

general management plan development concept plans

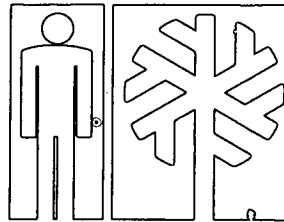
june 1983

Property of Division of Interpretation

National Park Service
Rocky Mountain Region
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BLACK CANYON OF THE GUNNISON

NATIONAL MONUMENT / COLORADO



APPROVED

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March 21, 1983

Acting Regional Director, Rocky Mountain Region

GENERAL MANAGEMENT PLAN
AND
DEVELOPMENT CONCEPT PLANS

BLACK CANYON OF THE GUNNISON
NATIONAL MONUMENT
COLORADO

Denver Service Center
National Park Service
U.S. Department of the Interior

TECHNICAL INFORMATION CENTER
DENVER SERVICE CENTER
NATIONAL PARK SERVICE

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I. INTRODUCTION

The Black Canyon of the Gunnison River, with its depth, narrowness, and sheerness is one of the world's premier wild canyons. The ancestral Gunnison River was wedged in by volcanic deposits and committed to a course from which it could not deviate. Trapped by its own stream course, it carved 50 miles of narrow canyon through hard, metamorphic rock. Twelve miles of this spectacular canyon were singled out for preservation as Black Canyon of the Gunnison National Monument by President Herbert Hoover on March 2, 1933 (see Appendix B).

Planning efforts that have been conducted for Black Canyon include a Wilderness Recommendation, and Wild and Scenic River Study. The Wilderness Recommendation, based upon study of the monument, public hearings, and responses to earlier wilderness proposals, was published in 1971. The recommended wilderness area was officially established as wilderness by Congress by Public Law 94-567 on October 20, 1976. This law officially designated 11,180 acres of the monument as wilderness pursuant to the Wilderness Act of 1964 (see Management Zoning Map, or Wilderness map in Appendix B).

A special study which reviewed and analyzed the 15-mile section of the Gunnison River downstream from the monument was completed in 1970. No action was taken as a direct result of this document. However, some of the material contained in this study has been incorporated into a Draft Wild and Scenic River Study recently completed by the National Park Service. The proposal of this more recent document is to designate 12.7 miles within the existing monument and 13.5 miles immediately downstream as "wild" river under the National Wild and Scenic Rivers System. The primary impact of this action would be the elimination of the downstream section as a potential water storage area and increased use of the Gunnison River and its gorge for recreation.

A Master Plan for the monument was prepared in 1974, but was never approved. Consequently the monument has been managed on a day to day basis, without the guidance of a broad philosophical base for managing the monument's resources, or without solutions for specific management or visitor use problems. This General Management Plan and Development Concept Plans will resolve those inadequacies and provide the needed guidance to Black Canyon's broad-scale and specific problems. Section III. B. of this document presents solutions to Black Canyon's parkwide problems, while section III. C. presents a series of development concept plans that solve the more specific and detailed problems.

Several field trips to the monument, along with numerous meetings with the monument staff, helped highlight the most pressing problems. Foremost among these is the need for permanent facilities on the South Rim. In addition, the monument staff and planning team felt there were a number of other problems which needed solutions. Alternative solutions to all of those problems were analyzed in the Environmental Assessment of Development Concept Plans (U.S. National Park Service, 1980), and through various means the interested public commented on which alternatives they felt were best. Based on the analysis of that public comment, environmental impacts, visitor needs, and operational

requirements the National Park Service has selected the alternatives that now comprise this General Management Plan and Development Concept Plans.

II. ENVIRONMENT

This section is a brief description of the environment that affects Black Canyon. A much more detailed description can be found in Appendix C.

Principal access to Black Canyon of the Gunnison National Monument is provided by transcontinental U. S. Highway 50, which passes through the nearby community of Montrose. The Gunnison River originates among the peaks of the Sawatch Range and flows generally west about 250 miles, passing through Black Canyon before it joins the Colorado River near the city of Grand Junction (see Vicinity map).

