

DES 96-15

SUPPLEMENT TO THE DRAFT

GENERAL MANAGEMENT PLAN
DEVELOPMENT CONCEPT PLANS
ENVIRONMENTAL IMPACT STATEMENT



ORGAN PIPE CACTUS
NATIONAL MONUMENT
ARIZONA

ON MICROFILM

PLEASE RETURN TO:

TECHNICAL INFORMATION CENTER
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4/17/01



United States Department of the Interior

NATIONAL PARK SERVICE
Organ Pipe Cactus National Monument
Route 1, Box 100
Ajo, Arizona 85321

PLEASE NOTE THE FOLLOWING CORRECTION:

REVIEW COMMENTS MUST BE POSTMARKED NO
LATER THAN JUNE 12TH. THE CLOSING DATE FOR
PUBLIC COMMENTS THAT APPEARS IN THE
SUPPLEMENT IS INCORRECT.



United States Department of the Interior

NATIONAL PARK SERVICE
Organ Pipe Cactus National Monument
Route 1, Box 100
Ajo, Arizona 85321

IN REPLY
REFER TO:

D18 (ORPI)

March 25, 1996

Dear Friends:

Enclosed for your review is a copy of the *Supplement to the Draft General Management Plan/Development Concept Plans/Environmental Impact Statement* for Organ Pipe Cactus National Monument. After reviewing comments on the first draft document we prepared and released in May 1995, the National Park Service determined a supplement to this document was needed to comply with the National Environmental Policy Act of 1969. This new document supplements the original and contains: (1) an update on the planning process; (2) a discussion of the two new alternatives, one of which constitutes our new proposed action; (3) a discussion of the environmental consequences of implementing the new alternatives; and (4) summary tables presented in English and Spanish comparing the actions and consequences of the four alternatives.

We would like to point out that in response to your comments, no tolls or traffic re-routes are proposed for State Route 85 in any of the alternatives. In the new alternatives, we are proposing to work with the State of Arizona to ensure continued commerce along this corridor while enhancing resource protection and conservation practices to help protect wildlife and improve visitor experiences within the monument.

We are asking you to review this Supplement so that we can use your input and reactions to make any changes to the document before it is finalized. Please send your comments by May 30, 1996, to:

Superintendent
Organ Pipe Cactus National Monument
Route 1, Box 100
Ajo, Arizona 85321

We would also like to invite you to voice your reaction at a public meeting to be held in Ajo, Arizona. The place and time for this meeting will be publicized locally. If you have any questions or we can aid your review of this draft plan, please contact me on (520) 387-6849. We look forward to hearing from you.

Sincerely,

Harold J. Smith
Superintendent



United States Department of the Interior

NATIONAL PARK SERVICE
Organ Pipe Cactus National Monument
Route 1, Box 100
Ajo, Arizona 85321

IN REPLY
REFER TO:

D18 (ORPI)

Marzo 25, 1996

Estimados Amigos:

Adjunto con esta carta les envío, para su revisión una copia del Suplemento del Borrador del Plan General/Planes del Concepto de Desarrollo/Declaración de Impacto Ambiental para el Organ Pipe Cactus National Monument. Después de que pasamos revista de los comentarios del primer borrador que preparamos y presentamos en mayo de 1995, el National Park Service decidió que se requería un suplemento al documento original para cumplir con la legislación de la Política Nacional Ambiental de 1969. El nuevo documento es un suplemento del original e incluye: (1) una actualización del proceso de planeación; (2) la presentación de dos alternativas nuevas, una de las cuales constituye una nueva propuesta de acción; (3) una presentación de las consecuencias ambientales de la instrumentación de las nuevas alternativas; y (4) los cuadros de resumen en los idiomas Inglés y Español donde se comparan las acciones junto con las consecuencias de las cuatro alternativas.

Deseamos señalar que, en respuestas a sus comentarios, que ninguna de las alternativas proponen ni garantías de paje ni un cambio de la carretera Estatal número 85. En la nueva alternativa, proponemos que se continúe una colaboración con el Estado de Arizona para asegurar que el tráfico comercial continúe en este corredor a la vez que se fomenta la protección de los recursos y las prácticas de conservación y, en esta manera proteger la vida silvestre y mejorar las experiencias de los visitantes dentro del parque.

Solicitamos que revise usted este Suplemento para que podamos aprovechar sus comentarios y reacciones y lograr cambios al documento antes de que se edite su versión final. Favor de enviar sus comentario antes del 30 de mayo, 1996 a:

Superintendent
Organ Pipe Cactus National Monument
Route 1, Box 100
Ajo, Arizona 85321

Asimismo, extendemos una invitación para que espere sus opiniones en una reunión pública que se convoca en Ajo, Arizona. Se anunciará la fecha y hora de esta reunión en forma oportuna. Si tienen preguntas o podemos auxiliar en su repaso de borrador de este documento, favor de comunicarse conmigo al (520) 387-6849. Contamos con sus comentarios.

Atentamente,

Harold J. Smith
Superintendent

SUPPLEMENT to the DRAFT General Management Plan
Development Concept Plans
Environmental Impact Statement

ORGAN PIPE CACTUS

NATIONAL MONUMENT
PIMA COUNTY, ARIZONA

This *Supplement to the Draft General Management Plan/Development Concept Plan/Environmental Impact Statement* presents two additional alternatives for future management of the monument, one of which constitutes the National Park Services' (NPS) new proposed draft general management plan. This document supplements the *Draft General Management Plan/Development Concept Plan/Environmental Impact Statement (Draft GMP/DCP/EIS)* prepared by the NPS and released in May 1995. The new alternatives were formulated in response to public comments generated by the *Draft GMP/DCP/EIS*, and are titled: *New Ideas Alternative* and *New Proposed Action Alternative*. Also in response to comments, no tolls, traffic re-routes, or changes to speed limits are proposed for State Route 85 (SR 85) in any of the alternatives, while the proposed agreement between the Tohono O'odham Nation and the NPS is now proposed in all of the alternatives.

As with the first two alternatives, the new alternatives work to ensure the legislative mandates and purpose of the monument are fulfilled. The *New Ideas Alternative* proposes to carry out principals of the Man and the Biosphere (MAB) program, adopt a regional perspective, maximize wilderness values and experiences, and enhance resource protection. Actions proposed in this alternative include:

- working with the State of Arizona Department of Transportation (ADOT) to ensure continued travel and commerce along the portion of SR 85 within the monument, while enhancing resource protection by exploring mitigation strategies, such as installing bridges and pullouts, to reduce wildlife mortality and improve the visitor experience
- reducing the amount of existing facilities inside the monument by concentrating facilities at or outside monument boundaries in the Ajo, Lukeville, and Why areas
- re-aligning the trail network in the Quitobaquito Springs area
- more strictly managing visitor use, such as using permits to manage visitors at Quitobaquito Springs and Alamo Canyon Wash
- establishing partnerships with other agencies, public, or private interests, to share facilities, staff, and costs
- proposing the greatest potential increase in wilderness in comparison to the other alternatives
- seeking redesignation of the monument to Organ Pipe Cactus National Park

The *New Proposed Action Alternative* constitutes the NPS's proposed action. The concept combines elements from the other alternatives: within the region, to carry out principles of the MAB program by adopting a regional perspective to improve visitor services and conserve resources, and within the monument, to improve management capabilities to enhance visitor opportunities and protect resources and wilderness values. Actions proposed in this alternative generally reflect those presented in other alternatives and include:

- working with ADOT, as in the *New Ideas Alternative*, to ensure continued travel and commerce while enhancing conservation practices along the SR 85 corridor in the monument; re-aligning the trail network in the Quitobaquito Springs area; establishing partnerships with others to share facilities, staff, and costs within the Why and Lukeville areas; and proposing an increase in wilderness, but to a lesser degree than in the *New Ideas Alternative*
- seeking redesignation of the monument, as in the *Former Preferred Future Alternative*, to Sonoran Desert National Park and retaining existing facilities in the Twin Peaks area
- seeking to be more cost-effective than the other alternatives, by relocating and developing partnerships for some facilities in Lukeville, proposing different uses for some existing facilities in the Twin Peaks area, and adding fewer new facilities.

The review period for this document ends on May 30, 1996. All comments must be received by that time and should be addressed to:

Superintendent, Organ Pipe Cactus National Monument
Route 1, Box 100, Ajo, Arizona, 85321

United States Department of the Interior
National Park Service, Denver Service Center

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SUMMARY

This *Supplement to the Draft General Management Plan/Development Concept Plan/Environmental Impact Statement* presents two additional alternatives for future management of the monument, one of which constitutes the National Park Service's (NPS) new proposed draft general management plan. This document supplements the *Draft General Management Plan/Development Concept Plan/Environmental Impact Statement (Draft GMP/DCP/EIS)* prepared by the NPS and released in May 1995. The new alternatives were formulated in response to public comments generated by the *Draft GMP/DCP/EIS*, and are titled: *New Ideas Alternative* and *New Proposed Action Alternative*. As with the first two alternatives, the new alternatives work to ensure the legislative mandates and purpose of the monument are fulfilled.

The following summary tables replace those in the *Draft GMP/DCP/EIS* as they compare the actions and consequences of the four alternatives: the two original alternatives and the two new alternatives contained in this *Supplement*. The summaries are presented in table format to assist the reader in comparing the alternatives and is the part of the document that is presented in two languages: English and Spanish. For more complete information on a given topic, the reader should consult the corresponding section in the *Draft GMP/DCP/EIS* or in this *Supplement*.

Portions of the tables are either shaded or un-shaded. Shaded boxes represent portions of the original two alternatives that remain as presented in the *Draft GMP/DCP/EIS*; the intent of these sections remains the same, however, some parts were re-worded to help clarify them. For example in this *Supplement*, the Existing Conditions and Former Preferred Future Alternatives have been renamed and, in the tables, are presented in a reverse order from the original. These changes were made to aid the reader in understanding and comparing the full range of alternatives and consequently, some of the descriptions needed to be re-worded to respond to these changes. Un-shaded boxes represent new information or parts of the original alternatives that have been substantively changed. Where changes have been made, the reasons are noted.

SUMMARY COMPARISON of ALTERNATIVES

ALTERNATIVES →	EXISTING CONDITIONS / NO ACTION ALTERNATIVE	FORMER PREFERRED FUTURE ALTERNATIVE	NEW IDEAS ALTERNATIVE	NEW PROPOSED ACTION ALTERNATIVE
	<p>This alternative is based primarily on continuing the existing course of action within the monument.</p>	<p>No longer the proposed action; this alternative focuses on improving management capabilities to enhance visitor opportunities and resource preservation within the monument.</p>	<p>Generated using ideas suggested by the public, this alternative enhances preservation of wilderness values and focuses on strengthening the monument's role as a Biosphere Reserve by proposing more regionally-oriented actions.</p>	<p>Constituting the NPS's proposed action, this alternative combines elements from the other alternatives to enhance visitor opportunities and resource preservation within the monument and the region, strengthens the monument's role as a Biosphere Reserve, and presents a cost-effective development strategy.</p>
TOPICS ▼	LAND USE AND MANAGEMENT			
<p>Management Zones</p>	<p>Retain the existing management zone system.</p> <p><i>Natural Zone</i> - largely unaltered lands with some use and facilities; divided into two subzones: <i>Wilderness Subzone</i> and <i>Natural Environment Subzone</i></p> <p><i>Historic Zone</i> - overlaps the prior subzones, contains sites listed or pending nomination to the National Register.</p> <p><i>Development Zone</i> - main visitor use and developed areas including State Route 85, Twin Peaks, and Lukeville.</p> <p><i>Special Use Zone</i> - privately owned lands with uses not normally found in Natural Zone; divided into three subzones: <i>Private Development Subzone</i>, <i>State Lands Subzone</i>, and <i>U.S. Customs and Immigration Reserve Subzone</i></p>	<p>Apply a new system derived from legislation, purpose and significance, and visitor experience.</p> <p><i>Wilderness Zone</i> - preserves wilderness values identified in the Wilderness Act with two subzones: <i>Potential Wilderness</i> and <i>Quitobaquito Management Area</i></p> <p><i>Non-wilderness Zones</i> - provides for uses involving large concentrations of people or facilities; divided into two subzones: <i>Travel Corridor</i> (includes State Route 85 and other roads) and <i>Development Area</i></p> <p><i>Cultural Resources Zone</i> - preserves, protects, and interprets cultural resources and settings.</p>	<p>Apply system similar to Former Preferred Future Alternative except for the following changes to two zones:</p> <p><i>State Route 85 Corridor</i> would become a separate subzone added to the <i>Non-Wilderness Zone</i> with a distinct management emphasis to ensure continued commerce and enhance conservation.</p> <p>Changes to the <i>Quitobaquito Management Area</i> subzone include expansion to about 2400 acres and visitor use restrictions.</p> <p>Management emphasis in the other zones remain essentially as described in the Former Preferred Future Alternative.</p>	<p>Same as New Ideas Alternative.</p>
NATURAL AND CULTURAL RESOURCES MANAGEMENT and ASSOCIATED FACILITIES				
<p>Natural and Cultural Resources Management Plan (NCRMP)</p>	<p>The NCRMP continues to guide the resources management program. Certain actions proposed in the plan help resolve issues identified during scoping of this GMP including the need for: a comprehensive resources management program, mitigation strategies and species recovery plans, and increased efforts to preserve air, water, cultural, and other resources.</p>	<p>Same as Existing Conditions Alternative.</p>	<p>Same as Existing Conditions Alternative except the proposed Wilderness Management Plan would be expanded to address wilderness and backcountry issues in a regional context. This inter-agency effort may include the NPS, U.S. Fish and Wildlife Service, Bureau of Land Management, and possibly other land managers in the area.</p>	<p>Same as New Ideas Alternative.</p>

ALTERNATIVES →	EXISTING CONDITIONS / NO ACTION ALT	FORMER PREFERRED FUTURE ALTERNATIVE	NEW IDEAS ALTERNATIVE	NEW PROPOSED ACTION ALTERNATIVE
Resources Management Facilities	The former residential building used as office and work space for resources management would remain. Some new structures may be added in the future to offset the need for more work space.	Construct new 8,000 s.f. science and resources management center in the Twin Peaks area to satisfy need for more office/work space; concentrate all resource management functions in one place; provide a forum/work space for the science and research community, and interpretation opportunities for visitors demonstrating Sonoran Desert ecosystems and NPS efforts to preserve them. The Center would contain offices, conference room, labs, museum storage, archival space, library, work rooms, and a greenhouse and nursery. The existing resources management offices would be converted back to employee homes. (Note: in the first summary table, the size of the facility was wrong, 8,000 s.f. is correct.)	A new 5,000 s.f. science, education, and resources management center (SERMC) would be constructed to satisfy the need for this type of facility as described in the Former Preferred Future Alternative. However, in this alternative, the facility is smaller, would be located in the Lukeville area, and would not include a greenhouse/nursery. The name of the center was amended to include education, thereby addressing the visitor-related aspect of the facility. A source outside the monument would be established to provide nursery-related services. The existing resources management offices in the Twin Peaks area would be removed and the lands restored.	As in the New Ideas Alternative, a 5,000 s.f. SERMC is proposed. However, in this alternative, it would be located in Twin Peaks by converting the existing visitor/administration facility, and a greenhouse and plant nursery would be constructed nearby for visitor education and research purposes. The existing resources management offices would be converted back to employee homes, as in the Former Preferred Future Alternative.
Cultural Resources	Continue stabilization, survey efforts, and the listing of historic properties in the National Register of Historic Places. New developments would be surveyed for archeological resources prior to construction and potential impacts mitigated.	Same as Existing Conditions Alternative. In addition, apply preservation and use treatments for the properties listed and eligible for listing in the National Register of Historic Places.	Same as Former Preferred Future Alternative, except use treatments for two properties would be modified: • interpretive programs would be conducted at Dos Lomitas Ranch replacing the former Twin Peaks amphitheater and campground • visitor use of Quitobaquito changes and would be controlled at all times by the use of permits or tour guides.	Same as Former Preferred Future Alternative.
Native American Consultation	Develop a mutually-beneficial written agreement between the NPS and Tohono O'odham Nation to strengthen consultation, coordination, and involvement. (Note: the need and importance of this agreement was expressed in the Tohono O'odham Nation's comments to the NPS and subsequently, has been added to this and all of the alternatives.)	Same as Existing Conditions Alternative. (Note: this alternative does not change since the agreement was originally proposed here and its basic purpose does not change. However, the description of the agreement has been revised somewhat in response to comments from the Tohono O'odham Nation.)	Same as Existing Conditions Alternative with one addition. The agreement would be expanded to include enhanced involvement of the Tohono O'odham Nation in the monument's interpretation program. The nature and extent of this involvement would be determined by both parties.	Same as New Ideas Alternative.
Visual Resources	No additional actions are proposed to enhance resource preservation.	The following actions are proposed to preserve visual resources: • the main powerline would be relocated and buried in non-wilderness lands along the State Route 85 corridor • all powerlines in the Twin Peaks area would be buried • sustainable design guidelines and practices would be implemented for all new developments.	Same as Former Preferred Future Alternative except: • the NPS proposes to work with Arizona Public Service to seek ways to off-set costs of relocating and burying lines, and • one guideline has been added to help ensure preservation of regional design and maintenance practices.	Same as New Ideas Alternative.

ALTERNATIVES →	EXISTING CONDITIONS / NO ACTION ALT.	FORMER PREFERRED FUTURE ALTERNATIVE	NEW IDEAS ALTERNATIVE	NEW PROPOSED ACTION ALTERNATIVE
VISITOR USE AND ASSOCIATED FACILITIES				
Interpretation Objectives and Themes	<p>Implement objectives and themes identified in 1993 Interpretive Prospectus. The <i>objectives</i> address comprehensiveness of the interpretive program, environmental awareness, outreach and regional cooperation, biosphere goals, and the adequacy of information and facilities for visitor use, and safety.</p> <p>The <i>themes</i> address: the amazing richness and diversity of the land and the people from past to present, environmental factors and the delicate balance of Sonoran Desert ecosystems, and the monument as a unique living laboratory.</p>	Same as Existing Conditions Alternative.	Same as Existing Conditions Alternative.	Same as Existing Conditions Alternative.
Interpretive Facilities	Retain existing visitor center. Upgrade the existing amphitheater area since it is in poor condition.	<p>The existing visitor center would be converted into an administrative facility. Several new facilities are proposed to help achieve the objective and themes:</p> <ul style="list-style-type: none"> • support ISDA in establishing a tri-cultural, tri-national center in the Lukeville area • a new 6,000 square-foot visitor information and interpretive center in the Twin Peaks area with a lobby, information desk, sales area, exhibits area, theater, rest rooms, and an adjacent outdoor patio and short interpretive trail accessible to visitors with disabilities • a lobby with exhibits and a multi-purpose room for visitors in the new Science and Resources Management Center • new exhibits at the three new pull-outs along State Route 85 and at key resource features • an upgrade of the amphitheater as in the Existing Conditions Alternative. 	<p>Remove the existing visitor center and amphitheater in Twin Peaks area. To help achieve the objectives and themes:</p> <ul style="list-style-type: none"> • support ISDA in establishing a tri-cultural, tri-national center in the Lukeville area and develop partnership to interpret NPS themes related to cultures • develop partnerships with other federal agencies to establish a regionally-oriented facility in the Why area to provide information and orientation on visitor opportunities; the exact size and location would be determined between partners at some future time • also within the facility in Why, the NPS would seek to interpret the monument and its resources • four pull-outs along State Route 85—including northern and southern information portals—containing parking, exhibits, and shade. 	<p>The following facilities are proposed to help satisfy the growing need for visitor services in the region and, achieve the objectives and themes within the monument:</p> <ul style="list-style-type: none"> • as in the New Ideas Alternative, support ISDA's center in Lukeville • similar to the New Ideas Alternative, develop partnerships to establish a regional information and orientation center in Why • convert part of the existing Twin Peaks visitor center and administrative building into an interpretive center with resources management as the major interpretive focus. (To accomplish this, 3,600 s.f. of new space would be added to the existing 5,900 s.f. structure; of the total, 4,500 s.f. would be devoted to the interpretive center and the remainder to the SERMC). • as in the New Ideas Alternative, four pull-outs would be added along State Route 85.
Partnerships and Outreach	Increase partnerships with others and expand regional outreach efforts in response to Biosphere Reserve designation.	Same as Existing Conditions Alternative.	The potential for partnerships with ISDA, other federal agencies, State of Arizona, and Tohono O'odham Nation increases in this alternative because of the nature of some of the proposed facilities, programs, and agreements.	Same as New Ideas Alternative.

ALTERNATIVES →	EXISTING CONDITIONS / NO ACTION ALT.	FORMER PREFERRED FUTURE ALTERNATIVE	NEW IDEAS ALTERNATIVE	NEW PROPOSED ACTION ALTERNATIVE
Camping	Retain existing facilities in Twin Peaks and Alamo Canyon Wash campgrounds.	Increase opportunities for primitive camping by providing: <ul style="list-style-type: none"> • 20 new walk-in campsites up-canyon from the existing group campground in Twin Peaks area; the existing parking area would be expanded to provide parking for 20 vehicles and one restroom. • four new drive-in campsites at Alamo Canyon Wash; a day-use only parking area for 6 vehicles would be delineated on previously disturbed land. 	Remove the 208 site Twin Peaks campground, remove opportunities for RV camping on NPS lands, close Alamo Canyon campground to overnight use, and increase primitive camping opportunities by: <ul style="list-style-type: none"> • converting the existing group campground in Twin Peaks to 1.5 mile walk-in campground with 6-10 campsites; a new trailhead with parking for 6-10 vehicles would be developed along the entrance road • converting the existing housing loop to a primitive campground with 15-20 drive-in campsites 	Same as Former Preferred Future Alternative.
Area Transportation Network: Roads	Retain existing road network. As described in the NCRMP, establish user capacities of roads providing access into the wilderness.	Same as Existing Conditions Alternative, except that some roads in the Twin Peaks area would be re-aligned to serve the new facilities and separate visitors from employee use areas. Approximately 1/2 mile of new road would be constructed; a 1500 ft. length of existing two-lane road would be removed and the area restored to natural conditions; and visitors and employees would have separate access and parking areas. In addition, a turn-around area, with approximately 400 ft. of new road, would be added at the entrance to Puerto Blanco Drive. Visitors could turn around if choosing not to take the one-way road.	Remove approximately 19.5 miles of roads including those in the Twin Peaks area, and the Quitobaquito, Northwest Patrol and West Boundary Patrol roads. Some of these roads would be converted into hiking trails or routes (see <i>Trails</i> below) while others would be restored to natural conditions. Approximately 1/2 mile of new road would be constructed in the Lukeville area to serve the new SERMC, Maintenance Complex /Fire Station, and VIP trailer village.	Same as Existing Conditions Alternative except that some roads in the Twin Peaks and Quitobaquito areas would be re-aligned. For Twin Peaks, actions would be similar to the Former Preferred Future Alternative: approximately 800 ft. of new road would be constructed; a 800 ft. length of existing two-lane road would be removed and the area restored; visitors and employees would each have separate access and parking areas; and a turn-around with about 400 ft. of new road would be added at the entrance to Puerto Blanco Drive. For Quitobaquito, actions would be the same as the New Ideas Alternative.
Area Transportation Network: State Route 85	Work with the State and other agencies to minimize road-related impacts on monument resources.	Same as Existing Conditions Alternative. Additionally, the NPS would seek to work with the State to add informational signs and pullouts at both monument entrances, and add three additional pull-outs. No tolls or fee stations are proposed. (Note: in the original proposal, the NPS proposed to look for an alternative route for commercial and other through-traffic as part of a planning effort; this idea has been dropped from consideration since at this time, due to public concerns and the lack of data demonstrating whether this action would significantly decrease wildlife mortality along the corridor.)	Same as Existing Conditions Alternative, except in this alternative, a program is proposed to minimize road-related impacts while ensuring continued commerce and enhancing visitor experience. The program would include establishing pull-outs with interpretive information, implementing a public education program, and experimenting with mitigation, such as the use of bridges over major washes and culverts in other areas to encourage safe wildlife movement.	Same as New Ideas Alternative.

ALTERNATIVES →	EXISTING CONDITIONS / NO ACTION ALT.	FORMER PREFERRED FUTURE ALTERNATIVE	NEW IDEAS ALTERNATIVE	NEW PROPOSED ACTION ALTERNATIVE
<p>Area Transportation Network:</p> <p>Trails and Hiking Routes (Note: trails are improved and maintained while hiking routes may be marked, but are otherwise undeveloped and not maintained.)</p>	<p>Retain the existing hiking system with the following improvements:</p> <ul style="list-style-type: none"> • signs and exhibits would be posted at four trails and hiking routes • the Visitor Center Nature Trail would be doubled in length to 2 miles and made accessible to wheelchairs. 	<p>In addition to the existing hiking system, nine new trails (9.9 miles) and two new hiking routes (13.5 miles) would be developed throughout the monument and signs added along existing hiking routes to enhance interpretation and access to resources. The additions include moving and re-aligning the trail system at Quitobaquito and making up to four miles of trails accessible to wheelchairs.</p>	<p>About 2.5 miles of existing trails would be removed in the Twin Peaks area, while the rest of the existing system would be retained. In addition, eight new trails (10.1 miles) and four new hiking routes (37 miles) would be added to enhance interpretation and visitor access to resources. Most of the additions would occur along former roads or on existing disturbed areas such as user-created social trails. In this alternative, up to 6.4 miles of trails would be made accessible to wheelchairs.</p>	<p>Same as Former Preferred Future Alternative, except that the trail additions have been reduced to 8 new trails (8.9 miles) while the miles of accessible trails increases to 5.5 miles. These changes occur because:</p> <ul style="list-style-type: none"> • one trail proposed in the Former Preferred Future is near prime Rosy Boa habitat and consequently was not proposed here • the Quitobaquito trail alignment is the same as in the New Ideas Alternative which reduces the total trail miles and increases accessible trail miles. Proposed hiking routes are the same as in the Former Preferred Future Alternative.
PARK OPERATIONS AND ASSOCIATED FACILITIES				
<p>Staffing</p>	<p>Approximately 27.3 employees are required to fully carry out the monument's purpose, programs, and legislative mandates. The monument would continue to use volunteers from the active VIP program to help offset expanding staff and program needs.</p>	<p>Approximately 36 additional employees would be required to fully implement this alternative. This number includes those needed to satisfy existing conditions. Use of volunteers would continue as in the Existing Conditions Alternative.</p>	<p>Since prior estimates may be unrealistic in light of current fiscal conditions, only 15 additional employees are proposed in this alternative. This number is based on the rate of past staffing increases-averaging one employee per year-instead of on projected, total needs. In addition, the NPS would seek alternative funding or partnership arrangements to offset staffing costs. Use of volunteers would continue as in the Existing Conditions Alternative.</p>	<p>Same as New Ideas Alternative.</p>
<p>Operations Facilities</p>	<p>Retain existing administrative and maintenance facilities. Add new 3,000 s.f. ranger operations and fire station to help protect lives and property, and offset the current shortage of office, work, and storage space.</p>	<p>The following is proposed to satisfy existing and future office, work, and storage space needs, separate employee and visitor use areas, and provide safe and efficient working environments:</p> <ul style="list-style-type: none"> • convert existing 5,900 s.f. visitor center/administrative building to administrative facility • add new 4,600 ranger operations and fire station with nearby helicopter pad. • expand maintenance area to include 2,000 s.f. office space, 9,100 s.f. covered parking, and 3,050 s.f. storage space. 	<p>Remove all operations facilities from Twin Peaks area. Instead:</p> <ul style="list-style-type: none"> • share or lease 2,000 s.f. of space in Ajo for administrative offices • construct a new maintenance complex and fire station in Lukeville area on about 1/2 acre of land; facilities include 2,500 s.f. office and work space, 12,000 s.f. covered parking and work bays, 5,000 s.f. of storage, and 2,500 s.f. covered space for the fire truck and related storage. • seek partnership to locate ranger operations within existing, under-utilized federal facilities at Customs and Immigration Reserve in Lukeville area 	<p>The following is proposed to satisfy office, work, and storage space needs in a cost effective manner:</p> <ul style="list-style-type: none"> • seek partnership for 2,000 s.f. of administrative office space in under-utilized federal facilities at Customs and Immigration Reserve in Lukeville area • expand maintenance area as described in the Former Preferred Future Alternative with the addition of a new 4,000 s.f. ranger operations and fire station with nearby helicopter pad.

ALTERNATIVES →	EXISTING CONDITIONS / NO ACTION ALT.	FORMER PREFERRED FUTURE ALTERNATIVE	NEW IDEAS ALTERNATIVE	NEW PROPOSED ACTION ALTERNATIVE
Employee Housing	The nine houses still used as employee homes would remain in the Twin Peaks housing loop.	Infill the existing Twin Peaks housing area with new apartments containing 10 total bedrooms for seasonal workers and visiting researchers. Five office buildings and dorms would be converted back for use as employee homes. A new community center and utility buildings would be added for use by employees and volunteers.	Remove housing from Twin Peaks area. Seek partnerships with a federal agency or private landowner to provide the following in the Lukeville area: <ul style="list-style-type: none"> • apartments containing 10 total bedrooms for seasonal employees and researchers • five homes for employees required to live in the area to provide on-site protection of life, property, and resources in the monument • for all area residents, convert a portion of an existing structure or construct a small community center for meetings or social functions. 	As in Former Preferred Future Alternative, five buildings would be converted back to employee homes in the Twin Peaks housing area. As in the New Ideas Alternative, the NPS would seek partnerships to provide the following in the Lukeville area: <ul style="list-style-type: none"> • apartments for seasonal employees and researchers • a small community center for area and monument residents.
DEVELOPMENT CONCEPT PLANS <i>(The intent of this section is to describe (by area), how all the new facilities proposed above would interrelate.)</i>				
Twin Peaks	The Twin Peaks area would stay essentially as it looks today. Since additional office space may be added to offset the space shortage, future plans may be developed to site facilities as they are needed.	Several new developments are proposed in this development to serve expanding needs of visitors, staff, and the science community. All new structures would be located outside the probable maximum flood zone, although some new road construction would occur in this area. The new visitor center, science and resources management center, and rehabilitated administrative facility would become a central complex and include new picnic and parking areas for visitors. A parking area for employees would be located on the opposite side of the complex. The new ranger operations and fire station would be located a short distance away and would include a new parking lot. Expansion of the maintenance area would occur on disturbed lands in the location of the existing facility. Once the offices are removed, the housing area would be used only for that purpose and would include a new community center and utility building. Some of the roads would be realigned to serve new facilities and separate employee and visitor use areas, and a turn-around added to Puerto Blanco Drive to improve vehicular circulation.	Approximately 43 acres of land would be restored to natural conditions once the majority of roads and facilities in the Twin Peaks area had been removed. Together with adjacent undeveloped lands, approximately 70 acres would be proposed as wilderness. The Twin Peaks area would become a primitive camping area. The existing entrance road would lead visitors to: <ul style="list-style-type: none"> • a new parking and trailhead area for the walk-in primitive campground • a drive-in primitive campground along the former employee housing loop drive. 	The facilities and layout are similar to the Former Preferred Future Alternative except that: <ul style="list-style-type: none"> • the extent of new buildings and road realignment is significantly reduced in this alternative • ranger operations and the fire station would be located next to the maintenance complex, on disturbed lands • the NPS would seek to establish the new community center in Lukeville instead of Twin Peaks.

ALTERNATIVES →	EXISTING CONDITIONS / NO ACTION ALT.	FORMER PREFERRED FUTURE ALTERNATIVE	NEW IDEAS ALTERNATIVE	NEW PROPOSED ACTION ALTERNATIVE
Quitobaquito Management Area	Existing road and parking areas would be retained and improved, and an orientation sign with information dispenser added. Due to safety concerns, the area would be staffed during daylight hours of high visitation periods.	A new trailhead and 7 mile one-way walking trail would be developed to improve visitor experience and safety. Parking, interpretive information, and composting toilet facilities would be relocated about 3/4 miles north of the existing location, to a new trailhead along Puerto Blanco Drive. Existing facilities would be removed and about 23 acres restored to natural conditions. Administrative vehicle access to the international boundary would need to be maintained within the existing non-wilderness corridor.	<p>The goal to improve visitor experience and safety would be remain as in the Former Preferred Future Alternative. However, the facilities would be relocated based on discussions with the Tohono O'odham Nation. This development concept is general; due to the sensitive nature of this area, a multi-agency task force would be established to develop a detailed design for this area once funding is secured.</p> <p>The new trailhead would be developed at the confluence of Puerto Blanco Drive and the former entrance road. An easy, 1-mile round-trip walking trail network would be established, occurring along the existing entrance road. To help protect resources, visitors would need a permit or to take part in a guided tour to use this area. As in the Former Preferred Future Alternative, administrative access to the border would be provided.</p>	Same as New Ideas Alternative.
Lukeville Area	Due to recent land exchanges between the NPS and private landowners in the area, the 1978 DCP (Development Concept Plan) is obsolete and would need to be amended in the future.	The 1978 DCP would be replaced with the following: The NPS would work to improve visitor experience and establish linkages between Lukeville and the monument. This would include assessing opportunities for interpretive services, eco-tourism related travel, and applying sustainable design guidelines. In the future, the NPS would offer support towards efforts to establish a tri-national information center in this area.	<p>The 1978 DCP would be replaced with the following. The new SERMC, maintenance complex, fire station, VIP area, and southern information portal would be developed on NPS lands. In addition, the NPS would support ISDA in developing a tri-cultural, tri-national facility in this area and seek to form partnerships to:</p> <ul style="list-style-type: none"> • provide housing for a limited number of NPS permanent and seasonal employees • develop a community center for all area residents • share office space at the border station for ranger operations. 	The 1978 DCP would be replaced with the following: as in the Former Preferred Future Alternative, the NPS would seek to enhance linkages between Lukeville and the monument's resources and values. As in New Ideas Alternative, the NPS would support ISDA's efforts and seek partnerships to: <ul style="list-style-type: none"> • provide housing, but only for NPS seasonal workers • develop a community center for all area residents • share office space at the border station, except for NPS administration.
NAME, BOUNDARY, AND WILDERNESS AREA CHANGES				
Redesignation	The name would remain Organ Pipe Cactus National Monument.	Support change in status from monument to Sonoran Desert National Park, which would require congressional legislation. Redesignation would help draw attention to the value and significance of the monument's varied resources and the need to preserve them.	Same as Former Preferred Future Alternative, except the name would change to Organ Pipe Cactus National Park. While management authorities and responsibilities would stay the same, national parks are typically seen as being more important which can help increase chances of obtaining funds to enhance preservation efforts and visitor services.	Support change in status to Sonoran Desert National Park for reasons stated in both the Former Preferred Future Alternative and the New Ideas Alternative.

ALTERNATIVES →	EXISTING CONDITIONS / NO ACTION ALT	FORMER PREFERRED / FUTURE ALTERNATIVE	NEW IDEAS ALTERNATIVE	NEW PROPOSED ACTION ALTERNATIVE
Boundary Adjustments	No adjustments to the boundary are proposed.	Propose equal acre land exchange with the Gu Vo District and the Tohono O'odham Nation along the crest of Ajo Mountains. The Tohono O'odham would receive 1502.6 acres from the NPS along the eastern portion of the divide. In exchange, the NPS would receive 825.5 acres along the western portion of the divide and 677.1 acres from the western part of the Gunsight Hills.	As in the Existing Conditions Alternative, no boundary adjustments are proposed. However, the NPS would seek to work with the Tohono O'odham Nation to ensure NPS mandates for preservation are achieved for monument lands lying east of the crest of the Ajo Mountains.	As in the Existing Conditions Alternative, no boundary adjustments are proposed since the Tohono O'odham Nation is not interested in a land exchange at this time. However, the NPS feels the exchange proposed in the Former Preferred Future Alternative would improve its ability to manage the monument. In the future, if the Tohono O'odham Nation expresses an interest in this idea, the NPS would be willing to enter into discussions.
Wilderness Area Additions	Seek to acquire approximately 1,280 acres currently held by the State and designated "potential wilderness", then propose for wilderness designation.	After actions proposed in this alternative would be implemented, approximately 3,410 acres would be proposed for wilderness designation including: • 1,280 acres of State trust lands • 206 acres along the powerline corridor • 23 acres along the former road in the Quitobaquito area • 1502.6 acres from the land exchange with the Tohono O'odham Nation.	After actions proposed in this alternative would be implemented, approximately 3,650 acres would be proposed for wilderness designation including: • 1,280 acres of State trust lands • 206 acres along the powerline corridor • 23 acres along the former road in the Quitobaquito area. • 1502.6 acres of NPS lands east of the crest of the Ajo Mountains • 70 acres of former developed areas in the Twin Peaks area • 570 acres along former roads	After actions proposed in this alternative would be implemented, approximately 1509 acres would be proposed for wilderness designation including: • 1,280 acres of State held lands • 206 acres along the powerline corridor • 23 acres along the former road in the Quitobaquito area
PLAN IMPLEMENTATION and COSTS				
Implementation Strategy	Implementation of development, programs, and staffing additions depends primarily on funding. The highest priority for development is construction of the ranger operations and fire station. Implementation of resource management projects and programs remain as described in the NCRMP.	Same as Existing Conditions Alternative.	As in the Existing Conditions Alternative, an implementation strategy based on priorities is proposed. However, most projects and programs proposed in this alternative have been prioritized into three levels. Projects in the highest priority involve human health and safety or meeting legislative requirements and include: the fire station and part of the maintenance complex in Lukeville, Quitobaquito DCP, partnership with the State of Arizona regarding State Route 85, agreements with the Tohono O'odham Nation, and several resource management programs and projects relating to threatened and endangered species, cultural resources, and abandoned mine lands.	As in the New Ideas Alternative, projects and programs in this alternative are prioritized and the highest priority projects and programs are the same. However, in this alternative, the fire station and maintenance facility would be located in the Twin Peaks area.

ALTERNATIVES →	EXISTING CONDITIONS / NO ACTION ALT.	FORMER PREFERRED FUTURE ALTERNATIVE	NEW IDEAS ALTERNATIVE	NEW PROPOSED ACTION ALTERNATIVE
Development Costs	General/park-wide: \$ 314,400 Twin Peaks Area: \$ 3,260,000 Quitobaquito Mgt. Area: \$ 127,000	Twin Peaks Area: \$ 14,544,000 Quitobaquito Mgt. Area: \$ 414,400 Alamo Canyon Wash: \$ 120,600 General/Park-wide: \$ 2,604,000 Costs involving partners are not included in these estimates since the size, location, and the NPS share of the costs if any are unknown. For this alternative, these projects include ISDA's facility in Lukeville.	Twin Peaks Area: \$ 3,425,000 Quitobaquito Mgt. Area: \$ 260,000 Alamo Canyon Wash: \$ 55,000 Dos Lomas: \$ 16,000 Lukeville Area: \$ 4,009,000 Other (roads, pull-outs trails, and exhibits): \$ 2,028,000 As in the Former Preferred Future Alternative, costs involving partners are not included for this alternative and include: ISDA's facility in Lukeville, the regional facility in Why, office space in Ajo for NPS administration, sharing facilities at the border station for ranger operations, and housing for some NPS employees in Lukeville.	Twin Peaks Area: \$ 5,162,000 Quitobaquito Mgt. Area: \$ 260,000 Alamo Canyon Wash: \$ 57,000 Other (roads, pull-outs trails, and exhibits): \$ 1,299,000 As in the Former Preferred Future Alternative, costs involving partners are not included and in this alternative include: ISDA's facility in Lukeville, the regional facility in Why, sharing facilities in the border station for NPS administrative offices, and apartment type housing for NPS seasonal workers in Lukeville.

SUMMARY COMPARISON of CONSEQUENCES

Impact Topics	EXISTING CONDITIONS / NO ACTION ALTERNATIVE	FORMER PREFERRED FUTURE ALTERNATIVE	NEW IDEAS ALTERNATIVE	NEW PROPOSED ACTION ALTERNATIVE
Wilderness	Currently, 1,280 acres of land are designated as potential wilderness; no additional acreage qualifies as wilderness. Long-term significant impacts from State Route 85 traffic would continue.	Protection of the Organ Pipe Cactus Wilderness would be maximized by eliminating or minimizing intrusions and increasing the acreage that qualifies as wilderness by approximately 2,130 acres. Indirect impacts on wilderness values that may occur due to the proximity of human intrusions would be mitigated to minimize adverse effects. Long-term significant impacts from State Route 85 traffic would continue.	Acreage that qualifies as wilderness would be increased by approximately 3,650 acres, maximizing protection of wilderness areas and values. Long-term significant impacts from State Route 85 traffic would continue.	Acreage qualifying as wilderness would be increased by approximately 1,509 acres. Long-term significant impacts from State Route 85 traffic would continue.
Air Quality	In-monument sources of pollution are minimal. Redesignation of the monument from a class II to a class I airshed area would provide maximum protection of the monument's air quality. However, this would be insufficient in preventing further degradation of air quality or visibility from Mexico.	Impacts on air quality and related values would be the same as the Existing Conditions / No Action Alternative.	Same as the Existing Conditions / No Action Alternative.	Same as the Existing Conditions / No Action Alternative.
Floodplains, Wetlands, and Water Resources	No effect on floodplains or water quality would occur. However, a lack of improvements to the trail system at Quitobaquito would allow for continuous vegetation trampling creating a potentially adverse impact on the wetland's function and value as wildlife habitat.	As in the Existing Conditions / No Action Alternative, implementing this alternative would have no effect on regulatory floodplains or surface and groundwater quality. Pending implementation of conservation measures, there would be only a slight increase in water consumption. Establishment of a well-defined trail network at Quitobaquito would have a positive impact on wetland functions and values.	Same as Former Preferred Future Alternative, except overall water consumption would decrease at Twin Peaks, but increase at Lukeville and Why. While the trail network at Quitobaquito has been redefined in this alternative, the impact on wetland functions and values would be beneficial, as in the Former Preferred Future.	Same as Former Preferred Future Alternative.

Impact Topics	EXISTING CONDITIONS / NO ACTION ALTERNATIVE	FORMER PREFERRED FUTURE ALTERNATIVE	NEW IDEAS ALTERNATIVE	NEW PROPOSED ACTION ALTERNATIVE
Threatened, Endangered, and Sensitive Species	The Sonoran mud turtle, Quitobaquito desert pupfish, and Quitobaquito desert snail would be adversely impacted by the continued disturbance and trampling of the pond's littoral zone, an area that provides important foraging, spawning, and resting habitat. The Sonoran mud turtle population may face extirpation. Current traffic levels and speed would eventually eliminate the Mexican rosy boa along State Route 85. While patrol efforts may shift, there would be little progress made to combat poaching.	The establishment of a well-defined trail system at Quitobaquito would have a beneficial effect on habitat for the Sonoran mud turtle, Quitobaquito snail, and the Quitobaquito desert pupfish. The lesser long-nosed bat could be adversely affected if the expansion of Alamo Canyon campground leads to increased human use at the nearby roost site. Continued use of State Route 85 by large volumes of traffic traveling at excessive speeds could be expected to eventually eliminate the Mexican rosy boa from this road corridor area, and impact other species. An increase in patrol efforts in known problem areas would help combat the poaching problem.	As in the Former Preferred Future Alternative, the establishment of a well-defined trail system at Quitobaquito would have a beneficial effect on habitat for the Sonoran mud turtle, Quitobaquito snail, and the Quitobaquito desert pupfish. Closing Alamo Canyon campground would reduce visitor use resulting in benefits to the lesser long-nosed bat and the cactus ferruginous pygmy owl. Experimental practices along State Route 85 could help reduce impacts to the Mexican rosy boa and other sensitive species.	Same as New Ideas Alternative except Alamo Canyon campground would remain open and be expanded by four campsites. However, no adverse impacts to the lesser long-nosed bat or the cactus ferruginous pygmy owl would occur.
Wildlife	There is no significant difference between this alternative and the Former Preferred Future Alternative with the exception of impacts on wildlife inhabiting the littoral zone of Quitobaquito pond. Continued disturbance to aquatic vegetation would degrade the quality of foraging, nesting habitat, and protective cover.	Proposed developments would not occur in areas which would result in additional loss of habitat for wildlife. Attempts would be made to schedule construction activities so that they did not interfere with breeding, nesting, or parturition. Continuing to eliminate human-provided water sources may reduce populations of avian species to more natural levels and may decrease the attractiveness of such areas to the Africanized honey bee. As described previously, the new trail network at Quitobaquito would reduce trampling of wildlife habitat and high mortality rates along State Route 85 would continue.	Beneficial impacts on wildlife would occur by reducing development and increasing wildlife habitat. Experimentation with bridges, culverts, fencing, and educational and marketing programs to gain public support and attract researchers, may reduce impacts to wildlife along State Route 85.	As in the Former Preferred Future Alternative, proposed developments would not result in additional loss of wildlife habitat and for Quitobaquito, would be a beneficial impact. As in the New Ideas Alternative, experimenting with bridges, culverts, fencing, and public education programs may reduce impacts to wildlife along State Route 85.
Vegetation	There would not be a significant impact on the monument's floral diversity or the amount of soil subject to erosion. The persistence of undesignated pullouts on State Route 85 would continue the vegetation disturbance in this area.	There would be no significant impact on the monument's floral diversity or amount of soil subject to erosion. The disturbance or loss of 58 acres of Sonoran desert vegetation would be offset by revegetation of 229 acres, for a net increase of 171 acres. The establishment of designated pullouts on State Route 85 would reduce vegetation disturbance in that corridor.	Similar to the Former Preferred Future Alternative. Approximately 5 acres would be impacted by new construction and 610 acres restored to natural conditions, for a net increase of 605 acres.	Similar to the Former Preferred Future Alternative. Approximately 50 acres would be impacted by new construction and 200 acres restored to natural conditions, for a net increase of 150 acres.

Impact Topics	EXISTING CONDITIONS / NO ACTION ALTERNATIVE	FORMER PREFERRED FUTURE ALTERNATIVE	NEW IDEAS ALTERNATIVE	NEW PROPOSED ACTION ALTERNATIVE
Cultural Resources	The management, protection, and preservation of important cultural resources would be enhanced, but not to the degree in the Former Preferred Future Alternative	Knowledge, protection, and preservation of important cultural resources would be enhanced. Prescribed treatments would reduce the loss of historic fabric from many significant historic sites and structures. Surveys would mitigate possible impacts from developments, allowing significant areas to be avoided and would contribute to an improved understanding the monument's history.	Similar to the Former Preferred Future Alternative, except in this alternative, increased management of visitors and monitoring of sensitive areas would help avoid impacts to cultural resources.	Same as the New Ideas Alternative.
Visitor Use and Experience	Based on current trends, visitation is expected to increase. Existing visitor and administrative facilities may be inadequate to provide visitors with a favorable experience. Visitor security problems at Ouitobaquito may remain. The effects of heavy truck congestion associated with NAFTA may have a negative long-term impact on visitor levels.	Implementing this alternative and existing trends will lead to increased visitation. New facilities, including trails, could allow visitors to experience uncrowded and safer conditions. There would be more opportunities for understanding the significance of the historical, cultural, and natural values of the monument and its part in an international network of public preserves. As with the Existing Conditions Alternative, NAFTA may have negative long-term impacts.	Overall, implementing this alternative would result in beneficial impacts to visitor use and experience. Visitor experience may be affected by separating information and interpretation (in Why) from monument resources. Removal of facilities at Twin Peaks and closure of Alamo Canyon campground would benefit visitors seeking more solitude. However, removal of RV camping from Twin Peaks would affect visitors who would not accept a substitute camping experience in the area. Cumulative impacts from NAFTA would continue as described in the Existing Conditions Alternative.	Similar to Former Preferred Future Alternative except that some visitor use would be re-distributed to some areas outside the monument. Visitor experience would benefit from opportunities in Why and Twin Peaks. Cumulative impacts from NAFTA would continue.
Socio-economics	Economic benefits resulting from this alternative would be generated primarily through increased housing demands in the surrounding communities based on the increased staffing at the monument.	Increased visitation, construction and operation of facilities in this alternative could provide moderate economic benefits to the local and regional economy. Increased sales tax, revenues, and new jobs are expected for the short- and long-term.	Same as Former Preferred Future Alternative.	Same as Former Preferred Future Alternative.
Socio-cultural Characteristics <i>(Note, this impact topic has been added in this Supplement)</i>	No adverse impact to lower income and minority populations would occur from monument activities. Increased involvement between the NPS and Tohono O'odham Nation would have beneficial effects to overall socio-cultural well-being. Communities would continue to experience change and transition from overall growth and increased traffic in the region.	No adverse impact to lower income and minority populations would occur. As in the Existing Conditions Alternative, increased involvement between the NPS and Tohono O'odham Nation would have beneficial effects to overall socio-cultural well-being.	Similar to Former Preferred Future Alternative. In this alternative, the potential for partnerships and involvement with the Tohono O'odham Nation would increase. Socio-cultural changes to communities as a result of several actions proposed in this alternative would generally be beneficial.	Similar to the New Ideas Alternative, except that fewer additions and other changes are proposed in the Lukeville and Twin Peaks areas, therefore, related socio-cultural impacts would also be less for these areas.

