, using a user market analysis, was conducted by the NPS Socioeconomic Studies Division. This study examined activity participation rates, population sizes, distance, and visitor demographics.

The study estimated that there would be about 189,000 annual visits to the monument by the year 2,000 and that there would be 283,000 annual visits by the year 2,010. These estimates assume that visitor facilities would be developed as recommended in the proposed action (alternative 1). These visitation projections are intended for use in impact assessment only. They cannot be considered as desired or optimum levels or goals for future use.

These projections can be put in perspective by comparisons with other national park system areas such as Bandelier, Pecos, and El Moro National Monuments in New Mexico and Saguaro, Walnut Canyon, and Wupatki National Monuments and Petrified Forest National Park in Arizona (see table below).

Each of these national park system areas have community, accessibility, and resource differences from Petroglyph National Monument. However, using 1990 and 1994 visitor levels, some comparisons can be made on the potential future visitation for Petroglyph National Monument.

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TABLE O-1. VISITS TO SELECTED NATIONAL PARK UNITS IN ARIZONA AND NEW MEXICO
1990 AND 1994, AND PERCENT OF CHANGE

PARK	1990 VISITS	1994 VISITS	PERCENT CHANGE 1990 TO 1994
Aztec NM	80,037	84,345	5%
Bandelier NM	327,918	430,138	31%
Canyon De Chelly NM	642,189	767,368	19%
Capulin Volcano NM	53,857	54,403	1%
Carlsbad Caverns NP	747,016	617,087	-17%
Chaco Culture NHP	72,675	76,173	5%
El Malpais NM	78,993	101,492	28%
El Morro NM	69,343	87,548	26%
Fort Union NM	17,031	20,301	19%
Gila Cliff Dwellings NM	52,316	59,693	14%
Grand Canyon NM	3,776,685	4,364,316	16%
Hubble Trading Post NHS	180,923	237,013	31%
Navajo NM	76,808	105,234	37%
Pecos NHP	45,316	39,517	-13%
Petrified Forest NP	844,582	922,927	9%
Petroglyph NM	48,403	88,059	82%
Saguaro NM	702,328	768,685	9%
Salinas Pueblo Missions NM	36,313	51,391	42%
Sunset Crater NM	502,450	522,963	4%
Walnut Canyon NM	134,429	162,295	21%
White Sands NM	582,487	583,061	1%
Wupatki NM	249,954	264,747	6%

SOURCE: National Park Service, Washington Office, Socioeconomic Studies Division

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