Impact Topics	EXISTING CONDITIONS / NO ACTION ALTERNATIVE	FORMER PREFERRED FUTURE ALTERNATIVE	NEW IDEAS ALTERNATIVE	NEW PROPOSED ACTION ALTERNATIVE
Cumulative Impacts	<p>There would be similar effects with the actions taken in this alternative as with the Former Preferred Future Alternative— although to a lesser degree—with two primary exceptions. No expansion of the National Wilderness Preservation System would occur. Persistent degradation of the only known habitat for the Quitobaquito desert pupfish and the Quitobaquito snail could potentially jeopardize their continued existence.</p>	<p>The cumulative effect of all actions would be to enhance protection, understanding, and recognition of Sonoran desert ecosystems and further strengthen relations with the Tohono O'odham nation and Mexico.</p> <p>Proposed actions would add to demands on the regional resources (e.g., groundwater consumption, habitat loss, air quality degradation) to a relatively minor extent. Despite a negligible loss of wildlife habitat, excessive mortality along State Route 85 would continue to decimate all forms of wildlife along this corridor, possibly eliminating some species from this portion of their range and reducing their genetic variability and reproductive fitness. Gains made in combatting poaching of rare flora and fauna may be negated if it merely results in a shift of the problem to less protected areas in the region. The importance of understanding the need to preserve the cultural heritage of the Sonoran Desert ecosystem would be perpetuated through increased preservation, research and interpretation. Revenues to the local and regional economy would continue to increase as visitation and government hiring and expenditures increase.</p> <p>On a broader scale, the proposed actions would involve no net loss to the nation's remaining wetland acreage, and could eventually lead to an expansion of the National Wilderness Preservation System by approximately 2,130 acres. Enhanced habitat protection for the endemic Quitobaquito snail and Quitobaquito desert pupfish would help perpetuate their existences.</p>	<p>Overall, the cumulative impacts are similar to the Former Preferred Future Alternative, with the primary difference being a re-distribution in visitor services. Cumulative effects of the actions proposed in this alternative when added to other regional activities would be moderate given recent and proposed increases in development and tourism-related industries in the region.</p> <p>Cumulative impacts to regional resources are also similar to the Former Preferred Future Alternative except that there may be some long-term reduction in wildlife mortality if experimental mitigations prove successful.</p> <p>As in the Former Preferred Future Alternative, the proposed actions would involve no net loss to the nation's remaining wetland acreage, and could eventually lead to an expansion of the National Wilderness Preservation System by approximately 3650 acres. Enhanced habitat protection for the endemic Quitobaquito snail and Quitobaquito desert pupfish would help perpetuate their existences.</p>	<p>The same as for the New Ideas Alternative, except that expansion of the National Wilderness Preservation System would be approximately 1,509 acres.</p>

RESUMEN DE COMPARACION DE ALTERNATIVAS

ALTERNATIVAS →	ALTERNATIVA DE CONDICIONES ACTUALES / SIN ACCION	ANTERIOR ALTERNATIVA FUTURA PREFERIDA	ALTERNATIVA DE NUEVAS IDEAS	NUEVA PROPUESTA PARA UNA ALTERNATIVA DE ACCION
	Esta alternativa se basa principalmente en continuar las acciones actuales dentro del monumento.	Ya no considerada como una propuesta de acción, esta alternativa se enfoca en una mejora en la capacidad administrativa para incrementar las oportunidades de los visitantes y la conservación de los recursos dentro del monumento.	Esta alternativa se generó aplicando las ideas sugeridas por el público y promueve la preservación de los valores silvestres y se enfoca a reforzar el papel del monumento como Reserva de la Biosfera proponiendo acciones más orientadas a las acciones regionales.	Esta alternativa constituye la acción propuesta por el NPS y combina elementos de otras alternativas para incrementar las oportunidades de los visitantes y la preservación de los recursos dentro del monumento y en la región, fomenta el papel del monumento como Reserva de la Biosfera y presenta una estrategia de desarrollo económicamente efectiva.
TEMAS ▼	EL USO DE LAS TIERRAS Y SU ADMINISTRACION			
Zonas de Administración	<p>Permanecería el sistema de administración que ya existe:</p> <p><i>Zona Natural</i> - principalmente terrenos inalterados con algún uso e instalaciones, dividido en dos subzonas: <i>Subzona Silvestre</i> y <i>Subzona de Ambiente Natural</i></p> <p><i>Zona Histórica</i> - se traslapa con las zonas anteriores, abarca sitios ya en lista o pendientes de nominación al Registro Nacional.</p> <p><i>Zona de Desarrollo</i> - principalmente para uso de los visitantes y áreas desarrolladas incluyendo la Carretera Estatal 85, Twin Peaks y Lukeyville.</p> <p><i>Zona de Uso Especial</i> - terrenos privados con usos no comunes con los de las Zona Natural, dividido en tres subzonas: <i>Subzona de Desarrollo Privado</i>, <i>Subzona de Terrenos Estatales</i>, y la <i>Subzona de Reserva Aduanal y Servicio de Migración estadounidense</i>.</p>	<p>Aplicar un nuevo sistema derivado de la legislación, propósitos y significado y la experiencia de los visitantes.</p> <p><i>Zona Silvestre</i> - preserva los valores silvestres identificados en el Acta Silvestre con dos subzonas: <i>Zona de Potencial Silvestre</i> y el <i>Area Administrativa de Quittobaquito</i>.</p> <p><i>Zonas No-silvestres</i> - proporcionan usos que involucran altas concentraciones de personas o instalaciones, divididos en dos subzonas: <i>Corredor de Tránsito</i> (incluyendo la Carretera Estatal 85 y otros caminos) y el <i>Area de Desarrollo</i>.</p> <p><i>Zona de Recursos Culturales</i> - preserva, protege e interpreta los recursos culturales y sus sitios.</p>	<p>Aplica un sistema semejante a la Anterior Alternativa Futura Preferida con la excepción de los cambios en dos zonas:</p> <p>El <i>Corredor de la Carretera Estatal 85</i> se convertiría en una subzona aparte agregada a la Zona No-silvestre con un énfasis administrativo muy especial para asegurar la continuación del comercio e incrementar la conservación.</p> <p>Los cambios al <i>Area de Administración de Quittobaquito</i> incluyen la expansión a más de 900 hectáreas y una restricción de usos por los visitantes.</p> <p>El énfasis administrativo en otras zonas permanece esencialmente lo mismo que la descripción en la Anterior Alternativa Futura Preferida.</p>	<p>Lo mismo que la Alternativa de Nuevas Ideas.</p>
LA ADMINISTRACION DE RECURSOS NATURALES Y CULTURALES Y LAS INSTALACIONES ASOCIADAS				
El Plan de Administración de Recursos naturales y Culturales (NCRMP siglas en Inglés)	El NCRMP continúa guiando el programa de administración de recursos. Ciertas acciones propuestas en el plan ayudan a resolver temas que se identificaron durante la revisión de este Plan General de Administración (GNP siglas en Inglés) incluyendo la necesidad para un programa integrado para la administración de recursos, estrategias de mitigación y planes para recuperación de especies y un aumento en los esfuerzos para preservar aire, agua y recursos culturales y otros.	Lo mismo que la Alternativa de Condiciones Actuales.	Lo mismo que la Alternativa de Condiciones Actuales con excepción que se ampliaría el Plan de Administración Silvestre para responder a los temas de terrenos silvestres y de terrenos primitivos dentro de un contexto regional. Este esfuerzo entre dependencias puede involucrar al NPS, US Fish and Wildlife Service, Bureau of Land Management y quizá otras dependencias administrativas en la región.	Lo mismo que la Alternativa de Nuevas Ideas.

ALTERNATIVAS →	ALTERNATIVA DE CONDICIONES ACTUALES / SIN ACCION	ANTERIOR ALTERNATIVA FUTURA PREFERIDA	ALTERNATIVA DE NUEVAS IDEAS	NUEVA PROPUESTA PARA UNA ALTERNATIVA DE ACCION
Instalaciones para Administración de Recursos	El edificio residencial que se emplea como oficina y área de trabajo para administración de recursos permanecería. Quizá, en el futuro, se agreguen algunas estructuras para reducir la demanda de espacio de trabajo adicional.	Construir un centro de ciencia y administración de recursos de aproximadamente 750 metros cuadrados en el área de Twin Peaks para: Satisfacer la necesidad de más espacio de oficina y de trabajo; concentrar las funciones de administración y recursos en un solo sitio; proporcionar un espacio para foros y trabajo para la comunidad científica e investigadores y ofrecer oportunidades para interpretación con los visitantes, demostrando los ecosistemas del Desierto Sonorense y los esfuerzos del NPS para la preservación de los mismos. El Centro incluiría oficinas, salones de conferencias, laboratorios, almacén museológico, archivos, biblioteca, salones de trabajo y un invernadero y un vivero. Las oficinas de administración de recursos ya existentes revertirían a residencias para los empleados. (Nota: en la primer edición del cuadro de resúmenes, se presentó al tamaño de la instalación erróneamente: 750 metros cuadrados es la cifra correcta.)	Se construiría un nuevo Centro de Administración de Recursos, Ciencia y Educación (SERMC siglas en Inglés) de 465 metros cuadrados para responder a las necesidades para este tipo de instalación de acuerdo con la descripción en la Anterior Alternativa Futura Preferida. No obstante, en esta alternativa, la instalación sería más pequeña y se ubicaría en Lukeville, sin incluir el invernadero ni el vivero. Se cambió el nombre del centro para que incluyera la educación, respondiendo así al uso de la instalación por los visitantes. Se establecería una instalación fuera del monumento para prestar servicios de vivero. Se eliminarían las oficinas de administración de recursos que ya existen en el área de Twin Peaks y se restauraría el terreno.	Al igual con la Alternativa de Nuevas Ideas, se propone un SERMC de 465 metros cuadrados. No obstante, en esta alternativa se le ubicaría en Twin Peaks, convirtiendo la instalación actual de visitantes y administración y, además, se construiría un invernadero y vivero cercanos para la educación de los visitantes y para investigación. Las oficinas actuales de administración de recursos revertirían a residencias para los empleados tal como en la Anterior Alternativa Futura Preferida.
Recursos Culturales	Continuar la estabilización, estudio y inventario de propiedades históricas en el Registro Nacional de Sitios Históricos. Se estudiarían los sitios de emplazamiento de nuevos desarrollos para asegurar la mitigación de los potenciales impactos de la construcción en los recursos arqueológicos.	Lo mismo que la Alternativa de Condiciones Actuales. Además, se aplicarían las normas de preservación y uso para las propiedades en el inventario y candidatos para el Registro Nacional de Sitios Históricos.	Lo mismo que la Anterior Alternativa Futura Preferida, con la excepción de la modificación del trato de dos propiedades: <ul style="list-style-type: none"> • los programas interpretativos se instrumentarían en el Rancho Dos Lomitas en sustitución del anterior anfiteatro en Twin Peaks y el sitio de acampar • los cambios en el uso de Quitobaquito por visitantes, controlado por permisos o empleando guías. 	Anterior Alternativa Futura Preferida.
Consulta con los Indígenas Nativos	Desarrollar un convenio escrito de beneficio mutuo entre NPS y la Nación Tohono O'odham para reforzar la consulta, coordinación e involucramiento de éstos. (Nota: en los comentarios de la Nación O'odham al NPS se subrayó la necesidad y la importancia de este convenio y, subsecuentemente, se ha agregado a esta y a todas Alternativas.)	Lo mismo que en la Alternativa de Condiciones Actuales. (Nota: esta alternativa no cambia ya que el convenio que se propuso originalmente aquí y su propósito no cambia. No obstante, se ha modificado algo la descripción del convenio en respuesta a los comentarios de la Nación Tohono O'odham.)	Lo mismo que la Alternativa de Condiciones Actuales. Se ampliaría el convenio para incrementar el involucramiento de la Nación Tohono O'odham en el programa de interpretación del monumento. La forma y la amplitud de este involucramiento sería determinado por ambas partes.	Lo mismo que la Alternativa de Nuevas Ideas.

ALTERNATIVAS →	ALTERNATIVA DE CONDICIONES ACTUALES/ SIN ACCIÓN	ANTERIOR ALTERNATIVA FUTURA PREFERIDA	ALTERNATIVA DE NUEVAS IDEAS	NUEVA PROPUESTA PARA UNA ALTERNATIVA DE ACCIÓN
Recursos Visuales	No se proponen acciones adicionales para incrementar la protección de los recursos.	Se proponen las siguientes acciones para preservar los recursos visuales: <ul style="list-style-type: none"> • se re-ubicaría la principal línea de abasto eléctrico enterrándola en terrenos no silvestres a lo largo del corredor de la Carretera Estatal 85 • se enterrarían todas las líneas eléctricas en el área de Twin Peaks • se instrumentarían normas de diseño sustentable en todo desarrollo nuevo. 	Lo mismo que la Anterior Alternativa Futura Preferida con la excepción de: <ul style="list-style-type: none"> • el NPS propone colaborar con el Servicio Público de Arizona para encontrar mecanismos para reducir los costos de la re-ubicación de las líneas eléctricas y • se ha agregado un lineamiento para asegurar la preservación del diseño y mantenimiento regional. 	Lo mismo que la Alternativa de Nuevas Ideas.
EL USO POR LOS VISITANTES Y LAS INSTALACIONES ASOCIADAS				
Los Objetivos y los Temas de la Interpretación	Instrumentar objetivos y temas que se identificaron en el Prospecto de Interpretación del año 1993. Los objetivos se enfocan al alcance del programa de interpretación, la conciencia ambiental, la cooperación y el extensionismo regional, las metas de la biosfera y la idoneidad de la información y las instalaciones para uso de los visitantes y la seguridad personal. Los temas se enfocan en: la asombrosa riqueza y diversidad de las tierras y las gentes desde el pasado al presente, los factores ambientales y el delicado equilibrio de los ecosistemas del Desierto Sonorense y del Monumento como un laboratorio viviente único.	Lo mismo que la Alternativa de Condiciones Actuales.	Lo mismo la que Alternativa de Condiciones Actuales.	Lo mismo que la Alternativa de Condiciones Actuales.

ALTERNATIVAS →	ALTERNATIVA DE CONDICIONES ACTUALES / SIN ACCIÓN	ANTERIOR ALTERNATIVA FUTURA PREFERIDA	ALTERNATIVA DE NUEVAS IDEAS	NUEVA PROPUESTA PARA UNA ALTERNATIVA DE ACCIÓN
Instalaciones para la Interpretación	Mantener el actual Centro de Visitantes. Mejorar el área del anfiteatro que ya existe y que se encuentra en malas condiciones.	Se convertiría al actual centro de visitantes en una instalación administrativa. Se proponen varias instalaciones nuevas para lograr los objetivos y los temas: <ul style="list-style-type: none"> • apoyar la Alianza Internacional del Desierto Sonorense en la creación de un centro tri-cultural, tri-nacional en el área de Lukeville • crear un nuevo centro de información e interpretación de más de 500 metros cuadrados en el área de Twin Peaks con un foyer, centro de información, áreas de ventas y de exhibiciones, teatro, sanitarios y un patio al aire libre, así como un sendero interpretativo accesible para visitantes con limitantes físicos. • un foyer con exhibiciones y un salón de usos múltiples para visitantes en el nuevo Centro de Ciencia y Administración de Recursos • nuevas exhibiciones en tres sitios en el acotamiento de la Carretera Estatal 85 y en sitios claves para entender los recursos naturales. • un mejora del anfiteatro como se describe en la Alternativa de Condiciones Actuales. 	Eliminar el centro de visitantes y el anfiteatro en el área de Twin Peaks. Para lograr este objetivo y los temas: <ul style="list-style-type: none"> • apoyar la Alianza en la creación de un centro tri-cultural y tri-nacional en el área de Lukeville y crear una relación colaborativa para interpretar los temas del NPS en relación a los aspectos culturales • desarrollar la colaboración con otras dependencias federales para establecer una instalación regionalmente enfocada en Why para proporcionar información y orientación en relación a las oportunidades para los visitantes; el tamaño y la ubicación se determinaría en consulta con los socios en el proyecto en el futuro. • asimismo, dentro de las instalaciones en Why el NPS procuraría interpretar el monumento y sus recursos • cuatro sitios en el acotamiento de la Carretera Estatal 85 incluyendo casetas de información en los extremos norte y sur con estacionamientos, exhibiciones y sombra. 	Se proponen las siguientes instalaciones para satisfacer el aumento en la demanda de servicios para los visitantes en la región y lograr los objetivos y los temas dentro del monumento: <ul style="list-style-type: none"> • lo mismo que en Alternativa de Nuevas Ideas, apoyar el Centro que propone la Alianza en Lukeville • en forma semejante a las Alternativas de Nuevas Ideas, desarrollar asociaciones para establecer un centro de información y orientación regional en Why • convertir una parte del actual centro de visitantes y administración en Twin Peaks en un centro interpretativo enfocado principalmente en la administración de recursos. (Para ésto se agregaría una nueva instalación de 350 metros cuadrados a los 550 metros cuadrados en la estructura que ya existe; de éstos un total de 418 metros cuadrados se dedicarían al centro interpretativo y el resto al SERMC). • lo mismo que en la Alternativa de Nuevas Ideas se crearían tres sitios en el acotamiento de la Carretera Estatal 85.
Asociaciones y Extensionismo	Incrementar la colaboración con otros y ampliar el extensionismo regional en respuesta a la designación de Reserva de la Biosfera	Lo mismo que en la Alternativa de Condiciones Actuales.	El potencial de una asociación con la Alianza, otras dependencias federales, el Estado de Arizona y la Nación Tohono O'odham aumenta en esta alternativa en relación al carácter de las instalaciones que se proponen, los programas y los convenios.	Lo mismo que las Alternativas de Nuevas Ideas.
Sitios de Acampar	Se mantendrían las instalaciones de acampar en Twin Peaks y el Cañón de Alamo Wash.	Incrementar las oportunidades para acampar en forma primitiva por medio de: <ul style="list-style-type: none"> • 20 sitios de acampar asequibles a pie cañón arriba del sitio de acampar en el área de Twin Peaks, se ampliaría el parque del estacionamiento para 20 vehículos, agregando un sanitario • cuatro nuevos sitios de acampar cerca del estacionamiento el Cañón de Alamo Wash, se establecería el permiso de solamente un día para un máximo de seis vehículos en un sitio definido y ya afectado dentro del parque de estacionamiento. 	Eliminar los 208 sitios de acampar en Twin Peaks, así como eliminar los estacionamientos para los Vehículos Recreativos (RV siglas en Inglés) en los terrenos del NPS, clausurar el campamento de pernocta en Cañón de Alamo e incrementar las oportunidades de acampar en los sitios primitivos por medio de: <ul style="list-style-type: none"> • convertir el actual sitio de acampar en Twin Peaks en un sendero de dos kilómetros y medio para llegar a pie a 6 o 10 sitios de acampar; se desarrollaría un nuevo sitio para iniciar el paseo con estacionamiento para entre 6 y 10 vehículos en el camino de entrada • convertir el camino circular de acceso a las residencias a un campamento primitivo con 15 a 20 sitios de acampar. 	Lo mismo que la Anterior Alternativa Futura Preferida.

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<p>Red de Transporte del Area:</p> <p>Caminos</p>	<p>Conservar la red de caminos que existen actualmente. De acuerdo con la descripción del NCRMP, establecer una norma de uso de los caminos que ofrecen acceso a los sitios silvestres.</p>	<p>Lo mismo que la de Condiciones Actuales, con la excepción de que los trayectos de algunos caminos en el área de Twin Peaks se ajustarían para acceso a las nuevas instalaciones y separación de las áreas para visitantes de las áreas de uso por el personal del parque. Se construiría aproximadamente un nuevo camino de 3/4 de kilómetro; se eliminaría un camino de dos carriles, ya en existencia, de casi 500 metros y se restauraría el terreno a su condición original; los visitantes y los empleados contarían con acceso separado a las áreas de estacionamiento. Además, habría un área de retorno, y se agregaría un camino nuevo de aproximadamente 130 metros en la entrada de Puerto Blanco. Los visitantes tendrían la opción de regresar si decidieran no continuar el camino de un solo sentido.</p>	<p>Se eliminarían aproximadamente 31 kilómetros de caminos incluyendo los del área de Twin Peaks y los caminos de patrulla de Quitobaquito, Noroeste y la Frontera Occidental. Se convertirían algunos de estos caminos en senderos o rutas para peatones (ver la sección de Senderos más adelante) mientras otros serían restaurados a sus condiciones naturales.</p> <p>Se construiría aproximadamente 3/4 de kilómetro de nuevo camino en el área de Lukeville para servir las necesidades del SERMC, el complejo de mantenimiento y cuartel de bomberos y la aldea de casas de remolque VIP.</p>	<p>Lo mismo que en la Alternativa de Condiciones Actuales con la excepción de que se ajustarían los trayectos de algunos caminos en el área de Twin Peaks y Quitobaquito.</p> <p>Las acciones para Twin Peaks serían semejantes a la Anterior Alternativa Futura Preferida: se construirían aproximadamente 250 metros de nuevo camino; se eliminarían 250 metros del camino de dos carriles ya en existencia y se restauraría el área; los visitantes y empleados cada uno tendrían acceso por separado a las áreas de estacionamiento; se agregaría un retorno con 120 metros de camino nuevo en la entrada de Puerto Blanco Drive. Para Quitobaquito, las acciones serían semejantes a las Alternativas de Nuevas Ideas.</p>
<p>Red de Transporte del Area:</p> <p>Carretera Estatal 85</p>	<p>Colaborar con el Estado de Arizona y otras dependencias para reducir al mínimo los impactos en los recursos del monumento relacionados con la carretera.</p>	<p>Lo mismo que con la Alternativa de Condiciones Actuales. Adicionalmente, el NPS procuraría colaborar con el estado para agregar rotulación informativa y descansos en el acotamiento cerca de las dos entradas al monumento, añadiendo tres descansos en el acotamiento. No se proponen casetas de peaje. (Nota: en la propuesta original, NPS propuso buscar una ruta alternativa para el tráfico comercial y otro para el tráfico general como parte del esfuerzo de planeación. Se ha descartado esta idea debido a una gran preocupación por parte del público, así como la falta de información que demostrara que la propuesta reduciría significativamente la mortandad de la fauna silvestre en este corredor.)</p>	<p>Lo mismo que la Alternativa de Condiciones Actuales, con excepción de que en esta alternativa, se propone un programa para reducir los impactos relacionados con la carretera a la vez que se asegura la continuidad del comercio e incrementa la experiencia de los visitantes. El programa incluiría la creación de descansos con información interpretativa, instrumentación de un programa de educación pública y la experimentación con la mitigación de los impactos por medio de la construcción de puentes en los arroyos y otros mecanismos para propiciar el movimiento de la vida silvestre en forma más segura.</p>	<p>Lo mismo que las Alternativas de Nuevas Ideas.</p>

ALTERNATIVAS →	ALTERNATIVA DE CONDICIONES ACTUALES / SIN ACCION	ANTERIOR ALTERNATIVA FUTURA PREFERIDA	ALTERNATIVA DE NUEVAS IDEAS	NUEVA PROPUESTA PARA UNA ALTERNATIVA DE ACCION
<p>Senderos y Rutas Para Peatones (Nota: Se mejoran y se mantienen los senderos, las rutas para peatones pueden estar señalados pero no mejorados ni mantenidos.)</p>	<p>Conservar el sistema de senderos que existe con las siguientes mejoras:</p> <ul style="list-style-type: none"> • se instalarían rotulación y exhibiciones en cuatro senderos y rutas • Se duplicaría el tamaño del Sendero de Historia Natural del Centro de Visitantes a 35 kilómetros y se mejoraría para aceptar sillas de ruedas 	<p>Además del sistema de rutas, se desarrollarían nueve senderos nuevos (15 kilómetros) y dos rutas nuevas (21 kilómetros) en todo el monumento y se agregarían rótulos en las rutas que ya existen para mejorar la interpretación y el acceso a los recursos. Estas mejoras incluyen la transferencia y ajuste del sistema de senderos en Quitobaquito y mejoras en hasta seis kilómetros de senderos para acomodar sillas de ruedas.</p>	<p>Se eliminarían más de 3 kilómetros y medio en el área de Twin Peaks a la vez que se mantendría el resto del sistema. Además, se agregarían ocho senderos nuevos (15 kilómetros) y cuatro rutas nuevas (60 kilómetros) para incrementar la interpretación y el acceso de los visitantes a los recursos. La mayoría de lo que se agrega sería en sitios de caminos anteriores o en áreas ya afectadas, tales como los nombrados senderos sociales. En esta alternativa se modificarían 9 kilómetros de senderos para acomodar sillas de ruedas.</p>	<p>Lo mismo que la Anterior Alternativa Futura Preferida, con excepción de que se han reducido los senderos que se añaden a 8 nuevos (12 kilómetros) a la vez que los senderos accesibles aumentan en casi nueve kilómetros. Estos cambios ocurren porque:</p> <ul style="list-style-type: none"> • uno de los senderos que se propusieron en la Anterior Alternativa Futura Preferida se encuentra muy cercana al hábitat de la boa rosada y por consecuencia no se propuso en este plan • el ajuste en el sendero de Quitobaquito es el mismo que se había propuesto en las Alternativas de Nuevas Ideas reduciendo el kilometraje total de senderos e incrementa el número de kilómetros de senderos accesibles. Las rutas que se proponen son los mismos que en la Anterior Alternativa Futura Preferida.
LA OPERACION DEL PARQUE E INSTALACIONES ASOCIADAS				
<p>Personal</p>	<p>Se requieren 27.3 empleados para cumplir con los propósitos, programas y mandatos legislativos del monumento. El monumento continuaría empleando los voluntarios del programa VIP para reducir la necesidad de un mayor número de empleados para los programas.</p>	<p>Se requerirían aproximadamente 36 empleados adicionales para instrumentar completamente esta alternativa. Este número incluye aquellas que se requieren para cumplir con las obligaciones actuales. Se contempla el uso de voluntarios en la Alternativa de Condiciones Actuales.</p>	<p>Ya que los estimados del pasado pueden resultar incorrectos en vista de la actual situación fiscal esta alternativa propone solamente 15 empleados adicionales. Esta cifra se basa en la tasa de aumento de empleados en los últimos años, éste ha sido de un empleado por año, en vez de proyecciones de las necesidades reales. Además, el NPS buscaría subvenciones o asociaciones para mitigar los costos del personal. El uso de voluntarios continuará de acuerdo con la Alternativa de Condiciones Actuales.</p>	<p>Lo mismo que las Alternativas de Nuevas Ideas.</p>

ALTERNATIVAS →	ALTERNATIVA DE CONDICIONES ACTUALES / SIN ACCION	ANTERIOR ALTERNATIVA FUTURA PREFERIDA	ALTERNATIVA DE NUEVAS IDEAS	NUEVA PROPUESTA PARA UNA ALTERNATIVA DE ACCION
Instalaciones para Operaciones	<p>Conservar las instalaciones administrativas y de mantenimiento actuales. Agregar un centro de operaciones de guardaparques y cuartel de bomberos de más de 900 metros cuadrados para proteger vidas y propiedad y compensar la falta de espacio para oficinas, trabajo y almacenamiento.</p>	<p>Se proponen las siguientes instalaciones para satisfacer las actuales y futuras necesidades para oficinas, trabajo y almacenamiento, separar las áreas de uso de empleados y visitantes y proporcionar ambientes de trabajo seguros y eficientes:</p> <ul style="list-style-type: none"> • convertir el actual centro de visitantes y administrativo que cuenta con 550 metros cuadrados en un centro exclusivamente administrativo • agregar un centro de operaciones de guardaparques y bomberos de 470 metros cuadrados junto con un puerto de helicópteros • ampliar el área de mantenimiento para abarcar 185 metros cuadrados para oficina, 845 metros cuadrados de estacionamiento con sombra y 283 metros cuadrados para almacenamiento 	<p>Eliminar todas las instalaciones para operaciones del área de Twin Peaks. En su lugar:</p> <ul style="list-style-type: none"> • compartir o arrendar 185 metros cuadrados en Ajo para oficinas administrativas • Construir un complejo de mantenimiento y cuartel de bomberos en Lukeville en una parcela de 2,000 metros cuadrados; las instalaciones incluyen: 232 metros cuadrados para oficina y área de trabajo, 1,115 metros cuadrados para estacionamiento y áreas de trabajo, 464 metros cuadrados de almacenamiento y 232 metros cuadrados de cobertura para el camión de bomberos y almacenamiento relacionado. • buscar una relación colaborativa para ubicar las operaciones de guardabosques dentro de instalaciones federales de poco uso en la Reserva de Aduana y Migración en Lukeville. 	<p>Se propone lo siguiente para responder a las necesidades de oficina, trabajo y almacenamiento económicamente eficiente:</p> <ul style="list-style-type: none"> • buscar una relación colaborativa para obtener 185 metros cuadrados para una oficina administrativa en instalaciones federales sub-utilizadas de la Reserva de Aduana y Migración en Lukeville • ampliar el área de mantenimiento de acuerdo con la descripción en la Anterior Alternativa Futura Preferida agregando 371 metros cuadrados para las operaciones de los guardaparques y el cuartel de bomberos y un aterrizaje para helicópteros aledaño.
Residencias Para Empleados	<p>Las nueve residencias que se utilizan actualmente para alojar a los empleados permanecerían en el circuito de Twin Peaks</p>	<p>Agregar apartamentos residenciales en la zona residencial de Twin Peaks con un total de 10 recámaras para trabajadores temporales e investigadores visitantes. Cinco edificios de oficina y dormitorios se convertirían en residencias para uso de los empleados. Se construiría un nuevo centro comunitario y se agregarían edificios de uso múltiple para los empleados y los voluntarios.</p>	<p>Eliminar las residencias del área de Twin Peaks. Buscar la colaboración con una dependencia federal o un particular para proporcionar lo siguiente en el área de Lukeville:</p> <ul style="list-style-type: none"> • apartamentos con un total de 10 recámaras para trabajadores temporales e investigadores • cinco residencias para empleados que requieren vivir en el sitio para proporcionar seguridad para vidas, propiedad y los recursos del monumento • para uso de todos los residentes del área, modificar una parte de la estructura que ya existe o construir un pequeño centro comunitario para reuniones o funciones sociales. 	<p>Al igual que en la Anterior Alternativa Futura Preferida, se modificarían cinco edificios para residencias de empleados en el área de Twin Peaks. Lo mismo que en las Alternativas de Nuevas Ideas el NPS buscaría la colaboración para suministrar lo siguiente en el área de Lukeville:</p> <ul style="list-style-type: none"> • apartamentos para trabajadores temporales e investigadores • un pequeño centro comunitario para los residentes del y del área.

ALTERNATIVAS →	ALTERNATIVA DE CONDICIONES ACTUALES / SIN ACCION	ANTERIOR ALTERNATIVA FUTURA PREFERIDA	ALTERNATIVA DE NUEVAS IDEAS	NUEVA PROPUESTA PARA UNA ALTERNATIVA DE ACCION
PLANES PARA EL DESARROLLO DEL CONCEPTO <i>(la intención de esta sección es describir (por área) como se relacionarían las nuevas instalaciones en la propuesta)</i>				
Twin Peaks	<p>El área de Twin Peaks permanecería esencialmente como se encuentra en la actualidad. Ya que se agregaría espacio de oficinas para completar la falta de espacio, los planes al futuro se desarrollarían de acuerdo con las demandas del sitio.</p>	<p>Se proponen varios desarrollos en este plan para responder al incremento en las necesidades de los visitantes, el personal y la comunidad científica. Se ubicarían todas las estructuras nuevas fuera del área de máxima probabilidad de inundaciones, aun cuando se construirían algunos caminos nuevos en el área.</p> <p>El nuevo centro de visitantes, el centro de administración de recursos y ciencia y una instalación mejorada para administración, se convertirían en un complejo central que incluiría una nueva área de merendar y estacionamiento para visitantes. Se ubicaría un área de estacionamiento para empleados en el lado opuesto del complejo. El centro de operaciones de los guardabosques y los bomberos se ubicarían a corta distancia e incluiría un nuevo parque de estacionamiento. La ampliación del área de mantenimiento se haría en terreno ya afectado en el sitio de la actual instalación. Una vez eliminadas las oficinas, se emplearía el área residencial solamente para ese propósito, incluyendo el nuevo centro comunitario y el edificio de usos múltiples.</p> <p>Se ajustarían los trayectos de algunos de los caminos para servir las necesidades de las nuevas instalaciones y uso separado de las áreas de empleados y visitantes y se agregaría un retorno a Puerto Blanco Drive para mejorar la circulación de vehículos. Se restaurarían aproximadamente 17 hectáreas de terreno a su condición natural (después de eliminar la mayoría de los caminos y las instalaciones en el área de Twin Peaks). Junto con terrenos no desarrollados, se agregarían aproximadamente 28 hectáreas a terrenos silvestres.</p>	<p>El área de Twin Peaks se convertiría en un área de acampar primitivo. El camino actual conduciría a los visitantes a:</p> <ul style="list-style-type: none"> • un nuevo estacionamiento en la cabecera de los senderos que conducen a los sitios primitivos de acampar • un sitio de acampar primitivo con acceso de vehículos cerca del anterior camino residencial. 	<p>Las instalaciones y el plan son semejantes a la Anterior Alternativa Futura Preferida con la excepción de que:</p> <ul style="list-style-type: none"> • hasta donde se reducen, en esta alternativa, los nuevos edificios y el ajuste en la trayectoria de los caminos • se ubicarían las operaciones de los guardaparques y el cuartel de bomberos cerca del complejo de mantenimiento, en terrenos afectados • el NPS buscaría establecer un nuevo centro comunitario en Lukeville en vez de Twin Peaks.

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El Area de Administración de Quitobaquito	Se mantendrían y mejorarían las actuales áreas de caminos y estacionamiento y se instalaría un rótulo con encasillado para material informativo. Por razones de seguridad, se contaría con personal durante las horas diurnas con altos índices de visitantes.	Se desarrollaría una nueva cabecera para un sendero de un kilómetro para mejorar la experiencia y la seguridad de los visitantes. Se re-ubicaría el estacionamiento, la información interpretativa y un sanitario (con tecnología de composta) aproximadamente a un kilómetro hacia el norte de sus actual ubicación, a una nueva cabecera de sendero en Puerto Blanco Drive. Se eliminarían las actuales instalaciones y se restaurarían aproximadamente 10 hectáreas a sus condiciones naturales. Se necesita mantener acceso administrativo a la zona de la frontera internacional dentro del corredor del área silvestre.	<p>Se mantendría la meta de mejorar la experiencia y la seguridad de los visitantes como en la Anterior Alternativa Futura Preferida. No obstante, se re-ubicarían las instalaciones en base a un diálogo con representantes de la Nación O'odham. Este concepto de desarrollo es general; la delicada naturaleza de esta área requiere un grupo de trabajo con representantes de varias dependencias para desarrollar un diseño del área una vez que se obtiene el presupuesto para el plan.</p> <p>Se crearía una nueva cabecera de sendero en el entronque de Puerto Blanco Drive y el anterior camino de entrada. Se establecería una red de senderos de kilómetro y medio, ida y vuelta, en el sitio del actual camino de entrada. Para auxiliar en la protección de los recursos se requerirá que los visitantes obtengan un permiso o participen en una gira guiada del área. Lo mismo que en la Anterior Alternativa Futura Preferida, se mantendría el acceso administrativo a la zona fronteriza.</p>	Lo mismo que en las Alternativas de Nuevas Ideas.
El Area de Lukeville	Con el reciente trueque de propiedades entre NPS y los propietarios particulares en el área el Plan de Concepto de Desarrollo (PCD) de 1978 es obsoleto y requiere una futura modificación.	Se sustituiría al PCD con los siguientes elementos: El NPS se esmeraría en mejorar la experiencia de los visitantes y establecería vinculación entre Lukeville y el Monumento. Esto incluiría una evaluación de las oportunidades para servicios interpretativos, viajes relacionados con el eco-turismo y la aplicación de pautas de diseño sustentable. En un futuro el NPS ofrecería apoyo a la creación de un centro de información tri-nacional en el área.	Se sustituiría al PCD de 1978 con los siguientes elementos: Se desarrollarían el nuevo SERMC, el complejo de mantenimiento y cuartel de bomberos, el área VIP y el centro de información sureño en terrenos del NPS. Además, el NPS apoyaría a la Alianza en el desarrollo de un centro tri-cultural, tri-nacional en esta zona y buscaría formar relaciones colaborativas para: <ul style="list-style-type: none"> • proporcionar alojamiento para un número limitado de empleados temporales y permanentes del NPS • Desarrollar un centro comunitario para todos los residentes del área • compartir oficinas en la frontera para la operación de los guardaparques. 	Se sustituiría al PCD de 1978 con los siguientes elementos: al igual de la Anterior Alternativa Futura Preferida, el NPS buscaría incrementar los enlaces entre Lukeville y los recursos y valores del monumento. Al igual que en Alternativa de Nuevas Ideas NPS apoyaría los esfuerzos de la Alianza y buscaría asociaciones para: <ul style="list-style-type: none"> • proporcionar alojamiento, pero solamente para empleados temporales del NPS • desarrollar un centro comunitario para todos los residentes del área • compartir espacio de oficina en la frontera, con la excepción de la administración del NPS.

ALTERNATIVAS →	ALTERNATIVA DE CONDICIONES ACTUALES / SIN ACCION	ANTERIOR ALTERNATIVA FUTURA PREFERIDA	ALTERNATIVA DE NUEVAS IDEAS	NUEVA PROPUESTA PARA UNA ALTERNATIVA DE ACCION
CAMBIOS DE NOMBRE, COLINDANCIA Y AREA SILVESTRE				
Redesignación	El nombre permanecería: Organ Pipe Cactus National Monument.	Apoyar el cambio de clasificación de Monumento al de Parque Nacional del Desierto Sonorense, cambio que requiere una legislación congressional federal. La re-designación propiciaría una atención al valor y el significado de los variados recursos del monumento y la necesidad de preservarlos.	Lo mismo que la Anterior Alternativa Futura Preferida, con la excepción que el nombre se cambiaría a Organ Pipe Cactus National Park. Aun cuando la autoridad y las responsabilidades administrativas serían las mismas, los parques nacionales característicamente cuentan con una imagen de mayor importancia que puede ayudar en la búsqueda de fondos para mejorar las actividades de preservación y servicios para los visitantes.	Apoyar el cambio de definición a Parque Nacional del Desierto Sonorense por las razones antes enumeradas en la Anterior Alternativa Futura Preferida y las Alternativas de Nuevas Ideas.
Ajustes de Colindancias	No se proponen ningunos ajustes de colindancias.	Se propone un trueque de terrenos con el Distrito Chu Yo de la Nación Tohono O'odham en la cima de las Montañas Ajo. La Nación O'odham recibiría 608 hectáreas del NPS en la región oriental del parte aguas. A cambio, el NPS recibiría 334 hectáreas en la región occidental del parte aguas y 274 hectáreas en la región occidental de Gunsight Hills.	De acuerdo con la Alternativa de Condiciones Actuales, no se proponen ajustes de colindancia. No obstante, el NPS buscaría colaborar con la Nación O'odham para asegurar se logren los mandatos de preservación del NPS para los terrenos del monumento que quedan al este de la cima de las Montañas Ajo.	De acuerdo con la Alternativa de Condiciones Actuales, no se proponen ajustes de colindancia ya que la Nación Tohono O'odham nos se interesa en un trueque de terrenos ahora. No obstante, el NPS considera que el trueque que se propone en la Anterior Alternativa Futura Preferida mejoraría su capacidad de administrar el monumento. En el futuro, si la Nación Tohono O'odham se interesa en la idea, el NPS estaría dispuesto a entrar en negociaciones.
Agregar al Area Silvestre Additions	Buscar la adquisición de aproximadamente 518 hectáreas actualmente propiedad del Estado de Arizona designado como "área con potencial silvestre" y proponer la designación formal de área silvestre.	Después de la instrumentación de las acciones que se proponen en esta alternativa, se propondría que se designaran aproximadamente 1,270 hectáreas como área silvestre incluyendo: • 518 hectáreas de terrenos estatales en fideicomiso • 83 hectáreas en el corredor de suministro de energía eléctrica • 9 hectáreas en un antiguo camino en el área de Quitobaquito • 607 hectáreas con un trueque de terrenos con la Nación O'odham.	Después de instrumentar las acciones propuestas en esta alternativa, se proponen que sean designadas 1,477 hectáreas como área silvestre incluyendo: • 518 hectáreas de terrenos estatales en fideicomiso • 83 hectáreas en el corredor de suministro de energía eléctrica • 9 hectáreas en un antiguo camino en el área de Quitobaquito • 607 hectáreas de terrenos del NPS del lado oriental de la cima de las Montañas Ajo • 28 hectáreas en áreas anteriormente en uso en el área de Twin Peaks • 231 hectáreas en antiguos caminos.	Después de instrumentar las acciones presentadas en esta alternativa, se proponen aproximadamente 611 hectáreas para designación de área silvestre incluyendo: • 518 hectáreas en terrenos estatales • 83 hectáreas en el corredor de suministro de energía eléctrica • 9 hectáreas en un antiguo camino en el área de Quitobaquito.

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LA INSTRUMENTACION DEL PLAN Y SUS COSTOS				
Estrategia de Instrumentación	la instrumentación del desarrollo, los programas y el aumento en personal depende principalmente del financiamiento. La más alta prioridad para el desarrollo es la construcción de un centro de operaciones para los guardaparques y los bomberos. Instrumentación de los proyectos administrativos y programas son los mismos que se han descrito en el NCRMP.	Lo mismo que en la Alternativa de Condiciones Actuales.	Lo mismo que en la Alternativa de Condiciones Actuales, la estrategia de instrumentación se basa en las prioridades que se proponen. No obstante, se han establecido prioridades para la mayoría de los proyectos y programas que se presentan en esta alternativa, en tres niveles. Los proyectos con la más alta prioridad son los que afectan la salud y la seguridad humana o cumplen con los requisitos legislados que incluyen: el cuartel de bomberos y parte del complejo de mantenimiento en Lukeville, Quitobaquito CPD, la colaboración con el estado de Arizona en relación a la Carretera Estatal 85, convenios con la Nación Tohono O'odham y varios programas de administración de recursos y proyectos relacionados a las especies amenazadas y en peligro, los recursos culturales y las minas abandonadas.	Lo mismo que en las Alternativas de Nuevas Ideas, se han establecido prioridades para los proyectos y los programas en esta alternativa y los proyectos y programas de más alta prioridad son los mismos. No obstante, en esta alternativa, se ubicarían al cuartel de bomberos y la instalación de mantenimiento en el área de Twin Peaks.
Costos de Desarrollo	General/Parque completo: \$ 314,400 Área Twin Peaks: \$ 3,260,000 Área Quitobaquito: \$ 127,000	Área Twin Peaks: \$14,544,000 Área Quitobaquito: \$ 414,400 Cañón de Alamo Wash: \$ 120,600 General/Parque completo: \$ 2,604,000 En estas estimaciones no se incluyen los costos de involucrar a los colaboradores ya que, el tamaño, la ubicación y el porcentaje que le corresponde al NPS - si hubiera - son desconocidos. Esta alternativa de proyectos sí se incluyen la instalación de la Alianza en Lukeville.	Área Twin Peaks: \$ 3,425,000 Área Quitobaquito: \$ 260,000 Cañón de Alamo Wash: \$ 55,000 Dos Lomitas: \$ 16,000 Área Lukeville: \$ 4,009,000 Otros (caminos, descansos, senderos, y exhibiciones): \$ 2,028,000 De acuerdo con la Anterior Alternativa Futura Preferida, no se incluyen los costos de la participación de colaboradores pero sí se incluyen: la instalación de la Alianza en Lukeville, la instalación regional en Why, la oficina en Ajo para la administración del NPS, instalaciones compartidas en la sede fronteriza de la operación de los guardaparques y residencias para algunos empleados del NPS en Lukeville.	Área Twin Peaks: \$ 5,162,000 Área Quitobaquito: \$ 260,000 Cañón de Alamo Wash: \$ 57,000 Otros (caminos, descansos, senderos y exhibiciones): \$1,299,000 De acuerdo con la Anterior Alternativa Futura Preferida no se incluyen los costos de los asociados en esta alternativa pero sí se incluyen: la instalación de la Alianza en Lukeville, la instalación regional en Why, la oficina en Ajo para la administración del NPS, instalaciones compartidas en la sede fronteriza de la operación de los guardaparques y residencias para algunos empleados del NPS en Lukeville.

RESUMEN DE LA COMPARACION DE CONSECUENCIAS

Temas de Impacto	CONDICIONES ACTUALES / SIN ACCION	ANTERIOR ALTERNATIVA FUTURA PREFERIDA	ALTERNATIVA DE NUEVAS IDEAS	ALTERNATIVA DE NUEVAS PROPUESTAS
Zonas Silvestres	Actualmente se han designado 518 hectáreas potenciales de terreno como zonas silvestres; ningún terreno adicional reúne las características de zona silvestre. Los impactos del tráfico de la Carretera Estatal 85 continuarían por un largo plazo.	La protección de la zona silvestre del Organ Pipe Cactus National Monument se incrementaría en el máximo al eliminar o reducir las intrusiones con un aumento en el terreno que reúne las características de zona silvestre de aproximadamente 862 hectáreas. Los impactos indirectos en los valores silvestres que pudieran manifestarse por las intrusiones humanas pudieran ser miligadas al reducir los efectos adversos. Los impactos significantes de la Carretera Estatal 85 continuarían por un largo plazo.	Los terrenos que se caracterizan como silvestres pudieran aumentarse en aproximadamente 1,477 hectáreas, ofreciendo una máxima protección de las áreas silvestres y sus valores. Los impactos significativos de la Carretera Estatal 85 continuarían por un largo plazo.	Los terrenos que se caracterizan como silvestres se incrementarían en aproximadamente 611 hectáreas. Los impactos significativos de la Carretera Estatal 85 continuarían por un largo plazo.
Calidad del Aire	Las fuentes de contaminación en el monumento son mínimas. La redesignación del monumento de un área de flujo de aire de Clase II a la de Clase I ofrecería la máxima protección de la calidad del aire en el monumento. No obstante, esto sería insuficiente para prevenir una disminución en la calidad del aire o la visibilidad por fuentes en México.	Los impactos en la calidad del aire y valores relacionados serían los mismos que en las Condiciones Actuales / Sin Acción.	Lo mismo que en Condiciones Actuales / Sin Acción.	Lo mismo que en Condiciones Actuales / Sin Acción.
Las Planicies Aluviales, Humedales y Recursos Hidráulicos	No habría efecto alguno en las planicies aluviales o en la calidad del agua. No obstante, la carencia de mejoras en el sistema de senderos del área de Quitobaquito permitiría un pisoteo continuo de la vegetación creando un efecto potencialmente adverso en la función del humedal y su valor como hábitat de la vida silvestre.	Lo mismo que con Condiciones Actuales / Sin Acción la instrumentación de esta alternativa no afectaría las planicies pluviales reglamentadas o en las calidad de aguas superficiales o los mantos acuíferos. En la ausencia de la instrumentación de acciones de conservación, habría solamente un leve aumento en el consumo de agua. La creación de una red de senderos bien definidos en Quitobaquito tendría un impacto positivo en la función del humedal y sus valores.	Lo mismo que la Anterior Alternativa Futura Preferida, con la excepción de la disminución en el consumo de agua en Twin Peaks, pero con un aumento en Lukeville y Why. Aun cuando se redefine la red de senderos en Quitobaquito en esta alternativa, el impacto en las funciones del humedal pudieran ser positivas como lo es en la Anterior Alternativa Futura Preferida.	Lo mismo que en la Anterior Alternativa Futura Preferida.

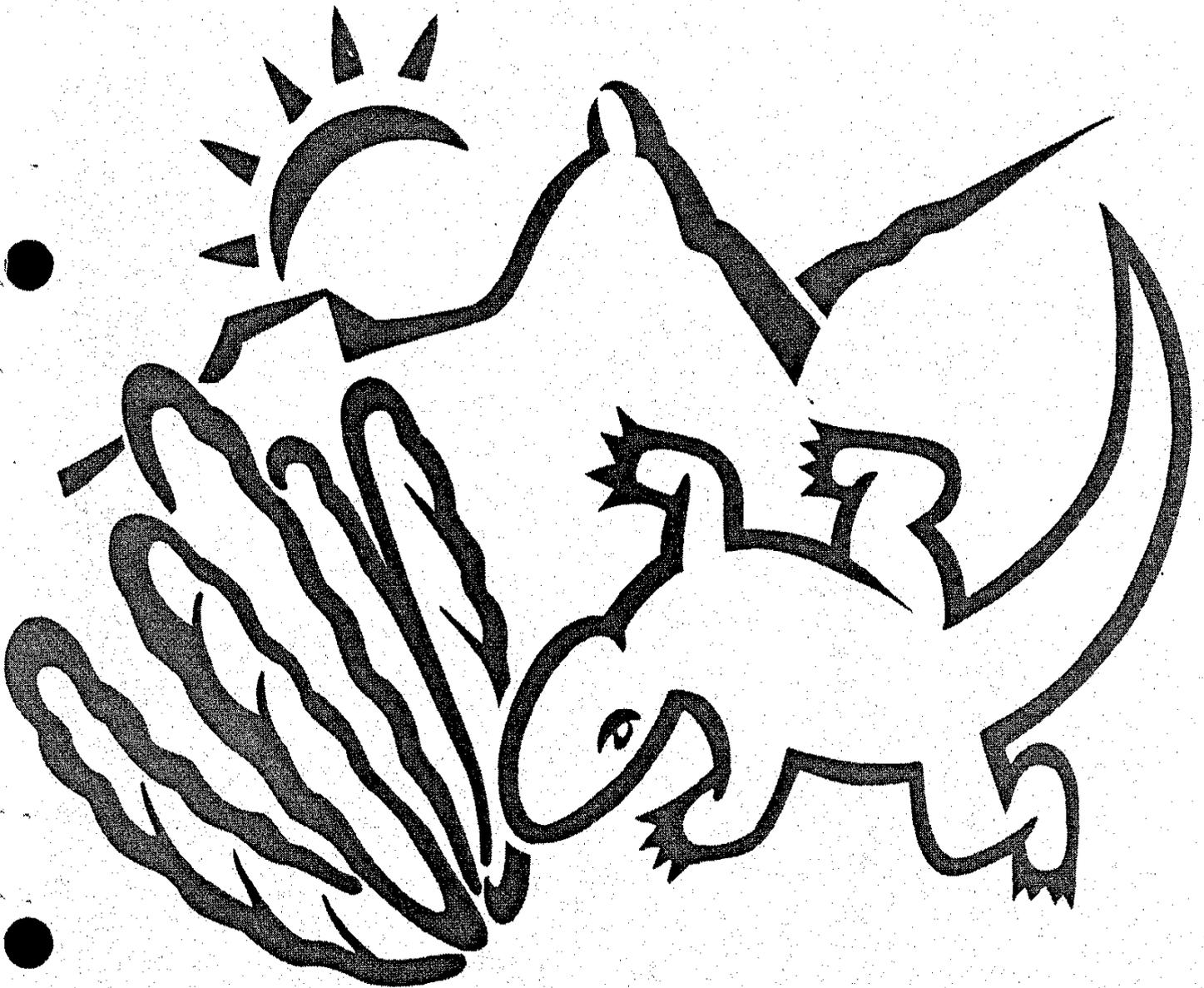
Temas de Impacto	CONDICIONES ACTUALES / SIN ACCION	ANTERIOR ALTERNATIVA FUTURA PREFERIDA	ALTERNATIVA DE NUEVAS IDEAS	ALTERNATIVA DE NUEVAS PROPUESTAS
Especies Amenazadas, en Peligro y Sensibles	La tortuga de ciénagas Sonorense, el pez cachorro del desierto y el caracol del desierto se verían negativamente afectadas con una continuación del alboroto y el pisoteo de la zona litoral del charco, que suministra un importante sitio para forraje, desove y hábitat de descanso. La población de la tortuga de ciénagas Sonorense puede enfrentar su desaparición. Los actuales niveles de visitas y la velocidad pudieran eliminar la boa rosada Mexicana a lo largo de la Carretera Estatal 85. Aun cuando las patrullas se modifiquen, poco se puede hacer para combatir la captura furtiva.	La creación de un sistema bien definido de senderos en Quitobaquito pudiera beneficiar el hábitat de la tortuga de ciénaga Sonorense, el caracol de Quitobaquito y el pez cachorro del desierto. El murciélago narigudo pudiera ser afectado negativamente si la expansión del sitio de acampar en Cañon de Alamo conlleva un mayor flujo de uso humano cerca de su posadero en el sitio. Se puede prever que el uso continuado de la Carretera Estatal 85 por grandes volúmenes de tráfico transitando a alta velocidad puede eventualmente eliminar a la Boa Rosada Mexicana en este corredor, e impactar otras especies. Un aumento en las patrullas en áreas con problemas conocidos pudiera ayudar a combatir el problemas de la colección furtiva.	Como en la Anterior Alternativa Futura Preferida, la creación de un sistema de senderos bien definido en Quitobaquito repercutiría en forma positiva en el hábitat de la tortuga de ciénaga Sonorense, el caracol de Quitobaquito y el pez cachorro del desierto. La clausura del sitio de acampar de Cañon de Alamo reduciría las visitas con los consecuentes beneficios al murciélago narigudo y el tecolote enano. Ciertas prácticas experimentales en la Carretera Estatal 85 contribuiría a reducir los impactos a la boa rosada Mexicana y otras especies sensibles.	Lo mismo que la Alternativa de Nuevas Ideas con la excepción de que el sitio de acampar de Cañon de Alamo permanecería y se agregarían cuatro sitios más. No obstante, no ocurrirían impactos negativos para el murciélago narigudo y el tecolote enano.
La Vida Silvestre	No existe diferencia significativa entre esta alternativa y la Anterior Alternativa Futura Preferida con la excepción de los impactos en la vida silvestre que habitan la zona litoral del charco de Quitobaquito. La alteración de la vegetación acuática degradaría la calidad del forraje, el hábitat para anidación y la cubierta protectora.	Se evitaría el desarrollo que se propone en áreas que resultarían en una mayor pérdida de hábitat para la vida silvestre. Se intentaría programar la construcción para que no interfirieran con el ciclo reproductivo. La eliminación de fuentes de agua artificiales reduciría las poblaciones de aves a niveles naturales y pudiera disminuir el atractivo de tales sitios para las abejas africanizadas. Como hemos descrito anteriormente, la nueva red de senderos en Quitobaquito reduciría el pisoteo del hábitat natural y las altas tasas de mortandad en el corredor de la Carretera Estatal 85.	Los impactos positivos en la vida silvestre resultarían cuando se redujera el desarrollo y se incrementen los hábitats silvestres. Experimentos con puentes, drenajes, cercos y programas de educación e información para lograr un apoyo público y atraer investigadores puede reducir los impactos a la vida silvestre en la Carretera Estatal 85.	Lo mismo que en la Anterior Alternativa Futura Preferida, los desarrollos que se proponen no resultarían en pérdida adicional de hábitat silvestre y, para Quitobaquito, serían positivos. Lo mismo que en la Alternativa de Nuevas Ideas, experimentos con puentes, drenajes, cercos y programas de educación pública pudieran reducir los impactos en la Carretera Estatal 85.
Vegetación	No habría un impacto significativo en la diversidad de la flora del monumento o en el suelo sujeto a la erosión. El efecto negativo sobre la vegetación debido a la existencia de descansos irregulares en el acotamiento continuaría.	No habría impacto significativo en la diversidad de la flora o en el suelo sujeto a la erosión. Se equilibraría la alteración o pérdida de 23 hectáreas de del desierto Sonorense con la re-vegetación de 93 hectáreas, con un aumento neto de 69 hectáreas. La creación de descansos en el acotamiento de la Carretera Estatal 85 reduciría la alteración de la vegetación en ese corredor.	Lo mismo que con la Anterior Alternativa Futura Preferida. Se afectarían aproximadamente 2 hectáreas con nuevas construcciones y se restauraría a su condición natural a 247 hectáreas, con un aumento neto de 245 hectáreas.	Semejante a la Anterior Alternativa Futura Preferida. La nueva construcción impactaría aproximadamente 20 hectáreas y se restaurarían 81 hectáreas a su condición natural con un aumento neto de 61 hectáreas.

Temas de Impacto	CONDICIONES ACTUALES / SIN ACCION	ANTERIOR ALTERNATIVA FUTURA PREFERIDA	ALTERNATIVA DE NUEVAS IDEAS	ALTERNATIVA DE NUEVAS PROPUESTAS
Recursos Culturales	Se incrementaría la administración, la protección y preservación de importantes recursos culturales, pero no tanto como en la Anterior Alternativa Futura Preferida.	Se incrementaría el conocimiento, y la preservación de importantes recursos culturales la protección. Tratamientos ordenados reducirían el impacto la pérdida de la tela histórica de sitios y estructuras significantes. Las encuestas disminuirían los posibles impactos del desarrollo, evitando ciertas áreas de importancia y contribuyendo así a un mejor entendimiento de la historia del monumento.	Semejante a la Anterior Alternativa Futura Preferida, con la excepción de que, en esta alternativa, una mejor administración de los visitantes y el monitoreo de áreas sensibles reducirían el impacto a los recursos culturales.	Lo mismo que en la Alternativa de Nuevas Ideas.
El Uso y la Experiencia del Visitante	En base a las actuales corrientes se prevé un aumento en el número de visitantes. Las actuales instalaciones para administración y visitantes pueden resultar inadecuadas para proporcionar al visitante una experiencia favorable. Los problemas de seguridad para los visitantes en Quitovaquito pueden continuar. A largo plazo los efectos de la congestión de camiones pesados asociados con el TLC pueden repercutir en forma negativa con el número de visitantes.	Instrumentar esta alternativa, acoplado con las tendencias actuales llevarían a un aumento en el número de visitantes. Instalaciones nuevas, incluyendo los senderos, permitirían que los visitantes disfrutaran de una experiencia menos congestionada y en condiciones más seguras. Existirían mayores oportunidades para entender el significado histórico, cultural y los valores naturales del monumento y el papel que ejerce en una red internacional de reservas públicas. Semejante a la Alternativa de Condiciones Actuales, el TLC puede afectar en forma negativa a largo plazo.	En conjunto, la instrumentación de esta alternativa resultaría en impactos positivos para el uso y la experiencia de los visitantes. La experiencia de los visitantes puede verse afectada en forma positiva al separar los recursos del monumento y las instalaciones que proporcionan información e interpretación (en Why). Eliminación de las instalaciones en Twin Peaks y la clausura del campamento de Cañón de Alamo beneficiaría a los visitantes que buscan mayor soledad. No obstante, la eliminación del campamento de vehículos recreativos del área de Twin Peaks afectaría adversamente a los visitantes que no aceptan una experiencia alternativa en esta área. Los efectos cumulativos del TLC continuarían en forma semejante a lo que se ha descrito en la Alternativa de Condiciones Actuales.	Semejante a la Anterior Alternativa Futura Preferida con la excepción de que se re-ubicarían algunos visitantes fuera del monumento. La experiencia de los visitantes se beneficiaría con otras opciones en Why y Twin Peaks. Los efectos cumulativos del TLC continuarían.
Efectos Socio Económicos	Los beneficios económicos que resultarían de esta alternativa se generarían principalmente en base al aumento en la demanda residencial en las comunidades aledañas con el aumento en el personal del monumento.	El aumento en el número de visitantes, la construcción y operación de las instalaciones en esta alternativa pueden ofrecer modestos beneficios económicos para la economía local y regional. En el corto y largo plazo se prevé un aumento en impuestos sobre ventas, utilidades y nuevos empleos.	Lo mismo que en la Anterior Alternativa Futura Preferida.	Lo mismo que en la Anterior Alternativa Futura Preferida.

Temas de Impacto	CONDICIONES ACTUALES / SIN ACCION	ANTERIOR ALTERNATIVA FUTURA PREFERIDA	ALTERNATIVA DE NUEVAS IDEAS	ALTERNATIVA DE NUEVAS PROPUESTAS
Características Socio-culturales <i>(Nota: Se ha agregado este tema de impacto a este Suplemento)</i>	No habría un impacto negativo para las poblaciones de bajos ingresos o grupos minoritarios como resultado de esta alternativa. Una intensificación en la relación entre NPS y la Nación Tohono O'odham repercutiría en forma positiva al bienestar socio-cultural en general. Las comunidades continuarían experimentando los efectos del cambio y una transición como resultado del crecimiento y el aumento del tráfico en esta región.	No habría un impacto negativo para las poblaciones de bajos ingresos o grupos minoritarios como resultado de esta alternativa. Una intensificación en la relación entre NPS y la Nación Tohono O'odham repercutiría en forma positiva al bienestar socio cultural general.	Semejante a la Anterior Alternativa Futura Preferida. En esta alternativa, aumenta el potencial para asociaciones e involucramiento con la Nación Tohono O'odham. Los cambios socio-culturales que resultarían de las varias acciones que se proponen, en general, beneficiarían a las comunidades.	Semejante a la Alternativa de Nuevas Ideas, con la excepción de que se proponen menos cambios y agregados en Lukeville y en Twin Peaks, por lo tanto, en estas áreas se reducirían los impactos socio-culturales relacionados.

Temas de Impacto	CONDICIONES ACTUALES / SIN ACCION	ANTERIOR ALTERNATIVA FUTURA PREFERIDA	ALTERNATIVA DE NUEVAS IDEAS	ALTERNATIVA DE NUEVAS PROPUESTAS
Impactos Cumulativos	<p>Los efectos de las acciones de esta alternativa serían semejantes a los de la Anterior Alternativa Futura Preferida aun cuando en menor grado, con dos excepciones primarias. No ocurriría una expansión del Sistema Nacional de Preservación Silvestre. La degradación continúa del único hábitat que se conoce para el pez cachorro y el caracol de Quitobaquito potencialmente disminuyen su supervivencia.</p>	<p>El efecto acumulativo de todas las acciones fortalecerían la protección, el entendimiento y el reconocimiento de los ecosistemas desérticos y, además, se incrementarían las relaciones entre la Nación Tohono Oodham y México.</p> <p>Las acciones que se proponen agregarían a las demandas de los recursos regionales (es decir, consumo de agua de subsuelo, la pérdida de hábitats, degradación de la calidad del aire) en forma mínima. Aun con una pérdida menor de hábitat silvestre, una pérdida excesiva en la Carretera Estatal 85 continuaría destruyendo las varias especies de vida silvestre en este corredor, posiblemente eliminando algunas especies en esta región, reduciendo así su variabilidad genética y su capacidad reproductora. El beneficio logrado al combatir la colecta furtiva de flora y fauna puede caducarse si meramente se traslada el problema a zonas menos protegidas en la región. Un aumento en la preservación, la investigación y la interpretación subrayaría la importancia de entender la preservación del patrimonio cultural del ecosistema del Desierto Sonorense. Las utilidades de las comunidades locales y regionales continuarían aumentando en relación al aumento en el número de visitantes y el aumento en el empleo y las erogaciones gubernamentales.</p> <p>En un marco más amplio, las acciones que se proponen no involucrarían una pérdida neta de superficie de los humedales nacionales y pudieran eventualmente llevar a una expansión del Sistema Nacional de Preservación Silvestre en un total de 462 hectáreas. Un incremento en la protección de hábitat para las especies endémicas del caracol y el pez cachorro del Quitobaquito propiciarían sus existencias.</p>	<p>En conjunto, los impactos cumulativos son semejantes a la Anterior Alternativa Futura Preferida, con la principal diferencia de una re-distribución en los servicios para visitantes. Los efectos cumulativos de las acciones propuestas en esta alternativa, cuando se suman a otras actividades regionales, resultarían modestas en relación a los aumentos propuestos para el desarrollo de las industrias relacionadas con el turismo en esta región.</p> <p>Los impactos cumulativos en los recursos regionales son semejantes a la Anterior Alternativa Futura Preferida, con la excepción de la reducción en la mortandad a largo plazo de la vida silvestre si los experimentos de mitigación resultan exitosas.</p> <p>Como en la Anterior Alternativa Futura Preferida, las acciones propuestas no involucrarían una pérdida neta en el área de humedales nacionales y pudieran, eventualmente, llevar a una expansión del Sistema Nacional de Preservación Silvestre de aproximadamente 1477 hectáreas. El incremento en la protección de las especies endémicas del caracol y el pez cachorro de Quitobaquito propiciaría su existencia.</p>	<p>Lo mismo que en la Alternativa de Nuevas Ideas, con la excepción de que las acciones propuestas llevarían a la expansión del Sistema Nacional de Preservación Silvestre en aproximadamente 610 hectáreas.</p>

INTRODUCTION TO
THE SUPPLEMENT



PURPOSE AND NEED

The purpose of this *Supplement* is to present two new alternatives resulting from comments and concerns raised by the public and other agencies during review of the *Draft GMP/DCP/EIS* released in May, 1995. Comments leading to development of this *Supplement* involved:

- actions affecting use of State Route 85 (SR 85)
- the number of alternatives presented
- new ideas about cooperation between the NPS and others, and about development both within the monument and outside monument boundaries
- requests for more involvement by the Tohono O'odham Nation
- costs associated with implementing the alternatives
- mitigation of impacts on natural resources, especially threatened and endangered species

After reviewing these and all other comments, the National Park Service (NPS) determined a supplement to the *Draft GMP/DCP/EIS* was needed. This document is intended to be just that—a supplement to the original document—as it provides additional information. The document you are reading is formally titled *Supplement To The Draft GMP/DCP/EIS*. To help avoid confusion between the documents, the original draft document will be referred to as the *Draft GMP/DCP/EIS* while this document will be referred to as the *Supplement*.

This *Supplement* contains:

- an update on the planning process and public involvement including further description of some of the reasons for preparation of this *Supplement* and what steps to expect in the future
- a discussion of the two new alternatives, one of which constitutes the National Park Service's new proposed action
- a discussion of the environmental consequences of implementing the new alternatives
- summary tables comparing the actions and consequences of the four alternatives

In the interest of avoiding duplication, information contained in the *Draft GMP/DCP/EIS* is incorporated here by reference and not repeated in this *Supplement*. The Natural and Cultural Resources Management Plan is summarized and also incorporated by reference and not duplicated in this document.

AN UPDATE ON PUBLIC INVOLVEMENT AND THE PLANNING PROCESS

In May of 1995, the *Draft GMP/DCP/EIS* was released for public review and comment. The NPS mailed or handed out more than 400 copies of the plan to interested people. Mailings contained a letter asking for comments on the draft plan, and invited citizens to participate in upcoming public meetings. The general nature of the meetings, comments, and what to expect next in the planning process are described below.

Public Meetings and Native American Consultations. The *Draft GMP/DCP/EIS* was presented at public meetings in Sonoyta, Sonora, Mexico, and in Ajo, Phoenix, and Tucson, Arizona on May 8, 9, 10, and 11, 1995, respectively. In addition, meetings were held on June 8 and 9 with the Tohono O'odham Nation, including representatives from the Hia C'ed O'odham, at the Gu Vo and Hickiwan Districts and at the Legislative Council in Sells. The International Sonoran Desert Alliance (ISDA) invited the NPS to make a short presentation on the plan which occurred during the May 1995 meeting of that organization. Briefings were also held with the Cabeza Prieta National Wildlife Refuge and with staff representatives of Senator John Kyl's and Congressman Ed Pastor's offices before the July 10 deadline.

Since that time, the NPS has held additional meetings to gather input into the development of the new alternatives. A public meeting was held in Ajo on October 25, 1995. In addition, on November 7 and

Introduction

21, 1995, the NPS consulted with the Tohono O'odham Nation at a Legislative Council meeting in Sells, and at a meeting held at Quitobaquito. At the legislative council meeting, discussion centered around access to sacred lands, and information used by the NPS regarding Tohono O'odham history and culture. The Quitobaquito meeting included a presentation and discussion about issues and proposals for the Quitobaquito Management Area.

Public Comments. In addition to the comments received at the public meetings, the NPS has received approximately 55 responses from other agencies, various organizations, and private citizens. A brief summary follows of some of the substantive comments that are addressed in the *Supplement*. Substantive comments relating to the *Affected Environments* section of the *Draft GMP/DCP/EIS* deal primarily with the need for factual corrections and will be addressed in the Final GMP/DCP/EIS.

Many comments were made in response to the impact of SR 85 on monument resources and the visitor experience. Concern was raised over any possibility of a toll being established on this road, and the negative impacts of traffic on rare, threatened, and endangered species.

Neither alternative in the *Draft GMP/DCP/EIS* proposes realignment of SR 85 or the establishment of a toll road. However, the *Former Preferred Future Alternative* does propose a future planning effort to find solutions to problems associated with the increasing impact of the volume and speed of traffic on wildlife and human safety.

The public presented some new ideas that may help alleviate some of the impacts of the traffic and the road on the monument. These ideas have been explored and are included in the new alternatives presented in this *Supplement*.

Some agencies and organizations felt that the range of alternatives presented in the *Draft GMP/DCP/EIS* did not consider the full range of possibilities regarding: facility development, both within the monument and outside monument boundaries, the potential for partnerships and other involvement with neighbors, managing visitor use in sensitive areas, and dispersing visitation across other areas. As with changes to SR 85, these ideas have been explored in the new alternatives in the *Supplement*.

Other concerns raised involved the need to include more specific procedures to mitigate impacts on air, water, plants, animals, soil, and the land and people inside and outside the monument. In response, the Environmental Consequences section of this *Supplement* has been improved and contains additional information including a new impact topic titled socio-cultural impacts. Also, a draft biological assessment is being prepared in consultation with the U.S. Fish and Wildlife Service (FWS), to analyze the impacts of the New Proposed Action on threatened and endangered species and to address mitigation procedures. A copy of the draft biological assessment can be acquired by contacting the monument and will be included in the Final GMP/DCP/EIS.

There were also questions regarding the costs of development. A discussion has been added in the Implementation and Costs section in this *Supplement* in an attempt to better define what is included in conceptual cost estimates.

Finally, it was felt that the NPS should further consult with the Tohono O'odham Nation and the public during the planning process. Consequently, the NPS held the meetings with the Tohono O'odham Nation and with the public as described previously. The NPS intends to continue communications with the Tohono O'odham Nation at both formal and informal levels to begin work on the proposed agreement and discuss topics of concern.

A variety of other comments and concerns were raised. Some of these are discussed in the *Alternatives Considered but Rejected* section in this *Supplement*. The remaining comments will be addressed within the final document to be prepared after public review of the *Supplement*. The process for developing the final document is outlined below.

The Planning Process: What's Next? After the *Supplement* is released to the public, a minimum 60-day review and comment period will occur, and within that period, one public meeting and at least one meeting with the Tohono O'odham Nation will be held. Also, the NPS is consulting with the FWS and preparing a biological assessment to help meet federal responsibilities under Section 7 of the Endangered Species Act (1973). Substantive comments received during the comment period would be reviewed and resolved in the Final GMP/DCP/EIS. The Final GMP/DCP/EIS will consist of one document combining the *Draft GMP/DCP/EIS* with the *Supplement*, any changes resulting from the public comment period for the *Supplement*, and the biological assessment along with a letter confirming successful completion of the Section 7 process. This final document would be distributed to the public and other agencies. A Record of Decision, which is the final approval needed allowing the NPS to implement the plan, would not be signed for at least 30 days after the notice of availability of the final document appears in the Federal Register.

Once a plan of action is approved, when and how the actions and services described in the final plan would be implemented depends on the NPS programming and budgeting process as well as the NPS planning, design, and construction process. The rate of implementation is directly tied to congressional funding levels—e.g., modest funding over the life of the general management plan means modest growth. Once funding is secured, development of new facilities would take three or more years from design through construction.

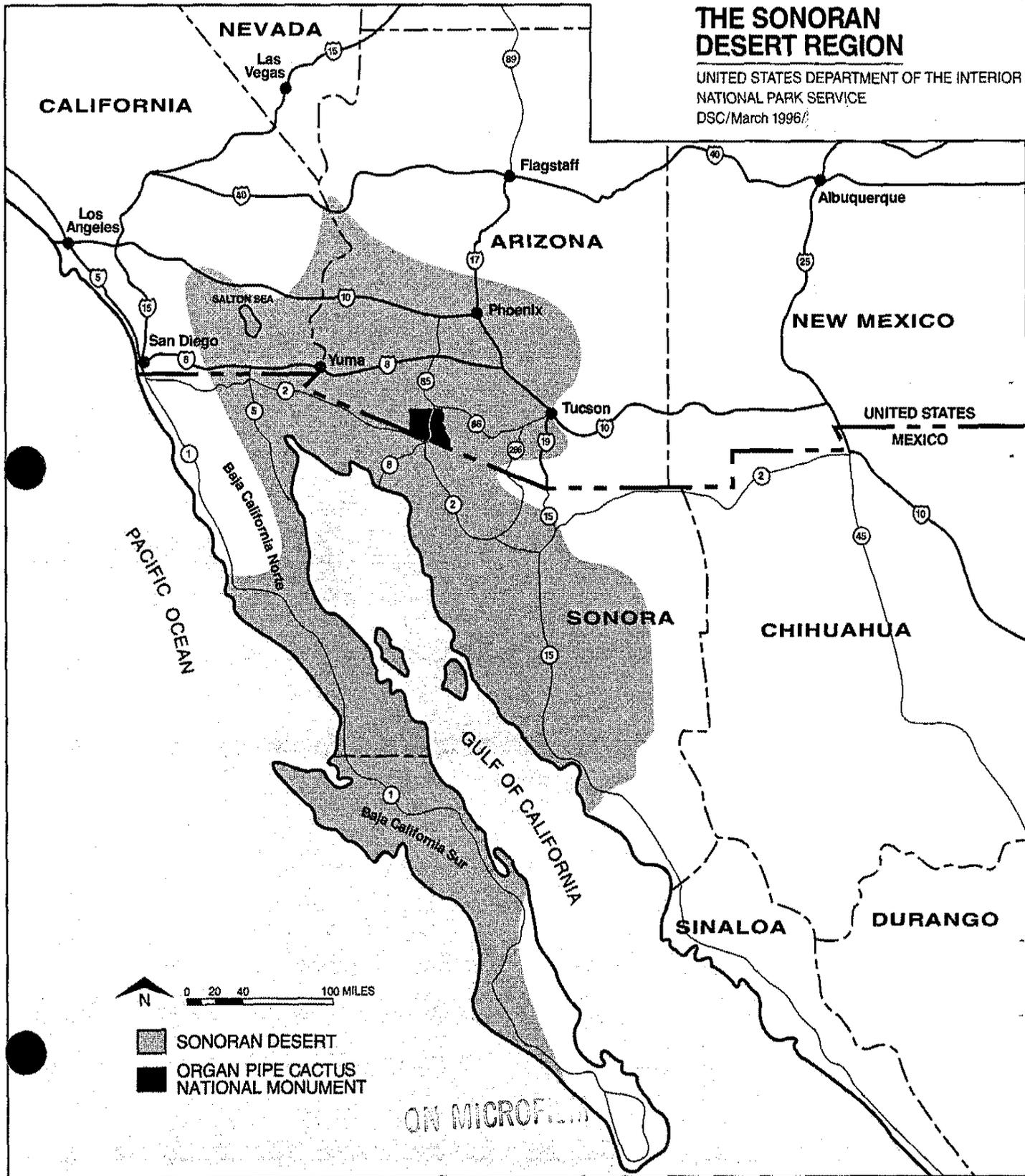


ORGAN PIPE CACTUS NATIONAL MONUMENT

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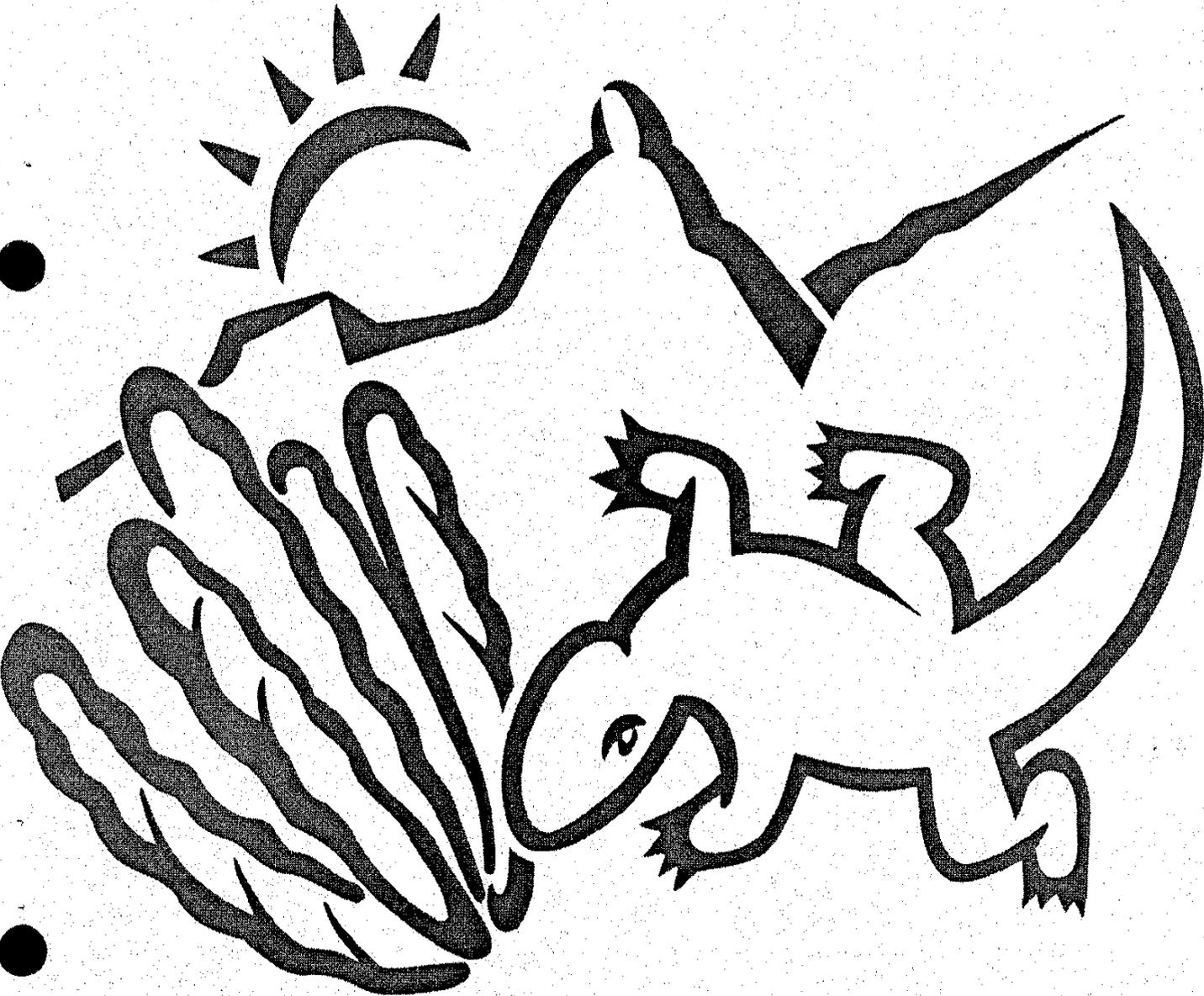
THE SONORAN DESERT REGION

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DSC/March 1996/



SUPPLEMENT TO

THE ALTERNATIVES



INTRODUCTION

Two additional alternatives have been added to the two originally presented in the *Draft GMP/DCP/EIS* and are described in this *Supplement*. The new alternatives are titled: *New Ideas Alternative* and *New Proposed Action Alternative*. As with the first two alternatives, the new alternatives fulfill the purpose and significance of the park, address issues raised, and achieve the desired futures statements all of which can be found in the *Draft GMP/DCP/EIS*, pages 9-13. These alternatives also help the NPS carry out the mandates of the 1916 Organic Act "to conserve the scenery and the natural and historic objects and wild life therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations."

To aid the reader, the organization of the alternatives is the same in both documents. Discussion of the two original alternatives—*Alternative 1: The Preferred Future* and *Alternative 2: A Continuation of Existing Conditions*—remain essentially as described in the *Draft GMP/DCP/EIS* except for two important changes presented in this *Supplement*. First, along SR 85, there are no tolls, fee collection stations, traffic re-routes, or reduction of the current speed limit proposed within the monument in any of the alternatives. This change is further discussed in the *Alternatives Considered but Rejected* section of this *Supplement*. Secondly, the original alternatives have been re-named to help the reader identify the new range of alternatives. A chart follows showing the names of the original alternatives, the names of the new range of alternatives, a general definition of the concept of each alternative, and in which document the descriptions of each alternative can be found.

Table 1. The New Range of Alternatives

Original Names of Alternatives	Names of the New Range of Alternatives	General Concept	Location of Alternative Descriptions
Alternative 2: Continuation of Existing Conditions	Existing Conditions / No Action Alternative	Constitutes the NPS no action alternative. This alternative is based primarily on continuing the existing course of action and is required to be analyzed by NEPA.	<i>Draft GMP/DCP/EIS</i> ; pages 47-59
Alternative 1: The Preferred Future	Former Preferred Future Alternative	No longer the proposed action, this alternative focuses on improving management capabilities to enhance visitor opportunities and resource preservation within the monument.	<i>Draft GMP/DCP/EIS</i> ; pages 17-46
	New Ideas Alternative	Using ideas from the public, the concept for this new alternative is to strengthen the monument's role as a Biosphere Reserve by adopting a more regional approach, enhance preservation of wilderness values by removing and relocating many facilities, and enhance resource protection by more strictly managing visitor use.	<i>Supplement</i> ; see <i>Alternatives</i> section
	New Proposed Action Alternative	This alternative constitutes the NPS proposed action. Combining features from the other alternatives, the resulting concept is to carry out principals of the MAB program by adopting a regional perspective to improve visitor services and conserve resources, and within the monument, improve management capabilities to enhance visitor opportunities and protect resources and wilderness values.	<i>Supplement</i> ; see <i>Alternatives</i> section

Alterations

Following this introduction are two discussions titled *Alternatives Considered but Rejected* and *Actions Common to All Alternatives*. The first section discusses those new actions proposed during the public comment period that the NPS has rejected from further consideration and would replace the similar discussion in the *Draft GMP/DCP/EIS*. The second section has been added to aid review of this *Supplement* by describing those actions that are common to all four alternatives.

English and Spanish versions of summary tables comparing the actions and consequences of all four alternatives can be found in the Summary section of this *Supplement*. This new summary, replaces the *Summary* found in the *Draft GMP/DCP/EIS*, pages v-xxii.

ALTERNATIVES CONSIDERED BUT REJECTED

The NPS analyzed all of the new ideas or alternatives that resulted from comments on the *Draft GMP/DCP/EIS*. Based on this analysis, some of the new ideas were incorporated into the new alternatives. A few ideas were rejected because they have been determined to be infeasible or beyond the scope of this project. These ideas are described below and the reason for the rejection of each is discussed.

The following discussion is intended to replace the similar section found on pages 17-18 in the *Draft GMP/DCP/EIS*. Some ideas originally rejected by the NPS, are now being considered in the new alternatives.

Re-route commercial thru-traffic outside of the monument. As stated in the public meeting held in Ajo on October 25, 1995, the NPS is not proposing in any of the alternatives to re-route traffic, establish a toll road, or construct a fee-collection station at the entrance within the monument along SR 85. As discussed on page 18 of the *Draft GMP/DCP/EIS*, the NPS considered searching for an alternative route and port of entry for commercial and other through-traffic as part of a planing effort to include all interested parties. And, if a solution could be found, the NPS was interested in moving the entrance station at Twin Peaks to the road at the monument's entrances. Since at this time, none of the nearby land owners or managers want the traffic or related economic and environmental impacts, these proposals have been dropped from consideration. In the new alternatives, the NPS presents a proposal to work with the State of Arizona Department of Transportation (ADOT) to ensure continued travel and commerce along this road corridor, while at the same time improving resource conservation measures and the visitor experience.

The Former Preferred Future Alternative in the *GMP/DCP/EIS* also proposed to work with the State to see if the speed limit could be reduced by 10 mph. This proposal was dropped from consideration at this time due to public concerns on the possible impact of this action on the economy, the lack of data showing whether a 10 mph reduction in speed limit would result in a significant reduction in wildlife mortality, and comments from ADOT stating they have no intention of reducing the speed limit along SR 85. However, the NPS would continue working with the State of Arizona Highway Patrol towards having the majority of vehicles travelling through the monument maintain the legal speed limit.

Expand the Tohono O'odham Nation to include the Monument. An idea to relinquish monument lands to the Tohono O'odham Nation was considered and rejected as being beyond the scope of this project. The Presidential Proclamation establishing Organ Pipe Cactus National Monument also directs the Secretary of the Interior, and consequently the NPS, to manage these lands in accordance with the 1916 Organic Act, as described above in the introduction to the new range of alternatives. Therefore, the NPS is not able to relinquish the inherent federal responsibilities and authority to manage these

lands unless directed otherwise by the President or Congress of the United States. In response to this idea, the NPS has included other measures in the two new alternatives to further strengthen relations with the Tohono O'odham Nation and to help insure protection and preservation of sacred or traditionally-used areas contained within the boundaries of the monument.

Monument Expansion. As described in the *Draft GMP/DCP/EIS*, page 17, a proposal emerged early in the planning process to expand the monument to include the Cabeza Prieta National Wildlife Refuge. The NPS decided that this idea was not necessary since the monument and refuge are both being managed for wilderness values. However, a proposal to develop an inter-agency wilderness management plan has been added to the following alternatives and would include BLM lands as well as the refuge. The intent of this proposal is to help protect resources, ecosystems, and wilderness values that are presently bisected along the straight line boundaries that separate these management areas.

Ask Mexico to move Highway 2 farther south of its existing location. Moving Highway 2 as a means to improve the wilderness experience, enhance resource protection, and increase safety at Quitobaquito is beyond the scope of this project and impractical to pursue. Instead, alternative solutions such as increasing patrols, using permits, and establishing guided tours are explored in the new alternatives. The NPS feels these strategies are more feasible for Quitobaquito especially since the highway is in Mexico, and outweigh the impacts of attempting to relocate the highway. They will work as solutions to other concerns at Quitobaquito as well.

Re-establish historic Tohono O'odham communities at Quitobaquito. This action does not appear to be viable for a variety of reasons: there is no electricity or potable water at the site, human habitation in the area would pose a significant adverse impact to threatened and endangered species and wildlife use of the area, and this type of development is clearly inconsistent with the Wilderness Act which applies to a majority of the Quitobaquito area. Increasing the interpretation of the historic use of this area is addressed in the new alternatives.

Divert Central Arizona Project water to Quitobaquito to help recharge the aquifer. Accelerated groundwater pumping for agriculture in the Sonoyta Valley has been identified as one of the greatest threats to the monument's water resources. NPS staff received a suggestion to resolve this threat by diverting water from the Central Arizona Project to recharge the aquifer. The NPS determined this to be impractical due to the significant costs and environmental impacts involved.

The General Management Plan should serve as a primary vehicle for the Threatened and Endangered Species Recovery Plan. A suggestion for the general management plan to also serve the role of a Threatened and Endangered Species Recovery Plan was rejected as being beyond the scope and intent of the General Management Plan. A General Management Plan is intended to direct future management, not serve as the vehicle for detailed implementation plans such as a recovery plan. The General Management Plan can, however, identify the need for development of such a recovery plan. A discussion of the proposed Threatened and Endangered Species program, including development of a species recovery plan, can be found in a following discussion under *Resources Management* in the *Actions Common to All Alternatives* section.

ACTIONS COMMON TO ALL ALTERNATIVES

The following actions are common to all four alternatives. Where applicable, the discussions replace those by the same title in the original two alternatives in the *Draft GMP/DCP/EIS*. All of the actions, including those common to all alternatives, are presented in comparison tables in the Summary section.

The common actions are described under the following topic headings: Natural and Cultural Resource Management, Visitor Use, Park Operations, and Wilderness Area Changes.

NATURAL AND CULTURAL RESOURCE MANAGEMENT: Natural and Cultural Resource Management Plan

As stated in both alternatives of the *Draft GMP/DCP/EIS*, the NPS uses Natural and Cultural Resources Management Plans—typically updated annually—to propose more detailed resource management strategies that would help achieve the basic goals presented in approved general management plans. Organ Pipe Cactus National Monument's Natural and Cultural Resource Management Plan (NCRMP) identifies management strategies, programs, projects, and priorities that help deal with the issues and ideas identified during development of this draft general management plan relating to:

- protection of threatened, endangered, and rare species and communities
- air and water quality management
- evaluation of visitor use impacts and limits
- monitoring of ecosystem health
- impacts and hazards of abandoned mine lands
- control of trespass livestock
- revegetation of impacted sites
- impacts from activities and land uses occurring outside monument boundaries

Consequently, the NCRMP would serve as the principal guide to management of the monument's resources in each of the four alternatives.

In the *Draft GMP/DCP/EIS*, only some of the proposed actions contained in the NCRMP—a lengthy and detailed document—were described. In response to public comments, the entire resources management program as presented in the NCRMP is summarized below. However, some additional actions have been proposed to supplement the program outlined in the NCRMP. Please refer to the *Resources Management* section of the alternatives for a discussion of any proposed additions.

The discussion is summarized by topic headings corresponding to those found in the NCRMP and include: program goals, vegetation management, wildlife management, natural resources inventorying and monitoring, water resources, threatened, endangered and sensitive species, air resources, archeology, historic resources, natural and cultural research management and planning, information/data management, integrated pest management, wildland fire, wilderness management, abandoned mine lands, aircraft management, Man and the Biosphere program, museum/archives/library, and other.

Program goals. The goals for resources management in the monument are to:

- develop a comprehensive and integrated natural and cultural resources management program that deals with the interactions among geological, hydrological, air, biological, historical and archeological components
- be pro-active in addressing the need for baseline data
- effectively deal with both internal and external threats and issues relating to ecosystems, biodiversity, ecological inventory and monitoring, threatened and endangered species management, vegetation and wildlife management, integrated pest management, air quality and degradation of cultural, natural, and wilderness resource values

Vegetation Management. The current emphasis of the monument's vegetation program on research, control of nonnative vegetation, and revegetation of disturbed areas would continue. Additional staff and funding is needed to continue carrying out these programs. A permanent staff coordinator would

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be established to ensure the programs are carried out including revegetation of disturbed sites, nonnative species control, sensitive species monitoring and general vegetation community research. A vegetation management plan would be prepared and incorporated into the NCRMP. The plan would address vegetation management issues and guide implementation of programs such as revegetation and plant community restoration in natural areas, landscaping in development areas, sensitive plant species management, nonnative plant species control, hazardous tree management, preserving plant species of historical significance, and outlining the role of interpretation in vegetation management programs. An assessment of the overall effectiveness of the monument's revegetation program is proposed to fully evaluate past revegetation projects, establish standard operation procedures for propagation and monitoring, and develop guidelines to direct future revegetation activities. In addition, an expanded program to monitor and mitigate the impacts of woodcutting would be developed and implemented.

Wildlife Management. A Wildlife Management Plan would be developed to guide wildlife management at the monument and a permanent coordinator position would be established to manage and implement the wildlife management program. Research, control of nonnative animals, and ecological inventorying and monitoring would continue and be expanded as described here and in following sections on threatened, endangered, and sensitive species, integrated pest management, and natural resource inventorying and monitoring. Programs would be established to evaluate the status of and develop a monitoring plan for bighorn sheep (*Ovis canadensis*), javelina (*Dicotyles tajacu*), mountain lion (*Felis concolor*), and mule deer (*Odocoileus hemionus*).

Natural Resources Inventorying and Monitoring. In response to legal mandates that require the NPS to protect and therefore be responsible for knowing the condition of the resources they are charged in managing, an international panel of scientists and managers met to plan the development of a program to both assess and monitor ecosystem conditions at the monument. As a result of the Ecological Monitoring Program (EMP) (previously referred to as the Sensitive Ecosystems Program), the monument has the framework for one of the most extensive and effective ecological research and inventorying and monitoring programs in the NPS. To date, progress has been made in such areas as land use trends and community patterns surrounding the monument, special status birds, mammals, and plants, ecology of invertebrates, amphibians and reptiles, alien plant threats, climatological monitoring, recovery of monument ecosystems since termination of cattle grazing, and vegetation structure and diversity in natural communities.

This program would continue as it provides a comprehensive and effective means for evaluating and managing natural resources. While most of the initial research phase is ending there is still a lack of basic data in some areas including soils, surficial geology, hydrology, and an update of the monument's flora. This data would be collected and the next steps in the program—integration and synthesis of research results—would be initiated. Some of the initial actions proposed to carry out this next step include:

- establishing a permanent coordinator and a science advisory committee to steer and guide the program
- mapping monitoring study sites and establishing monitoring protocols for various plants and animal species, microphytic crusts, climate, and land use trends
- preparing a natural resources monitoring handbook and video
- replacing and supplementing climate monitoring equipment
- developing and implementing a database management system to manage, analyze, interpret, and archive collected data
- publishing and distributing final natural resources inventory and assessment reports to identified universities, researchers, and other sources

Water Resources. Preservation of most natural and cultural resources is dependent on maintenance of relatively undisturbed surface, groundwater, and subsurface water resources. To combat threats to these resources, the current water resources program in the park would continue and be expanded. The current inventory of water resources provides little information about water quality or trends so a long-term monitoring program would be initiated to supplement the existing program. Both internal and external impacts on water resources in the monument are currently being studied and would continue.

Groundwater resources, surface water, land use, trends in water use, land subsidence, and characteristics of regional aquifers and the Rio Sonoyta watershed would be studied as they may have a direct impact on monument resources.

Significant progress has been made recently in researching the effects from outside agricultural land use on water resources in the park. Study plots would be established to help evaluate the effects of water drawdown from agricultural uses. The geo-hydrology of Quitobaquito Springs would be determined to help evaluate the impacts of groundwater depletion occurring in this area. A program would also be developed to collect data on the quantity and quality of ground and surface water entering the park along the northernmost boundaries.

Within monument boundaries, a water conservation plan would be developed and implemented to ensure the NPS uses water in the most efficient manner. The water-related resource attributes of the monument have not been fully assessed, so an inventory would be conducted by an interdisciplinary team. Results of this inventory would be used to provide a database from which to make informed management decisions and to protect water rights. A program is also proposed to control accelerated erosion that has been documented at Dos Lomitas and Armenta Ranches. The erosion deepens the arroyos which in turn causes road maintenance problems in these areas. Threats posed by abandoned mine tailings would be evaluated and any necessary remedial actions would be identified.

Threatened, Endangered, and Sensitive Species. An extensive threatened, endangered, and sensitive species plan specific to the monument would be developed to more effectively guide management, research, monitoring, and if needed, recovery of these species. In total, there are approximately 50 animal and plant species of special concern found with the monument. Research, monitoring, and management of all federally listed species would continue to be coordinated with the U.S. Fish and Wildlife Service (FWS) and the Arizona Game and Fish Department. The FWS currently is the lead agency responsible for the management and recovery of the Sonoran pronghorn in the area, including Organ Pipe Cactus National Monument. The NPS involvement in this program would continue and be expanded as needed.

Current monitoring programs would be expanded for the Quitobaquito desert pupfish (*Cyprinodon macularius eremus*), cactus ferruginous pygmy owl, lesser long-nosed bat (*Leptonycteris curasoae*), desert tortoise (*Gopherus agassizii*), organ pipe cactus (*Stenocereus thurberi*), acuna cactus (*Echinomastus erectocentrus* var. *acunensis*), senita cactus (*Lophocereus schottii*), and elephant trees (*Bursera microphylla*) to ensure protection, wise management, and recovery of these species. Since water is critical in determining flora and fauna distributions in desert ecosystems, a study on the biological-hydrologic relationships of the Rio Sonoyta area is needed and would aid in protecting the endangered pupfish and riparian vegetation communities.

A study would be developed to determine the extent of the poaching problem in the monument. Interviews with knowledgeable professionals in the area, including local courts, Pima County sheriff, Tohono O'odham Tribal Police, Arizona Department of Agriculture, monument staff, other federal agencies, and others would be conducted to help determine the extent of the problem and develop solutions. Methods for controlling and preventing poaching would be proposed and evaluated in the study and effective means would be implemented.

Air Resources. Air quality is related to visitor experience, the health of plants, wildlife and humans. Ensuring high air quality carries out several mandates under the Clean Air Act, the Wilderness Act, and the Biosphere Reserve status of the monument. To protect air resources in the park, the NPS would recommend to the Arizona Department of Environmental Quality that the park be reclassified from a class II to a class I airshed as identified in the Clean Air Act of 1977. Having a class I designation would offer the highest level of protection for the monument's air quality related values such as visibility. The potential for increased visibility impairment and air quality impacts are very likely given the growth in population and industry occurring adjacent to the monument, on both sides of the border. The redesignation process must be conducted by the state, have concurrence from the federal land managing agency—the NPS in this case—and include public hearings on the matter.

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Programs would be developed to monitor ambient air quality and visibility in the monument. Establishing this baseline data will document the extent and severity of trends, monitor changes, and provide a defense for reducing current or potential air pollutant impacts on resources and visitor experience.

Archeology. This topic section is much broader than the title indicates as it describes the proposed management program for all cultural resources—archeological, historic, and ethnographic. A cultural resource staff specialist position is needed to ensure an effective and comprehensive program of cultural resource inventory, management, protection, and interpretation is carried out within the monument. This person would also assist with the consultations with Native Americans which are of increasing importance in resource management.

The highest priority would continue to be developing an adequate inventory and database on the cultural resources in the monument. Towards this end, the following is proposed:

- an archeological sampling survey, assessment, and survey report with a focus on high-use areas and eroded features, and including curation and special studies of artifacts collected during the surveys
- a cultural history and a study to locate, identify, and record cultural resources in the Quitobaquito area
- a GIS (geographic information systems) model to predict the locations of archeological sites
- archival research related to previous surveys and research, analysis of artifacts collected during previous surveys, and reanalysis of collections in light of current data
- an overview, assessment, inventory, and oral histories on ethnographic resources, ethnobiology, ethnobotany, ethnoarcheology, and the history of use and development of the monument
- a long-term program to record rock art with assistance from the American Rock Art Recording Association
- an overview and synthesis of the archeological and historic resources of the monument
- an integrated data base and map of cultural and natural resources, including large, dispersed sites

Based on findings from the various surveys, nominations for listing on the National Register of Historic Places would be prepared for archeological sites and districts potentially eligible for listing. A protection program would be instituted and would include the use of volunteers to establish a site steward program through the Arizona State Historic Preservation Office. A site preservation guide would also be prepared. Important and irreplaceable prehistoric sites are subject to damage from natural processes, pests, and vandalism and theft. Interpretation, training, and awareness of archeological and ethnographic resources for the public and for park staff would be expanded and would become an integral part of monument operations.

Historic Resources. Evaluation of historic properties and sites for eligibility of listing on the National Register of Historic Places would continue. In addition, the treatment and use plan presented in the final approved general management plan would be used to develop a more detailed preservation plan, guidelines for general housekeeping, integrated pest management, and annual and cyclic maintenance, and monitoring protocols of historic structures and sites.

Natural and Cultural Resources and Research Management and Planning. The division of natural and cultural resources management would be broadened and expanded to address the full range of resource issues facing the monument. Components of the program would include all topics addressed in the NCRMP and summarized here. The research program would be expanded and would include an interpretive function involving traditional visitor programs and outreach efforts.

Information/Data Management. As the body of research has continued to grow, so has the need for a system of analyzing and synthesizing resulting information to keep it useable both now and in the future. Current efforts would be expanded toward developing and managing a resource information program. The program would integrate and implement a geographic information system (GIS), airborne video monitoring, automated quad indexing, global positioning system data, and a computerized bibliographic system. An administrative history would also be prepared to document the

development and status of resources management and research programs within the monument.

Integrated Pest Management. An integrated pest management plan (IPM) would be developed to provide a comprehensive and unified approach to addressing related issues and managing pest species using IPM techniques. The monument would continue efforts to monitor and control Africanized honey bees. In addition, a monitoring and control program would be established to analyze impacts generated by trespassing livestock.

Wildland Fire. Information about fire history and ecology is lacking to truly comprehend the role of fire in the desert ecosystem. A fire history would be prepared to direct future management activities in the monument. Additionally, a comprehensive fire management program and plan would be developed to manage wildfires and prescribed fires.

Wilderness Management. A wilderness management plan would be prepared to promote and protect wilderness values and experiences, and to guide research, search and rescue, maintenance, and other management projects and activities that occur within designated wilderness. Development of this plan would include conducting a study on visitor distribution, use, and related impacts. Results would be used to establish use capacities, as required by law, that work to protect resources and provide quality wilderness experiences. Cave and trail management plans would also be developed as very little has been done to document the extent of either of these elements in the Organ Pipe Cactus Wilderness.

Abandoned Mine Lands. A study of wildlife use of abandoned mines would be conducted to determine the impacts on or value to wildlife. Due to the potential hazard to visitors and wildlife, the yearly monitoring and maintenance program of the safety features established for all of the 92 hazardous mines and wells within the monument, would continue. The safety program would be improved in two ways. First, some mine and well sites would be closed to use, documented, and the area restored. Not all mine and well sites in the monument would be closed since some of them comprise significant cultural or natural resources. Where possible, closing sites would reduce the work and therefore costs of annually inspecting and repairing the safety features at each site. Secondly, an education program would be developed to make the hazard of abandoned mines and wells known to visitors and staff.

Aircraft Overflight Management. The existing draft aircraft monitoring and management program would be implemented. The program involves monitoring overflights, assessing the impacts of overflights on monument resources and the visitor experience, and working with the military to reduce these impacts.

Man and the Biosphere Program. The NPS would continue work to implement the Man and the Biosphere Program (MAB). The program is regional in focus and cooperative in nature involving the Sonoran Desert, the monument, MAB program specialists, and others throughout the region. The final approved general management plan will serve as the MAB plan for the monument. Work to be carried out includes fully defining the geographic area of the Sonoran Desert Biosphere Region, identifying resource issues of regional concern, and developing a consultative framework to promote discussion and cooperation among groups and individuals.

Museum/Library/Archives. A curatorial position would be established to manage the monument's existing library and museum. Currently, this work is performed by a biologist. Hiring a specialist in this area would allow the monument to standardize management of the library and museum and make more efficient use of the biologist. The curator would also oversee three projects including: development of a collections management plan, which is needed to guide the preservation and protection of museum specimens, completion, systematization, and maintenance of a historic photograph collection, and maintenance of the automated national catalog system.

Other. Three other resource projects do not fit in the previous topics and subsequently, are described here. User capacities and maintenance standards for non-wilderness areas, including the scenic loop drives, would be developed to ensure resource protection and quality visitor experiences. As visitation continues to increase, so do impacts from poaching, vandalism, and other illegal activities, and

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intensive maintenance needed to keep the roads passable. The standards will help manage and control these impacts.

A borrow material and spoil area plan would be developed as required by Special Directive 91-6. The plan would establish legitimate sources for borrow extraction and spoil disposal to ensure natural and cultural resources are protected at all locations prior to implementing borrow extraction or spoil deposition.

An integrated and comprehensive management plan for the Quitobaquito Resource Management Area would be developed based on the final approved general management plan. This plan would serve to integrate the variety of natural and cultural resource management activities, and to provide in-depth information on the status of rare species and cultural resources in this area.

Native American Consultations

As in the *Former Preferred Future Alternative*, an agreement between the NPS and the Tohono O'odham Nation would be developed that would serve to strengthen the ongoing effort of consultation and coordination between them, and to more directly involve the Tohono O'odham on various matters. However, two changes have been made. First, the idea was not presented as part of the *Existing Conditions Alternative*. Since the Tohono O'odham Nation expressed their interest in and importance of an agreement regardless of the course of action taken by the NPS, the agreement is proposed under all the alternatives, including the *Existing Conditions Alternative*. Secondly, in the *Former Preferred Future Alternative*, the NPS proposed the written agreement in the form of a memorandum of understanding. The form of the agreement is changed based on comments by the Tohono O'odham Nation. The NPS is willing to help prepare and enter into the most appropriate type of interagency agreement that would be worked out and would be acceptable to both parties.

The agreement could cover a variety of topics, or both parties may agree to develop several agreements. Some issues that may be discussed include:

- establishment of institutionalized mechanisms for regular consultation
- incorporation of Tohono O'odham and Hia-Ced individuals into park programs
- identification and study of sacred sites and traditional-use areas on NPS lands for better protection and visitor avoidance
- sharing of O'odham traditional, indigenous knowledge for NPS use in managing natural and cultural resources
- establishment of procedures for sharing of NPS findings from scientific research projects
- appropriate means of interpreting Tohono O'odham history, culture, and language to visitors
- creation of an avenue of input from the Tohono O'odham Nation on trail or other facility locations

VISITOR USE:

Interpretative Objectives and Themes

An Interpretive Prospectus was prepared partly in response to the need for a fresh look at the messages being delivered to the park visitors and partly in response to this planning effort which began in 1988. The interpretive objectives and interpretive themes identified in the Interpretive Prospectus and presented on pages 27-29 of the *Draft GMP/DCP/EIS*, are common to all alternatives. The reason that they are common to all is that the new objective and themes presented in the Interpretive Prospectus were broadened to address the monument's special designations as Wilderness and as a Biosphere Reserve. The monument needs to interpret not only the character and importance of its resources and resources management programs, but also its wilderness values, diverse cultural heritage, and role in an international network of protected samples of the world's major ecosystem types.

Area Transportation Network

State Route 85. As described in the *Alternatives Considered but Rejected* section, in all the alternatives, no tolls, entrance stations, traffic re-routes, or reduction to the existing speed limit are proposed. In the *Former Preferred Future Alternative*, the NPS proposed some of these items such as reducing the speed limit from 55 to 45 miles per hour, looking for an alternative port-of-entry as part of a planning effort to determine if some of the traffic could be re-routed elsewhere, and establishing an entrance station at monument boundaries. These ideas were dropped from consideration since at this time, none of the nearby land owners or managers want the traffic or related economic and environmental impacts, the lack of data showing whether a 10 mph reduction in speed limit would result in a significant reduction in wildlife mortality, comments from ADOT stating they have no intention of reducing the speed limit along SR 85, due to public concerns on the possible impact of these actions on the economy. The NPS was only interested in entrance stations at the monument's boundaries if a solution to re-route some of the traffic could be found.

Instead, the NPS proposes actions in each of the new alternatives that work to ensure continued travel and commerce while improving conservation measures to protect resources and enhance the visitor experience along the segment of SR 85 within the monument.

PARK OPERATIONS: Cooperative Management and Planning in the Region

As described on page 34 of the *Draft GMP/DCP/EIS*, the NPS would continue efforts to expand dialogues and recognition of the Sonoran Desert Biosphere Region including further implementation of the Man and the Biosphere Program and continued participation in the International Sonoran Desert Alliance (ISDA). The monument would also increase communication efforts to further strengthen its working relationship with other federal, state, and local agencies and groups, the general public, the Tohono O'odham Nation, and Mexico.

Recently, there have been discussions in the region about establishing a larger, international Biosphere Reserve that might include Organ Pipe Cactus National Monument, other federal lands in the area, and the Biosphere Reserves in Mexico. The NPS would support this idea and work with others to determine its feasibility and possible implementation.

WILDERNESS AREA CHANGES: Wilderness Additions

As in the Existing Conditions and *Former Preferred Future Alternatives*, the two areas totalling 1,280 acres are currently held in State trust and would be proposed for wilderness designation in all alternatives. One parcel lies near Bates Well, the other near Dos Lomitas and both are depicted on all maps showing alternatives. These areas are already designated as "potential wilderness" in the wilderness legislation.

In some of the alternatives, other areas are also proposed for wilderness designation as described under the *Wilderness Additions* section of those alternatives.

THE NEW IDEAS ALTERNATIVE

This new alternative was formulated using ideas generated by the public for management actions resulting from review of the *Draft GMP/DCP/EIS*, and is therefore titled the *New Ideas Alternative*. The planning team listed each new action that was suggested, prepared analysis to determine those the NPS deemed reasonable (refer to the *Alternatives Considered But Rejected* section of the *Supplement*, for ideas that were rejected), and then further developed these ideas into this new alternative.

The concept of this new alternative is to carry out the principles of the Man and the Biosphere program while ensuring the legislative mandates and purpose of the monument are fulfilled. The NPS proposes to accomplish this by:

- working with ADOT to ensure continued travel and commerce along the portion of SR 85 within the monument, while enhancing resource protection by exploring mitigation strategies, such as installing bridges and pullouts, to reduce wildlife mortality and improve the visitor experience
- reducing the amount of existing facilities inside the monument by concentrating facilities at or outside monument boundaries in the Ajo, Lukeville, and Why areas
- re-aligning the trail network in the Quitobaquito Springs area
- more strictly managing visitor use, such as using permits to manage visitors at Quitobaquito Springs and Alamo Canyon Wash
- establishing partnerships with other agencies, public, or private interests, to share facilities, staff, and costs

A description and map of the *New Ideas Alternative* follows at the end of the discussion of this alternative.

LAND USE AND MANAGEMENT

The 1978 General Authorities Act, Public Law 95-625, requires the identification and management commitment to establish visitor carrying capacities on all lands of the NPS. Carrying capacity refers to the type and level of visitor use an area can accommodate while sustaining desired resource and social conditions that are based on the monument's purpose and significance.

In this alternative, changes are proposed for some of the monument's current visitor use capacities in both the wilderness and non-wilderness areas of the monument and are described by zone in the following Management Zone section. The existing capacities primarily focus on overnight use and are presented in Appendix of this *Supplement*. All of the carrying capacities are based on available data on resource and social conditions in the monument, and therefore, tend to be general. In the future, a wilderness management plan would be prepared to refine the existing system by establishing both day and night visitor-use capacities for wilderness areas. The proposed plan would also propose additional management actions for areas that exceed recommended capacity and need to be brought into standard.

Management Zones

Management zones for this alternative are similar to those described in the *Former Preferred Future Alternative* of the *Draft GMP/DCP/EIS*, pages 19-22. However, several modifications have been made to the document including the addition of a new Non-Wilderness subzone titled *State Route 85 Corridor*, added discussion for several zones to help clarify the management intent, and a change in visitor use and size of the Quitobaquito Management Area. Also, the total acreage in some of the zones changes in response to actions proposed in this alternative. The modified management zones are described below and illustrated by the *New Ideas Alternative* map located at the end of the discussion of this alternative.

Wilderness Zone - The management emphasis in this zone would ensure consistency with the legislative mandate of the Wilderness Act. All lands in this zone would remain undeveloped, retaining the primeval character and influence for which they were designated. As stated in the legislation:

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- lands would be preserved in their natural conditions affected primarily by the forces of nature
- outstanding opportunities for solitude and primitive unconfined recreation would be provided
- ecological, geological, and cultural features of scientific, educational, scenic, or historic value would be preserved

Only those facilities that are the minimum necessary for the health and safety of wilderness travelers or for the protection of wilderness resources would be provided. Approximately 312,600 acres—about 95% of the monument—are currently designated wilderness.

The following two subzones were created to focus on unique situations that occur within the wilderness zone. Other subzones may be added as part of the proposed wilderness management plan that is called for in the Natural and Cultural Resources Management Plan.

Potential Wilderness Subzone – Lands designated potential wilderness lands would be managed in a manner consistent with the wilderness zone even though, at this time, these lands contain elements inconsistent with wilderness values. Several actions proposed by this plan would add approximately 2372 acres to lands eligible for designation. This figure includes the 1240 acres that are currently designated as potential wilderness additions and described previously in the *Actions Common To All Alternatives* section. The rest of the lands are described under the *Name, Boundaries, and Wilderness Area Changes* section of this alternative.

Quitobaquito Management Area Subzone – Management emphasis for this area would involve:

- maintaining the ecosystem and preserving the critical habitat for the endangered desert pupfish using only those manipulations essential to the continued health and functioning of the system
- preserving the cultural resources
- providing for safe public access and enjoyment of cultural and natural values within the context of the above items
- complying with federal laws

Several actions are proposed in this alternative work toward achieving these goals. The NPS would request that the Tohono O'odham Nation participate in further development and execution of goals and objectives for this area. The exact nature of this participation could be developed as part of the written agreement sought between the Tohono O'odham Nation and the NPS.

The boundaries of the Quitobaquito Management Area would be expanded to include more of the ecosystem, enhancing protection of the sensitive and significant resources. As a preliminary estimate, the boundaries would be extended to include approximately 2400 acres to incorporate the extent of the Quitobaquito Springs watershed that occurs in the United States. Most of this area is currently designated wilderness or potential wilderness and is accounted for in each zone listed above. In the future, this boundary could be amended as the result of discussions with the Tohono O'odham Nation regarding cultural considerations.

To further enhance resource protection, visitor use of the area would be controlled at all times; during the day, visitors would need a permit or would need to participate on a guided tour of the area, and overnight use of the area would continue to be prohibited, as it is now. Initially, the limit of day-users would be based on management's ability to offer guided tours and enforce the permit system. The NPS would attempt to use volunteers to help provide sufficient service. In the future, the wilderness management plan would establish standards for this area which could increase or reduce the initial limits.

Non-Wilderness Zone – The management emphasis of non-wilderness lands was determined in the plan leading to the establishment of the Organ Pipe Cactus Wilderness in 1978. Management emphasis for these lands would be to provide for the major roads as well as existing and future parking areas, pullouts, public-use structures, management structures, and other areas needed for various non-wilderness uses involving concentrations of people. Lands in this zone totals approximately 15,718 acres and would be managed under the following subzones.

State Route 85 Corridor Subzone – Approximately 22 miles of SR 85 lie within the monument. ADOT maintains the road under a perpetual easement that applies to an area extending 33 feet from each side of the road centerline. As required by NPS Management Policies, this area has been zoned as part of this alternative since it occurs within the legislated boundaries of the monument. The *State Route 85 Corridor Subzone* section was added to this alternative to recognize the distinction of this road from other roads that are managed and maintained solely by the NPS. This sub-zone applies to all non-wilderness lands along SR 85, including the road, for a total of approximately 1600 acres.

Under the mandates in the mission of the National Park Service and the Wilderness Act, the NPS must work to protect resources and wilderness values, and provide for the enjoyment of present and future generations within the monument. Therefore, the NPS would maintain the area outside the easement in a natural and essentially unmodified condition to help preserve adjacent wilderness values. Since the road corridor and related traffic affect the resources and visitor experience in the monument, the NPS proposes to work with ADOT to ensure continued travel and commerce within the easement while improving resource protection, reducing the impact of the traffic on wildlife, increasing safety for humans, minimizing fire hazards, and improving the visitor's experience of the monument while travelling along the road corridor. The NPS would seek to develop an agreement or partnership with ADOT and possibly others, such as the National Biological Service personnel at the University of Arizona, involved in the management or interested in the future of this road. Together, this group would help develop a program to:

- research the extent of traffic impacts on wildlife, vegetation, cultural resources, human safety, and the visitor experience, and research possible solutions to the impacts
- explore and implement measures and technologies that ultimately would reduce impacts on monument resources while accommodating traffic; research findings would be used to help determine viable and effective measures which could be innovative or involve traditional practices such as constructing bridges over major washes, installing culverts, and establishing programs involving vegetation clearing
- establish an education and information program to gain public support and attract researchers, scientists, and planners from a variety of disciplines to study, develop, and apply effective measures

Results from this program could ultimately help the NPS protect some resources while improving conditions for travellers on the road. More far-reaching effects could also occur as resulting information and innovations are applied in the Sonoran Desert region and elsewhere.

Travel Corridor Subzone – These lands would be managed primarily as travel corridors providing visitor and management access—both physical and scenic—to the designated wilderness. These corridors include 150 feet or more on each side of the road centerline for a total of approximately 12,324 acres of non-wilderness land along Ajo Mountain Drive (Rt. 011), Puerto Blanco Drive (Rt. 012), Senita Basin Rd. (Rt. 202), Bates Well Rd. (Rt. 405), North Patrol Rd. (Rt. 406), El Camino de Dos Republicas (Rt. 201), and several administrative access roads such as those along the international boundary. The total of this subzone is lower than in the *Former Preferred Future Alternative* because several roads are proposed to be removed or converted into trails in this alternative.

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Although these travel corridors are in non-wilderness, the noise and dust of vehicles on these roads can impact the visitor experience on adjoining lands in the Wilderness Zone, and the high concentration of plants that align these roads can lead to a high fire hazard. As described in the previous *Resources Management* portion of the *Actions Common to All Alternatives* section, the impact of these roads on desert vegetation would be studied and recommendations proposed for road alignment, maintenance, and carrying capacity.

Development Area Subzone – Management emphasis for this area would focus on the facilities needed by visitors and management. This zone applies to non-wilderness areas where concentrations of facilities or use substantially alters the natural environment and includes federal and privately owned lands. In this alternative, the acreage of this zone is lower than in the *Former Preferred Future Alternative* totalling approximately 1794 acres concentrated around Lukeville and in one small area within Twin Peaks. Of this total, approximately 73 acres are privately owned in the Lukeville area, approximately eight acres are part of the U.S. Customs and Immigration Reserve, and the remainder are managed by the NPS.

Cultural Resources Overlay Zone – Lands in this overlay zone would be managed to emphasize the preservation, protection, and interpretation of archeological, ethnographic, and historic resources and their settings. All of these resources occur in other zones and would be managed consistently with both zone definitions. For example, where these resources occur in wilderness, they would be managed in a manner consistent with the Wilderness Act. Resources in this zone include the eight properties currently listed in the National Register of Historic Places, one property formally determined eligible for listing, and other culturally significant resources that would receive general visitation. The total acres of lands in this zone are reflected in the Wilderness and Non-Wilderness Zone totals.

It is important to note that this zone does not include all significant cultural resources in the monument. Sensitive sites or features that cannot withstand use would not be included in the zone and consequently, are not shown on the map of this alternative; these important resources would still be protected under federal law and NPS management policies.

This zone may include some traditional-use sites of the Hia-Ced O'odham and Tohono O'odham. Consultation with the Tohono O'odham Nation would occur regarding the significance and treatment of these areas, possible evaluation and nomination to the National Register of Historic Places, and, if appropriate, strategies for accommodating visitors.

NATURAL AND CULTURAL RESOURCE MANAGEMENT AND ASSOCIATED FACILITIES

This alternative proposes the following actions related to natural and cultural resources management in addition to those described in the *Actions Common To All Alternatives* section in this *Supplement*.

Resources Management Facilities

As in the *Former Preferred Future Alternative*, a new facility is proposed to satisfy the specific requirements and functions of the Resources Management Division and its expanding research and resources management program. However, in this alternative, the facility is smaller, would be located in the Lukeville area, would not include a greenhouse and nursery, and would have a slightly different name. A description of the new facility follows.

A new science, education, and resources management center (SERMC) would be built and would serve to:

- concentrate natural and cultural resources management and staff together with some of the interpretation staff at one new location in the Lukeville area
- provide a forum and working space for the science, education, and research community associated with both the natural and cultural components of the Sonoran Desert ecosystem and the monument's resources management activities that work to preserve them

- provide educational programs related to the monument's resources and resources management program (accordingly, education was added to the name of the facility)

The NPS feels that it is essential for this facility to be located near the resources being studied, managed, and preserved. Since in this alternative most facilities would be removed from the Twin Peaks area, the proposed location is at the southern entrance to the monument in the Lukeville area, within the non-wilderness zone. This location was selected in part due to its proximity to the resource and utilities.

Today, the monument does not have adequate space for employees or the work they perform. With the exception of the division chief, all resource management personnel currently share office space in two small, former residences in the Twin Peaks employee housing complex. Because these structures were originally built for another purpose and had to be creatively adapted for their new role, they do not meet the division's essential needs for office, meeting, storage, and laboratory space. Under this alternative, the houses that now provide resource management work space would be demolished and the area restored to natural conditions.

Because of the nature and location of this facility, the NPS would be willing to enter into a partnership with other agencies or private interests to construct this facility. If a partnership can be established, the size of this facility may need to be increased to satisfy the partner's needs. As an initial estimate, the SERMC would need to be approximately 5,000 s.f. in size to accommodate the following functions:

- offices for natural and cultural resource management and interpretation staff
- a large conference room
- various labs
- rest rooms and a shower
- kitchen and eating area
- museum storage and archival space
- a library
- various work rooms, including a dark room
- space for circulation, janitorial and mechanical/electrical equipment

The conceptual location and layout of these facilities are shown in the *Lukeville Area Development Concept Plan* (DCP) presented later in this alternative.

Wilderness Management

As described in the *Actions Common to All Alternatives* section, the NPS intends to prepare a wilderness management plan for the Organ Pipe Cactus Wilderness. To be more regional, cooperative, and cost-effective, this planning effort would be prepared as an inter-agency plan that addresses the full extent of designated wilderness and adjacent backcountry in the area. This effort would help protect wilderness resources and ecosystems especially since the existing straight line boundaries of these areas cross hydrographic features, wildlife corridors, and other systems. The NPS would seek to participate or initiate this planning effort and would include other agencies of the Department of Interior, especially the U.S. Fish and Wildlife Service who are the managers of the adjoining Cabeza Prieta National Wildlife Refuge, and the Bureau of Land Management who are the managers of land immediately north of the monument. As federal resources become increasingly limited, discussions among these agencies about the possibility of developing joint plans, and possibly sharing staff or space, have started to occur. Others that may also be involved as direct participants or contributors to the plan would include the Bureau of Indian Affairs, the Tohono O'odham Nation, the International Sonoran Desert Alliance, the U.S. Air Force, and managers of the Biosphere Reserves in Mexico.

Cultural Resources

In addition to actions described previously in *Actions Common To All Alternatives*, this alternative proposes changes in the visitor use of Dos Lomitas Ranch and Quitobaquito Springs. The following table has been prepared listing only the new proposed use for Dos Lomitas Ranch and Quitobaquito

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Springs—Dos Lomitas Ranch is listed and Quitobaquito Springs is eligible for listing on the National Register of Historic Places. Uses of all other National Register properties—both listed and eligible for listing—remain the same as proposed in the *Former Preferred Future Alternative* in the *Draft GMP/DCP/EIS*, and consequently, are not included in the following table. The preservation treatment for all properties remains as described in the *Former Preferred Future Alternative*, page 25 of the *Draft GMP/DCP/EIS*. Consequently, preservation treatments are not shown in the following table.

Table 2. New Ideas Alternative: Cultural Resource Treatments for Significant Properties

<i>Properties</i>	<i>Proposed Use</i>
National Register Properties (listed and eligible for listing)	
Dos Lomitas Ranch	Interpretive programs would be held at this site to replace the former function of the Twin Peaks amphitheater; improvements would include a campfire area with benches for presenting the programs, and signs at this site and along the dirt entrance road for interpretation and education about protecting resources.
Quitobaquito Springs	Use by permit or tour only; interpretive site on newly designed trail system; signs for interpretation and education about protecting resources.

In addition to the treatments prescribed, protection of all cultural resources would be enhanced through a variety of techniques. Where possible, increased patrols and the use of various innovative security technologies would be employed. In addition to Quitobaquito Springs, permits or interpretive guides would be used at Alamo Canyon Wash. When the Twin Peaks amphitheater is removed, outdoor talks would be held in the Dos Lomitas Ranch area due to its proximity to the privately-owned campground and lodging in the Lukeville area. Visitor use would increase during the day and night at this area which could help increase protection of the resources; people would be present for longer periods reducing opportunities for vandals.

As described previously under the *Resources Management* portion of the *Actions Common to All Alternatives* section, the monument would also seek to establish an active unit of the Arizona Site Steward Program. This state-operated program encourages citizens to acquire the necessary training and then volunteer to inspect, evaluate, and monitor significant cultural resources on a regular basis. Establishing this program in the monument would increase protection of historic properties, such as Bates-Well Ranch, and to other places with a concentration of cultural resources, increase baseline data available on these resources and places, and could increase preservation efforts and treatments.

Visual Resources

Underground Powerlines. In keeping with the concept of this alternative, the following actions are proposed to enhance preservation of wilderness values:

- all of the powerlines would be removed from the Twin Peaks area once the facilities are removed
- approximately 22 miles of existing above-ground powerlines located west of SR 85 would eventually be relocated to and buried within disturbed areas in the Non-Wilderness Zone, State Route 85 Corridor Subzone.
- the existing service road that runs along the length of the powerline would be removed and approximately 206 acres of lands restored to natural conditions

While this proposal is the same as in the *Former Preferred Future Alternative*, the following strategy has been added to help off-set the costs of these actions, especially relocating and burying the line lying west of SR 85. The NPS would seek and pursue opportunities to implement these actions only as they can be achieved in a cost-effective manner and to minimize costs, if any, to tax and rate payers.

The Arizona Public Service company (APS) maintains the powerlines under a Special Use Permit with the NPS. According to conversations with the APS, burying lines can lead to reduced maintenance costs and these savings can be passed on to consumers. Due to recent improvements to conduit, underground power lines generally require less maintenance than above ground power-lines which are susceptible to wind, lightning, wildlife, and other damage. Currently, the above-ground lines located west of SR 85 are difficult to reach, increasing maintenance efforts and costs. Relocating the line alongside SR 85 would make it faster and easier to access.

Also, the APS expressed an interest in working with the NPS to further off-set costs of the project by using volunteer labor, donations, or other means. At present, the APS is beginning to explore an idea that would allow some communities in Mexico to purchase power from APS. To accomplish this, they would need to increase the voltage size of the powerline and are considering various locations for this new line. A mutually agreed upon location may serve the interests of the NPS and APS, limiting costs to consumers. Depending on the location of this new line, further environmental analysis would need to be conducted in accordance with NEPA.

Sustainable Design Guidelines. The following guideline would be added to the seven sustainable design guidelines described on page 26 in the *Draft GMP/DCP/EIS*. The intent of the new guideline—number 8 below—is to ensure preservation of the cultural influence on design and maintenance practices in the region.

8. To the extent practicable, utilize current or past cultural practices and design elements in the development and maintenance of new facilities or maintenance practices. This would help the NPS ensure that historical, regionally used practices and design elements of Sonoran Desert cultures are reflected in future development and maintenance activities.

VISITOR USE AND ASSOCIATED FACILITIES

Interpretative Facilities

Several new facilities and programs are proposed in order to meet the interpretation objectives and present the themes and stories identified as important to understanding the monument's purpose and significance. The objectives and themes remain as described in the *Draft GMP/DCP/EIS*, pages 27-29. The basis for the proposed facilities is on the visitor needs and use patterns identified by the 1989 Visitor Survey. The proposed facility and program developments are discussed below and include a information, orientation, and interpretive center, primitive camping, new wayside exhibits, including two that serve as gateways of information to the monument experience, and some roads and trails. In addition, several existing facilities and programs have been eliminated to protect sensitive resources, reduce staffing and maintenance costs, or enhance the wilderness experience of this area. As described below, they include camping areas, the campground amphitheater, roads, and trails.

In keeping with the concept of this alternative, most of the major visitor facilities would be removed from the Twin Peaks area and would be relocated to one of the gateways, near the north or south entrances to the monument. This concept is further illustrated in the *Development Concept Section* of this alternative.

Multi-Agency Information, Orientation, and Interpretive Center. Consistent with the concept of this alternative, the existing visitor center would be removed from the Twin Peaks area. Yet, the need for a visitor center remains. The 1989 Visitor Survey indicates that 95% of monument visitors use the existing center, and over 70% of monument visitors are over 60 years in age. Also, the NPS expects that the need for visitor-oriented facilities will increase with the increase in visitation. At present, the monument experiences an average visitor increase of 7% annually.

To accommodate these needs, the NPS would seek partnerships with other federal agencies to establish a new facility in the Why area that would serve two purposes: provide information on and orientation to recreational opportunities in the Sonoran Desert region, and to interpret resources within the monument. The location of Why was proposed because of its proximity to the various federal lands

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and because of the amount of visitors and travelers passing through this junction. Within this facility, visitors might find information and enjoy exhibits that tell important stories of the area with a focus on area resources and federal efforts to preserve and protect these resources. Possible partners would include other Department of the Interior agencies including the Bureau of Land Management (BLM), U.S. Fish and Wildlife Service, and the Bureau of Indian Affairs, although ultimately others may also be involved. The resulting partnerships could help reduce federal costs, avoid a duplication of services, and serve many visitors to the area.

The size of the facility would be determined based on the needs of each partner. As an initial estimate, approximately 5,000 s.f. would serve inter-agency functions which might include:

- lobby with information desk and orientation media
- sales area for publications and related material
- interpretive exhibit area
- small, multi-use theater
- public and employee rest rooms
- employee offices, work space, and break area
- storage space for sale items, janitorial supplies
- space for circulation and mechanical/electrical equipment

The location of the facility would also be determined among the partners. At this time, some land is available for purchase in the Why area, however, congressional legislation would be required if the NPS would seek to purchase lands outside the monument boundaries. A second option would be to work with the BLM to build this facility on federally owned lands. The U.S. Border Patrol currently leases land from the BLM for a facility in the Why area and a similar arrangement may be possible for the information, orientation, and interpretive center.

Tri-Cultural, Tri-National Center. The International Sonoran Desert Alliance is currently promoting development of a tri-national, tri-cultural center in the Sonoran Desert region. The U.S., Tohono O'odham Nation, and Mexico would all be involved in this facility. At this time, the ultimate size, function, or location of this facility has not been finalized. However, Lukeville looks to be one of the most promising locations, especially due to its proximity to Mexico to help facilitate Mexican involvement with this center.

The NPS would support the idea of this facility, and depending on its location, may become a partner in this effort. If a partnership were possible, the NPS would be interested in helping to develop exhibits and programs that would help tell the monument's stories or interpret themes that deal with the different cultures of the region. While many of the interpretive themes have a cultural component, the second theme is most specific to cultures, including societies, groups, or peoples, and follows below.

II. Cultures have successfully lived and thrived in the desert environment from prehistoric times to the present. Like the abundant and diverse natural resources, the cultural history of the monument is rich in diversity.

Organ Pipe Cactus NM is an area of confluence of three prehistoric peoples. Peoples from prehistoric to recent times have found similar and yet different ways of living with the desert.

The desert environment shaped the experience of all peoples who have occupied the monument. Yet at the same time, these peoples shaped the land in ways that met their needs.

If constructed in Lukeville, approximately 1,000 s.f. of office, exhibit and display, and storage space could be used by the NPS. If this facility is not built or ISDA is not interested in a partnership, the NPS would seek to provide this information within the science, education, and resources management center in the Lukeville area, the information, orientation and interpretive center in Why, or through signs and wayside exhibits within the monument.

Information Portals and Wayside Exhibits. Information portals would be established near the north and south entrances to the monuments as depicted on the *New Ideas Alternative* and Lukeville Area Development Concept Plan drawings. These gateways would be developed on the side of SR 85 that visitors enter the monument: on the east side of the road for visitors travelling north from the Lukeville port-of-entry and on the west side of the road for visitors travelling south from Why. Currently, there is little sense of arrival at either entrance, and many visitors do not realize they are in a national park area where special regulations and considerations are in force. To improve the sense of arrival and interpretive profile at these areas, pullouts with parking for approximately 15-20 vehicles would be developed with multiple wayside exhibit panels. Together with entrance signs, enhanced to be more visually striking, these information portals would serve as gateways to the monument, providing a welcome to visitors, orienting them to the monument with a map and other information, introducing them to the Sonoran Desert, and letting them know that certain regulations are in force to protect the park. The addition of picnic tables, simple shade structures, and at the northern portal, a short trail, are proposed to accommodate visitor needs.

Two smaller pullouts, accommodating from 5-10 vehicles each, with wayside exhibits are proposed along SR 85 and are also proposed in the *Former Preferred Future Alternative*. Shown on the *New Ideas Alternative* map, the first area is located between mileposts 70 and 71, and the second between mileposts 73 and 74. Several smaller wayside exhibits are also proposed and would be located at various outdoor locations throughout the monument to interpret specific features or to provide information about trails. These wayside exhibits would be restricted to non-wilderness areas along roads or at trailheads in non-wilderness areas where they can be used by substantial numbers of people. Key areas identified for new wayside exhibits include Ajo Mountain and Puerto Blanco scenic drives, Quitobaquito Springs, Dos Lomitas Ranch, Gachado Line Camp, Golden Bell Mine, and Bonita Well.

While most of the portals and exhibits would occur on currently disturbed lands, further environmental analysis is needed to ensure compliance with NEPA and other federal laws.

Partnerships and Outreach Programs

As in the *Former Preferred Future Alternative*, partnerships and outreach efforts would be expanded. Additionally, in this alternative, the NPS proposes to work with ISDA and others to develop and promote a tri-national, tri-cultural facility as described above. This facility would include an educational component in which the NPS would hope to participate.

The Tohono O'odham Nation's involvement in the interpretive program would be expanded in this alternative. A partnership between the NPS and the Tohono O'odham Nation would be established to determine the specific nature of this involvement. Cooperation would enhance the monument's interpretive programs and could include some or all of the following:

- Members of the Tohono O'odham Nation could become part of the NPS staff to jointly direct aspects of the interpretive program and provide interpretive services in the monument.
- The demonstration and sales of traditional arts and crafts could be incorporated into the visitor center in cooperation with the Southwestern Parks and Monuments Association.
- Events similar to the popular O'odham Days held each spring could be extended or expanded to include other times of the year.
- The Tohono O'odham Nation may provide and/or conduct some interpretative programs for their culturally important places.

It is important to note that funding sources for programs or positions could occur in a variety of ways to be worked out in the future between the two parties. Some suggestions might include NPS funding, Tohono O'odham funding, joint funding arrangements, donations, volunteer efforts, or grant applications.

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Camping

The main campground and amphitheater at Twin Peaks would be closed, and approximately 30 acres restored to natural conditions and proposed for wilderness designation. The NPS would encourage and support private efforts and other agencies to meet visitor demand for this type of campground facility in Lukeville and areas outside the monument.

Based on the visitor's increasing desire for a primitive-style camping experience with little development and no electricity, this type of camping would be expanded in the monument and is more compatible with the adjacent wilderness. The existing employee housing area would be removed and replaced with a drive-in primitive style campground. Approximately 15-20 drive-in, primitive sites would be developed on the leveled areas remaining once the homes are removed. The Twin Peaks water tank would be retained to continue provision of water and rest room facilities.

The Twin Peaks area is a spectacular setting for camping. The experience of the campground, including restrictions, would be similar to that provided currently at the Alamo Canyon Wash campground: permits would be required, motor homes and RV trailers would be prohibited, and the maximum capacity would be four people per site.

Visitors seeking a more remote primitive camping experience would be able to use a second primitive campground in the Twin Peaks area. The existing group campground would be retained and rehabilitated into a walk-in primitive camping area with approximately 6-10 sites. The road leading to the existing Twin Peaks group campground would be converted into an approximately 1.5 mile walking trail. The existing group rest room facilities in the area would be retained and water would continue to be provided.

The Alamo Canyon Campground would be closed to overnight use to help protect the natural and cultural resources in this area. Visitors could drive-in and use the area during the day by permit or on a guided tour. A pullout and parking area would be established at the entrance to the road which would be gated and closed to general visitor traffic.

Area Transportation Network

Actions are proposed that would change the current network of roads, including SR 85, and trails in the park. The additions and changes are described below.

Roads. In this alternative, the use of approximately 44.5 miles of roads would change in response to the concept and other actions, such as the shift in facility locations: approximately 19.5 miles of road would be eliminated and restored to natural conditions and approximately 25 miles of road would become trails, as described below.

Existing roads that would be eliminated include:

- the unpaved and currently unmaintained 9.6 mile Northwest Patrol Rd. (Rt. 038)
- the unpaved and currently unmaintained 5.3 mile West Boundary Patrol Rd. (Rt. 039)
- approximately 4.5 miles of roads in the Twin Peaks area—including the paved 3.91 mile Campground Rd. (Rt. 200), unpaved .4 mile Service Rd. North (Rt. 048), and the unpaved .42 mile Old Utility Spur and L.P. Gas Tank Spur (Rts. 045 and 046)—as shown and discussed further in the *Twin Peaks Development Concept Plan* section of this alternative.

The roads that would be converted to trails are described in the following discussion on trails. One of these roads—the unpaved 9.35 mile North Patrol Rd. (Rt. 406)—affects use of other roads in the monument and is further described here. This road connects SR 85 with the Bates Well Rd (Rt. 405); the Bates Well Rd. in the monument is actually a part of a longer road originating as the Darby Well Rd. in Ajo, through BLM land, into the monument, and on to the Cabeza Prieta National Wildlife Refuge. By converting the North Patrol Rd. to a trail in this alternative, visitors and NPS would need to drive to Ajo to access the Bates Well Rd. There is the possibility that the three agencies—NPS, BLM,

and FWS—could enter in a partnership arrangement to patrol these areas as discussed later under staffing.

Road Use and Maintenance. As stated in the *Actions Common to All Alternatives, Natural and Cultural Resources Management Plan* section, user capacity of the roads accommodating vehicular access into the wilderness would be determined as part of the wilderness management plan to be developed in the future. These roads would include Ajo Mountain Dr. (Rt. 011), Puerto Blanco Dr. (Rt. 012), Senita Basin Rd. (Rt. 202), and El Camino de Dos Republicas (Rt. 201). Also, the NPS would work with the FWS and BLM to determine capacities for Bates Well Rd. (Rt. 405) as the route begins in Ajo, travels over BLM lands through the monument, and into the Cabeza Prieta National Wildlife Refuge. Until capacities can be determined, all of these roads would be maintained in a manner that helps to preserve wilderness values to the greatest extent possible.

In general, the elimination of almost 44.5 miles of road would result in a reduction of maintenance. Improvements to the remaining 85 miles of paved and graded roads maintained by the NPS are sometimes required in order to keep these roads passable and to help reduce impacts caused by vehicles. Most of the existing roads in the monument were not designed but were bulldozed into the desert. Consequently, these roads suffer from improper drainage and alignment, and many are located in or across major washes. Although dry during much of the year, even minor water flows in these drainages create washouts resulting in heavy repair and maintenance. Generally, improvements would include minor reroutes or realignments. Specific road improvements are not described here because it is not known when and where these improvements are needed. When they are needed, the improvements would be made so as not to affect designated wilderness areas and would comply with NEPA, the National Historic Preservation Act, and all other pertinent legislation.

State Route 85. The approximately 22 miles of SR 85 within the boundaries of the monument would continue to serve as a through-route. As stated previously, the NPS proposes to work with ADOT, which is responsible for maintaining the road, to ensure continued travel and commerce, improve the visitor experience, and apply conservation practices to protect resources along the road corridor within the monument. Some actions may involve:

- development of information portals at the north and south entrances to the monument to increase the visibility of the monument's presence to travelers and allow for a place to stop, rest, and obtain information on the use and the importance of these federally protected lands
- development of two wayside pullouts, in addition to the informational portals, along the road allowing visitors and travelers a place to stop safely, rest, and learn about the monument and its resources
- bridge construction over major washes, installing culverts, or other measures to mitigate road-related impacts on wildlife

Trails. (In the following discussion, "trails" refer to improved and maintained areas for walking, while "hiking routes" may be marked, but are otherwise undeveloped, un-maintained, and would tend to be more challenging to use than trails.)

Approximately 2.5 miles of trails would be removed and the lands restored while the rest of the existing trail network—totalling approximately 10.1 miles—would be retained. Removal of some trails is in response to the removal of some facilities that are proposed in this alternative. These trails occur within the Twin Peaks area and include:

- the .1 mile round-trip Visitor Center Nature Trail
- the 1 mile round-trip Twin Peaks Campground Perimeter Trail
- the 1.3 mile one-way Palo Verde Trail

In addition, eight new trails and four new hiking routes totalling 37 miles would be added to enhance interpretation of and visitor access to resources, and help accommodate the desire for new trails as identified in the 1989 Visitor Survey. The criteria used to determine appropriate trail additions remains as described on page 32 of the *Former Preferred Future Alternative*. Consequently, many of the new trails and routes proposed in this alternative are the same as those described in the *Former Preferred*

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Future Alternative, however, some are different. For example, about 6.4 miles of trails could be made accessible to wheelchairs in this alternative (about 2 miles more than in the other alternative), the alignment of the trails proposed for Quitobaquito Springs are different (further described in the *Development Concept Plans* section in this alternative), and some roads have been converted into trails or hiking routes.

The following table describes the new trails and hiking routes in this alternative. Shaded boxes in the table represent trails that remain as described in the *Former Preferred Future Alternative*. The description of these trails is included in this alternative since a similar table was not presented in the *Draft GMP/DCP/EIS*.

Table 3: New Ideas Alternative: Proposed Trails and Routes

Proposed Trail or Route	Length and Location	Purpose/Comments
Quitobaquito Trail Network	Roughly 1 mile round trip from parking at Puerto Blanco Dr. to pond and springs. Most of trail would occur on social trails and would incorporate the .4 mile roadbed. Extensive network of remaining social trails to be removed and the lands restored.	Provides access to spring and pond and interpretation of water, cultural use, the landscape, unique species, resource protection, and global biodiversity. Would be made wheelchair accessible.
Walk-in Campground Access Trail	Approximately 1.5 mile one-way trail along the former Twin Peaks Campground road beginning at a new parking area also located in the old road bed.	Provides access to the proposed new walk-in primitive campground in the location of the former group campground, and to the proposed Twin Peaks trail.
Alamo Canyon Trail	Approximately 2 mile one-way extension of existing trail beginning at the campground.	Formalize existing social trail and provide interpretation of the natural and cultural history of the Alamo Canyon area.
Senita Basin Loop Trail	Approximately 3 mile loop from existing Senita Basin parking and picnic area at the terminus of the Senita Basin Rd	Formalize one existing social trail into a trail and provide interpretation of the Senita Cactus and other desert plants. Would be made wheelchair accessible, if feasible.
Bomita Well Trail	Approximately .2 mile loop from existing parking area along Puerto Blanco Dr.	Access to rancher's line camp, provide interpretation of land use, impacts, and water themes, along with lifestyles of people and cowboys in Sonoran Desert as they relate to ranching.
Grinding Holes Trail	Approximately .2 mile loop from parking along SR 85 between mileposts 76 & 71	As described previously, the NPS would involve the Tohono Oodham Nation before formalizing social trails and implementing interpretation of areas involving their heritage.
Twin Peaks Trail	Approximately 3.5 mile round-trip from new walk-in primitive campground.	A challenging hike to top of Twin Peaks, fulfilling a trail need requested by visitors surveyed. One of many existing social trails, reflecting this area's popularity and years of use, would be formalized into a safe, easy to maintain trail.
Desert Garden Loop Trail	Approximately .3 mile round trip from new pullout along SR 85 between mileposts 73 & 74.	Provide opportunity to walk in desert and introduce the Sonoran Desert. Would be made wheelchair accessible, if feasible.
Sonoran Desert Trail	Approximately .2 mile loop as part of information portal along SR 85 near the northern entrance to the monument.	Introduce the Sonoran Desert and the monument at the north entrance. Interpret themes of desert adaptation and environmental awareness. Would be made wheelchair accessible.
Puerto Blanco Loop Route	Proposed 6-9 mile loop through wilderness starting at existing parking area along stop 4 on Puerto Blanco Dr.	Offers quiet hiking through low desert mountains and opportunities to see backcountry mining sites. Low to moderately strenuous hiking.
Diaz Spire Loop Route	Proposed 6 mile loop through wilderness from parking area along Ajo Mountain Dr.	Offers great views of Ajo Mountains involving moderate to strenuous hiking.

Proposed Trail or Route	Length and Location	Purpose/Comments
Northern Boundary Route	Approximately 9.35 mile one-way wilderness route along former North Patrol Rd. between SR 85 and Bates Well Rd.	Provides access to wilderness, solitude, and cultural features. Interpretation of wilderness values, resource protection, and human use and adaption in desert environments.
Organ Pipe Cactus Wilderness Route	Approximately 14 mile one-way wilderness route along former Cipriano Hills Rd. between Puerto Blanco Drive and Bates Well Rd.	Provides access to wilderness, solitude, and cultural features. Interpretation of wilderness values, resource protection, and human use and adaption in desert environments.

Most of the new trails would be developed along existing roads or other disturbed areas such as "social trails." The term social trail is used to reflect areas that have been continuously used by visitors and have resulted in a compacted, worn area resembling a trail. As stated previously in the Roads section, approximately 25 miles of new trails and hiking routes would be converted from the following roads:

- the unpaved .39 mile Quitobaquito Rd. (Rt. 203) would be converted to a maintained trail
- the paved 1.33 mile Campground Access Rd. (Rt. 101) in the Twin Peaks area would be converted to a maintained trail
- the unpaved 9.35 mile North Patrol Rd. (Rt. 406) would be converted to a hiking route
- the unpaved 13.95 mile Cipriano Hills Rd. (Rt. 404) would be converted to a hiking route

To convert roads into trails, part of the road bed would be converted as a trail and the remaining road bed restored to natural conditions. For hiking routes, little or no work would be done to convert roads into hiking routes. The existing road bed would be allowed to return to a more natural state.

Any proposed interpretive or wayfinding signs would be sensitive to the wilderness nature of most of the monument. Where possible, alternative means such as pamphlets would be used instead of signs to provide information on trails and hiking routes occurring in the Organ Pipe Cactus Wilderness.

PARK OPERATIONS AND ASSOCIATED FACILITIES

Staffing

The monument is currently under-staffed to be able to fully carry out management actions and programs required by federal laws and NPS policies. Using two special programs developed by the NPS to project staffing needs and described below, approximately 79 total employees would be needed to fully carry out the monument's legislated mandate to protect resources and provide for visitor enjoyment; the staff currently consists of the equivalent of 26 full-time employees (FTE), less than half of those needed.

The two programs used to determine the amount of resources management, visitor protection, and administrative support staff needed, are based on profiles of monument resources, management, environments, and visitors. The Resource Management Assessment Program (RMAP) calls for a total of 56.4 FTE to provide adequate management of monument resources and related administrative support. The monument currently has eight FTE to carry out these functions. The Visitor Resource Assessment Program (VRAP) calls for a total of 22.3 FTE to provide adequate visitor protection and related administrative support. The monument currently has seven FTE to carry out these functions. Neither of these programs estimate the number of interpretation or maintenance staff needed. At this time, the monument has three interpretation and six maintenance FTE.

At present, the RMAP and VRAP projections may be unrealistic in light of current fiscal concerns in the federal government. As a more realistic projection, this alternative uses a projection based on the actual rate of growth over the past ten years. Historically, the staff has grown an average of one FTE

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per year. Therefore, over the next 15 years—the estimated life of this plan—the monument would seek to gain approximately 15 FTE at a minimum.

The following chart shows a distribution of the additional FTE for each division. Since these numbers reflect a reduction over the number of FTE estimated in the Former Preferred Future Alternative, the distribution reflects current priorities in the monument and may need to be adjusted in the future to correspond with issues as they arise.

<u>Division</u>	<u>Full Time Equivalents</u>
Maintenance	4.5
Natural and Cultural Resources Management	4.5
Interpretation	2.5
Visitor Protection	2.5
Administration	1.0

Under this alternative, some changes in assignments of existing and proposed staff would need to occur. Protection work would change in this alternative since some of the roads would be closed or converted into trails. Since certain areas could not be reached by vehicle, more backcountry patrols by foot, horse, or airplane would need to be performed to protect visitors and resources.

Protection and maintenance of cultural properties would also be affected. Some cultural resource properties that lie a short distance from roads to be closed under this alternative, would be more difficult for staff to access. Use of these areas may be expected to decrease since they cannot be readily accessed by vehicle. A variety of tools would be used to increase protection and allow for the maintenance of these properties in their wilderness setting. Some of these tools may include increasing the use of infra-red satellite alarm systems and airplane or helicopter patrols.

Operations Facilities

Consistent with the concept of this alternative, all operational facilities would be removed from the Twin Peaks area including:

- administration/visitor center building
- maintenance complex
- employee housing
- ranger operations building
- two buildings that function as the resource centers
- the VIP trailer village

Consequently, roads and trails in the area would also be removed as discussed in the *Area Transportation Network* section of this alternative. An approximate total of 43 acres within Twin Peaks would be restored to natural conditions and together with currently undeveloped lands, approximately 70 acres would be proposed for wilderness designation.

Many of these facilities are essential to the continued operation and maintenance of the monument and must be adjacent to the physical resources. These facilities include the maintenance complex, fire station, ranger operations, and a limited amount of employee housing as described below and depicted in the *Lukeville Area DCP* section of this alternative. Some functions, such as administrative offices, do not need to be directly adjacent to the monument's physical resources and would be relocated outside the monument. Consequently, the administrative facility would be located in Ajo, under this alternative.

The new locations would:

- occur in previously disturbed or developed areas as much as possible
- maximize wilderness and resource values by minimizing future development and increasing the size of wilderness within the monument

- where feasible, establish partnerships or share facilities
- separate employee and visitor use areas

Maintenance Complex and Fire Station. In this alternative, the fire station would be designed as part of the maintenance complex. The proposed maintenance complex and fire station would be located near Lukeville, would require approximately 1/2 acre of land and would contain the following:

- a security system for the entire facility
- about 2,500 s.f. of office and work space for carpentry, supply storage, plumbing shop, and a small paint shop
- about 12,000 s.f. of covered parking for vehicle and equipment storage and bays for welding, washing, and automobile and heavy equipment repair
- about 4,000 s.f. of covered storage space for materials
- about 1,000 s.f. of 5 foot high concrete silos for materials storage
- loading ramps
- about 2,500 s.f. of covered space for the fire truck and related equipment storage

To help offset costs, the NPS would attempt to re-use or recycle materials from the existing facility in the Twin Peaks area. In addition, the NPS proposes to enter into discussions with the other federal agencies in the Lukeville area to share facilities, staff, and storage needs. Based on these discussions, the NPS may need to increase the size of this complex to accommodate any added functions.

Employee and VIP Housing. The NPS would seek partnership ventures to establish housing in the Lukeville area for employees with required housing and for the monument's seasonal work force. Land, power, water, restrooms, and showers would continue to be provided for Volunteers-in-Parks (VIPs) with their own recreational vehicles (RV), however, the facility would be relocated to the southern entrance of the monument near the maintenance facility, as shown on the Lukeville Area DCP. Any additional housing needs would be secured by employees on a free market basis in surrounding communities.

The NPS would intend to develop a mutually beneficial partnership with one of the other federal agencies and/or a private owner in Lukeville to provide the housing. Required housing is assigned to those employees the NPS needs immediately available to provide on-site protection of life, property, and resources in the monument. At this time, the NPS has determined that a minimum of 5 single family homes would be needed for those employees with required housing. Because affordable, seasonal or short-term housing is difficult to find during the winter season, apartments or efficiencies containing approximately 10 total bedrooms, would be sought to help accommodate most of the monument's seasonal workers. At least one of these units would be reserved for use by visiting researchers or scientists.

All NPS housing, whether owned or leased by the NPS, would need to meet federal standards and would need to be affordable for employees. Two housing areas currently exist in the Lukeville area: one constructed and maintained by GSA on the U.S. Customs and Immigration Reserve, and the other owned and maintained by a private land-owner. The NPS is not interested in utilizing the existing federal housing area due to the noise and congestion generated by the adjacent port of entry facility. If a mutually satisfactory arrangement cannot be reached with either the federal agency or private owner, the NPS would seek to construct these homes on federally owned lands in the vicinity of the maintenance facility complex.

The NPS would also seek to establish a community center for all area residents. An existing building in the Lukeville area may serve as the facility, such as one of the currently un-used homes in the existing housing area on the U.S. Customs and Immigration Reserve, or a new building may be constructed. While the NPS would help initiate and participate in this effort, the functions and size of the facility would need to be determined among all community participants.

Ranger Operations. The NPS would seek to locate its law enforcement functions to the Customs and Immigrations Reserve located within the boundaries of the monument. The NPS would work to

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establish a partnership and agreements with the U.S. Customs Service, Immigration and Naturalization, and the Government Services Administration to share the existing under-utilized facilities at the border station and within the housing compound. The NPS would seek space for:

- first aid
- law enforcement and fitness training
- office and work space
- helicopter landings

Administration. Administrative functions would be moved from the existing facility in Twin Peaks to a building in Ajo. Approximately 2,000 s.f. of space is needed to accommodate the following functions:

- offices for the superintendent and three other employees
- one large conference/meeting room
- supply and equipment storage
- a rest room
- a foyer or lobby suitable for greeting visitors and providing information

The NPS would seek to share space with another federal agency, or lease office space if it is available. According to local sources, leasing rates in Ajo range from .35 cents to \$2.00 per s.f. If shared or leased space is not available, the NPS would explore the possibility of purchasing land and constructing needed office space. Congressional legislation would be needed to allow the NPS to purchase any lands outside monument boundaries.

DEVELOPMENT CONCEPT PLANS

The DCPs are intended to depict the basic concepts for development in the Twin Peaks, Quitobaquito Springs, and Lukeville areas—in other words, the inter-relationship of the various visitor, operational, and transportation elements. Therefore, only very general locations, functions, and sizes of proposed facilities are shown. Once funding is secured for development, detailed design and construction drawings would be developed for each facility or area, and further environmental analysis performed in compliance with NEPA.

Twin Peaks

As described in previous sections, most of the facilities currently residing in Twin Peaks would be removed. Approximately 43 acres of land would be restored to natural conditions once the majority of roads, trails, and buildings in the Twin Peaks area would be removed or relocated. Subsequently, approximately 70 acres of land currently designated as non-wilderness—including the restored lands together with adjoining undeveloped lands—would become potential wilderness additions.

The Twin Peaks area would be converted into a primitive camping area with some opportunities for picnicking and hiking as shown on the *Twin Peaks Development Concept Plan* map. A portion of the existing paved entrance road would remain leading visitors to a new parking and trailhead area for the walk-in primitive campground, or to the former housing loop drive which would be converted to a drive-in primitive campground. The new trailhead would consist of a 10 vehicle parking area that would be constructed on disturbed land at the existing intersection of the entrance road and the road leading to the main campground. An approximately 1.5 mile trail would lead from the trailhead and parking area to a walk-in primitive camping area located on the site of the existing group camping facility. The drive-in primitive campground would contain a restroom and a day-use parking area for 6-10 vehicles. A new 3.5 mile round-trip trail would lead from this campground to the top of Twin Peaks. The existing water tank, sewage system, and unpaved roads leading to them, would be retained to provide water and sewer to the rest rooms in this area.

Quitobaquito Springs

The concept for development at Quitobaquito Springs—to improve safety, visitor experience, and resource protection—remains very close to that described in the *Former Preferred Future Alternative*, page 36. However in this alternative, protection of the varied, sensitive resources in the Quitobaquito Springs area would be accomplished differently: visitors would be allowed access into this area via permits or on interpretive tours of the area. At first, the amount of use allowed would be based on the NPS ability to manage the permit and tour programs. In the future, day-use standards and user capacities would be established for this area as part of a wilderness management plan.

While the concept was similar, a new layout for the parking, trail, and other facilities is proposed in this alternative as shown on the Quitobaquito DCP and described below. The description and illustration of the new layout is very general in nature and has primarily resulted from concerns raised by the Tohono O'odham Nation and its Districts. Once funding is secured, a multi-agency task force would be established to develop a detailed design for this area. The design would include locating the exact locations of the elements, development of detailed design drawings, and finalizing how interpretive stories would be shared with visitors. At a minimum, this group would need to include representatives of the Tohono O'odham Nation, the U.S. Fish and Wildlife Service, the State Historic Preservation Office, and the National Park Service. Group representatives could also be from various disciplines including archeology, anthropology, history, landscape architecture, maintenance, wildlife biology, and others. This group would also help develop detailed mitigation strategies and would contribute to the effort to prepare all documents to ensure compliance with NEPA, the National Historic Preservation Act, and all other applicable federal laws and regulations.

In this alternative, the parking lot would be placed in a currently disturbed area at the existing intersection of Puerto Blanco Drive and the Quitobaquito road. An orientation sign, interpretive information, a composting or vault type toilet, and picnic tables shaded by a simple ramada would be provided near the parking area. Moving the parking area and other facilities to a safer location would help decrease the incidence of vehicle break-ins and theft. NPS law enforcement records indicate 16 burglary or larceny incidents occurring in the Quitobaquito parking lot from 1990-1995. The new location is sheltered by hills in the area, unlike the existing location. However, the new location would be immediately visible to rangers and visitors driving by on the Puerto Blanco Drive, which would help to increase safety. The current location of the parking lot is not visible from Puerto Blanco Drive.

A well-defined trail network would also be established along existing roads and disturbed areas. This relatively easy, approximately 1 mile round-trip walking loop would be made accessible to visitors with disabilities. The new trail would begin at the parking area and travel along what is now the road. About 1/2 mile down the trail, a new trail segment would be added following the contours of the land and leading to the Quitobaquito Springs. The trail would direct people from the spring and on to the historic pond. A small portion of the trail network would be established in the vicinity of the pond to offer views of the water and vegetation, and to offer good birding opportunities. From the pond, the trail would loop back along the former parking lot and road, back to the start of the trail.

The new trail system would help protect resources and improve the area's value as wildlife habitat by reducing the amount of vegetation trampling, erosion, and human use of sensitive areas, such as the edge of the pond, that is presently occurring. Over time, visitors have established a vast, well-worn matrix of trails in the area. Once the new trail network is in place, the numerous social trails remaining would be restored to natural conditions.

While walking along the trails, visitors would have the opportunity to learn about the cultural use of the area and its natural resource significance. As described under the previous partnerships section, the Tohono O'odham would be significantly involved with the interpretation of this unique area.

Administrative vehicle access to the international border would need to be maintained along the 60-foot wide reserve. A new section of road would be constructed that would connect Puerto Blanco Drive with the existing border patrol road. Due to the sensitive nature of this area, the exact location of

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this road section would be determined in the field as part of the next phase of the development plan for the Quitobaquito area. At present, patrols along the border go from the present location of the Quitobaquito parking lot, on to an administrative road leading to the border patrol roadway. The existing border patrol road is about 250 feet from the Quitobaquito pond. Permission for use of this road could be granted by the Superintendent to visitors with special needs, on a case-by-case basis.

During public review of the *Draft GMP/DCP/EIS*, a new idea was proposed involving development by Mexico of a pullout along Highway 2 and a pedestrian border crossing from Mexico into the Quitobaquito area. Quitobaquito is historically significant to Mexico as well as the U.S. At various times in history, this oasis in the desert has been owned by both countries and was an important stopping point along the historic Camino del Diablo established as a route between Mexico and California connecting present-day Sonoyta and other parts of Mexico with the monument and the Cabeza Prieta National Wildlife Refuge. If citizens of Mexico decide to further develop the idea of this pedestrian crossing, the NPS would be willing to enter into discussions with Mexico and other U.S. agencies to determine its feasibility. As with the access on the U.S. side, all access would be limited based on the carrying capacity of the area and would be closely monitored and controlled at all times.

Lukeville Area

Private enterprise in Lukeville, as well as in Ajo and Why, would continue to provide essential services to visitors and travelers. When the wilderness boundaries were determined, areas around Lukeville and Twin Peaks were retained as non-wilderness to allow for the expansion or development of visitor and NPS administrative facilities. Consequently, in this alternative, the Lukeville area would become the location of several NPS facilities. The Lukeville Area DCP drawing depicts the location of the various facilities that have been added or relocated to this place from other areas in the monument.

A new, approximately 1/2 mile long road would be constructed on NPS owned lands and would lead to a parking area for the new science, education, and resources management center. The road would continue from this facility to the new maintenance complex and fire station and on to the RV area for NPS volunteers. A security system would be added to all facilities constructed in this area.

The southern information portal would be developed along the eastern side of SR 85, north of privately-owned developments in Lukeville. A pullout with parking for 15-20 vehicles, shade, information, and an enhanced entrance sign would welcome and help orient visitors to the monument while offering a place to rest.

As discussed previously in this alternative, the NPS would seek a partnership to provide additional facilities in the Lukeville area, possibly on privately-owned lands or lands managed by another federal agency. While the location and size of these facilities are unknown, they would include:

- 3-5 homes for employees with required housing and apartments containing 10 total bedrooms for NPS seasonals or researchers
- office and work space for ranger operations, most likely within currently under-utilized facilities at the border station
- a new community center for all area residents

If a mutually satisfactory arrangement cannot be reached with either another federal agency or a private land-owner, the NPS would seek to develop these facilities on NPS-owned lands in the vicinity of the maintenance facility.

NAME, BOUNDARY, AND WILDERNESS AREA CHANGES

Redesignation

As with the *Former Preferred Future Alternative*, the NPS would support proposing legislation to change its designation to National Park status, however, the new proposed name is different. In this alternative the new proposed name would be Organ Pipe Cactus National Park.

NPS management responsibilities and authorities are generally the same whether an area is designated a National Park or National Monument. In fact, all units of the National Park Service are required to adhere to federal laws, follow NPS management policies and guidelines, and carry out the mission of the NPS as established in the 1916 Organic Act, "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

The differences between monument and park designation, are in some ways subtle, but are important in terms of status, especially when it comes to competing for ever-dwindling federal dollars. The basic distinction between the designations is that National Monuments are created by a signature of the President of the United States, typically by way of a Presidential Proclamation, while National Parks are created by an Act of Congress. Many of this nation's National Monuments were created to protect a single feature, a unique occurrence of a natural phenomenon, or a specific area of historical or cultural importance, and were named accordingly, such as: Organ Pipe Cactus National Monument, Natural Bridges National Monument, or Montezuma's Castle National Monument. In recent years, the larger National Monuments responsible for protecting a variety of significant resources have been re-designated through Acts of Congress into National Parks including: Death Valley National Park, Joshua Tree National Park, and Saguaro National Park.

Even though monuments and parks are governed by the same rules, National Parks are often considered to be more important. Recent evidence of this was on Congress's list of units of the National Park system that were being considered for possible closure; because of their status, no National Parks were on the list, while National Monuments were, including Organ Pipe Cactus National Monument.

The following factors contribute to Organ Pipe Cactus National Monument's distinction and importance in this country and subsequently, provide some of the rationale for its redesignation. Some of these facts reiterate portions of the significance statements found in the *Draft GMP/DCP/EIS*, on page 9. They are repeated here since they link to the reasoning behind proposed redesignation.

- At 330,689 acres, it is the largest National Monument of the National Parks system in the lower 48 states.
- While there are other units of the National Park system in the Sonoran Desert, none of them so clearly exemplifies the unique features and biological diversity that define the Sonoran Desert ecosystem.
- It is a place where three cultures intersect and is significant archeologically, geographically, and internationally for the cultural resources which can be found reflecting long, widespread, and diverse occupations by Native Americans, Mexican, and Anglo groups.
- The monument borders the Tohono O'odham Nation, whose heritage and creation beliefs are linked integrally to the monument, and borders Mexico where communication and economic ties with the U.S. are increasing and resulting in a new openness.
- The monument provides habitat for a highly diverse flora and fauna, including 27 rare, endangered, and threatened wildlife species.
- Within its boundaries are expansive vistas of Sonoran Desert landscapes with dramatic mountains and valleys, eroding bajadas and alluvial fans, and magnificent specimens of columnar cacti, all of which are easily enjoyed by all people whether in a vehicle or on foot.

For all these reasons, National Park status is sought.

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Boundary Adjustments

No adjustment to the current boundary is proposed in this alternative. However, the NPS would seek to work with the Tohono O'odham Nation to ensure that NPS mandates for preservation are achieved for the monument lands lying east of the crest of the Ajo Range. This item would be covered under the agreement to be developed between the Tohono O'odham Nation and the NPS, as discussed previously in the *Actions Common to All Alternatives, Native American Consultations* section.

Wilderness Additions

In addition to the State Trust lands described in the *Actions Common to All Alternatives*, the following areas may be eligible for wilderness designation. When implemented, several actions proposed in this alternative would remove incompatible elements from these lands which would allow the lands to be eligible for wilderness designation. Once conditions are met, a legislative proposal would be prepared to propose their addition.

1. Approximately 206 acres of land where the above-ground powerlines are currently located west of SR 85. The old lines and poles would be removed and the powerline road restored to natural conditions. These lands could then qualify to be added into the wilderness boundaries.
2. Approximately 23 acres of the Quitobaquito area would be suitable for wilderness designation once the existing parking lot and road are restored to natural conditions.
3. In the Twin Peaks area, approximately 70 acres of land, currently designated as non-wilderness, would be suitable for wilderness designation once facilities on about 43 acres of land are removed and the area restored. The remaining 27 acres are adjacent to the area that would be restored and are currently undeveloped.
4. Approximately 570 acres of roads and adjacent non-wilderness lands would be suitable for wilderness designation once the roads would be removed or be converted into hiking trails. Trails are considered appropriate facilities in wilderness areas.
5. The 1502.6 acres of land occurring on the eastern divide of the Ajo Mountains. These lands were not included in the original wilderness designation due to the existence of special-use permits for grazing. These permits have expired and have not been re-established.

PLAN IMPLEMENTATION AND COSTS

Implementation

The intent of a general management plan (GMP) is to provide comprehensive, general guidance for managing a unit of the NPS over a 15-20 year time span. The ability and rate of which the NPS is able to implement the actions in a GMP is variable and is based on numerous factors, many of which are not controlled by the NPS. Some NPS managed areas are able to fully implement approved GMPs within this time frame, while for other areas it takes much longer.

Funding is the ultimate determinant of the time frame in which proposed developments, programs, and staffing additions would be implemented. Because of limited federal resources, the NPS together with other federal agencies, is seeking partnerships to develop cost-effective solutions for carrying out their legislated responsibilities. Partnerships, donations, and volunteer work can offset implementation costs. In these cases, the costs described would be the financial value or cost-saving to the NPS.

Priorities. A prioritization or phasing strategy is proposed to direct implementation actions in this alternative. Priorities for staffing are not included in this discussion since they are discussed below in the *Staffing Cost* section. The following strategy may be amended by the monument as needed to

ensure effective management of the resources, visitors, and employees. The NPS would comply with all laws and regulations, including NEPA, the National Historic Preservation Act, and the Endangered Species Act, before implementing these actions.

When priorities are set at either park or national levels of the NPS, projects related to health and safety issues receive the highest priority rankings. Projects dealing with legislative requirements such as the protection of or recovery of threatened and endangered species, protection of significant cultural resources, and Native American consultations, also rank high. Likewise, the projects in this alternative related to health and safety or legislative requirements are proposed as the highest priority and include implementation of the following: (these highest priority projects are not presented in any specific order)

- the fire station as part of the new maintenance complex proposed in the Lukeville area; for security reasons, part of this maintenance complex would need to be constructed at the same time
- the DCP for Quitobaquito Management Area which relates to safety, threatened and endangered species, and cultural resource concerns
- a partnership with ADOT to develop and implement the program proposed for SR 85 to improve visitor safety and help protect and recover threatened and endangered species affected by the road and related traffic
- the one or more agreements to be developed between the NPS and the Tohono O'odham Nation
- inventorying, monitoring, and mitigation programs and actions to protect and recover threatened and endangered species including control of nonnative vegetation and animals
- studies and programs that help mitigate impacts on occurring from outside the monument on threatened and endangered species including expansion of the water resources management program
- safety programs for abandoned mine lands
- inventory, evaluation, and monitoring programs to protect cultural resources including their nomination to the National Register of Historic Places

Second level priorities involve provision of essential services and NPS functions that are not a level one priority, or, are the second phase of a high priority project. In this alternative, many second priority projects are those that would need to be accomplished before facility removal, restoration, and new development in the Twin Peaks area could be accomplished. Second level priority projects include implementation of:

- the rest of the programs and projects identified in the Natural and Cultural Resources Management Plan; due to financial considerations, many of these would be phased over time
- the rest of the maintenance complex and other new facilities in the Lukeville area
- partnerships that work toward: development of the visitor center in Why, use of existing office and work space for NPS ranger operations in Lukeville, initiation of the joint effort to prepare a wilderness and backcountry management plan, establishing employee housing in Lukeville
- finding office space for NPS administrations in the Ajo area
- working with APS to determine strategies to relocate and bury powerlines
- developments at Dos Lomitas Ranch for conducting interpretive programs
- road removal, road conversion to trails, other new trails, and restoration of area social trails all of which would most likely need to be phased over time
- redesignation which would require congressional legislation

All other projects and programs proposed in this alternative are third level priority projects and may encompass the second or third phase of projects initiated at higher priority levels. These include implementing:

- facility removal, restoration, and development of the campgrounds and trails in the Twin Peaks area
- the proposed additions to wilderness which would require congressional legislation

Cost Estimates

Cost Estimates for New Developments. Costs of development are one-time costs to the government. The NPS recognizes that development costs for the federal government tend to be higher than those for private citizens, and subsequently, has prepared the following discussion regarding escalated costs. In light of recent fiscal concerns in the federal government, the NPS would seek all means to offset the estimated costs which might include the use of partnerships, volunteers, donations, or any other available means. For the purpose of this planning effort, the total costs the government may expect to incur to implement these developments are listed below the discussion of escalated costs. If costs are successfully offset or reduced, these estimates instead would represent the value or cost savings to the government.

Escalated Costs. This discussion has been prepared due to the number of concerns raised regarding costs and in an attempt to explain why costs to the government seem to escalate over those for private citizens. The Estimating Section of the NPS's Denver Service Center has developed what is referred to as "Class C" costs that are used to estimate total development costs of projects. Over time, the actual costs of projects—from planning, design, to construction—have been tracked and compiled into the "Class C Estimated Guide" which is routinely used in estimates for planning purposes.

Why do these costs appear so high? The costs are comprised of the following five factors, which when totalled, equal the costs reflected in this document.

1. *Class "C" unit prices.* These prices, also known as net construction costs, are generally higher than the normal market price due to actual increases experienced in federal government bids due to requirements related to fair labor laws, purchasing, ensured safety, bonding, and additional paperwork. In addition, these costs are meant to be valid for at least a few years after a plan is finalized.
2. *Design and construction document preparation.* This is a standard expense of 25% of the net construction cost. DCPs presented in General Management Plans are not sufficiently detailed to actually build or prepare anything. Design construction drawings and documents are required in the construction process and to bid the work. Small, relatively simple projects may sometimes dispense with this requirement.
3. *Increase for project remoteness.* Many project locations in the NPS are very remote compared to those that occur within reasonable distance of communities and suppliers. Remote areas require increase costs for transporting materials and equipment further distances and sometimes, by less cost effective means. Labor costs also rise at remote area because lengthy daily travel must be compensated, or per diem paid when daily commutes are too lengthy. In the case of the monument, a remoteness factor was not applied to the net construction cost estimate.
4. *Increase for unlisted technical tests and studies.* This increase is one of the greatest unknowns for the NPS, but if not calculated into the initial cost estimate, has been known to lead to significant funding shortages. Often in the early planning portion of projects, there is not enough time and money to reveal unexpected subsurface or historical site conditions. Because of the high chance of uncovering archeological resources at the monument, a factor of 10% has been applied to the net construction costs to cover the need for these types of tests.
5. *Increase for overhead.* This is the standard cost for contract administration and construction supervision. All NPS projects are subject to this factor of 31% and there is no flexibility in this amount.

As an example, assume the net construction cost of a small, 2 stall rest room that meets all federal requirements of accessibility and safety, is estimated at \$50,000. As stated previously, this initial estimate would be higher than for a private citizen because of compliance with fair labor laws,

purchasing, ensured safety, bonding, and additional paperwork. By applying the previous formula (net costs + 25% document prep. + 10% studies/tests + 31% overhead), the estimated total cost of this fictitious project would equal the following:

$$\$50,000 + \$12,500 + \$5,000 + \$15,500 = \$83,000$$

The NPS is required to estimate the total amount of costs the federal government can expect to incur on projects, and consequently these totals comprise the cost estimates in the alternatives.

Total Costs. The total development cost is expected to be approximately \$ 9,793,000 for this alternative and is broken down below by area. More detailed figures can be found in Appendix B of this Supplement. (The figures from the Appendix were rounded up to the nearest thousand.)

Twin Peaks:	\$ 3,425,000
Quitobaquito:	\$ 260,000
Alamo Canyon:	\$ 55,000
Dos Lomitas:	\$ 16,000
Lukeville Area:	\$ 4,009,000
Other Roads, Pullouts, Trails, and Exhibits:	\$ 2,028,000

The cost for projects involving partners or those located outside monument boundaries are not included in these estimates. At this time, the proposals are preliminary and the make-up of the partnerships, and the size, location, and the NPS share of facility costs—if any—are unknown. Examples of NPS costs in established partnership efforts vary widely: from the NPS paying for construction to having a facility donated at no cost to the NPS, from using NPS paid staff, to using another agencies' paid staff, to using volunteers at no cost to the federal government. Because of these unknown variables, the NPS has not attempted at this time to predict the costs of these projects to the federal government. The NPS would seek public involvement on the partnerships, locations, and size of the facilities in compliance with NEPA, and would be able to begin to predict and present any costs at that time.

The projects that are discussed in this alternative but are not included in the cost estimates include: the inter-agency information, orientation, and interpretive center in Why, ISDA's possible tri-cultural, tri-national center, sharing facilities in the border station for NPS ranger operations, seeking office space in Ajo for NPS administrative purposes, establishing a small facility for community meetings and social functions in the Lukeville area, and seeking homes for some NPS employees also in the Lukeville area.

Cost Estimates of Adding Staff. Increases in funding and therefore staffing, are difficult to predict. To gain the entire 15 FTEs—at the average rate of one per year—the NPS would eventually incur a total cost of roughly \$850,000. As described previously, in this alternative there is a significant chance of lowering the cost and number of additional FTE through partnerships and other ventures in this alternative. For example, jointly paid or volunteer employees could be used to staff the information, orientation, and interpretive center in Why.

As an initial estimate, if three positions can be funded through other sources over the life of the plan, the NPS would save roughly \$170,000 of salary plus the amount to cover the need for additional vehicles, supplies, materials, travel, and training.



ORGAN PIPE CACTUS

NATIONAL PARK

NEW IDEAS ALTERNATIVE

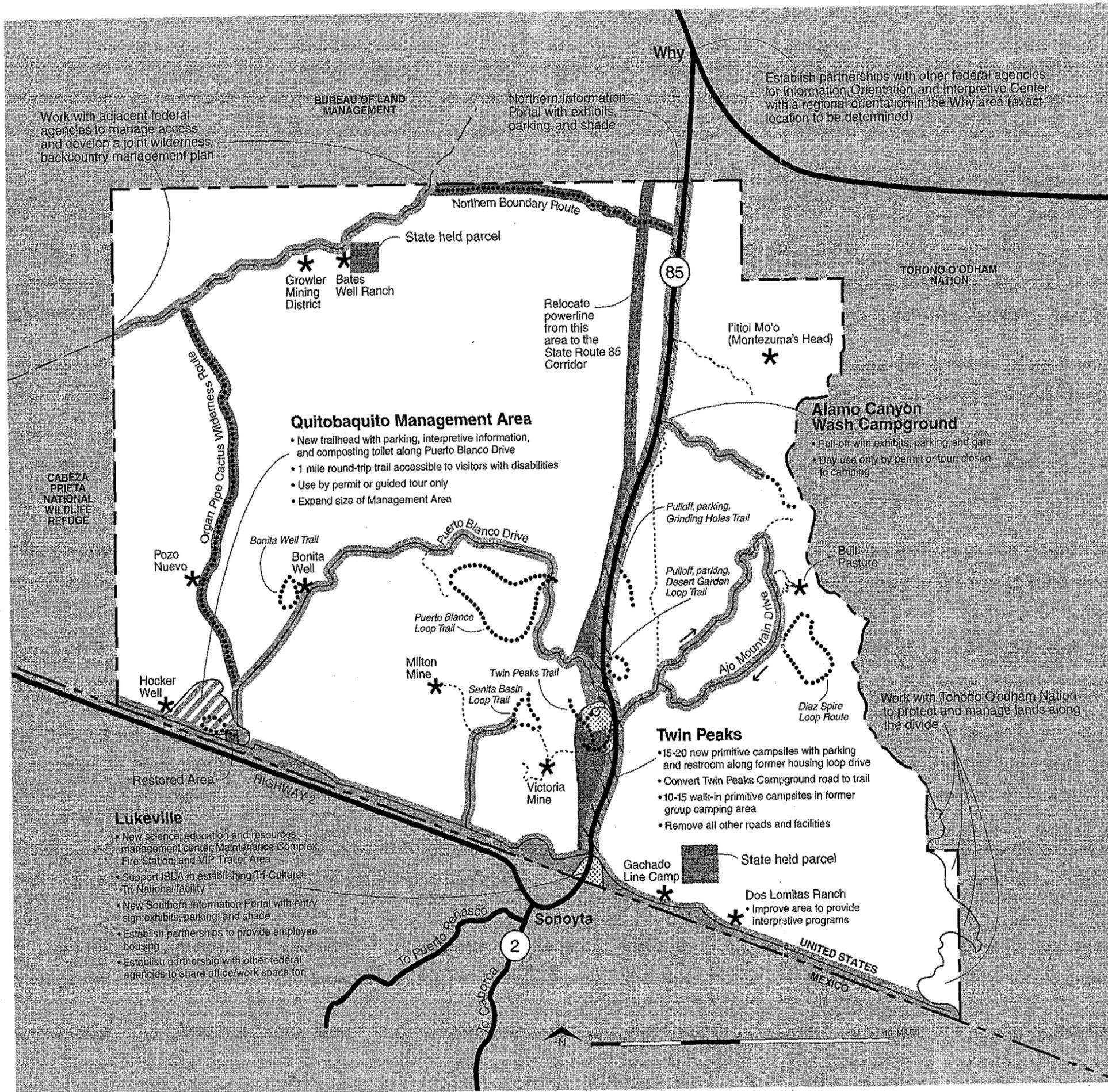
ORGAN PIPE NATIONAL PARK
 UNITED STATES DEPARTMENT OF THE INTERIOR
 NATIONAL PARK SERVICE
 DSC/March 1996/157/20023

MANAGEMENT ZONES

- Non-Wilderness Development Area
- State Route 85 Corridor Zone
- Non-Wilderness Travel Corridor
- Wilderness Zone
- Potential Wilderness Additions
- Wilderness Zone - Quitobaquito Management Area
- Cultural Resources Overlay Zone

GENERAL LEGEND

- Existing Trails
- Proposed Maintained Trails
- Paved Roads
- Graded Dirt Road
- Unimproved Dirt Road



Work with adjacent federal agencies to manage access and develop a joint wilderness, backcountry management plan

BUREAU OF LAND MANAGEMENT

Northern Information Portal with exhibits, parking, and shade

Establish partnerships with other federal agencies for Information, Orientation, and Interpretive Center with a regional orientation in the Why area (exact location to be determined)

Growler Mining District
 Bates Well Ranch

Quitobaquito Management Area

- New trailhead with parking, interpretive information, and composting toilet along Puerto Blanco Drive
- 1 mile round-trip trail accessible to visitors with disabilities
- Use by permit or guided tour only
- Expand size of Management Area

Relocate powerline from this area to the State Route 85 Corridor

Pitofl Mo'o (Montezuma's Head)

Alamo Canyon Wash Campground

- Pull-off with exhibits, parking, and gate
- Day use only by permit or tour, closed to camping

Twin Peaks

- 15-20 new primitive campsites with parking and restroom along former housing loop drive
- Convert Twin Peaks Campground road to trail
- 10-15 walk-in primitive campsites in former group camping area
- Remove all other roads and facilities

Lukeville

- New science, education and resources management center, Maintenance Complex, Fire Station, and VIP Trailer Area
- Support ISDA in establishing Tri-Cultural, Tri-National facility
- New Southern Information Portal with entry sign, exhibits, parking, and shade
- Establish partnerships to provide employee housing
- Establish partnership with other federal agencies to share office/work space for

Work with Tohono O'odham Nation to protect and manage lands along the divide

State held parcel

Dos Lomitas Ranch
 • Improve area to provide interpretive programs

ON MICROFILM



ORGAN PIPE CACTUS NATIONAL PARK

NEW IDEAS ALTERNATIVE

TWIN PEAKS DEVELOPMENT CONCEPT PLAN

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DSC/February 1996

Publ. as 157/20017
Now 157/20017A

- NEW FACILITIES
- ▨ REMOVE ROADS AND FACILITIES:
RESTORE TO NATURAL CONDITIONS
- ... PROPOSED TRAIL

**PRIMITIVE
CAMPGROUND**
• 15-20 DRIVE-IN CAMPSITES
• RVs WOULD NOT BE ALLOWED

RESTROOM

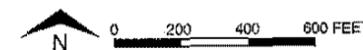
LINK TO TWIN
PEAKS TRAIL

WATER TANK



PARKING AREA

- START OF WALK-IN CAMPGROUND ACCESS TRAIL
(1.5 miles one-way) AND TWIN PEAKS TRAIL
- TWIN PEAKS CAMPGROUND TO BE REMOVED AND
THE AREA RESTORED



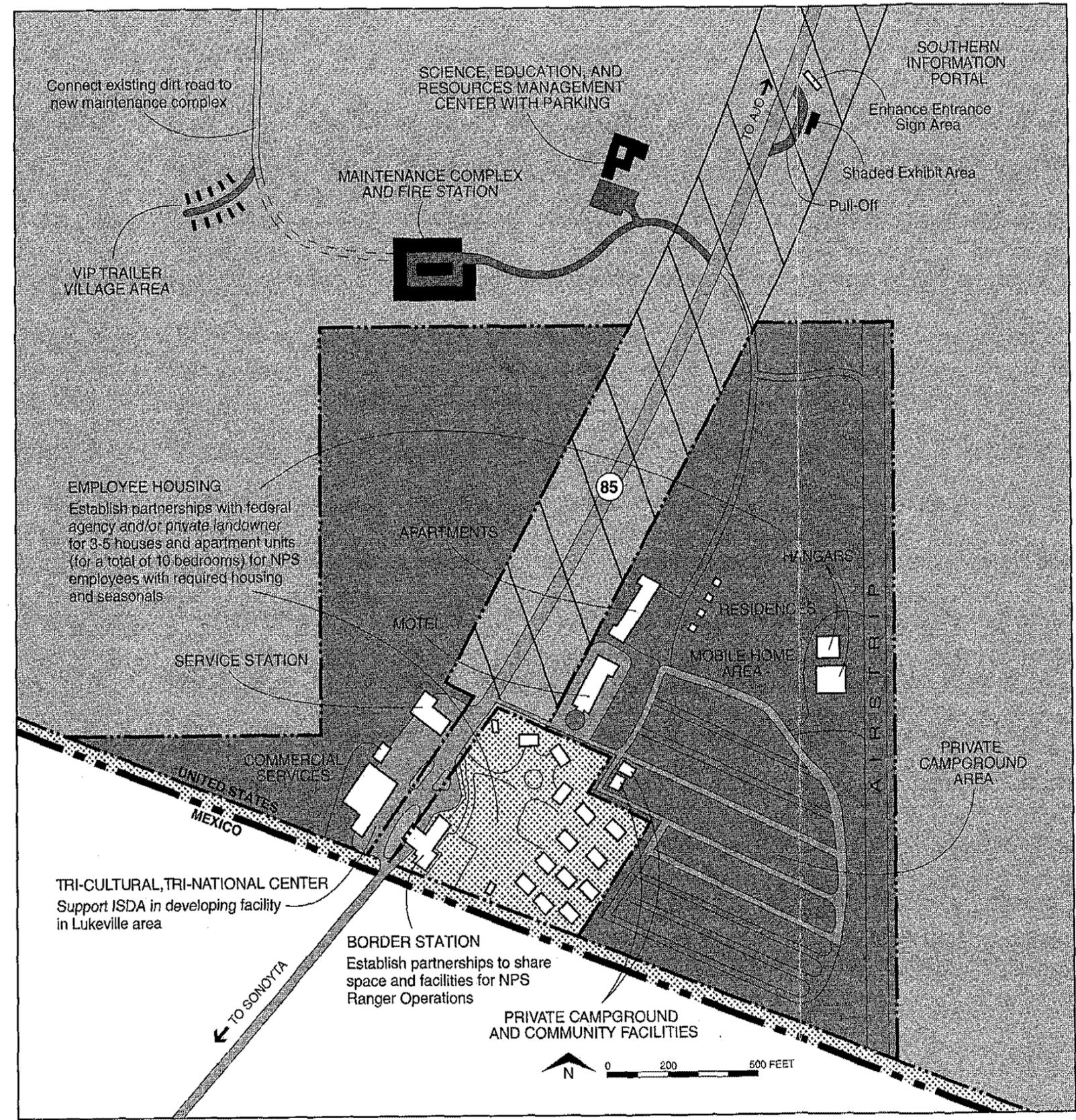
ON MICROFILM



ORGAN PIPE CACTUS NATIONAL PARK

NEW IDEAS ALTERNATIVE Lukeville Area DCP

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DSC/March 1996/157/20026



- EXISTING PAVED ROADS AND AREAS
- EXISTING DIRT ROADS
- NEW PAVED ROADS AND AREAS
- NEW DIRT ROADS
- NON-WILDERNESS STATE ROUTE 85 CORRIDOR
- PRIVATELY OWNED LANDS
- CUSTOMS AND IMMIGRATION RESERVE AND PUBLIC RESERVE
- NEW BUILDINGS OR FACILITIES
- ORGAN PIPE CACTUS NATIONAL MONUMENT- NON-WILDERNESS DEVELOPMENT AREA

ON MICROFILM

THE NEW PROPOSED ACTION ALTERNATIVE

This alternative constitutes the NPS's new proposed action. Parts of the concepts and actions from the other three alternatives have been combined into this alternative. The resulting concept is two-fold: within the region, carry out principles of the MAB program by adopting a regional perspective to improve visitor services and conserve resources; and within the monument, improve management capabilities to enhance visitor opportunities and protect resources and wilderness values. To accomplish this, the NPS proposes to:

- working with ADOT, as in the *New Ideas Alternative*, to ensure continued travel and commerce while enhancing conservation practices along the SR 85 corridor in the monument; re-aligning the trail network in the Quitobaquito Springs area; establishing partnerships with others to share facilities, staff, and costs within the Why and Lukeville areas; and proposing an increase in wilderness, but to a lesser degree than in the *New Ideas Alternative*
- seeking redesignation of the monument, as in the *Former Preferred Future Alternative*, to Sonoran Desert National Park and retaining existing facilities in the Twin Peaks area
- seeking to be more cost-effective than the other alternatives, by relocating and developing partnerships for some facilities in Lukeville, proposing different uses for some existing facilities in the Twin Peaks area, and adding fewer new facilities.

Much of the following description of the *New Proposed Action Alternative* refers to previous discussions in other alternatives. A brief summary of most actions is made so the full effect of the alternative can be understood without necessarily referring to other sections. In addition, the Summary Comparison of Alternatives found at the beginning of this *Supplement* allows for a full comparison of all the actions in all the alternatives. A map of the *New Proposed Action Alternative* follows at the end of the discussion of this alternative.

While most of the actions come from other alternatives, one new action is proposed in this alternative. In response to public concerns and reactions at the most recent public meetings, a new approach to development is proposed and described in this alternative in an attempt to lower costs to the NPS. This new approach attempts to efficiently use existing facilities while reducing the amount of new construction over that proposed in other alternatives. Specific facilities are discussed under the following sections: Resources Management, Visitor Use and Associated Facilities, and Park Operations and Associated Facilities. In addition, the layout and inter-relationships of the facilities within the Twin Peaks, Quitobaquito Springs, and Lukeville areas are described in the *Development Concept Plan* section.

LAND USE AND MANAGEMENT

The management zone scheme for this alternative is the same as for the *New Ideas Alternative* except for visitor use of Quitobaquito and the total acreage of each zone. For example, fewer acres of Potential Wilderness Subzone are proposed by this alternative than in the *New Ideas Alternative*. This reduction is due to the fact that several miles of roads proposed to be converted into wilderness in the *New Ideas Alternative* would be retained as roads in this alternative, and consequently, would not meet requirements for potential wilderness designation.

A list of the zones and subzones follows with the changes in this alternative that apply to Quitobaquito and total acreage. Refer to the *Land Use and Management* section of the *New Ideas Alternative* for a full definition of each zone. The management zones are illustrated on the map of the *New Proposed Action Alternative* at the end of the discussion of this alternative.

Management Zones

Wilderness Zone – The management intent is to ensure consistency with the legislative mandate of the Wilderness Act. Approximately 312,600 acres are currently designated wilderness.

Alternatives

Potential Wilderness Subzone – Approximately 3410 acres would be eligible for wilderness designation, the same as in the *Former Preferred Future Alternative*. In the meantime, these lands would be managed consistently with the wilderness zone.

Quitobaquito Management Area Subzone – As in the *New Ideas Alternative*, the boundaries of this subzone would be expanded to incorporate the Quitobaquito Springs watershed—approximately 2400 acres of either designated or potential wilderness—in order to include more of the ecosystem and enhance resource protection. However, in this alternative, visitor use restrictions are not proposed at this time. In the future, a carrying capacity study would be determined and if needed, appropriate restrictions would be proposed and analyzed in compliance with NEPA.

Non-Wilderness Zone – The intent of this zone is to provide for the major roads, parking areas, pullouts, public-use and management structures, and other areas needed to accommodate concentrations of people. The total acres for this zone—18,090 acres—is the same as in the *Former Preferred Future Alternative*. However, in this alternative the lands are divided into the following three subzones.

State Route 85 Corridor Subzone – As with the *New Ideas Alternative*, this subzone applies to approximately 1600 acres, including the road. As in the *New Ideas Alternative*, the NPS would maintain the area outside the easement in a natural and essentially unmodified condition to help preserve adjacent wilderness values. Additionally, the NPS proposes to work with ADOT to ensure continued travel and commerce within the easement while improving resource protection, reducing the impact of the traffic on wildlife, increasing safety for humans, minimizing fire hazards, and improving the visitor's experience of the monument while travelling along the road corridor.

Travel Corridor Subzone – Managed primarily to provide visitors and management both physical and scenic access to the designated wilderness, these areas include 150 feet from each side of the road centerline for a total of approximately 14,626 acres—the same as in the *Former Preferred Future Alternative*—along the following roads: Ajo Mountain Drive (Rt. 011), Puerto Blanco Drive (012), Senita Basin Rd. (Rt. 202), Bates Well Rd. (Rt. 405), North Patrol Rd. (Rt. 406), El Camino de Dos Republicas (Rt. 201), Cipriano Hills Rd., and several roads in the Twin Peaks area.

Development Area Subzone – This subzone applies to concentrations of visitor and management oriented facilities within the Twin Peaks and Lukeville areas and totals approximately 1864 acres. (In the *Former Preferred Future Alternative*, SR 85 was included in this zone.)

Cultural Resources Overlay Zone – Lands in this zone would emphasize preservation, protection, and interpretation of visited cultural resources and their settings. As an overlay zone, these areas occur within the other zones and subzones, and are the same in all alternatives.

NATURAL AND CULTURAL RESOURCE MANAGEMENT & ASSOCIATED FACILITIES

This alternative proposes the following actions related to natural and cultural resources management in addition to those described in the *Actions Common to All Alternatives* section in this *Supplement*.

Resources Management Facilities

As in the *New Ideas Alternative*, a science, education, and resources management center (SERMC) would be established to satisfy the expanding research, resources management, and related educational programs. However, in this alternative, this facility would be retrofitted within an existing structure instead of being in a new facility as in the *New Ideas Alternative*. (Refer to the discussion of goals,

justification, functions, and space needs for this facility in the *New Ideas Alternative*, since they are also the same in this alternative.)

As in the *New Ideas Alternative*, approximately 5,000 s.f. are needed to house the facility and it needs to be located near the resources being studied, managed, and preserved. To accomplish this, this alternative proposes using part of 5,900 s.f. visitor center and administrative facility in the Twin Peaks area could be converted for use as the SERMC. Using the existing facility is a cost effective use of this space since the functions and needs of the SERMC could readily be accommodated within the existing facility. For example, the existing room where a slide show is presented to visitors does not function well as a theater yet would be ideal as a large conference room, one of the functions needed in the new SERMC. An interpretive center is also proposed as part of this new facility, and together with the SERMC, would require that an addition be built onto the existing facility as described further in the *Interpretive Facilities* and *Twin Peaks Development Concept Plan* sections of this alternative.

Wilderness Management

As in the *New Ideas Alternative*, the NPS proposes to facilitate preparation of an inter-agency Wilderness and backcountry management plan for the Organ Pipe Cactus Wilderness, BLM backcountry, and the FWS managed Cabeza Prieta National Wildlife Refuge. Other agencies and groups may also be involved. The extent and nature of this plan would be developed with the agencies involved.

Cultural Resources

Proposed preservation and use treatments for culturally significant properties remain as described in the *Former Preferred Future Alternative* in the *Draft GMP/DCP/EIS*, pages 24-25.

Visual Resources

Powerlines and Sustainable Guidelines. As with both the *New Ideas* and *Former Preferred Future Alternatives*, the NPS would seek to bury powerlines within the Twin Peaks area and eventually relocate and bury the powerlines that currently lie west of SR 85 to non-wilderness lands within the SR 85 corridor. This project is proposed to maximize the wilderness in and scenic values of the monument. The NPS would seek and pursue opportunities to implement these actions only as they can be achieved in a cost-effective manner and to minimize costs, if any, to tax and rate payers as discussed in the *New Ideas Alternative*.

The proposed sustainable design guidelines presented in the *Former Preferred Future* would apply to this alternative and would include the additional guideline proposed in the *New Ideas Alternatives*. These guidelines would serve to minimize the impact of new developments on the landscape and on natural systems by maintaining biological diversity and environmental integrity, contributing to the health of the air, water, and soils, reflecting regional goals and conditions, and reducing the impact of human use.

VISITOR USE AND ASSOCIATED FACILITIES

Some new and some improved facilities and programs are proposed in order to meet the interpretation objectives, to present the themes and stories important to understanding the monument's purpose and significance, and to achieve the concept of this alternative. The interpretive objectives and theme outline can be found in the *Draft GMP/DCP/EIS*, pages 27-29. They are used to help determine the amount of and type of facilities and interpretive programs that are needed to interpret the resources and stories of the monument to the visitors and residents in the area on both sides of the international boundary.

Alternatives

Interpretive Facilities

To satisfy the continued and growing need of visitors and other users of this part of the Sonoran Desert, several facilities are discussed but only one would be developed solely by the NPS while the others would be developed by others with the NPS as a potential partner. These facilities include: a multi-agency information and orientation center in the Why area, ISDA's tri-cultural tri-national center in the Lukeville area, and an interpretive center as part of the science, education, and resources management center in the Twin Peaks area of the monument.

The existing visitor center in the Twin Peaks area is too small and outdated, and focuses primarily on the monument. Instead of continuing to accommodate visitor needs only within the monument, the NPS proposes to work with others to encourage development of visitor-oriented facilities within the region, each with a distinct non-competing purpose and function. These facilities would help to:

- reach the greatest number of visitors to the monument as well as this area of the Sonoran Desert
- increase the type of information that could be provided as well as the potential for partnerships that ultimately could result in cost savings to the NPS
- focus on the different but equally important aspects of the various stories, resources, and management issues of the Sonoran Desert

A discussion of the purpose and function of each facility follows.

Multi-agency Information and Orientation Center. To help accommodate visitor information and orientation needs in the region, the NPS proposes to assist in the establishment of a new multi-agency information and orientation center in the Why area by developing partnerships with other federal agencies and/or private interests. Described in the *New Ideas Alternative*, the idea of this type of facility has been gaining support and subsequently is also proposed as part of this alternative. Why was selected as a location because it serves as a critical junction for people travelling between Mexico and the U.S. and because of its proximity to the various federal lands.

The purpose and preliminary size estimate of the new facility has been changed from that proposed in the *New Ideas Alternative*. In this alternative, the facility would focus on providing information and orientation on use of federally protected lands in the area, including the monument, and visitor opportunities in the Sonoran Desert region. (In the *New Ideas Alternative*, the facility would also serve as an interpretive center for the monument, however in this alternative, the interpretive center is proposed in another location and is described below.) The size of the facility would be determined based on the needs of each partner. As an initial estimate, approximately 2,500 s.f. would be needed to contain the following inter-agency functions:

- lobby with information desk, orientation media, and to provide various permits
- sales area for publications and related material
- interpretive exhibit area
- public and employee rest rooms
- employee offices, work space, and outdoor break area
- storage space for sale items, janitorial supplies
- space for circulation and mechanical/electrical equipment

As stated in the *New Ideas Alternative*, some land is available for purchase in the Why area although congressional legislation would be required if the NPS sought to purchase any lands outside the monument boundaries. A second option would be to work with the BLM to build this facility on federally owned lands. The U.S. Border Patrol currently leases land from the BLM for a facility in the Why area and a similar arrangement may be possible for this facility.

If this facility is not built, the NPS would seek partnerships to provide this information within the interpretive center in the Twin Peaks area, described below, or through signs and wayside exhibits throughout the region and the monument.

ISDA's Tri-Cultural, Tri-National Center. As in the *New Ideas Alternative*, the NPS supports development of this center in the Lukeville area, and would be interested in a possible partnership. The NPS would not want to duplicate information and services provided through ISDA and this facility, and instead would be interested in complementing the function of this facility. If a partnership were possible, the NPS would be interested in helping to develop exhibits and programs that would carry out the monument's interpretive themes relating to cultures. If this facility is not built or ISDA is not interested in a partnership, the NPS would seek to provide this information within the interpretive center in the Twin Peaks area, described below, or through signs and wayside exhibits in the monument.

SERMC Interpretive Center. An approximately 4,500 s.f. interpretive center linked to the new science, education, and resources management center (SERMC) is proposed in this alternative. A 3,600 s.f. addition would be added to the existing visitor center and administrative building in the Twin Peaks area. The existing building together with the addition would be converted into the interpretive center, and the rest into the SERMC.

The size of the interpretive center is reduced from the previous estimates for a new visitor center in the *Former Preferred Future Alternative* for several reasons. Combining the visitor center with the SERMC would allow sharing of space and eliminate duplication of some functions. For example, interpretive and resources management employees could share one conference room, restrooms, break area, and janitorial storage and utilities areas; if two buildings were constructed these functions would need to be duplicated. Another reason the proposed facility is smaller is that some of the functions of the existing visitor center could be handled at the two previously discussed visitor facilities, allowing the interpretive center in the monument to focus on interpreting resources and resources management activities. As evidenced in the interpretive themes, resource issues, resources management, and resource protection are key aspects of the interpretive stories and themes of *Organ Pipe Cactus National Monument*. These themes deal with the richness and diversity of resources, environmental factors, responsible management, and the fact that the monument serves as a unique living laboratory. In addition, the public has become increasingly aware and interested in the environmental and social issues facing the NPS. Therefore, the proposed interpretive center would work to connect the monument's research, science, and education program with the visitors.

While the interpretive center and SERMC would need to work together, employee work space and visitor use areas would be separated as shown and described in the Development Concept Plan section. The functions in the new interpretive center would include:

- lobby with information desk and orientation media (this lobby could also serve as reception area for the SERMC)
- sales area for publications and related material
- storage space for sale items
- interpretive exhibit area
- multi-use theater
- public restrooms with exterior access
- employee offices and work space (which would be part of the SERMC)

The interpretive center would also include an outdoor public use space. Presently during O'odham Days, more than 2,000 people can congregate around the visitor center area, yet there is no place designed to accommodate this number of people or to allow for other outdoor related uses. The proposed outdoor space would be designed for multiple-uses so that the space could function for smaller interpretive programs and be easily expanded for large events, like O'odham Days. To achieve this, a core area and overflow space would be developed. The core space would be designed as a shaded plaza with outdoor exhibits and would serve as the starting point for tours of the SERMC nursery and greenhouse and would alleviate overcrowding in the interpretive center. An interpretive trail would begin at this plaza as discussed later in the *Area Transportation Network* section.

The overflow area would be simply designed to accommodate crowds and temporary structures such as booths, stages, or exhibits, yet would appear generally undeveloped when not in use. For example the

Alternatives

entire area might not need to be paved: in some places the ground is hard and level enough to accommodate a variety of functions, or soil stabilizers could be used. Both the core and overflow areas would be landscaped with native vegetation and would include electricity, lighting, seating, shade, and water.

Information Portals and Wayside Exhibits. Information portals at the north and south entrances of the monument, two other pullouts, and other exhibits would be established as proposed in the *New Ideas Alternative*. The portals would be visually striking, serve as gateways to the monument, provide a welcoming and rest area for visitors, orient visitors to monument resources, and let them know that certain regulations are in force to protect the park. To help interpret specific features or resources, two smaller pullouts with wayside exhibits are proposed between mileposts 70-71 and mileposts 73-74. Several other wayside exhibits are proposed at key areas throughout the monument as described in the *New Ideas Alternative*. While most of these developments would occur on currently disturbed lands, further environmental analysis would be prepared before construction of the facilities to ensure compliance with NEPA and other federal laws.

Partnerships and Outreach Programs

As in the *Former Preferred Future* and *New Ideas Alternatives*, partnerships and outreach efforts would be expanded to include working with ISDA to develop and promote a tri-national, tri-cultural facility and significantly increase the Tohono O'odham Nation's involvement in interpretation of the monument.

Camping

To help satisfy visitors' increasing demand for a primitive-style camping experience with little development, a walk-in camping area would be established in the Twin Peaks area near the existing group camping area as described in the *Former Preferred Future Alternative*. Approximately 20 primitive campsites would be developed and the parking area expanded for 20 vehicles, with one restroom.

The Alamo Canyon campground would be expanded as described in the *Former Preferred Future Alternative*, to include four additional sites and a delineated parking area to help manage day-use. Before this expansion would occur, resource studies would be performed on the sensitive cultural and natural resources in this area and the results used to determine overnight use capacity of this area. Based on the results, the location and densities of campsites may change, and if necessary, use restrictions may be imposed to protect resources.

Area Transportation Network

Roads. The road network would remain as described in the *Existing Conditions Alternative* with the following exceptions. Some roads in the Twin Peaks and Quitobaquito areas would be re-aligned to serve proposed facilities and changes in use, and user capacities of the roads accommodating vehicular access into the wilderness would be determined as described in the Natural and Cultural Resources Management Plan section of the *Actions Common to All Alternatives*.

In the Twin Peaks area: approximately 800 feet of new, two-lane paved road would be constructed, 800 feet of two-lane paved road would be removed, visitors and employees would each have separate access and parking areas, and a new turn-around with about 400 feet of new dirt road would be added at the entrance to Puerto Blanco Drive.

As in the *New Ideas Alternative*, the approximately .4 mile long Quitobaquito entrance road would be converted into a trail and the remaining road bed would be removed and restored to natural conditions.

Trails. The existing network of trails would be retained and in addition, eight new trails and two new hiking routes totalling about 22 miles would be added to enhance interpretation of and visitor access to

resources, and to help accommodate the desire for new trails as identified in the 1989 Visitor Survey. The following table describes the new trails and hiking routes in this alternative; shaded boxes in the table represent trails that remain as described in the *Former Preferred Future Alternative*. The criteria used to determine the trail additions and most of the new trails are also the same as those described in the *Former Preferred Future Alternative*, except the number and total of trail miles are reduced in this alternative. These changes result from the elimination of the trail proposed near prime rosy boa habitat and the change to the trail network proposed for Quitobaquito Springs; both of these changes are the same as in the *New Ideas Alternative*. In addition, a new interpretive center nature trail (that incorporates the existing visitor center nature trail) and a new trail as part of the northern information portal are proposed. As a result of these changes, up to 5.5 miles of trails would be made accessible for visitors with disabilities—a 1.5 mile increase over the *Former Preferred Future Alternative*.

As described in the *New Ideas Alternative*, the vast majority of new trails would be developed along existing disturbed areas or social trails and the addition of interpretive or wayfinding signs would be added to underscore the need for sensitivity to the wilderness nature of most of the monument.

Table 4: New Proposed Action Alternative: Proposed Trails and Routes

Proposed Trail or Route	Length and Location	Purpose/Comments
Quitobaquito Trail Network	Roughly 1 mile round trip from parking at Puerto Blanco Dr. to pond and springs. Most of trail would occur on social trails, and would incorporate the .4 mile roadbed. Extensive network of remaining social trails to be removed and the lands restored.	Provides access to spring and pond and interpretation of water, cultural use, the landscape, unique species, resource protection, and global biodiversity. Would be made wheelchair accessible.
Interpretive Center Nature Trail	Use part of existing visitor trail for approximately .5 mile round trip originating from new visitor center.	Wheelchair accessible, this trail would introduce resource management issues and accomplishments, ecological relationships, and desert adaption themes.
Alamo Canyon Trail	Approximately 2 mile one-way extension of existing trail beginning at the campground	Formalize existing social trail and provide interpretation of the natural and cultural history of the Alamo Canyon area.
Senita Basin Loop Trail	Approximately 3 mile loop from existing Senita Basin parking and picnic area at the terminus of the Senita Basin Rd.	Formalize one existing social trail into a trail and provide interpretation of the Senita Cactus and other desert plants. Would be made wheelchair accessible.
Bonita Well Trail	Approximately 2 mile loop from existing parking area along Puerto Blanco Dr.	Access to rancher's line camp, provide interpretation of land use, impacts, and water themes, along with lifestyles of people and cowboys in Sonoran Desert as they relate to ranching.
Grinding Holes Trail	Approximately 2 mile round trip from parking along SR 85 between mileposts 70 & 71	As described previously, the NPS would involve the Tohono O'odham Nation before formalizing social trails and implementing interpretation of areas involving their heritage. Would be made wheelchair accessible.
Twin Peaks Trail	Approximately 3.5 mile round-trip from parking lot in new primitive campground.	A challenging hike to top of Twin Peaks, fulfilling a trail need requested by visitors surveyed. One of many existing social trails, reflecting this area's popularity and years of use, would be formalized into a safe, easy to maintain trail.
Desert Garden Loop Trail	Approximately 3 mile loop from new pullout along SR 85 between mileposts 73 & 74	Provide opportunity to walk in desert and introduce the Sonoran Desert. Would be made wheelchair accessible, if feasible.
Sonoran Desert Trail	Approximately .2 mile loop as part of information portal along SR 85 near the northern entrance to the monument.	Introduce the Sonoran Desert and the monument at the north entrance. Interpret themes of desert adaptation and environmental awareness. Would be made wheelchair accessible.

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Proposed Trail or Route	Length and Location	Purpose/Comments
Puerto Blanco Loop/Route	Proposed 6-9 mile loop through wilderness starting at existing parking area along stop 4 on Puerto Blanco Dr.	Offers quiet hiking through low desert mountains and opportunities to see backcountry mining sites. Low to moderately strenuous hiking.
Diaz Spire Loop/Route	Proposed 6 mile loop through wilderness from parking area along Ajo Mountain Dr.	Offers great views of Ajo Mountains involving moderate to strenuous hiking.

PARK OPERATIONS AND ASSOCIATED FACILITIES.

Staffing

As described previously in the *New Ideas Alternative*, Staffing section the NPS would toward a target of 45 FTE over the life of this plan, an increase of 15 FTE over existing conditions. A realistic projection figure of 1 FTE per year based on past trends was used to determine this number. The breakdown of proposed FTE per division also remains the same as in the *New Ideas Alternative*.

Operations Facilities

Ideas from the *Existing Conditions Alternative*, *Former Preferred Future Alternative*, and *New Ideas Alternatives* have been combined to propose the following actions regarding operational facilities. In this alternative, most of the existing facilities in the monument would be retained, except for house trailers which, as an agency, the NPS is attempting to eliminate from all units of the National Park system. Some expansions and additions are proposed to accommodate maintenance, ranger operations, and the fire station while partnerships would be sought to accommodate seasonal housing and administrative offices. A discussion of each of these follows.

Maintenance, Ranger Operation, and Fire Station Complex. The existing maintenance complex in the Twin Peaks area would be retained and expanded as described in the *Former Preferred Future Alternative*. In addition, the ranger operations and fire station would be incorporated into the design of the maintenance complex, as described in the *New Ideas Alternative*. The expanded complex would add:

- approximately 2,000 more s.f. of work space for maintenance activities and some office space to accommodate a total of 10.5 existing and projected FTE
- approximately 2,400 s.f. covered space for materials storage
- approximately 850 s.f. of 5 foot tall concrete storage silos
- approximately 9,100 s.f. of covered parking and drive-through work bays for heavy equipment repair, loading, and parking for 25-30 vehicles (some oversized)
- approximately 4,000 s.f. for the ranger operations and fire station; the majority of this space would be used to store the fire truck and emergency equipment, and the remainder used for office, training and work space for 9.2 employees

As in the *New Ideas Alternative*, the NPS proposes to enter into discussions with other federal agencies in the Lukeville area to share facilities, staff, equipment, and storage needs. Based on the outcome of these discussions, the NPS may seek to offset some of the costs of the expansions and may need to adjust the final square footage needs.

Employee and VIP Housing. The existing Twin Peaks housing loop, homes, and RV area for volunteers would be retained as in the *Former Preferred Future Alternative*. Retaining this housing community is cost-effective for the NPS and at the same time, helps the monument attract employees and volunteers to this area. The two homes that currently function as resource centers and the two homes that function as dorms for seasonal employees would be converted back to single family

residences. This work would primarily be cosmetic as no major construction would be needed. No new employee housing would be constructed in this area.

Since affordable, short-term housing is difficult to find in the area during the busy winter season, the NPS would seek partnership ventures to establish apartments or efficiencies for seasonal employees and visiting scientists and researchers in the Lukeville area, as in the *New Ideas Alternative*. The NPS estimates that approximately 10 total bedrooms are needed which could be in apartments or efficiencies. All NPS housing, whether owned or leased by the NPS, would need to meet federal standards and would need to be affordable for employees. As stated previously, the NPS is not interested in utilizing the existing housing area within the U.S. Customs and Immigration due to the noise and congestion generated by the adjacent port of entry. If a mutually satisfactory arrangement cannot be reached with either the federal agency or private owners, the NPS would seek to construct these units on federally owned lands in the Lukeville vicinity.

As in the *New Ideas Alternative*, the NPS would help initiate and participate in establishing a community center in the Lukeville area for all area residents—those living in Lukeville and Twin Peaks. The function and size of the facility would be determined with community participants and could be located in an existing building, or a new one.

Administration. Approximately 2,000 s.f. of total office space would be needed to accommodate a total of four administrative FTEs, including the Superintendent. In this alternative, the NPS would work to establish an agreement with the Government Services Administration, U.S. Customs and Immigration, and Immigration and Naturalization to utilize and share office space in the border station. The facilities are currently under-utilized and would help off-set the monument's need for office and work space.

DEVELOPMENT CONCEPT PLANS

As stated previously, the DCPs are intended to depict the basic concept for development in the Twin Peaks, Quitobaquito Springs, and Lukeville areas—in other words, the inter-relationship of the various visitor, operational, and transportation elements. Therefore, only very general locations, functions, and sizes of proposed facilities are shown. Once funding is secured for development, detailed design and construction drawings with further environmental analysis in compliance with NEPA and other federal legislation would be developed for each facility or area.

Sustainable design guidelines would be utilized for all proposed developments to ensure:

- facilities are visually compatible and sensitive to the Sonoran Desert environment
- water conservation and sustainable technologies are utilized
- buildings are located for energy efficiency in the hot, arid climate, and are not located in floodplains of major washes
- alternative energy and waste disposal measures are considered

Twin Peaks

The development concept plan for the Twin Peaks area is shown on the corresponding map. In many ways, it is similar to that proposed in the *Former Preferred Future Alternative*, except for the reduced size and change of location of some of the facilities.

The science, education, and resources management center, greenhouse, and nursery would be located next to the interpretive center and joined by an outdoor plaza and nature trail. To help separate visitors and employees, a visitor parking and picnic area would be located on one side of the facility, and an employee parking area on the opposite side.

Alternatives

Expansion of the maintenance facility would occur on disturbed lands as described in the *Former Preferred Future Alternative*. However, in this alternative, the ranger operations and fire station would be located next to the maintenance facility, with a nearby area for helicopter landings.

Other changes to the *Former Preferred Future Alternative DCP* concern the housing loop area. Several facilities are not proposed by this alternative including the community center and seasonal housing which are instead, proposed in the Lukeville area, and the satellite dish and utility building which have been omitted.

As in the *Former Preferred Future Alternative*, some of the roads would be realigned and a new turn-around for Puerto Blanco Drive added. These additions would be made to serve the new facilities, improve vehicular circulation in the area, and separate employee and visitor use areas. Approximately 800 feet of new paved two-lane road would be constructed along the visitor's entrance to the Twin Peaks area and 800 feet of existing two-lane road would be removed. Approximately 400 feet of new dirt road would be added at the entrance to Puerto Blanco Drive as the new turn-around.

Quitobaquito Springs

The proposed development concept plan for the Quitobaquito Springs area is the same as in the *New Ideas Alternative*. Please refer to the drawing and discussion in the DCP section of the *New Ideas Alternative*.

Lukeville Area

While several actions are proposed for the Lukeville area, the sizes or specific locations of the facilities are not known at this time. Actions proposed in this alternative that could occur in Lukeville are described on the *New Proposed Action Alternative* map and include: housing for NPS seasonals and visiting researchers totalling about 10 bedrooms, use of office and work space for NPS administration within the existing border station, ISDA's Tri-National, Tri-Cultural Center, and a community center for all area residents in Lukeville and Twin Peaks. Most of these actions are similar to some of the actions proposed in the *New Ideas Alternative*, however, less development is proposed in this alternative.

NAME, BOUNDARY, AND WILDERNESS AREA CHANGES

Redesignation

For all the reasons described in the *New Ideas Alternative*, National Park status would be sought. However, in this alternative, the proposed name would be Sonoran Desert National Park since this name better exemplifies the significant resources contained within its boundaries.

Boundary Adjustments

The NPS feels that the land exchange proposed in the *Former Preferred Future Alternative* would enhance management of these lands for both the NPS and the Tohono O'odham Nation. However, the NPS will not seek to implement this exchange unless both parties are willing. At this time, the Tohono O'odham Nation does not appear to be interested in the proposal so the NPS will respect this decision and consequently, has not depicted this action on the map of the *New Proposed Action Alternative*. If in the future the Tohono O'odham Nation becomes interested in pursuing this or a similar idea, the NPS would be willing to enter into negotiations at that time.

Wilderness Additions

In addition to the state trust lands described in the *Actions Common to All Alternatives*, the following areas may be eligible for wilderness designation and are the same as in the *Former Preferred Future*

Alternative with one exception. The acres involving the proposed land exchange with the Tohono O'odham Nation are not proposed in this alternative. Once conditions are met, a legislative proposal would be prepared to propose the addition of approximately 1509 acres.

1. Approximately 206 acres of land where the above-ground powerlines are currently located west of SR 85. The old lines and poles would be removed and the powerline road restored to natural conditions. These lands could then qualify to be added into the wilderness boundaries.
2. Once the existing parking lot and road are restored to natural conditions, approximately 23 acres of the Quitobaquito area would be suitable for wilderness designation.
3. In the Twin Peaks area, approximately 70 acres of land, currently designated as non-wilderness, would be suitable for wilderness designation once facilities on about 43 acres of land are removed and the area restored. The remaining 27 acres are adjacent to the area that would be restored and are currently undeveloped.

PLAN IMPLEMENTATION AND COSTS

Implementation

As described previously, the intent of a GMP is to provide comprehensive, general guidance for managing a unit of the NPS over a 15-20 year time span. The ability and rate of which the NPS is able to implement the actions in a GMP is variable and is based on numerous factors, many of which are not controlled by the NPS. Some NPS managed areas are able to fully implement approved GMPs within this time frame, while for other areas, it takes much longer.

Funding is the ultimate determinant of the time frame in which proposed developments, programs, and staffing additions would be implemented. Because of limited federal resources, the NPS, together with other federal agencies, is seeking partnerships to develop cost-effective solutions for carrying out legislated responsibilities. Partnerships, donations, and volunteer work can offset implementation costs and would be sought wherever possible.

Priorities. A prioritization or phasing strategy has been developed to implement actions in this alternative as described in the *New Ideas Alternative*. Likewise, priorities may be amended in the future, and those for staffing are included in the following *Staffing Cost* section.

The same categories used in the *New Ideas Alternative* have been used for the prioritization of the actions in this alternative. The projects in this alternative related to health and safety or legislative requirements, such as threatened and endangered species, significant cultural resources, and Native American consultation, are proposed as the highest priority and include implementation of: (these projects are not in any specific order of priority)

- the fire station as part of the expanded maintenance complex proposed in the Twin Peaks area
- the DCP for the Quitobaquito Management Area which relates to safety, threatened and endangered species, and cultural resource concerns
- a partnership with ADOT to develop and implement the program proposed for SR 85 in order to improve visitor safety and to help protect and recover threatened and endangered species affected by the road and related traffic
- the one or more agreements to be developed between the NPS and the Tohono O'odham Nation
- the inventory, monitoring, and mitigation programs and actions to protect and recover threatened and endangered species including control of nonnative vegetation and animals
- studies and programs that help mitigate impacts occurring from outside the monument on threatened and endangered species including expansion of the water resources management program
- safety programs for abandoned mine lands

Alternatives

- inventory, evaluation, and monitoring programs established to protect cultural resources including their nomination to the National Register of Historic Places

Second level priorities involve provision of essential services and NPS functions that are not a level one priority, or, are the second phase of a high priority project, and in this alternative include implementation of:

- the rest of the programs and projects identified in the *Natural and Cultural Resources Management Plan*; due to financial considerations, many of these would be phased over time
- expansion of the maintenance complex in the Twin Peaks area
- partnerships that work toward: development of the visitor center in Why, use of existing office and work space for NPS administration in Lukeville, initiation of the joint effort to prepare a wilderness and backcountry management plan, and the establishment of housing for NPS seasonals in Lukeville
- plans developed with APS to determine strategies to relocate and bury powerlines
- related road work and conversion of the existing visitor/administrative facility in Twin Peaks to the science, education, and resources management center, greenhouse, nursery, and interpretive center
- new trails and restoration of social trails which most likely would be phased over time
- redesignation which would require congressional legislation

All other projects and programs proposed in this alternative are third level priority projects and may encompass the second or third phase of projects initiated at higher priority levels. These include the implementation of:

- conversion of houses currently used as office space and dorms, back to employee homes; this could not be accomplished until the new SERMC, ranger operations, and seasonal apartments have been completed
- the proposed additions to wilderness which would require congressional legislation

Cost Estimates

Cost Estimates for New Development. The following costs of development are one-time costs to the government. The NPS recognizes that development costs for the federal government tend to be higher than those for private citizens, and subsequently, has prepared a discussion in the *Cost Estimates* section of the *New Ideas Alternative* regarding escalated costs. This discussion also applies to the estimated costs for this alternative.

For the purpose of this planning effort, the total costs the government may expect to incur to implement these developments are listed below. If costs are successfully offset or reduced, these estimates instead would represent the value or cost savings to the government.

The total development cost is expected to be approximately \$ 6,778,000 for this alternative and is broken down below by area. More detailed figures can be found in Appendix B of this *Supplement*. (The figures from the Appendix were rounded up to the nearest thousand.)

Twin Peaks:	\$ 5,162,000
Quitobaquito:	\$ 260,000
Alamo Canyon:	\$ 57,000
Other Roads, Pullouts, Trails, and Exhibits:	\$ 1,299,000

The cost for projects involving partners or those located outside monument boundaries are not included in these estimates. At this time, the proposals are preliminary and the make-up of the partnerships, and the size, location, and the NPS share of facility costs—if any—are unknown. Examples of NPS costs in established partnership efforts vary widely: from the NPS paying for construction to having a facility donated at no cost to the NPS, from using NPS paid staff, to using another agencies paid staff, to using volunteers at no cost to the federal government. Because of these unknown variables, the NPS

has not attempted at this time to predict the costs of these projects to the federal government. The NPS would seek public involvement on the partnerships, locations, and size of the facilities in compliance with NEPA, and would be able to begin to predict and present any costs at that time.

The projects that are discussed in this alternative but are not included in the cost estimates include: the inter-agency information and orientation center in Why, ISDA's possible tri-cultural, tri-national center, sharing facilities in the border station for NPS administration, establishing a small facility for community meetings and social functions in the Lukeville area, and seeking apartment type housing for NPS seasonal employees also in the Lukeville area.

Cost Estimates of Adding Staff.

Increases in funding and therefore staffing, are difficult to predict. As described in the *New Ideas Alternative*, the rate of past staffing increases for the monument was used to predict a realistic increase for this alternative: at one FTE per year this equates to a total of 15 FTE. To gain the entire 15 FTEs—at the average rate of one per year—the NPS would eventually incur a total cost of roughly \$850,000.

As in the *New Ideas Alternative*, the cost and number of additional FTE could be reduced through partnerships and other ventures due to the increased potential for establishing inter-agency partnerships.





SONORAN DESERT NATIONAL PARK

NEW PROPOSED ACTION ALTERNATIVE

SONORAN DESERT NATIONAL PARK
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DSC/March 1996

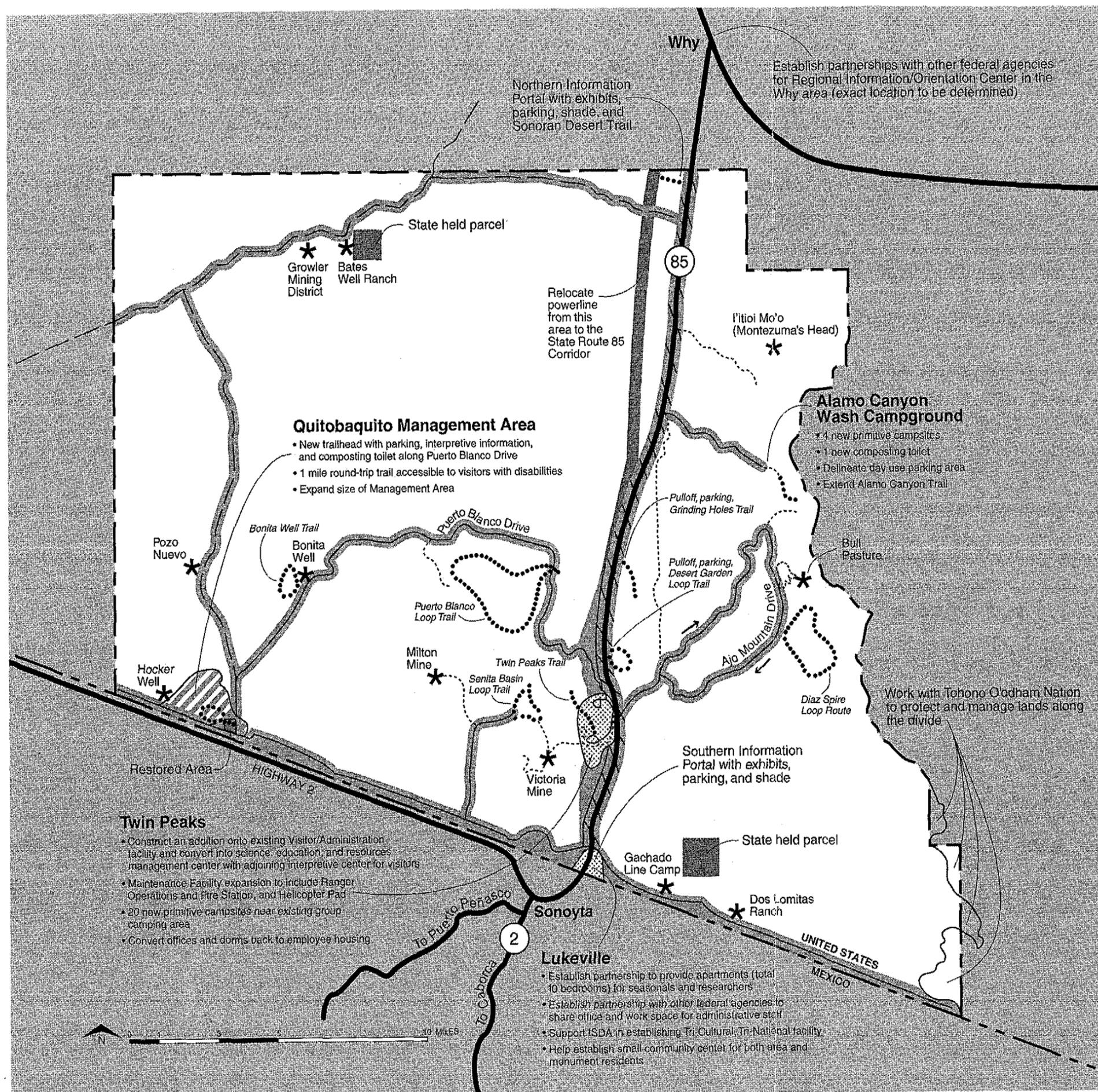
Publ. as 157/20014
Now 157/20014A

MANAGEMENT ZONES

- Non-Wilderness Development Area
- State Route 85 Corridor Zone
- Non-Wilderness Travel Corridor
- Wilderness Zone
- Potential Wilderness Additions
- Wilderness Zone - Quitobaquito Management Area
- Cultural Resources Overlay Zone

GENERAL LEGEND

- Existing Trails
- Proposed Maintained Trails
- Paved Roads
- Graded Dirt Road
- Unimproved Dirt Road



ON MICROFILM



SONORAN DESERT NATIONAL PARK

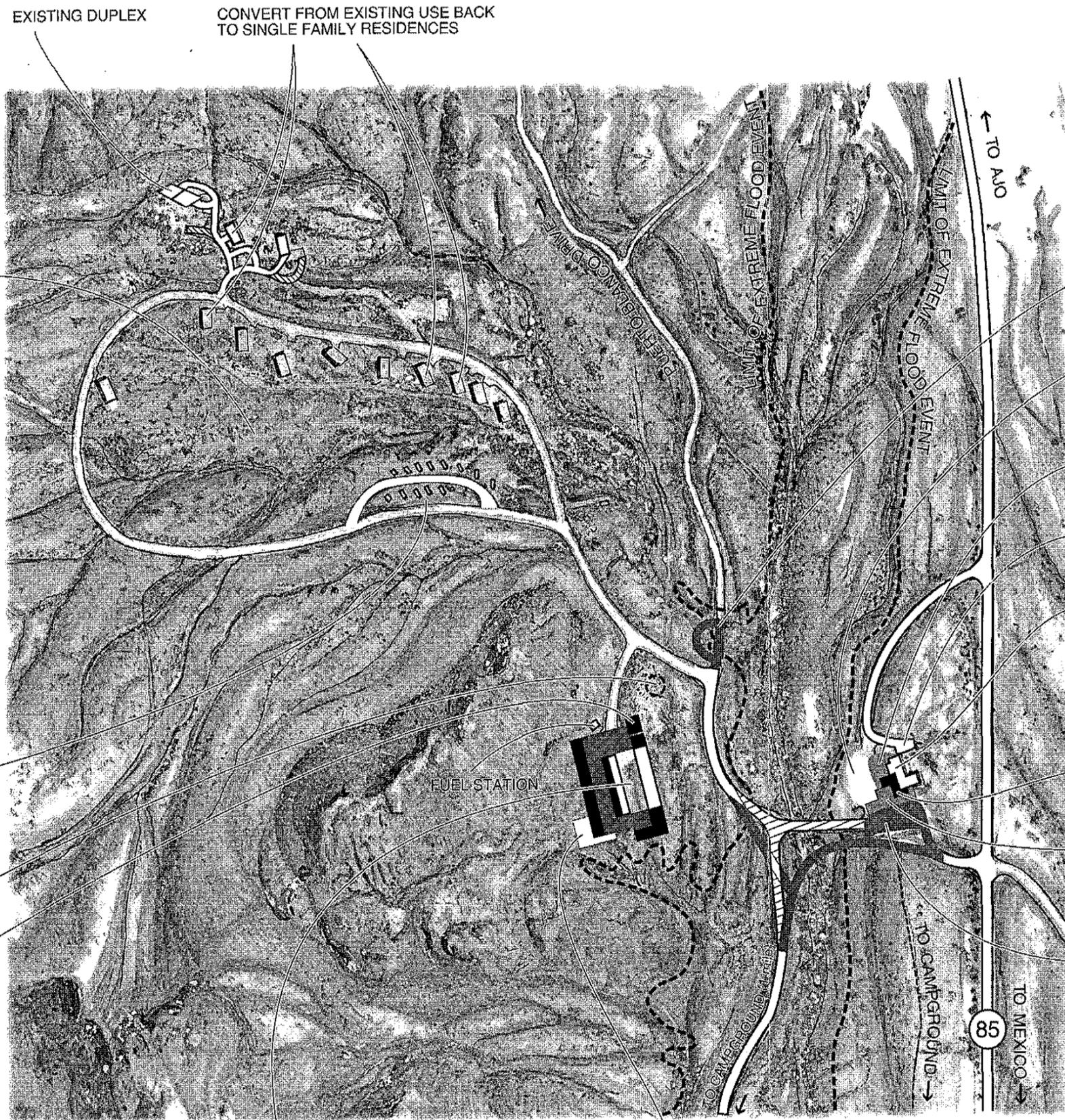
NEW PROPOSED ACTION ALTERNATIVE

TWIN PEAKS DEVELOPMENT CONCEPT PLAN

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DSC/March 1996

Publ. as 157/20016
Now 157/20016A

- EXISTING BUILDINGS AND FACILITIES
- NEW BUILDINGS AND STRUCTURES
- NEW ROADS, PAVED AREAS, AND OTHER FACILITIES
- REMOVE ROADS: RESTORE TO NATURAL CONDITIONS
- EXISTING TRAIL



EMPLOYEE HOUSING AREA
 • MAINTAIN CURRENT NUMBER OF HOUSING UNITS

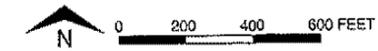
VIP TRAILER VILLAGE
 • MAINTAIN CURRENT CAPACITY

HELICOPTER PAD

RANGER OPERATIONS AND FIRE STATION

MAINTENANCE COMPLEX
 • EXPANDED WORK/SHOP SPACE, COVERED STORAGE AND PARKING
 • ADD WASH BAYS, CONCRETE SILOS, AND LOADING RAMPS

FORMER CORRAL AREA



NEW TURN-AROUND

MULTI-USE OVERFLOW SPACE

GREENHOUSE AND NURSERY AREA

EXISTING EMPLOYEE PARKING

SCIENCE, EDUCATION, AND RESOURCES MANAGEMENT CENTER
 • CONVERT EXISTING ADMINISTRATION/VISITOR FACILITY

VISITOR CENTER
 • ADDITION WITH RESTROOM

MULTI-USE OUTDOOR PLAZA-CORE AREA

VISITOR PARKING

SUPPLEMENT TO
ENVIRONMENTAL
CONSEQUENCES



INTRODUCTION

triAs required by the National Environmental Policy Act (NEPA) of 1969, the potential consequences of implementing the new alternatives were analyzed. The following discussion of consequences addresses both adverse and beneficial impacts on the human environment that are expected to occur if actions related to the two new alternatives are implemented. Most of the actions contained in the two new alternatives have been discussed previously in the *Draft GMP/DCP/EIS*. Therefore, the following analysis will focus on those actions that are unique to the alternatives presented in this document. Impacts associated with actions already described in the *Draft GMP/DCP/EIS* will be incorporated by reference.

A chart summarizing the environmental consequences is located in the summary section, following the summary of alternatives. The chart contains a comparison of the two new alternatives. Analysis of the no action alternative and *Former Preferred Future Alternative* can be reviewed in the *Draft GMP/DCP/EIS*.

The programmatic nature of many actions proposed in general management plans makes it difficult to quantify their environmental impacts; consequently, more detailed site-specific planning and analysis would be required before implementing some actions contained in this document. More specific mitigations for implementing the *New Proposed Action Alternative* are presented in Appendix I. In addition, other more detailed efforts may involve preparing project-specific environmental assessments, obtaining additional clearances and permits from regulatory agencies, or developing further mitigation strategies.

Impact Topics

Impact topics were developed to allow comparison of the environmental consequences, or impacts, of each alternative. The same impact topics that were used for analyzing alternatives in the *Draft GMP/DCP/EIS* have been used to analyze the two new alternatives in this *Supplement*. These topics include: wilderness; air quality; floodplains, wetlands, and water resources; threatened, endangered, and sensitive species; wildlife; vegetation and soil; cultural resources; visitor use and experience; socioeconomic; and cumulative impacts. A definition of each topic can be found on pages 105-106 of the *Draft GMP/DCP/EIS*, as well as a list of those topics dismissed from further consideration. One new impact topic was analyzed in this *Supplement*: impacts to socio-cultural characteristics. This new impact topic was developed in part, to address Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations", issued by President Clinton on February 11, 1994. The definition of this impact topic is provided under that topic heading.

ENVIRONMENTAL CONSEQUENCES

IMPACTS ON WILDERNESS

New Ideas Alternative

Proposed actions would increase protection of wilderness resources and values, and are consistent with both the Wilderness Act and NPS management policies. Actions directly affecting wilderness are similar to the *Former Preferred Future Alternative* with three exceptions:

- the proposed wilderness and backcountry management plan would be prepared as an inter-agency effort with the U.S. Fish and Wildlife Service (FWS) and Bureau of Land Management (BLM)
- fewer acres would be committed to development within the Twin Peaks area in the monument
- 3650 acres would be proposed for wilderness designation, including 70 acres of former developed lands in the Twin Peaks area and 570 acres along former road corridors

An indirect effect of this new alternative, which is common to all alternatives, is that user capacities would be established for roads that provide access into wilderness.

Wilderness values would be enhanced under the *New Ideas Alternative* by the removal of nearly all of the existing development in the Twin Peaks area, the reduction of the number of roads providing vehicular access into wilderness areas, and the relocation and burying of the powerlines. By maintaining only those facilities or roads that are either resource dependent, essential for efficient monument operations, or offer a unique experience (e.g., primitive camping opportunities), the monument would become more compatible with wilderness values.

Anticipated impacts to wilderness resulting from actions contained in the *New Ideas Alternative* are essentially the same as described in the *Former Preferred Future Alternative*. There would be no direct adverse effect on wilderness since all proposed development would occur outside wilderness boundaries. Although most maintained trails and unimproved hiking routes would occur either in designated or proposed wilderness, their presence and use is considered acceptable and appropriate in wilderness areas.

Other beneficial impacts on wilderness would result from an increase in the amount of acreage eligible for wilderness designation. Under this alternative, the size of the Organ Pipe Cactus Wilderness could potentially increase by 3650 acres, compared to 3,410 acres under the *Former Preferred Future Alternative*. Once designated, these lands would receive permanent protection under the Wilderness Act.

Development and implementation of an inter-agency wilderness management plan also would have beneficial effects on designated and proposed wilderness areas as well as those areas managed to maintain wilderness values. Coordination and joint planning with the FWS and BLM would promote more efficient management of adjoining wilderness areas and address issues of common concern. This planning effort would seek collaborative approaches, ensure a spectrum of visitor opportunities, and facilitate information sharing among agencies to better protect wilderness resources.

Establishing user capacities of backcountry roads would help ensure that adjacent wilderness areas are protected to the greatest extent possible. Determining these capacities as proposed in the *Natural and Cultural Resources Management Plan*, would have a beneficial effect by limiting intrusions on the solitude and visual quality of adjacent wilderness.

The approximately 22 miles of SR 85 within the monument would continue to serve as a through route; however, the NPS proposes to continue to work with ADOT to develop ways to mitigate impacts from existing use. No reduced speed limits, tolls, or traffic re-routes are planned. The impact to wilderness values from noise and visual intrusions resulting from the anticipated increase in non-monument traffic would continue to be adverse, long-term and significant.

Environmental Consequences

Conclusion. Actions described in the *New Ideas Alternative* would, for the most part, continue to enhance wilderness values. Under this alternative, an additional 3,650 acres of the monument would be proposed as wilderness. Removal of facilities and roads, development of an inter-agency wilderness management plan, and the establishment of user capacities for roads leading into wilderness would have long-term beneficial effects on wilderness areas and values. Coordination with ADOT to seek ways to minimize impacts of continued use and conditions along SR 85 would facilitate protection of monument resources. However, the indirect impact of traffic on the solitude and visual quality of adjacent wilderness would continue to be adverse, long-term, and significant.

New Proposed Action Alternative

Impacts to wilderness would be essentially the same as the *New Ideas Alternative* except that fewer acres would be restored to natural conditions and proposed for wilderness designation. Under this alternative, 1,509 acres would be proposed as wilderness, compared to 3,650 acres under the *New Ideas Alternative*. The difference in acreage is due to three factors:

- 70 acres in the Twin Peaks area would remain developed
- none of the monument's backcountry roads would be restored or converted to trails under this alternative
- the 1502.6 acres of the monument that which lie of the crest of the Ajo range would not be proposed for addition into wilderness, however, the NPS would work with the Tohono O'odham Nation to ensure that management of these lands is compatible with wilderness values

All other actions and resulting impacts would be the same as those described for the *New Ideas Alternative*.

Conclusion. Actions described in the *New Proposed Action Alternative* would, for the most part, enhance wilderness values and attributes as described under the *New Ideas Alternative*. The continued use of all backcountry roads as well as existing facilities in the Twin Peaks area would make these areas ineligible for wilderness designation (as proposed under the *New Ideas Alternative*); however, this would not be an adverse impact to the wilderness character of the monument as a whole. As with the *New Ideas Alternative*, inter-agency development of a wilderness management plan and establishing user capacities for backcountry roads providing access to wilderness would have long-term beneficial impacts to wilderness areas and values. Impacts on adjacent wilderness resulting from traffic on SR 85 would continue to be adverse, long-term and significant, although the NPS would work with ADOT on these issues.

IMPACTS ON AIR QUALITY

New Ideas Alternative

There would be no change to the actions to protect air quality from those described under the *Former Preferred Future Alternative*. The NPS would continue to seek redesignation of the monument from a class II to a class I airshed which would have a long-term beneficial effect on air quality. However, despite the more stringent air quality standards associated with a class I designation, it cannot prevent further visibility impairment or air quality degradation from pollutants that originate outside the U.S.

Actions described in the *New Ideas Alternative* involving ground disturbance and construction would have a temporary and insignificant impact on air quality. Although there would be little dust associated with new construction due to the lack of proposed development in the Twin Peaks area, dust would be generated during building demolition. In either case, impacts would be minor and short-term. To further reduce dust levels and minimize soil erosion around construction sites, bare soil would be dampened with water and disturbed areas would be revegetated with native plants.

Conversion of roads to trails along with elimination of some roads entirely would decrease the amount of dust produced by vehicles in remote sections of the monument. This conversion would also reduce the amount of road surface subject to wind erosion. Establishing user capacities for selected roads within the monument may affect vehicle volumes and therefore have a related benefit on air quality. However, in both instances the localized nature of impacts is expected to be minor in the context of overall air quality within the monument. Although use of the SR 85 corridor is expected to increase over time and would continue to have localized, adverse impacts on air quality, this would not affect the redesignation of the monument from a class II to a class I airshed.

Conclusion. Overall impacts to air quality would be the same as described for the *Former Preferred Future Alternative*, the primary benefit being redesignation of the monument from a class II to a class I airshed. This action would have a long-term, beneficial effect on monument air quality. Airborne pollutants generated by construction-related activities and vehicle use of monument roads would have short-term and localized impacts, but would be minor in the context of the monument's overall air quality.

New Proposed Action Alternative

Impacts on the monument's air quality would be the same as described under the *New Ideas Alternative*.

Conclusion. Redesignation of the monument's airshed to class I would have a long-term, beneficial effect on monument air quality. Although vehicle use and construction-related activities would result in short-term and localized increases in airborne pollutants, these impacts would be minor in relation to overall monument air quality.

IMPACTS ON FLOODPLAINS, WETLANDS, AND WATER RESOURCES

New Ideas Alternative

Impacts to floodplains, wetlands, and water resources would be similar to those described under the *Former Preferred Future Alternative*. All proposed actions would occur outside regulatory floodplains. Proposed development in the Lukeville and Why areas would require careful planning and further environmental analysis to prevent adverse impacts on floodplains, wetlands, and water resources.

Although there may be a slight alteration of drainage patterns around new development or areas where facilities have been removed, site grading and the installation of culverts would help minimize the disruption of surface and subsurface water flows. Removal of facilities in the Twin Peaks area would have the added benefit of eliminating existing impervious surfaces and restoring soil conditions. Impacts on surface or groundwater quality also would be avoided by ensuring that runoff and sediments from construction sites do not enter washes and other bodies of water. Runoff would be controlled in compliance with federal and state regulations.

In the Quitobaquito area, facilities would be relocated, resulting in similar long-term beneficial impacts on wetland functions and values as those described for the *Former Preferred Future Alternative*. The exact location of proposed trails and facilities would require further site planning and may determine the need for additional environmental compliance. A properly designed and maintained trail network would decrease, if not eliminate, vegetation trampling, soil erosion, and turbidity along the edges of the pond, springs, and channel. Such actions would enhance habitat values of the pond's littoral (shallow water) zone, producing a beneficial effect on the many species of wildlife that forage, nest, or seek protective cover in this area.

To further ensure that visitor use does not result in adverse impacts on sensitive resources in the Quitobaquito area, visitors would be required to either obtain a permit or visit the area as part of a

Environmental Consequences

guided tour. The NPS would also monitor the effects of visitor use to determine appropriate user capacities that promote resource protection, including wetland functions and values. To assess the impact of groundwater depletion on monument resources, including sensitive species at Quitobaquito, the NPS would continue to collect groundwater data both within the monument and on adjacent lands in the U.S. and Mexico, as well as work with Mexican resource specialists on this issue.

Although the construction of additional housing and facilities in the Lukeville and Why areas could be expected to increase water consumption over existing levels, this increase is not expected to be statistically significant. Similarly, the lack of new construction and removal of some facilities from the Twin Peaks area would cause a corresponding decrease in water consumption within this area of the monument; however, the NPS would still develop and implement a water conservation plan.

Conclusion. Actions contained in this alternative would not have an adverse effect on regulatory floodplains or surface and groundwater quality. Wetland functions and values would be enhanced in the Quitobaquito area through establishment of a well-designed and maintained trail network, restrictions on visitor access, and development of an appropriate user capacity for the area. A lack of new construction and removal of some facilities from the Twin Peaks area would cause a decrease in water consumption at this location. Conversely, new construction would result in an increase in water consumption in the Lukeville area. To assess the impact of groundwater depletion on monument resources, the NPS would continue to collect groundwater data both within the monument and on adjacent lands, as well as work with Mexican resource specialists on this issue.

New Proposed Action Alternative

Although in this alternative more development would occur within the Twin Peaks area, impacts on floodplains, wetlands, and water resources would essentially be the same as those described under the *New Ideas Alternative*. However, rather than a decrease in water consumption over existing levels, use could be expected to increase since several offices would be reconverted into four employee residences, allowing more people to reside within the Twin Peaks area, and development of the new interpretive center would attract more visitors. Following implementation of conservation measures, there would be only a slight to moderate increase in water consumption over existing levels.

Conclusion. Proposed actions would have no adverse impact on regulatory floodplains or surface and groundwater quality, and would result in only a slight to moderate increase in water consumption over existing levels. Prior to constructing any facilities outside the monument, additional environmental analysis would be performed to ensure protection of water resources. Visitor use restrictions and improvements to the trail system at Quitobaquito would enhance the wetland's value as wildlife habitat by limiting human intrusions and the disturbance of sensitive resources. The NPS would also continue to collect groundwater data to assess the impact of groundwater depletion on monument resources.

IMPACTS ON THREATENED, ENDANGERED AND SENSITIVE SPECIES

In response to comments on the *Draft GMP/DCP/EIS*, the following discussion is presented in greater detail in this Supplement. Section 7 of the Endangered Species Act (1973) prohibits federal agencies such as the NPS from implementing any action that is likely to jeopardize the continued existence of a federally listed (i.e. endangered, threatened) species. Furthermore, the Act requires that the NPS consult with the FWS on any action it authorizes, funds, or executes that could potentially affect a protected species or its designated critical habitat. To help meet its responsibilities under the Act, the NPS is currently consulting with the FWS as well as preparing a biological assessment that analyzes potential effects of the GMP on federally listed, proposed, and candidate species. This document will appear as an Appendix in the final GMP/DCP/EIS along with a letter from the FWS confirming successful completion of the Section 7 process.

Of the endangered, proposed endangered, and candidate species identified by the FWS (Appendix G of the *Supplement*), as well as the plant and wildlife species of special concern (Appendices C and D of the *Draft GMP/DCP/EIS*, pages 148-151), only the Sonoran pronghorn, Mexican rosy boa, lesser long-nosed bat, cactus ferruginous pygmy owl, Quitobaquito desert pupfish, Quitobaquito snail, and Sonoran mud turtle may be affected by proposed actions. Specific actions, mitigation measures, and their effects on listed species are outlined below for each alternative discussed in this *Supplement*.

New Ideas Alternative

Sonoran Pronghorn. Organ Pipe Cactus National Monument is within the historic range of the Sonoran pronghorn. Prior to a recent verified sighting of two pronghorns just west of SR 85 near the Alamo Canyon road in mid-August 1995 (Organ Pipe Cactus NM, unpublished data), the last verified observation of a pronghorn near this highway was a carcass found on Ajo Mountain Drive in 1972. There is an unconfirmed report of four Sonoran pronghorn crossing SR 85 in August 1993, approximately 1.5 km north of the monument visitor center. Although observations along SR 85 have been limited in recent decades, pronghorns were supposedly not uncommon along the highway. Long-time Ajo residents reported seeing more Sonoran pronghorn along the highway near Ajo and south in the Valley of the Ajo in previous decades (FWS 1994).

Observations of pronghorn movements suggest that traffic along SR 85 acts as a barrier to pronghorns, restricting their movements to areas west of the highway. Not only is the highway a deterrent to expanding pronghorn populations, but the resulting modified behavior patterns may lead to a reduction in genetic exchange, reduced viability, and the ability to adapt to environmental change.

To reduce wildlife mortality and habitat fragmentation along SR-85, the NPS would work with state and federal agencies to develop a research program examining the effectiveness of various traditional and innovative measures aimed at reducing wildlife mortality and facilitating safe passage across the roadway. Some of the traditional methods to be examined include bridge construction and placement of oversized culverts beneath the roadway; vegetation removal along road shoulders; and educating motorists about wildlife use of the road corridor through various interpretive media, including road signs and wayside exhibits. Because fenced highways have been shown to fragment pronghorn habitat and isolate herds (Ockenfels et al. 1996), the NPS does not support their use to keep animals off SR 85 or to guide them into culverts.

Since the effectiveness of techniques varies, the NPS would not rely on any one method exclusively. Measures proven to be effective would be applied on a limited basis and further environmental analysis completed before expanding their use on a broader scale. In the meantime, the NPS would continue working with the ADOT towards enforcing the existing speed limit within the monument.

Vegetation removal along road shoulders would cause further habitat losses and may increase the barrier that SR 85 presents to pronghorn. Although bridge construction and culvert placement would focus on areas of known wildlife use, such as xeroriparian corridors (i.e., washes), some pronghorn may have difficulty locating or may simply refuse to enter culverts. Moreover, any gains experienced by ensuring safe passage across the highway could be offset by a potential increase in predator-related mortality. Such structures could serve as a predator trap, allowing mountain lions and coyotes to successfully ambush pronghorn at culvert openings. Because pronghorn, like other animals, are not restricted to xeroriparian habitats, increased efforts to educate motorists and enforce the existing speed limit may have the most impact on reducing the potential for vehicle-related mortality.

Despite such mitigation measures, pronghorn may still avoid using the SR 85 corridor due to the disturbance associated with the heavy volume of traffic travelling at high speeds. Elevated heart rates have been correlated with auditory or visual disturbance among pronghorn (Thompson et al. 1968, Cherkovich and Tatoyan 1973, Moen et al. 1978 [cited in FWS 1994]. Hughes and Smith (1990) reported flight distances of 400-500 meters in response to an approaching vehicle. They also reported that though the impacts of military aircraft overflights on the Sonoran pronghorn are unknown, in one

Environmental Consequences

instance, low-level flights over three pronghorns caused them to move about 100 meters from their original location.

Key components of the recently revised draft recovery plan for the Sonoran pronghorn include monitoring the present U.S. population, assisting with monitoring in Mexico, protecting and managing known habitat, and continuing research efforts to provide a better understanding of the subspecies (FWS, 1994). The NPS will assist in Sonoran pronghorn recovery by continuing to serve as a member of the interagency Core Working Group. As called for in the *Natural and Cultural Resources Management Plan*, the NPS will implement activities outlined in the recovery plan, under the lead of the FWS, including development of a monitoring program.

Mexican Rosy Boa. As described previously under the *Former Preferred Future Alternative*, the Mexican rosy boa has experienced a human-induced population decline within the monument and has been adversely impacted by highway mortality along SR 85. However, unlike the *Former Preferred Future Alternative*, the NPS is no longer proposing a pullout and trail at Eagle's Pass (mile 66.0), a rocky outcrop that represents one of the few areas of potential rosy boa habitat along the road corridor.

As described for Sonoran pronghorn, in this alternative the NPS proposes to work with state and federal agencies to develop a research program that examines the effectiveness of various mitigation strategies at reducing wildlife mortality. Of the traditional mitigation techniques mentioned, those actions aimed at modifying the motorist's behavior (e.g., speed limit enforcement, use of signs and other interpretive media) offer the greatest potential for reducing rosy boa mortality along the road corridor. At 55 mph, motorists would have more time to react, and consequently avoid hitting snakes in the roadway than they would if travelling at higher speeds.

The effect that vegetation removal would have on this snake is unknown. However, due to its small home range size, even relatively minor habitat losses could result in adverse impacts such as a localized decline in prey species.

Installing culverts along the length of the roadway might be successful in reducing vehicle-related mortality by keeping snakes off the pavement. However, without some type of structural barrier, such as a low fence, to guide snakes into culverts, the effectiveness of this technique is uncertain (and could further inhibit pronghorn movements). The small home range size of snakes necessitates that culverts be placed less than 0.25 mile apart to prevent the disruption of gene flow within populations. This would require more than 90 culverts to be located beneath the 22-mile stretch of highway within the monument. Consequently, not only is the effectiveness and practicality of such measures of concern, but they may also enhance the efficacy of predators—and possibly poachers—as they await prey along the fenceline and culvert openings. Such losses could eventually eliminate the rosy boa from all areas bordering SR 85. In contrast, the low speeds and infrequent traffic volume experienced on dirt roads throughout the monument appears to have an insignificant effect on this species.

Lesser Long-nosed Bat. The lesser-long nosed bat is a seasonal resident in the monument, visiting between April and September. In 1989, the largest known maternity colony in the U.S., consisting of approximately 20,000 bats was discovered roosting in an abandoned mine adit near Alamo Canyon. Through coordination with the FWS, the NPS has instituted an annual monitoring program to obtain data on the colony including its size, productivity, diet, and habitat requirements.

As outlined in the draft recovery plan for this species (FWS 1994), recovery actions should stress protection of known roosts, determination of foraging and mating behavior, population monitoring, and public education. The NPS is assisting in recovery efforts through ongoing monitoring of the roost, protecting all potential roost sites and food plants within the monument, and educating visitors about the ecological importance of bats.

Lesser long-nosed bat colonies appear to be sensitive to human disturbance. Such disturbance could have potentially adverse effects on the species' survival if it resulted in abandonment of a major roost or a decline in juvenile survivorship or recruitment. The proximity of the maternity roost to Alamo

Canyon Campground, coupled with the fact that features such as mine adits are attractive destinations for hikers, increases the potential for human-induced disturbance at the roost site. However, previous indications are that little, if any visitation presently occurs at the site, particularly at the time of year when bats are roosting.

Under this alternative, there would be little opportunity for potential disturbance to the roost site since visitor access at Alamo Canyon would be closely controlled through permit or direct supervision (e.g., guided hikes). The Alamo Canyon campground would also be closed. Furthermore, the remote location and nondescript nature of the adit would discourage all but the most ardent hikers; accessing the site from the campground requires a 1.5-mile hike cross-country, across rugged terrain.

Although the entrance to the adit is currently fenced with barbed wire and signed to prohibit entry, a more permanent closure is proposed to minimize potential disturbance on the maternity colony of lesser long-nosed bats. A "bat friendly" grate would be placed at each opening of the adit that would allow bats unimpeded access to the mine's interior, while prohibiting human entry. It would also reduce mortality attributed to predators such as common barn-owls which can now enter through the existing barbed wire fence. Although similar barbed wire fences appear on other mine openings throughout the monument, more permanent closures could be constructed for those adits determined to be significant bat roosting sites. Consequently, other bat species could benefit from such mitigative measures.

Cactus Ferruginous Pygmy Owl. The cactus ferruginous pygmy owl is an permanent but uncommon resident that occurs in washes, canyons, and saguaro stands; it typically nests in riparian areas during June and July. The last recorded observation of this owl within the monument was in 1993 in Growler Canyon, approximately 1 mile from Bates Well (Organ Pipe Cactus NM, unpublished data). The cause for the cactus ferruginous pygmy owl's decline at Organ Pipe Cactus NM and throughout the northern part of its range is unknown. However, the ongoing destruction of riparian habitat across the region may partially explain the reasons for the decline.

Critical habitat designation for the cactus ferruginous pygmy owl has been proposed from the well in Alamo Canyon (T16S, R4W, unsurveyed Section 6) downstream to the point where Growler Wash intersects the Bates Well Road. The boundaries encompass the current active channel, in addition to secondary, side, and overflow channels extending up to 100 meters laterally of the 100-year floodplain. Although this owl has not been observed in the vicinity of the Alamo Canyon campground for nearly 10 years, the nearby wash has been proposed as critical habitat since it possesses suitable habitat characteristics and has the potential to support nesting owls. Restricting visitor access in the Alamo Canyon area, as proposed under this alternative, may have a long-term beneficial effect on the species by minimizing the potential for human disturbance to this fairly shy owl or its critical habitat by minimizing the potential for human disturbance or habitat degradation.

To aid in the management of the cactus ferruginous pygmy owl, the NPS would expand its monitoring program as well as collect data on the demographics, behavior, and habitat requirements of this species. Such information would help the NPS provide more effective protection for this rare owl.

Quitobaquito Desert Pupfish, Quitobaquito Snail, and Sonoran Mud Turtle. Impacts associated with development of a well-designed and maintained trail system at Quitobaquito would be the same as those described under the *Former Preferred Future Alternative*. Establishment of a trail system would have a long-term beneficial effect on habitat for the Sonoran mud turtle, Quitobaquito snail, and Quitobaquito desert pupfish. By encouraging visitors to remain on established trails, there would be a reduction to and possibly an elimination of vegetation trampling along the pond's littoral zone. This highly productive zone, dominated by stands of bulrush and submerged aquatic vegetation, is rich in invertebrates and provides protective cover, along with important foraging, spawning, and resting areas for the above-mentioned species.

To further minimize the potential for adverse impacts on sensitive species and their critical habitat, visitor use would be closely regulated via restrictions to visitor access and development of an

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appropriate visitor carrying capacity for the area. Although these species would still be vulnerable to stochastic (chance) events (e.g., environmental perturbations, decline in habitat quality), the risk from anthropogenic (human caused) impacts (e.g., water pollution, introduction of nonnative fish) would be reduced.

The NPS would continue to aid pupfish recovery efforts by implementing actions contained in the desert pupfish recovery plan (FWS 1993). Some of the specific actions to be accomplished include an expansion of the current monitoring program to assess population status, detect trends, and evaluate the success of pupfish recovery. The NPS would continue to conduct habitat assessments and population estimates under site-specific protocols mutually established by the NPS and FWS, and assist with the collection of life history information to help determine factors affecting population persistence. In addition, the NPS would further its efforts to educate the public about the plight of the Quitobaquito desert pupfish through a variety of interpretive media. The NPS would work closely with the FWS on the above actions.

Conclusion. Of the threatened, endangered, and sensitive species identified within the monument, only the Sonoran pronghorn, Mexican rosy boa, lesser long-nosed bat, cactus ferruginous pygmy owl, Quitobaquito desert pupfish, Quitobaquito snail, and Sonoran mud turtle may be affected by proposed actions. Mitigation measures, including experimentation with traditional and innovative techniques, as well as continuation of efforts to work with fish and wildlife agencies would seek to minimize long-term adverse impacts to these species.

New Proposed Action Alternative

Impacts on the Sonoran pronghorn, Mexican rosy boa, lesser long-nosed bat, Quitobaquito desert pupfish, Quitobaquito snail, and Sonoran mud turtle would be the same as those described under the new ideas alternative. With the exception of the cactus ferruginous pygmy owl, there would be no effect on any other species of concern.

The only difference between the two alternatives involves proposals for the Alamo Canyon area. Under this alternative, the NPS would adopt actions proposed in the *Former Preferred Future Alternative* to expand the existing campground by four sites and delineate a day-use parking area within the existing roadbed.

Although no restrictions would be placed on visitor use of the Alamo Canyon area, this is unlikely to have an adverse effect on either the lesser long-nosed bat or cactus ferruginous pygmy owl. It is particularly unlikely that increasing the capacity of the Alamo Canyon campground would have an effect on the lesser long-nosed bat for the following reasons:

- visitation to the monument and use of Alamo Canyon is relatively low during the time of year that bats are roosting
- grates would be placed at each opening of the adit to allow bats unimpeded access to the mine's interior, while prohibiting human entry
- the remote location and nondescript nature of the adit would discourage all but the most determined hikers from visiting the roost site.

Although day use is typically limited to hikes along the wash, which is within designated critical habitat for the cactus ferruginous pygmy owl, this type of visitor use is generally infrequent, occurs at low levels, and is confined to the existing trail. Likewise, the current low-levels of overnight use seem to have no adverse affect on this species. However, the impact that doubling the size of the campground would have is unknown. Since campground expansion could result in the presence of twice as many campers in the area at dawn and dusk, periods when this owl is actively foraging, the potential for human disturbance would be greater than under existing conditions.

The lack of this owl's confirmed presence in the Alamo Canyon area, coupled with the low potential for human disturbance is not expected to have an adverse affect on the species or its critical habitat. To ensure that management actions do not result in adverse effects on the cactus ferruginous pygmy owl,

the NPS would expand its monitoring program as well as collect data on the demographics, behavior, and habitat requirements of this species prior to campground expansion. Gaining a better understanding of the species' tolerance of humans would not only aid the NPS in providing more effective protection for this rare owl, but it would also help determine the appropriateness of campground expansion, as well as the location and density of proposed campsites.

As in the *New Ideas Alternative*, appropriate user capacities would be determined and established for the Quitobaquito area. Although in this alternative, no initial restrictions would be placed on visitor use of the Quitobaquito area, this is not expected to have an adverse effect on the Quitobaquito desert pupfish, Quitobaquito snail, or Sonoran mud turtle.

Conclusion. Impacts on the Sonoran pronghorn, Mexican rosy boa, lesser long-nosed bat, Quitobaquito desert pupfish, Quitobaquito snail, and Sonoran mud turtle would be the same as those described under the *New Ideas Alternative*. Although differences exist in proposed actions for the Alamo Canyon area, these differences are not expected to have an adverse effect on either the lesser long-nosed bat or cactus ferruginous pygmy owl. Similarly, no adverse effects are anticipated for the Quitobaquito desert pupfish, Quitobaquito snail, or Sonoran mud turtle despite an initial lack of visitor use restrictions in the Quitobaquito area.

IMPACTS ON WILDLIFE

New Ideas Alternative

Actions contained in the *New Ideas Alternative* would have a beneficial effect on wildlife and its habitat by limiting the potential for human disturbance and habitat degradation. This would be accomplished by committing fewer acres to development within the monument, restricting visitor use in sensitive areas such as Quitobaquito and Alamo Canyon, establishing carrying capacities for wilderness areas and backcountry roads, and developing a research program examining the effectiveness of various mitigation strategies at reducing wildlife mortality and facilitating safe passage across SR 85.

New construction would result in the disturbance or loss of approximately 5 acres of desert scrub vegetation. The irretrievable commitment of this acreage to development precludes its use as wildlife habitat. Approximately 610 acres would be revegetated and restored to natural conditions following removal of some facilities in the Twin Peaks area and closure of several backcountry roads. Although vegetation and habitat values would return to these areas with time, conditions of restored sites may differ from those that existed prior to development.

As described in the *Former Preferred Future Alternative*, construction-related disturbance (e.g., noise, increased human presence) would impact wildlife in the vicinity of these sites. Although most animals could be expected to temporarily avoid these areas during construction, some small mammals and birds may be permanently displaced due to a loss of nest sites and forage species. However, such actions are not expected to adversely affect monument fauna since new construction would involve an expansion of existing development and would occur on small sites surrounded by larger areas of undisturbed habitat.

Despite an anticipated increase in visitation, visitor use is not expected to cause adverse impacts on wildlife or its habitat. Based on current patterns of visitor use (NPS 1990), most use would continue to be concentrated in interpretive centers or other areas of existing development, areas that wildlife typically avoid. As previously mentioned in the *Former Preferred Future Alternative*, by channeling use along a system of well-maintained trails at Quitobaquito (nearly half of which would incorporate existing social trails or the roadbed), habitat values of the pond's littoral zone would be enhanced. A reduction in vegetation trampling, particularly along the pond's northern edge, would be especially beneficial to those species that forage, nest, or seek protective cover in the emergent vegetation. Wildlife that would benefit most from such actions include numerous species of birds and

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invertebrates, as well as rare and sensitive species such as the Quitobaquito desert pupfish, Sonoran mud turtle, and Quitobaquito snail. Since vegetation-free areas, which do not restrict access or visibility, would still persist along the edge of the pond, a reduction in vegetation trampling is not expected to adversely affect the pond's use as a water source particularly for large mammals.

Due to the discontinuous nature of desert scrub vegetation, new trail construction would involve minimal vegetation removal causing minor losses of wildlife forage and habitat. Moreover, the infrequent and low-level use of backcountry trails, coupled with the establishment of user capacities for wilderness areas, is expected to result in transitory and minor impacts on wildlife behavior and habitat use. To ensure protection of critical wildlife habitat and activity centers from human disturbance, park managers would implement seasonal or short-term closures whenever necessary.

As described previously in the *Impacts on Threatened, Endangered and Sensitive Species* section, experimentation with mitigation techniques such as bridge and culvert installation, vegetation removal along road shoulders, education of motorists, and speed limit enforcement could be expected to reduce vehicle-related mortality along SR 85. However, the effectiveness of some techniques, such as the use of low structural barriers to guide animals into culverts, may be outweighed by the increased efficiency of both predators and poachers as they await animals along the fence line and at culvert openings. The monument's herpetofauna (e.g., snakes, lizards) would be especially vulnerable in such situations.

In other instances, wildlife may simply refuse to enter culverts, adding to further habitat fragmentation and the potential for decreased genetic exchange within populations. Although the presence of bridges and culverts in areas of known wildlife use, such as xeroriparian corridors, would help reduce the lethal effects of the highway, it would not totally eliminate the problem since many animals would still attempt to cross the road. Consequently, highway mortality would continue to have the potential to eliminate some species from this portion of their range as well as reduce faunal diversity, genetic variability, and population levels within the monument.

Since it is unknown what effect even relatively minor habitat losses would have on monument fauna, particularly those species with a small home range, vegetation clearing would be tried on a limited basis before expanding its use along the entire road corridor. Given the potential drawbacks of the above techniques, increased efforts aimed at educating motorists and enforcing the existing speed limit may have the greatest impact on reducing vehicle-related mortality. To ensure that mitigation measures do not result in adverse impacts on monument fauna, methods would be applied on a limited basis and their effectiveness evaluated before expanding their use on a broader scale.

Conclusion. Actions contained in the *New Ideas Alternative* would have a beneficial effect on wildlife and its habitat by limiting the potential for human disturbance and habitat degradation. This would be accomplished by committing fewer acres to development within the monument, restricting visitor use in sensitive areas, establishing carrying capacities for wilderness areas and backcountry roads, and developing a research program examining the effectiveness of various mitigation strategies at reducing wildlife mortality and facilitating safe passage across SR 85. Although mitigation techniques such as bridges, oversized culverts, and vegetation clearing might reduce the lethal effects of SR 85, in some instances the effectiveness of such measures may be outweighed by increased levels of predation and poaching, further habitat fragmentation, and decreased genetic exchange within populations. To minimize the potential for adverse impacts on monument fauna, mitigation measures would be applied on a limited basis and their effectiveness evaluated before expanding their use on a larger scale.

New Proposed Action Alternative

Impacts on monument wildlife would be similar to those described for the *New Ideas Alternative*. However, under the *New Proposed Action Alternative*, approximately 50 acres of wildlife habitat would be lost to development. To help compensate for lost habitat values, 200 acres would be revegetated and restored to natural conditions following construction. Although some small mammals and birds may be permanently displaced due to habitat loss, new construction is not expected to have significant

adverse or long-term impacts on local populations since it generally represents an expansion of existing development, involving small sites surrounded by larger areas of undisturbed habitat. Experimentation with mitigation techniques such as bridge and culvert installation, vegetation removal along road shoulders, education of motorists, and enforcement of the speed limit could be expected to reduce vehicle-related mortality along SR 85. However, in some cases such measures could have negative consequences on monument fauna as previously described under the *New Ideas Alternative*. To avoid the potential for adverse impacts, methods would be applied on a limited basis and fully evaluated before incorporating their use along the entire road corridor.

Conclusion. Impacts would be similar to those described for the *New Ideas Alternative* except that less acreage, particularly in the Twin Peaks area, would be available for wildlife habitat. Impacts of this alternative on wildlife are not expected to be significant.

IMPACTS ON VEGETATION AND SOIL

New Ideas Alternative

Impacts on vegetation and soils would be very similar to those described for the *Former Preferred Future Alternative*, with the greatest difference being the amount of acreage committed to development, particularly in the Twin Peaks area. Proposed actions would disturb or remove soil and native vegetation from approximately 5 acres, virtually all of it representative of the mixed Sonoran desertscrub plant community. Consequently, vegetation losses would not have a significant impact on the monument's floral diversity. Although revegetation and landscaping would restore vegetation to disturbed sites and help recreate species diversity and plant density, it may take decades to replicate the community structure and ecological processes found on undisturbed sites. Following new construction or removal of facilities, approximately 610 acres of monument land would be restored to natural conditions.

New construction and the relocation of some NPS functions to the Lukeville and Why areas would involve some additional ground disturbance. Some of the facilities may be located in existing structures or on previously disturbed sites. Further environmental analysis would be required before construction could occur to ensure that appropriate measures are taken to protect native vegetation and soils.

Development of a new trailhead and parking area along Puerto Blanco Drive would not result in new ground disturbance or vegetation removal since the parking area would be located within an existing disturbed site, at the confluence of Puerto Blanco Drive and the Quitobaquito road. Most of the proposed trail network would occupy previously disturbed areas including the existing roadbed and some social trails. Of the approximately 1 mile of trails to be built, roughly 0.5 mile would involve new construction, eliminating approximately 0.25 acre of riparian vegetation along a 3-foot wide swath.

The removal and subsequent revegetation or conversion to trails of approximately 19.5 miles of roads would restore desert flora to approximately 570 acres. In addition, native vegetation would be restored to nearly 43 acres in the Twin Peaks area, following the removal of buildings, campground, roads, and trails. Restoring vegetation to former roadbeds would have a beneficial effect on area soils by decreasing the amount of soil subject to erosion.

The discontinuous nature of the vegetation would allow the eight new trails and four new hiking routes totalling approximately 37 miles, to be routed with minimal impact on large plants (e.g., shrubs, trees, columnar cacti). Vegetation and soil losses would be further minimized by channeling use along well-maintained trails and incorporating existing social trails into the trail network wherever possible. Before new trail construction could occur on previously undisturbed sites, additional environmental analysis would be needed to more fully assess the impacts on soils and vegetation.

Environmental Consequences

As in the *Former Preferred Future Alternative*, an additional 206 acres along SR 85 would be restored to natural conditions following burial of the overhead powerline and revegetation of the administrative road. Construction of information portals at the north and south entrances to the monument as well as two new pullouts along the road corridor would result in less than two acres of new disturbance since most of these sites are located in previously disturbed areas. The lack of additional designated pullout along SR 85 may continue to encourage visitors to park along the road shoulder, and sometimes beyond, resulting in soil compaction, vegetation trampling and removal, and subsequent soil erosion.

The NPS will strive to maintain the native flora of monument areas, manipulating vegetation only where necessary to achieve management objectives (NPS, 1988). To date, the monument's vegetation program has emphasized research, control of nonnative species, and rehabilitation of previously disturbed sites.

Although the exact location of building footprints would be determined at the comprehensive design stage, whenever possible buildings would be located on previously disturbed sites to reduce the amount of new ground disturbance. Besides the direct loss of soil and vegetation resulting from construction activities, indirect impacts may also occur to these resources outside the building footprints. Such impacts include minor alteration of drainage patterns due to site grading, and soil compaction and vegetation removal caused by foot traffic around buildings. This may lead to decreased soil permeability and moisture retention, creating additional surface runoff and soil erosion. To mitigate these effects, culverts and drainage systems would be used to divert runoff, and hardening techniques may be employed to reduce soil impacts caused by trampling.

To mitigate construction-related impacts on the monument's flora, areas near developed sites would be revegetated and restored to natural conditions. Disturbed sites would be revegetated with native plant materials salvaged from areas impacted by construction. To guide restoration efforts, the NPS would develop a site-specific revegetation plan to outline procedures for collecting and propagating native species, salvaging topsoil, site grading and soil preparation, erosion control, re-establishment of native vegetation, and post-construction monitoring. The use of native vegetation for landscaping around developed areas would provide an attractive setting and help screen the built environment from visitor use areas.

Conclusion. Approximately five acres would be impacted by new construction as the NPS fully implements actions contained in this alternative. To help offset the amount of acreage lost to construction, 610 acres would be restored to natural conditions. None of the proposed actions would affect floral diversity or result in long-term adverse impacts on monument soils or vegetation.

New Proposed Action Alternative

Proposed actions would result in similar impacts on monument soils and native vegetation as previously described under the *New Ideas Alternative*. However, in this alternative:

- fewer acres would be restored in the Twin Peaks area due to the retention of existing structures and construction of several new facilities
- no changes are proposed to the existing network of backcountry roads
- fewer new trails and hiking routes (totalling approximately 13.5 miles) would be constructed
- the Alamo Canyon campground would be expanded

Under this alternative, an additional 50 acres of monument land would be committed to development. Vegetation losses would be partially mitigated by the revegetation of approximately 200 acres following new construction.

As previously described in the *Former Preferred Future Alternative*, expansion of the Alamo Canyon campground would remove less than two acres of desertscrub vegetation, primarily triangle-leaf bursage and creosote. Wherever possible, campsites would be situated to avoid the removal of large

trees, shrubs, and columnar cacti. The proposed parking area would not involve new ground disturbance or vegetation removal since it would be located entirely within the existing roadbed.

Other mitigation measures described under the *New Ideas Alternative* would be the same for the new proposed action.

Conclusion. Impacts on monument soils and native vegetation would be similar to those described under the *New Ideas Alternative*, although more acreage would be committed to development (approximately 50 acres) and fewer acres would be restored to natural conditions (approximately 200 acres).

IMPACTS ON CULTURAL RESOURCES

New Ideas Alternative

Prehistoric, Historic, and Ethnographic Resources. Impacts would be similar to those described under the *Former Preferred Future Alternative*, with the exception of impacts to four of the nine monument properties listed in the National Register of Historic Places, or eligible for listing. These changes are related to shifts in visitor access and use. For two of the sites, Bates Well Ranch and Growler Mine/Mining District, the access changes since visitors would need to drive to the Ajo area, the start of the Bates-Well road, to access these sites by vehicle. Visitation would be expected to go down, which would reduce impacts to cultural resources. Current ranger resource-protection patrols may also be more difficult, however protection could be maintained with other means such as remote electronic sensing technologies.

For the other two properties, Quitobaquito Springs and Dos Lomitas Ranch, visitor use would change. For Quitobaquito, visitor use under the *New Ideas Alternative* would be more controlled, limited to permits or to guided tours. This would have an overall beneficial impact on cultural resources in this area. Interpretive programs planned under this alternative for Dos Lomitas Ranch would increase use which may curtail vandalism and other untoward encounters with cultural resources.

NPS would continue to support the goal of an activated Arizona Site Steward Program to aid in the protection and monitoring of cultural resources within the monument. This would have a beneficial impact to these resources. The *New Ideas Alternative* also emphasizes more cooperative partnerships sought with such neighbors and regional organizations as the Tohono O'odham Nation and the International Sonoran Desert Alliance. This would have an increased beneficial impact to cultural resources over that described under the *Former Preferred Future Alternative*.

Archeological Resources. Impacts to archeological resources would be similar to those in the *Former Preferred Future Alternative*, except that overall effects would be less due to a removal of current facilities from the Twin Peaks development area. Additional archeological surveys would be required in the Lukeville area prior to construction of new facilities, such as the science and resources management center, maintenance facility, employee housing, community center, and for 1/2 mile of new road, but it is anticipated that no resources would be affected due to the previous disturbance that has occurred at the proposed sites. Archeological surveys would also be required prior to selection of a site for a visitor center in Why, as well as prior to the design and construction of two informational portals and two pullouts along SR 85, and 400 feet of new road along the Puerto Blanco Drive to accommodate a new parking area. As in the *Former Preferred Future Alternative*, proposed new trails would also be surveyed for archeological resources prior to their establishment.

In all cases, if previously unknown archeological resources are discovered during these surveys, facilities will be designed or relocated to avoid impacts to the sites. If it became infeasible to do so, mitigative measures would be developed in consultation with the Arizona state historic preservation officer, the Advisory Council on Historic Preservation, and, if appropriate, the Tohono O'odham Nation and the Hia-Ced O'odham.

Environmental Consequences

Conclusion. Impacts from actions proposed under the *New Ideas Alternative* would have overall beneficial impacts to cultural resources from those described under the *Former Preferred Future Alternative*. The primary benefits would be in those areas where visitation would be more closely controlled and monitored to avoid adverse impacts to resources. No adverse impacts are expected to archeological resources; however, before any ground disturbance occurs, surveys would be conducted. Increased partnerships with other federal agencies, the Tohono O'odham Nation, and other entities would result in increased awareness and protection of cultural resources.

New Proposed Action Alternative

Prehistoric, Historic, and Ethnographic Resources. The actions and therefore, the environmental consequences of the *New Proposed Action Alternative* are the same as in the *Former Preferred Future Alternative*. Opportunities for partnerships with other entities under this alternative would help ensure protection of cultural resources.

Archeological Resources. Impacts to archeological resources would be similar to those in the *New Ideas Alternative* except that less overall acreage would be affected in the Twin Peaks area from facilities removal. Additional archeological surveys would be required in the Twin Peaks development area for the construction new facilities such as expansion of the maintenance complex with ranger operations and fire station, and the addition of an interpretive center, outdoor plaza, greenhouse and plant nursery near the existing visitor center/administrative facility. As in the *New Ideas Alternative*, archeological surveys would be required in the Lukeville area prior to the addition of new facilities such as apartments for employee housing, and a community center, but it is anticipated that no resources would be affected due to the previous disturbance that has occurred at the proposed sites. Archeological surveys would also be required prior to selection of a site for a visitor center in Why, as well as prior to the design and construction of 800 feet of new road along the Puerto Blanco Drive to accommodate a new parking area.

As in the *Former Preferred Future Alternative*, proposed new trails would also be surveyed for archeological resources prior to their establishment. In all cases, if previously unknown archeological resources are discovered during these surveys, facilities will be relocated or designed to avoid impacts to the sites. If it became infeasible to do so, mitigation measures would be developed in consultation with the Arizona state historic preservation officer, the Advisory Council on Historic Preservation, and, if appropriate, the Tohono O'odham and Hia-Ced O'odham nations.

Conclusion. The *New Proposed Action Alternative* would have similar impacts to those described in the *New Ideas Alternative* relative to the protection and monitoring of cultural resources. Increased partnership with entities and agencies having mutual interest in cultural resource protection would benefit from these resources. No adverse impacts are anticipated from actions proposed in this alternative.

IMPACTS ON VISITOR USE AND EXPERIENCE

New Ideas Alternative

Visitor Use. Overall visitor use would be dispersed due to the removal of facilities such as the Twin Peaks visitor center and campground. Visitation at a regional information and orientation center in the Why area could be comparable or higher than at the present visitor center at Twin Peaks if through traffic travelling between Arizona and Mexico is captured at the Why junction.

Visitation to Quitobaquito would likely decrease due to proposed actions such as use limits and tour scheduling. These proposals may have adverse impacts as some visitors may find it inconvenient and restrictive to follow a guided tour through Quitobaquito. This impact is expected to be minor but long-term.

As in the *Former Preferred Future Alternative*, redesignation from National Monument to National Park may result in a sudden surge in visitor numbers. Eliminating RV camping opportunities at the Twin Peaks campground may have little effect on overall regional visitation and would likely cause visitors to find alternative campsites on adjacent public lands or in private campgrounds. In 1995, average user nights per month during peak season at Twin Peaks campground was approximately 10,000 persons (333 persons per day), with an average of 250 persons per month (8 persons per day) camping in Alamo Canyon. Consequently, eliminating RV camping at Twin Peaks may impact adjacent public land managers who might be faced with accommodating these displaced monument campers, as well as their own increasing overnight visitor population. This action would also result in modest long-term economic benefits to private campground owners.

Visitor Experience. Impacts to visitor experience would be both adverse and beneficial as a result of removal of facilities and infrastructure from the monument. For some visitors, the wilderness experience would be enhanced by the removal of facilities, restoration of disturbed lands, and the increase in the amount of wilderness. Because of these actions, more opportunities would be available for activities such as primitive camping and hiking, giving the visitor a greater opportunity to explore the Sonoran Desert wilderness. In addition, adding up to 38 miles of new trails, some converted from roads, may offer an increased sense of solitude to a hiker's experience. However, the removal of some facilities, such as the Twin Peaks campground and roads would adversely affect some visitors who currently enjoy these areas. This would be a moderate adverse impact on the overall visitor experience over the long-term.

A visitor center in Why would also have beneficial impacts on visitor experience. Visitors would be given the opportunity to learn about the monument and other public lands before deciding to visit the resource. Visitors may also find it more convenient to gather information about public lands such as camping, hiking, and sightseeing opportunities at one central location without driving to the monument or other lands. Partnering with agencies such as the BLM, FWS, or the Tohono O'odham Nation would offer the visitor a regional perspective on public lands in Western Pima County, and a perspective of the historical and cultural significance of these lands as seen by others. All of these effects would benefit the visitor experience over the long-term.

Separation of the visitor center from the monument would also have some adverse impacts on visitor experience. The 1989 Visitor Use Study indicates that nearly 95% of visitors use the existing visitor center, and over 80% find it very useful. Why is approximately 5 miles from the northern boundary of the monument and 25 miles from the Twin Peaks area. The distance between a visitor center in Why and the resource may detract from the visitor's ability to relate to resources and attractions within the monument that are interpreted at the visitor center. This would be a moderate adverse impact to the overall visitor experience over the long-term.

Enhanced site design and ranger presence at Quitobaquito would impact the visitor experience under this alternative. Relocating the parking lot to a topographically enclosed area, along with supervised tours, would give visitors an increased sense of security. Additionally, Tohono O'odham involvement in the interpretation of the area may enhance the visitor experience by adding an interpretive dimension not currently offered to the visitor. The proposed paved trail to Quitobaquito Springs would allow easier access for visitors with disabilities over the trails proposed in the *Former Preferred Future Alternative*. Overall, these impacts would benefit the visitor experience at Quitobaquito.

The visitor's camping experience would be impacted in several ways under this alternative. Actions such as eliminating RV camping would impact campers who would not accept a substitute camping experience since the monument offers a unique type of RV camping opportunity in regards to activities, scenic quality, solitude, and permitted length of stay.

While the Alamo Canyon Campground would be closed, the proposed primitive campgrounds in the former housing area and group campground in Twin Peaks would accommodate more visitors seeking a primitive camping experience than currently exists. These campgrounds would also offer a more primitive and solitary experience than tent camping at the existing Twin Peaks RV campground.

Environmental Consequences

However, while the new campgrounds would offer a similar type of primitive camping experience, the presence of more tent campsites would offer less solitude than what currently exists at Alamo Canyon Campground.

Conclusion. Impacts from actions contained in this alternative would generally be beneficial to visitor experience. Removal of some facilities and services at Twin Peaks would offer visitors who travel there more solitude and primitive camping experiences. However, relying on an orientation center at Why instead of at Twin Peaks would provide greater distance between interpretive information and the resources in the monument. Removal of most camping at Twin Peaks, especially for those utilizing RV units, would have an adverse impact on those seeking this experience at this site. However, other camping opportunities are available on surrounding public and private lands; therefore, this is not considered to be a major impact. Visitor experience would be improved at Quitobaquito since visitation would be by permit thereby reducing overcrowding and resource damage, although some may feel inconvenienced by the permit system. Closing of the Alamo Canyon campground would also allow for visitors to experience this area in its more natural state.

New Proposed Action Alternative

Visitor Use. The impacts to visitor use would essentially be the same as in the *Former Preferred Future Alternative*. For the Twin Peaks area, the primary differences affecting visitor use are:

- a facility is proposed in Why (as in the *New Ideas Alternative*) which in this alternative would focus on providing regional information and orientation
- an interpretive center would be incorporated into and focus on the science, education, and resources management facility, and would replace the existing visitor center at Twin Peaks
- the Twin Peaks Campground would be retained and primitive camping opportunities increased in the group campground area

As a result of these actions, visitation would be higher at Twin Peaks than that occurring in the *New Ideas Alternative*.

This alternative would also result in increased visitor use at Alamo Canyon campground than would occur in the *New Ideas Alternative*. The campground is proposed to remain open and have an additional four drive-in campsites. Impacts on visitor use in the Quitobaquito Springs area would be the same as the *New Ideas Alternative*.

Visitor Experience. This alternative strives to provide more of a balance between visitor facilities occurring in the region and in the monument than the *New Ideas Alternative* or in the *Former Preferred Future Alternative*. As in the *New Ideas Alternative*, the new proposed action would allow visitors to learn about the region at the information and orientation center in Why. Additionally, visitors would have the opportunity to learn specifically about the NPS mission and resources management in an interpretive center to be included as part of the science, education, and resources management facility at Twin Peaks.

As with other alternatives, a change from National Monument to National Park would likely result in some increase in visitation. However, the information and orientation center in Why is likely to redistribute visitors between Why, the monument, and other public lands and facilities in the area, potentially alleviating crowded conditions in some areas during the peak season.

Within the monument, the possibility of crowded conditions during some peak visitation times would be more likely in this alternative than the *New Ideas Alternative*, largely due to the lower number of trails proposed and the retention of more on-site visitor facilities and RV camping. Impacts from crowding in these areas would be moderate during peak visitation times, but minor at other times.

Conclusion. Impacts to visitor use and experience from actions contained in the new proposed action alternative would be similar to the *Former Preferred Future Alternative* with the greatest difference being redistribution of some use to areas outside the monument, as in the *New Ideas*

Alternative. Within the monument, interpretation would center on the monument's purpose and allow for interactions with the science, education, and resources management facility. Visitors would still have the opportunity to learn more about the region's resources at the multi-agency facility proposed at Why. Camping opportunities would increase at Twin Peaks and Alamo Canyon as also proposed under the *Former Preferred Future Alternative*. This would have overall benefits to those seeking a primitive camping experience within the monument. Impacts to Quitobaquito relative to visitor experience and use would be similar to the *New Ideas Alternative*.

IMPACTS ON SOCIOECONOMICS

New Ideas Alternative

This alternative would result in overall economic benefits to local and regional economies. The communities of Why and Ajo could experience short and long-term benefits from construction and operation of a regional information/orientation center in Why. Direct and indirect short-term impacts include construction-related sales and tax revenues, employment, food and lodging. Long-term impacts include tourist-related expenditures from items such as gas, food, and lodging. Expenditures above current levels are difficult to predict since visitors and employees currently patronize local businesses in Ajo and Why, however, Why would likely experience the largest revenue increase. Housing demands for monument employees in Ajo and Why would increase slightly from the present levels, resulting in a modest increase in sales and tax revenues.

In the Lukeville area, construction and operation of the science, education, and resource management center (SERMC), maintenance complex, ranger operations, the fire station, employee housing, and the VIP RV area would have direct and indirect beneficial impacts to the local and regional economy. The economies of Lukeville and Sonoyta, Mexico would experience moderate beneficial economic impacts resulting from an increased demand for services from NPS employees and researchers working and living in the Lukeville area. If the International Sonoran Desert Alliance (ISDA) finds it feasible to locate their tri-national, tri-cultural facility in Lukeville, then visitor use from this facility would provide additional economic benefits to this area.

Local economies would directly benefit from a predicted increase in RV camping demands resulting from the elimination of 208 RV spaces from the Twin Peaks Campground. Locating administrative facilities in Ajo would likely result in a modest increase in sales and tax revenues resulting from operation of such facilities. This facility would be located in vacant office space and would have negligible impacts to the local community. If the NPS is able to share office space with other land management agencies in this facility, the community as well as visitors could benefit from a centralized administrative office for federal lands in Western Pima County. Some benefits include visitor convenience for collecting information about various public lands, better communication between land agencies, and more coordinated regional land management strategies.

Location of monument related facilities and services in these local communities would place additional demand on public services such as water, fire protection, law enforcement and housing. Existing services are considered adequate to handle increased needs for public services and the revenues generated by monument related facilities in these communities would offset impacts. Therefore, impacts to public services would be minor.

Conclusion. Impacts to socioeconomic conditions from actions contained in this alternative would not be major. Lukeville and Why would experience overall economic benefits from the location of facilities and services in these communities. Public services are generally adequate to accommodate increased demands from population growth associated with location of facilities in these areas. Revenues would offset costs of any needed expansion of public services.

Environmental Consequences

New Proposed Action Alternative

Actions contained in this alternative would impact socioeconomic conditions, but not to the extent of the *New Ideas Alternative*. The difference in the *New Proposed Action Alternative* is that several facilities would be retained or constructed in Twin Peaks, not Lukeville as proposed in the *New Ideas Alternative*. As in the *New Ideas Alternative*, the NPS would seek to establish seasonal apartments, a community center, and use a portion of the Customs and Immigration Reserve facility for NPS administration functions. Therefore, overall impacts to Lukeville under the new proposed action alternative would be beneficial to the local economy, and not be significantly different than those actions proposed under the *New Ideas Alternative*.

Socioeconomic impacts to the community of Why would essentially be the same as the *New Ideas Alternative*. Also, impacts to public services provided in Why and Lukeville, would be similar to the *New Ideas Alternative*.

Conclusion. Impacts would be similar to the *New Ideas Alternative*. A regionally-focused orientation center would still provide economic benefits to Why while Lukeville would benefit from location of seasonal housing for the NPS, a community center, shared use of office space for NPS administration at the border station, and the International Sonoran Desert Alliance facility. The impacts of retaining and expanding existing facilities in the Twin Peaks area would have minor socioeconomic impacts to Lukeville and other communities in the region.

IMPACTS ON SOCIO-CULTURAL CHARACTERISTICS

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations", was issued by President Clinton on February 11, 1994. In accordance with this law, this *Supplement* includes an analysis of potential impacts on minority and low-income populations residing in the United States, which may result from implementation of this plan. For the purposes of this plan, the definition of "socio-cultural" impacts include economics as well as social well-being of residents, including NPS employees and the Tohono O'odham Nation, and potential effects on the character of a community.

New Ideas Alternative

Impacts to low income and minority populations in the region would generally be beneficial. Increased visitation and available services would bring new dollars and job opportunities into the area economy. Increased involvement and partnerships between the Tohono O'odham Nation and the NPS would have beneficial effects to overall socio-cultural well-being. The Tohono O'odham Nation's heritage and relationship with lands in the monument and region would be shared through their involvement in the tri-cultural, tri-national center, the regional information and orientation center, and the NPS interpretive program. The written agreements can be used to strengthen and further develop the NPS's relationship with the Tohono O'odham Nation over time and to ensure Tohono O'odham representation on issues affecting the interpretation and preservation of their culture within the monument.

Construction and operation of a regional information and orientation center would have a moderate impact on the character of Why. Why's estimated current population is approximately 300 permanent residents and a total of up to 2,000 residents in the winter season. Population growth is restricted somewhat by the lack of available private land in the area. Small population and restricted growth opportunities contribute to the community's sense of solitude. While economic benefits would occur from the construction of the facility, additional traffic and related commercial development would tend to decrease the community solitude.

The proposed information and orientation facility, along with the possible partnering of other land agencies to share space and information about their respective public lands would increase the identity of Why as an important gateway to surrounding recreational lands. If participation of the nearby

Tohono O'odham Nation in this facility occurs, it could help to establish Why as a focal point for information about the cultural and historical significance of surrounding lands.

ISDA's tri-national, tri-cultural center together with the science, education, and resources management center, maintenance complex, employee housing, ranger operations and fire station, and community center would impact the character of the Lukeville area. The extent of the impacts would depend on the scale and location of the facilities, and what partners were involved. Establishing the tri-cultural, tri-national center in Lukeville would provide a permanent location for ISDA and give Mexican, Tohono O'odham, and American people a location to promote the significance of the natural, cultural, and historic resources of the region. Possible adverse socio-cultural impacts would be increased traffic and a change to the "small town" character with the addition of facilities and associated commercial development. A community center to be utilized by all residents of Lukeville, including monument employees, would have beneficial impacts to residents seeking a focal point for social activities. While overall changes in socio-cultural conditions in Lukeville would occur over time under this alternative, these changes are not anticipated to have major adverse impacts to the community.

Conclusion. Impacts to low income and minority populations in the region would generally be beneficial. Increased visitation and available services would bring new dollars and job opportunities into the area economy. Increased involvement and partnerships between the NPS and the Tohono O'odham Nation would have beneficial effects to overall socio-cultural well-being. Impacts to socio-cultural characteristics of nearby communities would be moderate. The location of a regionally-focused orientation center at Why would have the most pronounced effects as traffic and visitation would increase. Lukeville would experience similar changes, but not to the degree Why would. No adverse impact to low income or minority populations would occur.

New Proposed Action

Impacts to the socio-cultural environment would be similar to the *New Ideas Alternative*. The primary difference is that a different level of development would occur in the Lukeville area. The ISDA facility and some housing, the community center, and locating some NPS administrative functions would be pursued in Lukeville, however, other facilities and services would be located in Twin Peaks. These shifts in focus and function are not anticipated to have measurable differences to the socioeconomic character of Lukeville than those described under the *New Ideas Alternative*. Impacts to socio-cultural conditions of the Tohono O'odham Nation and Why would be the same as under the *New Ideas Alternative*.

Conclusion. The impacts to socio-cultural conditions from actions contained in this alternative would be very similar to the *New Ideas Alternative*. The primary difference is that fewer facilities are proposed for Lukeville, and consequently would not necessarily generate the same effects to the character of this area as under the *New Ideas Alternative*. Visitation through these areas are generally expected to increase through time and overall socio-cultural impacts would be felt regardless of NPS actions proposed in this alternative. As in the *New Ideas Alternative*, no adverse impact to low income or minority populations would occur.

CUMULATIVE IMPACTS

New Ideas Alternative

Overall, the cumulative impacts for the *New Ideas Alternative* are similar to the *Former Preferred Future Alternative*—to enhance protection, understanding, and recognition of Sonoran desert ecosystems and further strengthen relations with the Tohono O'odham Nation and Mexico—with the primary difference being a redistribution in visitor services. Cumulative effects of the actions proposed in this alternative when added to other regional activities would be moderate given recent and proposed increases in development and tourism-related industries in Puerto Penasco, Mexico, elsewhere in the

Environmental Consequences

region, and in response to NAFTA and improvements to the border patrol station in Lukeville. Cooperative management efforts such as development of a regional wilderness management plan, as well as involvement in an inter-agency visitor center and ISDA's tri-cultural, tri-national center would facilitate information exchange and collaborative approaches to ensure resource protection on adjacent lands.

Cumulative impacts to natural resources are also similar to the *Former Preferred Future Alternative* except that there may be a long-term reduction in wildlife mortality if experimental mitigation techniques along SR 85 prove successful. On a broader scale, proposed actions would have an insignificant affect on regional air quality, involve no net loss to the nation's remaining wetland acreage, and could eventually lead to an expansion of the National Wilderness Preservation System by approximately 3,650 acres. They would also aid recovery efforts for rare and sensitive species such as the Quitobaquito desert pupfish, lesser long-nosed bat, and Sonoran pronghorn. The loss of an additional 5 acres of desert scrub habitat would be insignificant when compared to the overall size of the monument and losses occurring throughout the region.

Conclusion. Cumulative impacts for the *New Ideas Alternative* are similar to the *Former Preferred Future Alternative* with the primary difference being a redistribution in visitor services, the amount of acreage eligible for wilderness designation, and a potential long-term reduction in wildlife mortality along SR 85.

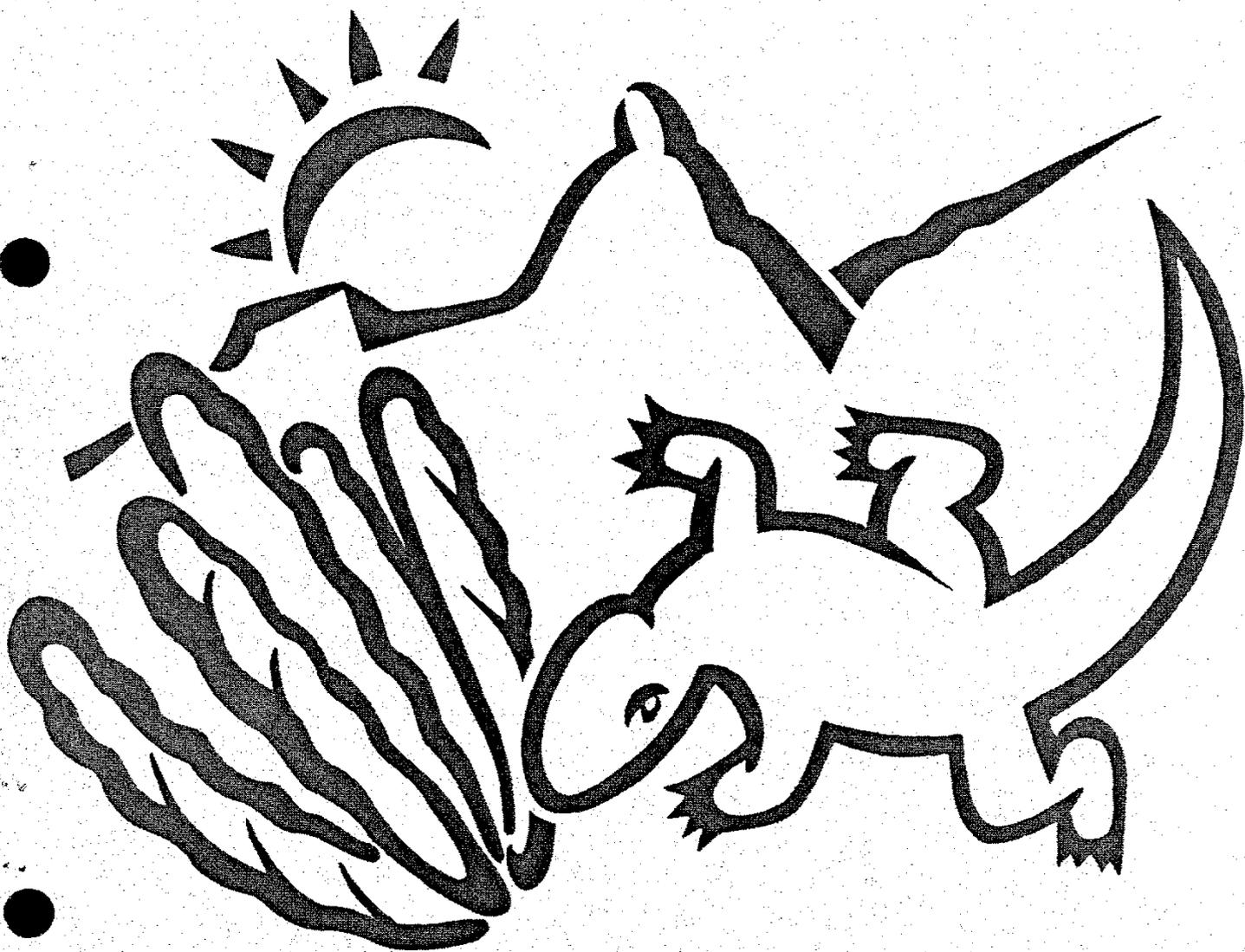
New Proposed Action Alternative

Cumulative impacts would be the same as for the *New Ideas Alternative*, except that proposed actions could eventually lead to an expansion of the National Wilderness Preservation System by 1,509 acres.

Conclusion. The only difference between the cumulative effects for the *New Proposed Action Alternative* and the *New Ideas Alternative* is in the amount of acreage that would be added to the National Wilderness Preservation System.

SUPPLEMENT TO

APPENDIXES AND
BIBLIOGRAPHY



SUPPLEMENT TO APPENDIX B: COST ESTIMATE BREAKDOWNS

A discussion titled *Escalated Costs* has been prepared due to the number of concerns raised regarding costs and in an attempt to explain why costs to the government seem to escalate over those for private citizens. This discussion can be found in the *Cost Estimate* section in the *New Ideas Alternative*.

The following cost estimates were prepared using the Estimating Section of the NPS's Denver Service Center "Class C" costs that are used to estimate total development costs of projects in the general planning stage. Over time, the actual costs of projects—from planning, design, to construction—have been tracked and compiled into the "Class C Estimating Guide" which is routinely used in estimates for planning purposes.

A breakdown of the estimated costs of the two alternatives presented in this Supplement are contained on the following pages. The costs are broken down into four columns: cost item, gross construction costs, advance planning cost, and total costs. A definition of what is generally contained in each column follows.

Cost Item. This column lists and describes the items that costs were estimated for. The items are presented by area.

Gross Construction Costs. This column lists the estimated gross cost of each item. The gross cost is the total of net construction costs and an increase for overhead as defined below.

Net construction costs are based on Class "C" unit prices. These prices are generally higher than the normal market price due to actual increases experienced in federal government bids due to requirements related to fair labor laws, purchasing, ensured safety, bonding, and additional paperwork. In addition, these costs are meant to be valid for at least a few years after a plan is finalized. Since Organ Pipe Cactus National Monument is only considered somewhat remote, most of the increase in net construction costs involve an increase for unlisted technical tests and studies. This increase is one of the greatest unknowns for the NPS, but if not calculated into the initial cost estimate, has been known to lead to significant funding shortages. Often in the early planning portion of projects, there is not enough time and money to reveal unexpected subsurface or historical site conditions. Because of the high chance of uncovering archeological resources at the monument, a factor of 10% has been applied to the net construction costs to cover the need for these types of tests.

Increase for overhead. This is the standard cost for contract administration and construction supervision. All NPS projects are subject to this factor of 31% and there is no flexibility in this amount.

Advance Planning Cost. This column includes the cost of design and construction document preparation, the next stage after the GMP is approved. This is a standard expense of 25% of the net construction cost (not the gross construction costs). DCPs presented in General Management Plans are not sufficiently detailed to actually build or prepare anything. Design construction drawings and documents are required in the construction process and to bid the work. Small, relatively simple projects may sometimes dispense with this requirement.

Total Costs. This last column totals the gross construction cost and advance planning cost columns.

Appendices: Updates and Revisions

NEW IDEAS ALTERNATIVE

Feb. 7, 1996

Cost Item	Gross Constr. Cost	Advance Planning Cost	Total Costs
TWIN PEAKS			
Campsites (drive-in)	\$15,720	\$3,000	\$18,720
Convert group CG to walk-in	\$3,930	\$750	\$4,680
Convert road to trail (paved)	\$117,900	\$22,500	\$140,400
Trailhead parking	\$22,270	\$4,250	\$26,520
Trailhead sign & pamphlet dispenser	\$2,620	\$500	\$3,120
Remove Dev. & Restore to Natural Conditions			
Obliterate and revegetate trails	\$28,820	\$5,500	\$34,320
Building removal	\$176,457	\$33,675	\$210,132
Restore campground to natural conditions	\$255,450	\$48,750	\$304,200
Restore Twin Peaks to natural conditions	\$2,253,200	\$430,000	\$2,683,200
Twin Peaks Subtotal	\$2,876,367	\$548,825	\$3,425,292
QUITOBAQUITO			
Trailhead parking (unpaved)	\$31,440	\$6,000	\$37,440
Trailhead sign & pamphlet dispenser	\$2,620	\$500	\$3,120
Composting toilet	\$32,750	\$6,250	\$39,000
Accessible trail (0.5 mile)	\$28,296	\$5,400	\$33,696
Convert road to accessible trail	\$27,510	\$5,250	\$32,760
Remove & rehab existing social trails	\$69,168	\$13,200	\$82,368
New one lane dirt road	\$26,200	\$5,000	\$31,200
Quitobaquito Subtotal	\$217,984	\$41,600	\$269,584
ALAMO CANYON			
Remove campsites (4)	\$7,860	\$1,500	\$9,360
Restore campground to natural conditions	\$38,318	\$7,313	\$45,630
Alamo Canyon Subtotal	\$46,178	\$8,813	\$54,990
DOS LOMITAS			
Campfire circle	\$5,240	\$1,000	\$6,240
Benches	\$8,384	\$1,600	\$9,984
Dos Lomitas Subtotal	\$13,624	\$2,600	\$16,224
OTHER ROADS, PULL-OUTS TRAILS, AND EXHIBITS			
Info Portal pull-offs (2)	\$245,232	\$46,800	\$292,032
Entrance sign upgrade	\$2,620	\$500	\$3,120
Entrance sign plantings	\$983	\$188	\$1,170
Shade structure (ramada)	\$2,358	\$450	\$2,808
Exhibit panels (8)	\$7,860	\$1,500	\$9,360
Paved pull-outs (2)	\$122,616	\$23,400	\$146,016
Wayside exhibits (20)	\$104,800	\$20,000	\$124,800
Accessible trail (3.7 miles)	\$348,984	\$66,600	\$415,584
Unpaved trail (2.5 miles)	\$114,625	\$21,875	\$136,500
Convert road to accessible trail (1.5 miles)	\$141,480	\$27,000	\$168,480
Convert road to hiking route (23.35 miles)	\$611,770	\$116,750	\$728,520
Roads, POs, Trails & Exh. Subtotal	\$1,703,328	\$325,063	\$2,028,390
LUKEVILLE AREA			
Science & Resources Mgmt. Ctr.	\$1,454,100	\$277,500	\$1,731,600
Ramada vehicle & equip. cover	\$31,440	\$6,000	\$37,440
Ramada material storage cover	\$10,480	\$2,000	\$12,480
Five ft. high concrete silo storage	\$45,850	\$8,750	\$54,600
Maintenance Building	\$409,375	\$78,125	\$487,500
Ramada Fire truck & equip. cover	\$3,930	\$750	\$4,680
Maintenance yard (gravel)	\$104,800	\$20,000	\$124,800
Maint. fence & security w/lighting	\$93,010	\$17,750	\$110,760
VIP-RV pads w/hook-ups	\$327,500	\$62,500	\$390,000
Paved road (0.5 mile)	\$540,375	\$103,125	\$643,500
Unpaved road (0.5 mile)	\$262,000	\$50,000	\$312,000
Paved parking (40 cars)	\$83,840	\$16,000	\$99,840
Lukeville Subtotal	\$3,366,700	\$642,500	\$4,009,200
Grand Total	\$8,224,180	\$1,569,500	\$9,793,680

NEW PROPOSED ACTION ALTERNATIVE

Feb. 7, 1996

Cost Item	Gross Constr. Cost	Advance Planning Cost	Total Costs
TWIN PEAKS			
Remodel for SERMC and Interp. Ctr.	\$579,675	\$110,625	\$690,300
Interpretive Center Addition	\$990,360	\$189,000	\$1,179,360
Reconvert office/dorms to residences	\$196,500	\$37,500	\$234,000
Maint./ranger/fire complex additions	\$1,061,100	\$202,500	\$1,263,600
Covered parking for park vehicles	\$596,050	\$113,750	\$709,800
Covered storage space	\$137,550	\$26,250	\$163,800
5' High concrete storage silos	\$38,973	\$7,438	\$46,410
Loading ramps (2)	\$22,270	\$4,250	\$26,520
Open air repair bays (1)	\$75,456	\$14,400	\$89,856
Visitor car & bus parking	\$249,424	\$47,600	\$297,024
Picnic area (w/ramada)	\$37,728	\$7,200	\$44,928
Plaza w/shade, elec., & planting (1000SF)	\$52,400	\$10,000	\$62,400
Paved road (800 LF)	\$216,150	\$41,250	\$257,400
Remove & rehab existing social trails	\$55,544	\$10,600	\$66,144
One lane unpaved road	\$26,200	\$5,000	\$31,200
Twin Peaks Subtotal	\$4,335,380	\$827,363	\$5,162,742
QUITOBAQUITO			
Trailhead parking (unpaved)	\$31,440	\$6,000	\$37,440
Trailhead sign & pamphlet dispenser	\$2,620	\$500	\$3,120
Composting toilet	\$32,750	\$6,250	\$39,000
Accessible trail (0.5 mile)	\$28,296	\$5,400	\$33,696
Convert road to accessible trail	\$27,510	\$5,250	\$32,760
Remove & rehab existing social trails	\$69,168	\$13,200	\$82,368
New one lane dirt road	\$26,200	\$5,000	\$31,200
Quitobaquito Subtotal	\$217,984	\$41,600	\$259,584
ALAMO CANYON			
Delineate existing 16 car parking	\$8,384	\$1,600	\$9,984
Campsites (4)	\$6,812	\$1,300	\$8,112
Composting toilet (sm. prefab)	\$32,750	\$6,250	\$39,000
Alamo Canyon Subtotal	\$47,946	\$9,150	\$57,096
OTHER ROADS, PULL-OUTS TRAILS, AND EXHIBITS			
Waysides (20)	\$131,000	\$25,000	\$156,000
Info Portal pull-offs (2)	\$245,232	\$46,800	\$292,032
Entrance sign upgrade	\$2,620	\$500	\$3,120
Entrance sign plantings	\$983	\$188	\$1,170
Shade structure (ramada)	\$2,358	\$450	\$2,808
Exhibit panels (8)	\$7,860	\$1,500	\$9,360
Paved pull-outs (2)	\$122,616	\$23,400	\$146,016
Upgrade trail for accessibility	\$9,170	\$1,750	\$10,920
New accessible trails (hardened)	\$348,984	\$66,600	\$415,584
New unpaved trail	\$220,080	\$42,000	\$262,080
Park Wide Subtotal	\$1,090,903	\$208,188	\$1,299,090
Grand Total	\$5,692,212	\$1,086,300	\$6,778,512

**UPDATE TO APPENDIX G:
CONSULTATIONS WITH THE U.S. FISH AND WILDLIFE SERVICE
AND THE ARIZONA FISH AND GAME DEPARTMENT**

At present, the NPS is consulting with the FWS and preparing a biological assessment to help meet federal responsibilities under Section 7 of the Endangered Species Act (1973). Section 7 of the Endangered Species Act (1973) prohibits federal agencies such as the NPS from implementing any action that is likely to jeopardize the continued existence of a federally listed (i.e. endangered, threatened) species. Furthermore, the Act requires that the NPS consult with the FWS on any action it authorizes, funds, or executes that could potentially affect a protected species or its designated critical habitat. To help meet its responsibilities under the Act, the NPS is currently consulting with the FWS as well as preparing a biological assessment that analyzes potential effects of the GMP on federally listed, proposed, and candidate species. This document will appear as an Appendix in the final GMP/DCP/EIS along with a letter from the FWS confirming successful completion of the Section 7 process.

The following letters are more recent versions of letters presented in the Draft GMP/DCP/EIS and consequently, are presented *here*.



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
ARIZONA ECOLOGICAL SERVICES STATE OFFICE
2321 W. Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951



Telephone: (602) 640-2720 FAX: (602) 640-2730

March 29, 1995

In Reply Refer To:
AESO/SE
2-21-89-I-078

MEMORANDUM

TO: Natural Resource Specialist, Denver Service Center-TWE, National Park Service, Denver, Colorado (Attn: Liz Bellantoni)

FROM: State Supervisor

SUBJECT: Species List for Organ Pipe Cactus National Monument

This memorandum is in response to your February 24, 1995, request for an updated list of federally listed, proposed threatened or endangered species and candidate species that may occur on Organ Pipe Cactus National Monument, Pima County, Arizona.

Our data indicate the following listed and candidate species may occur on Organ Pipe Cactus National Monument:

Endangered

Lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*)
Sonoran pronghorn (*Antilocapra americana sonoriensis*)
American peregrine falcon (*Falco peregrinus anatum*)
Brown pelican (*Pelecanus occidentalis*)
Desert pupfish (*Cyprinodon macularis*)

Proposed Endangered

Cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*)

Candidate Category 1

Acuna cactus (*Echinomastus erectocentrus* var. *acunensis*)

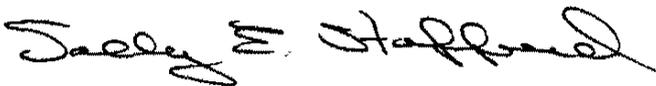
Candidate Category 2

California leaf-nosed bat (*Macrotus californicus*)
Greater western mastiff-bat (*Eumops perotis californicus*)
Underwood's mastiff-bat (*Eumops underwoodi*)
Pale Townsend's big-eared bat (*Plecotus townsendii pallescens*)

Yuma myotis (*Myotis yumanensis*)
Cave myotis (*Myotis velifer*)
Western burrowing owl (*Athene cunicularia hypugea*)
*Loggerhead shrike (*Lanius ludovicianus*)
White-faced ibis (*Plegadis chihi*)
Ferruginous hawk (*Buteo regalis*)
Black rail (*Laterallus jamaicensis*)
Desert tortoise (Sonoran population) (*Gopherus agassizii*)
Chuckwalla (*Sauromalus obesus*)
Rosy boa (*Lichanura trivirgata*)
Canyon spotted whiptail (*Cnemidophorus burti*)
Quitobaquito tryonia (snail) (*Tryonia quitobaquiae*)
Trelease agave (*Agave schottii* var. *treleasei*)

*This species was omitted from the 1994 Animal Candidate Review. The Fish and Wildlife Service (Service) is conferring with the Washington office to determine if this was intentional or an error. We are retaining it on this list until it is confirmed that it is no longer a candidate species.

In future communications on this project, please refer to consultation number 2-21-89-I-078. If we may be of further assistance, please contact Brenda Andrews or Tom Gatz.


for Sam F. Spiller

cc: Superintendent, Organ Pipe Cactus National Monument, Ajo, Arizona
Director, Arizona Game and Fish Department, Phoenix, Arizona

THE STATE OF ARIZONA



GAME & FISH DEPARTMENT

2221 West Greenway Road, Phoenix, Arizona 85023-4399 (602) 942-3000

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Fife Symington

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Chairman Elizabeth T. Woodin, Tucson
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Director
Duane L. Shroufe

Deputy Director
Thomas W. Spalding

February 24, 1995

Ms. Liz Bellantoni
National Parks Service, Denver Service Center-TWE
Box 25287
Denver, Colorado 80225

Re: Special Status Species; Organ Pipe Cactus National Monument,
Arizona

Dear Ms. Bellantoni:

The Arizona Game and Fish Department (Department) has received your request of February 24, 1994, regarding special status species for above-referenced area and the following information is provided.

The Department's Heritage Data Management System has been accessed and current records show that the special status species on the attached list have been documented as occurring in Organ Pipe Cactus National Monument.

Thank you for the opportunity to provide this information. If you have any questions, please contact me at (602) 789-3600.

Sincerely,

Nancy Olson
Project Evaluation Specialist
Habitat Branch

NLO:nc

Enclosure

AGFD# 02-24-95(03)

Appendixes: Updates and Revisions

02/24/95

ARIZONA GAME AND FISH DEPARTMENT - HERITAGE DATA MANAGEMENT SYSTEM

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SPECIAL STATUS SPECIES - ORGAN PIPE CACTUS NATIONAL MONUMENT

NAME	COMMON NAME	ESA	TNW	USFS	NPL
AGAVE SCHOTTII TRELEASEI	TRELEASE AGAVE	C2		S	HS
ANTILOCAPRA AMERICANA SONORIENSIS	SONORAN PRONGHORN	LE	SE		
BUFO RETIFORMIS	SONORAN GREEN TOAD	3C		S	
CNEMIDOPHORUS BURTI XANTHONOTUS	REDBACK WHIPTAIL	C2			
CYPRINODON MACULARIUS EREMUS	QUITOBAQUITO DESERT PUPFISH	LE	SE		
ECHINOMASTUS ERECTOCENTRUS ACUNENSIS	ACUNA CACTUS	C1		S	HS
EUMOPS PEROTIS CALIFORNICUS	GREATER WESTERN MASTIFF BAT	C2		S	
EUMOPS UNDERWOODI	UNDERWOOD'S MASTIFF BAT	C2		S	
FEROCACTUS EASTWOODIAE	GOLDEN BARREL CACTUS	3C			SR
GLAUCIDIUM BRASILIANUM CACTORUM	CACTUS FERRUGINOUS PYGMY-OWL	PE	SE	S	
GOPHERUS AGASSIZII (SONORAN POPULATION)	SONORAN DESERT TORTOISE	C2	SC	S	
HELODERMA SUSPECTUM	GILA MONSTER	3C		S	
LEPTONYCTERIS CURASOAE YERBABUENAE	LESSER LONG-NOSED BAT	LE	SE	S	
LICHANURA TRIVIRGATA TRIVIRGATA	MEXICAN ROSY BOA	C2			
LOPHOCEREUS SCHOTTII	SENITA				SR
MACROTUS CALIFORNICUS	CALIFORNIA LEAF-NOSED BAT	C2	SC	S	
MAMILLARIA THORNERI	THORNER FISHHOOK CACTUS	3C			SR
MYOTIS VELIFER BREVIS	SOUTHWESTERN CAVE MYOTIS	C2		S	
NEDEVANSIA STRIATA	DAHLIA ROOTED CEREUS				SR
PERITYLE AJOENSIS	AJO ROCK DAISY	3C			SR
STENOCEREUS THURBERI	ORGAN PIPE CACTUS				SR
STREPTANTHUS CARINATUS	LYRE-LEAVED TWISTFLOWER	3C		S	
TRYONIA QUITOBAQUITAE	QUITOBAQUITO TRYONIA	C2			
TUMANOCA MACDOUGALII	TUMANCO GLOBEBERRY	3C		S	SR
TYRANNUS MELANCHOLICUS	TROPICAL KINGBIRD		SC	S	

STATUS DEFINITIONS

- LE - Listed Endangered by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA). Species which are in imminent jeopardy of extinction.
- PE - Proposed Endangered. Being reviewed by USFWS for listing as Endangered under ESA.
- C1 - Category 1 Candidate as identified by USFWS under ESA. Species determined to be appropriate for listing, but are currently precluded due to other listing priorities.
- C2 - Category 2 Candidate as identified by USFWS under ESA. Species being considered for listing as Threatened or Endangered pending more information.
- 3C - Category 3 Candidate as identified by USFWS under ESA. Species once considered for listing as Threatened or Endangered, but found to be more common than previously thought.
- SE - State Endangered on the Arizona Game and Fish Department's listing of Threatened Native Wildlife in Arizona (TNW). Species extirpated from Arizona since the mid-1800s or for which extinction or extirpation is highly probable without conservation efforts.
- SC - State Candidate on the Department's TNW list. Species with known or suspected threats, but for which substantial population declines from historical levels have not been documented.
- S - Classified as "sensitive" by the Regional Forester when occurring on lands managed by the U.S.D.A. Forest Service.
- HS - Highly Safeguarded as defined by Arizona Native Plant Law. (1993)
- SR - Salvage Restricted as defined by Arizona Native Plant Law. (1993)

APPENDIX H: EXISTING USE CAPACITIES

This Appendix presents the Monument's existing carrying capacities as excerpted from section 1.5 of the *Compendium Listing of Special Regulations in Effect for Organ Pipe Cactus National Monument*. Under the provision of Title 36, Code of Federal Regulations, Chapter 1, Parts 1 - 7, the Superintendent's Orders (compendium) were established for Organ Pipe Cactus National Monument. Unless otherwise noted, these orders apply in addition to the provisions contained in parts 1 - 7 of Title 36 CFR. Parts of sections 1.5, 2.2, and 2.10 follow.

§ 1.5 Closures and public use limits.

(1) The following roads are closed to vehicular traffic except for use by National Park Service, other Federal, State or Local Agencies, and other individuals in accordance with approved General Management or Resource Management Plans:

The road to the sewage lagoon
 The road to the maintenance storage yard (boneyard - Tiger Cage Area)
 The road to the Monument Pistol Range
 The power line road
 Border road east of Blankenship Ranch
 Border road west of Quitobaquito
 The roads to the maintenance complex and to park residence area
 The road to the vegetative recycle area

The Monument Visitor Center is open to the public every day between the hours of 8:00 AM to 5:00 PM.

The following carrying capacities, in terms of largest party sizes will apply to the different backcountry camping zones.

Zone #	Zone Name	Carrying Capacity	Largest Party Size
100	Kuakatch Wash	8	6
111	Grass Canyon	4	4
112	Pitahaya	4	4
113	Montezuma Wash	4	4
121	North Alamo Canyon	4	4
122	South Alamo Canyon	4	4
130	Tillotson Peak East	6	6
140	Tillotson Peak West	8	6
150	Arch Canyon	6	4
160	Diablo Canyon	4	4
170	Diaz Spire	6	4
180	Sonoyta Valley West	8	8
190	Sonoyta Valley East	8	8
200	Pinkley Peak North	8	6
210	Pinkley Peak South	10	7
220	Senita Basin North	8	6
230	Senita Basin South	6	4
240	Victoria Mine	8	6
250	La Abra Plain	10	8
260	Sonoyta Mountains	6	4
300	Ajo Valley North	15	8
310	Ajo Valley South	15	8

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Zone #	Zone Name	Carrying Capacity	Largest Party Size
320	Bates Mountain West	10	6
330	Bates Mountain East	10	6
340	Bates Valley	8	6
351	Cipriano Hills	8	6
352	N. Puerto Blanco Mtns.	4	4
400	Growler Wash	15	8
410	Cristobal Wash	15	8
420	Quitobaquito Hills	10	6

§ 2.2 Wildlife Protection

(e) The use of artificial light to view wildlife within the monument is prohibited.

§ 2.10 Camping and food storage

MAIN CAMPGROUND

Vehicles

- Camping with permit allowed on a first come, first serve basis.
- Maximum RV length is 35' (motorhomes measured bumper to bumper - trailers measured from hitch point to rear bumper)
- One RV per site/ two vehicles per site
- Washing vehicles in campground prohibited
- Mirrors extending more than 6" to side should be removed when not towing trailer/vehicle
- Sewage to be disposed at the dump station **only**

Campsites

- Two tents per site
- Maximum site occupancy is 6 people
- Tents should use tent pads/gravel area, but not natural vegetation area

Camping Limit

- Limit to 14 calendar days for period January 15 through April 30th and 30 days during the remainder of the year, Checkout time - 11 A.M.

Generator Hours- 12 noon to 5:00 pm

GROUP CAMPING

Camping

- Is for Organized groups only
- By reservations
- Reservations accepted no more than six months in advance
- RV (Motorhomes, trailers, tent trailers) camping is available in sites 1 & 2 only
- RV/tent camping is available in site 1 only
- Tent camping is available in sites 3, 4, and 5 only, with parking available near each site.

NO RV parking at these sites. Tents limited to marked perimeter.

Camping Limit - Limit is 14 calendar days for period January 15 through April 30th and 30 days during the remainder of the year.

Vehicles

- Maximum for site 1 is 7 RV's
- Maximum for site 2 is 13 RV's

Tents

- Maximum for site 1 is 15; Maximum for site 3 is 6; Maximum for site 4 is 8; Maximum for site 5 is 8

People

- Maximum for site 1 is 45; Maximum for site 2 is 40; Maximum for site 3 is 18; Maximum for site 4 is 24; Maximum for site 5 is 24

Maximum Vehicle Length

- 35 foot for motorhomes measured bumper to bumper. Trailers are measured from hitch point to rear bumper. Detachable Mirrors which extend 6" beyond vehicle side fender line are to be removed when not towing a second vehicle or trailer.

Generator Hours - 12 noon to 5:00 P.M.

ALAMO PRIMITIVE CAMPGROUND

Vehicles

- Camping with a backcountry permit (obtained from the Visitor Center *only*, on a first come, first serve basis).
- Motor homes and RV trailers are prohibited.
- Parking is limited to space provided at each site.
- Parking for day use/backcountry use should use the south side of parking lot, near the pit toilet.
- Permit should be placed on dashboard of vehicle, so the number can be read through windshield.
- Unregistered vehicles are subject to citation/towing, at the owners expense.

Campsites Are for Primitive Camping only.

- Maximum capacity if four people per site.
- Maximum capacity is twenty people per night, for the entire campground.
- Camping is limited to seven (7) calendar days, with a break of not less than 30 calendar days before a new permit can be issued.
- Check out time is 11 A.M.
- Entrance permit required.
- Wood fires are not permitted.

BACKCOUNTRY CAMPING

- Backcountry camping permit required for overnight stays. Acquire permit at Visitor Center, first come, first serve. Permits should be placed on dash of vehicles, so the number on the back can be read through the windshield.

Camping

- Is limited to fourteen (14) days in any 90 day period.
- No more than two (2) consecutive nights may be spent at the same campsite.
- Within one half mile of any road, historic site, or water source is prohibited.
- Leave a clean campsite; carry out all trash.
- Sanitation, bury human waste, using a "cat hole"; a six inch deep hole, covered after use.

Parking - Backpackers should park in the pull-out or parking area specified on their backcountry permit.

APPENDIX I: MITIGATION MEASURES AND DEVELOPMENT CONSTRAINTS

Mitigation measures and development constraints are specific actions that when implemented, minimize, avoid, or eliminate impacts on resources that would be affected by proposed actions. The following resource protection strategies would be implemented for the NPS's proposed action. Where applicable, more specific mitigation measures are outlined in the summary of the Natural and Cultural Resources Management Plan in the *Actions Common to All Alternatives* section, or the *Environmental Consequences* section under the appropriate impact topic.

The NPS would fully comply with all applicable laws, regulations, and policies governing resource protection including the National Environmental Policy Act, Endangered Species Act, Clean Water Act, Clean Air Act, Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands), National Historic Preservation Act, and agency specific guidelines. In instances where resource conditions may have changed over time or more detailed site design is required, the NPS would ensure that the necessary level of environmental compliance has been completed prior to implementing any proposed actions.

Wilderness

In compliance with the Wilderness Act's mandate that wilderness be undeveloped, retain its primeval character and influence, and be devoid of permanent improvements or human habitation, all proposed development, with the exception of trails, would be located outside designated wilderness. Although most of the new maintained trails and unimproved hiking routes would occur either in designated or proposed wilderness, their presence and use is considered acceptable and appropriate in wilderness areas. Managers would also use the "minimum tools" (i.e., the least heavy-handed approach) necessary for resource management, trail maintenance, or cultural resources preservation in order to achieve wilderness management objectives.

Air Quality

Disturbed areas would be revegetated with native plants to stabilize soils, decreasing the amount of dust subject to wind erosion. Whenever possible, bare soil would be dampened with water to further reduce dust around construction sites.

The NPS would implement a comprehensive air quality monitoring program to ensure maximum protection of the monument's air quality-related values, and to verify that federal pollution control standards are not being exceeded. The program would entail inventory and monitoring of air quality-related values (including visibility), evaluating air pollution impacts, and collecting baseline and trend data on pollutants such as ozone and sulfur dioxide.

Floodplains, Wetlands, and Water Resources

Floodplains and wetlands would be avoided to the greatest extent possible when selecting sites appropriate for development or visitor use. In accordance with NPS guidelines governing floodplain management and wetlands protection (45 FR 35916 and 47 FR 36718), actions would be taken to enhance and restore floodplain and wetland values, to avoid modification or development in floodplains and wetlands when practicable alternatives exist, and to mitigate adverse impacts if a floodplain or wetland would be occupied or modified.

A Clean Water Act, Section 404 permit would be obtained for the discharge of dredged or fill material into waters of the United States. A Section 401 Water Quality Certification would be acquired in conjunction with the 404 permit.

A Clean Water Act, Section 402, National Pollutant Discharge Elimination System permit would be obtained for all ground disturbing activities that exceed five acres in impact.

The NPS would comply with numeric water quality standards for fecal coliform and radiochemicals listed in the Arizona Administrative Code (AAC) R-18-11-109. G.

Best management practices (BMPs) would be implemented during and after all construction phases to protect watershed condition and riparian areas, to maintain adequate vegetative cover, and to minimize the discharge of sediment, petroleum, nutrients, bacteria and other pollutants to the watershed or water courses. All discharges would meet applicable water quality standards.

A monitoring program would be implemented to evaluate the effectiveness of BMPs in protecting watershed condition and water resources.

Sanitary waste facilities provided during construction phases would be planned and developed in such a manner to ensure protection of both surface and groundwater resources.

An Aquifer Protection Permit would be obtained from the Arizona Department of Environmental Quality (ADEQ) in instances where new facility construction would dispose pollutants to the land surface, the underlying soil, or to groundwater, or where there is a reasonable probability that pollutants would reach groundwater.

Public or semi-public water supply systems would be developed to comply with the Arizona Administrative Code (AAC) R-18-4-201 et seq., *Public and Semipublic Water Supply Systems* rules.

If any gasoline lines or underground storage tanks containing petroleum products are moved, the lines would be tested and recertified by ADEQ before being used.

Any new or modified water and/or wastewater facility must be designed to protect public health and the environment through a construction approval program that ensures that proposed plans and specifications for construction comply with ADEQ sanitation rules, engineering guidelines and policies.

Vegetation and Soil

To minimize unnecessary ground disturbance and vegetation impacts resulting from construction, equipment and materials would be stockpiled on previously developed sites or within construction footprints. Construction limits would be identified in construction documents and specifications, and fenced or signed in the field to further protect vegetation and environmentally sensitive areas from disturbance. A construction supervisor would monitor ground and vegetation disturbance to ensure that they are restricted to the minimum area necessary.

To minimize soil erosion and vegetation impacts caused by visitor use or construction-related activities, disturbed areas would be revegetated and restored to natural conditions. These sites would be revegetated with native plant materials (e.g., seeds, transplanted vegetation) salvaged from areas impacted by construction. To guide restoration efforts, the NPS would outline procedures for collecting and propagating native species, salvaging topsoil, site grading and soil preparation, erosion control, vegetation re-establishment, and post-construction monitoring. Whenever possible, vegetation would be used to screen the built environment from visitor use areas.

Projects would be scheduled so that clearing and grading is done during times of minimum erosion potential. Erosion control techniques would be used to prevent sediment transport from construction sites. Topsoil stockpiles would be covered or stabilized, and hay bales and drift fences (or similar structures) would be used as wind barriers. For trail and campsite improvements, design criteria would incorporate soil compaction techniques and prevent sediment transport due to pedestrian traffic, water,

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and wind erosion. Consideration also would be given to the type and location of permanent erosion and sediment controls such as energy dissipators, velocity controls, and vegetation buffer strips.

Locations requiring excessive cut and fill would be avoided, as would steep slopes, sites that drain directly into sensitive water bodies, and areas subject to subsidence, landslides, rock outcroppings, and highly erodible soils.

Wildlife

A Wildlife Management Plan would be developed to guide wildlife management at the monument. Monitoring programs also would be expanded to include desert bighorn, javelina, mountain lion, and mule deer.

To reduce wildlife mortality along SR 85, the NPS would work with the Arizona Department of Transportation to (1) establish a research program to seek design solutions such as bridge construction and the placement of oversized culverts beneath the roadway to facilitate safe passage, and (2) educate motorists about wildlife use of the road corridor via signs and various interpretive media.

To ensure protection of critical wildlife habitat and activity centers from human disturbance, park managers would implement seasonal or short-term closures whenever necessary.

Threatened, Endangered, and Sensitive Species

To reduce the potential for adverse effects on endangered, threatened, or sensitive plants or animals, qualified park personnel would survey development sites prior to construction. If a species of concern is found to be inhabiting a site, the NPS would consult with the FWS to determine appropriate mitigation measures to avoid adverse impacts.

To minimize the potential for disturbance to the maternity colony of lesser long-nosed bats, a "bat-friendly" grate would be placed at each opening of the adit to allow bats unimpeded access to the mine's interior, while prohibiting human entry.

A study would be developed to determine the extent of the poaching problem in the monument. Methods for preventing poaching would be evaluated and those determined to be effective would be implemented.

An extensive threatened, endangered, and sensitive species plan specific to the monument would be developed to more effectively guide management and recovery of these species. Current monitoring programs also would be expanded for the Quitobaquito desert pupfish, cactus ferruginous pygmy owl, lesser long-nosed bat, desert tortoise, elephant tree, organ pipe cactus, acuna cactus, and senita cactus.

Cultural Resources

Archeologic surveys would be done prior to any development. If previously unknown cultural resources are discovered, facilities will be re-designed or relocated to avoid impacts to the sites. If avoidance is infeasible, mitigation will be sought in consultation with the Arizona state historic preservation officer, the Advisory Council on Historic Preservation, and if appropriate, the Tohono O'odham Nation and the Hia-Ced O'odham.

To further protect cultural resources from theft and vandalism, where possible, increased patrols and the use of various innovative security technologies would be employed. The monument would also seek to establish an active unit of the Arizona Site Steward Program. This state-operated program encourages citizens to acquire the necessary training and then volunteer to inspect, evaluate, and monitor significant cultural resources on a regular basis.

GLOSSARY AND ABBREVIATIONS

AAC. Arizona Administrative Code.

ADEQ. Arizona Department of Environmental Quality.

ADOT. Arizona Department of Transportation.

affected environment. Existing biological, physical, geographical, social, cultural, and economic conditions of an area that are subject to change, both directly and indirectly as a result of a proposed human action.

APS. Arizona Public Service company.

BLM. Bureau of Land Management, a federal agency in the Department of the Interior.

DCP. Development Concept Plan. The document prepared to guide the new uses proposed for a specific site in a park.

ecology. The study of the interrelationships between organisms and their physical environments.

ecosystem. A community of living organisms interacting with one another and with their physical environment, such as a forest, pond, or estuary.

EIS. Environmental Impact Statement. The National Environmental Policy Act of 1969 requires that an environmental impact statement be prepared to evaluate the potential environmental effects of major federal actions. This document identifies and analyzes activities that might affect the human and natural environment.

EMP. Ecological Monitoring Program

EPA. Environmental Protection Agency. The agency of the United States Government that approves EISs; it is independent of any other federal department or agency.

ethnographic resource. A feature or geographic area of traditional and continuing significance to a contemporary people.

ethnography. The description and study of a people's culture using the methods of cultural anthropology.

ethnohistory. The study of the past ways of life and culture of a people using the methods of cultural anthropology and history.

extirpate. A wildlife species no longer present in an area because of local extinction.

extirpation. The term used when the whole population of a particular animal or plant species is wiped out locally or dies and becomes extinct, often because of environmental neglect or mismanagement.

floodplain. Land adjacent to a river that periodically floods.

FWS. Fish and Wildlife Service, a federal agency in the Department of the Interior.

GIS. Geographic Information System. A computerized mapping database that stores, retrieves, and manipulates spatial data.

GMP. General Management Plan. The document prepared to guide the overall operations of a park for the next 15 years or so, including visitor use and resource protection and preservation.

indigenous. Peoples, animals, or plants native to a particular area or environment.

inholding. Parcel of land surrounded by property owned by another.

IPM. Integrated Pest Management.

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ISDA. *International Sonoran Desert Alliance.* A non-profit organization that promotes the protection and preservation of the Sonoran Desert on both sides of the United States-Mexico border.

juvenile. An animal in the process of maturing and growing into adulthood.

littoral zone. Important wildlife foraging, spawning, and resting area near a pond's edge, and in the monument, dominated by stands of bulrush and submerged aquatic vegetation.

maximum probable flood. The most severe and extensive flood considered reasonably possible to occur at a site as a result of existing hydrologic, topographic, and meteorologic conditions.

mitigation. Activities that will avoid or reduce the severity of an adverse environmental impact or eliminate it altogether.

NEPA. The National Environmental Policy Act of 1969. A federal law that requires the consideration and analysis of environmental effects of a proposed federal action, no action, and the full range of reasonable alternatives.

NPS. National Park Service. A federal agency in the Department of the Interior.

riparian. Vegetation adapted to moist growing conditions and occasional flooding occurring along watercourses.

RMAP. Resource management assessment program. used to estimate the number of employees needed to carry out resource management in units of the National Park system.

SERMC. Science, education, and resources management center. A term used to describe a new facility containing the functions listed in the title and proposed under certain alternatives.

SRMC. Science and resources management center. A term used to describe a new facility containing the functions listed in the title and proposed under certain alternatives.

self-sustaining. Capable of maintaining oneself or itself independently.

species. A group of individual plants or animals (including subspecies and populations) that share common characteristics and interbreed.

stochastic events. Randomly occurring events, for example, decline in habitat quality or flooding.

traditional cultural property. An ethnographic resource recognized as especially important to a contemporary people's heritage by being listed in the National Register of Historic Places. Some Native Americans object to this *National Register term*.

VRAP. Visitor resource assessment program. used to estimate the number of employees needed to protect visitors in units of the National Park system.

watershed. The area drained by a river system.

wetland. A low-lying area supporting vegetation adapted to periodic saturation or floodwater conditions, such as a swamp or marsh.

xeroriparian. Desert vegetation dependent on floodwater conditions occurring along intermittent watercourses, such as dry washes and arroyos.