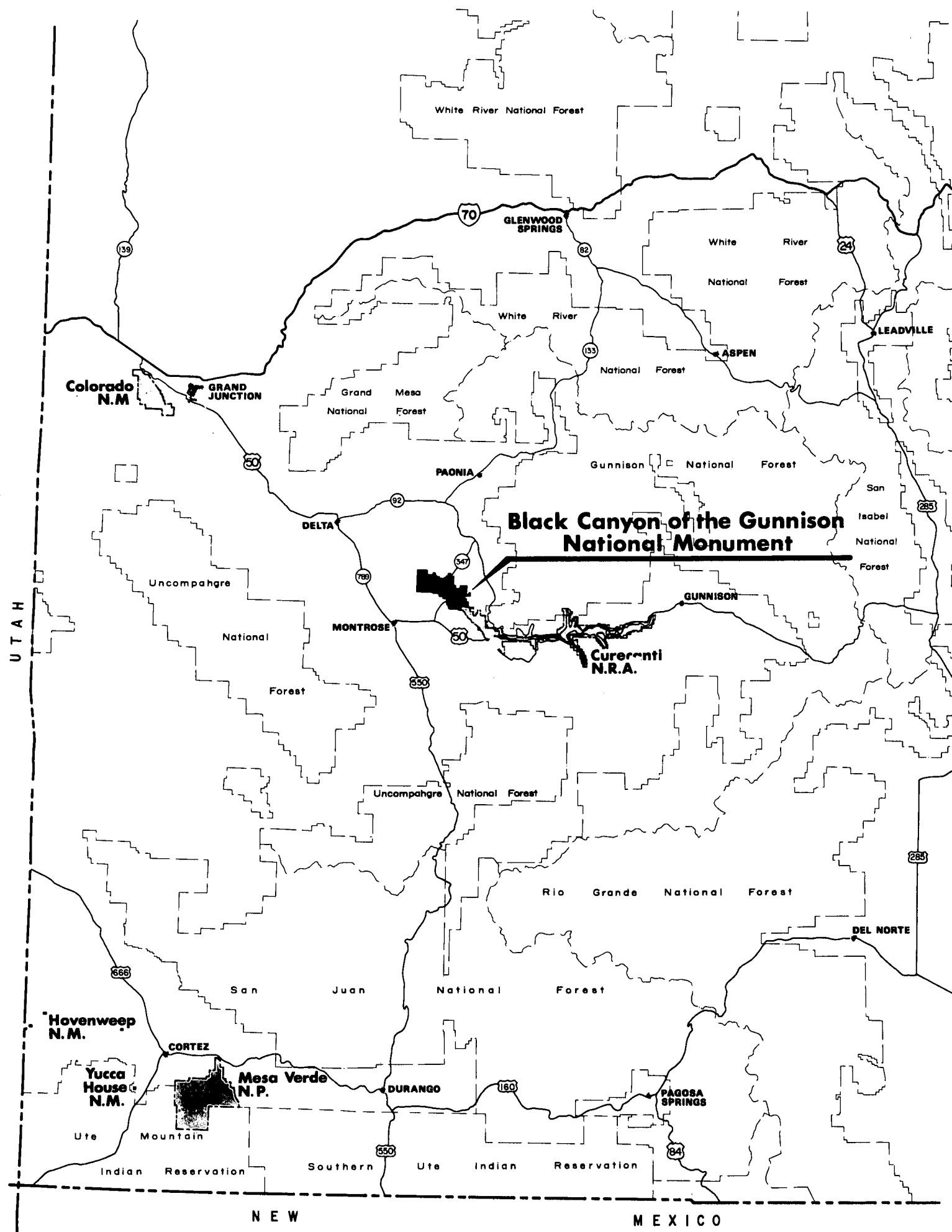
The monument includes about 12 miles of the canyon's impressive central section. The Gunnison River has eroded down through several rock types but the dark Precambrian gneiss predominates. The walls of the canyon are typified by deep fissures, numerous clefts, rock promontories and sheer cliffs.

The monument includes mountain-brush vegetation communities, pinyon-juniper woodland, and several more unique biotic communities associated with the canyon and river. The monument's environment has provided habitat that is desirable for several threatened or endangered species (state or federal classification). These include three species of fish, the river otter, peregrine falcon, bald eagle, and several species of plants.

Archeological evidence indicates that the Gunnison River area has been sporadically used on a temporary, seasonal basis over the past 10,000 years by a variety of prehistoric Indian groups. During the 1700's and 1800's Black Canyon became the scene of several dramatic explorations by miners, adventurers, and survey crews. By 1910, the first of a series of projects was completed that would tap the water resource potential of the Gunnison River in Black Canyon. These water diversion or hydroelectric dam projects dramatically alter the natural flow and conditions of the river.

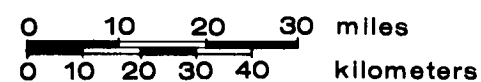
In 1933 Black Canyon of the Gunnison National Monument was established to preserve twelve miles of the spectacular gorge. Since that time the National Park Service has worked to preserve the canyon while providing for public use and enjoyment of the area. They have provided roads, campgrounds, a temporary visitor center, administrative facilities, numerous overlooks, and trails (see Existing Facilities and Existing Facilities - Detail Maps). Most of these facilities were developed in the early years of the monument's history and were intended to be temporary or have deteriorated with age.

Other problems result from changing visitor use patterns. For example, in the late 1930's, just after the monument was established, the average annual visitation was less than 15,000. By the 1970's average annual visitation has risen to about 270,000. Most visitors enjoy the monument from the formalized overlooks along the roads, but other visitors hike, picnic, camp, rock climb, cross-country ski, or otherwise enjoy the natural scene.



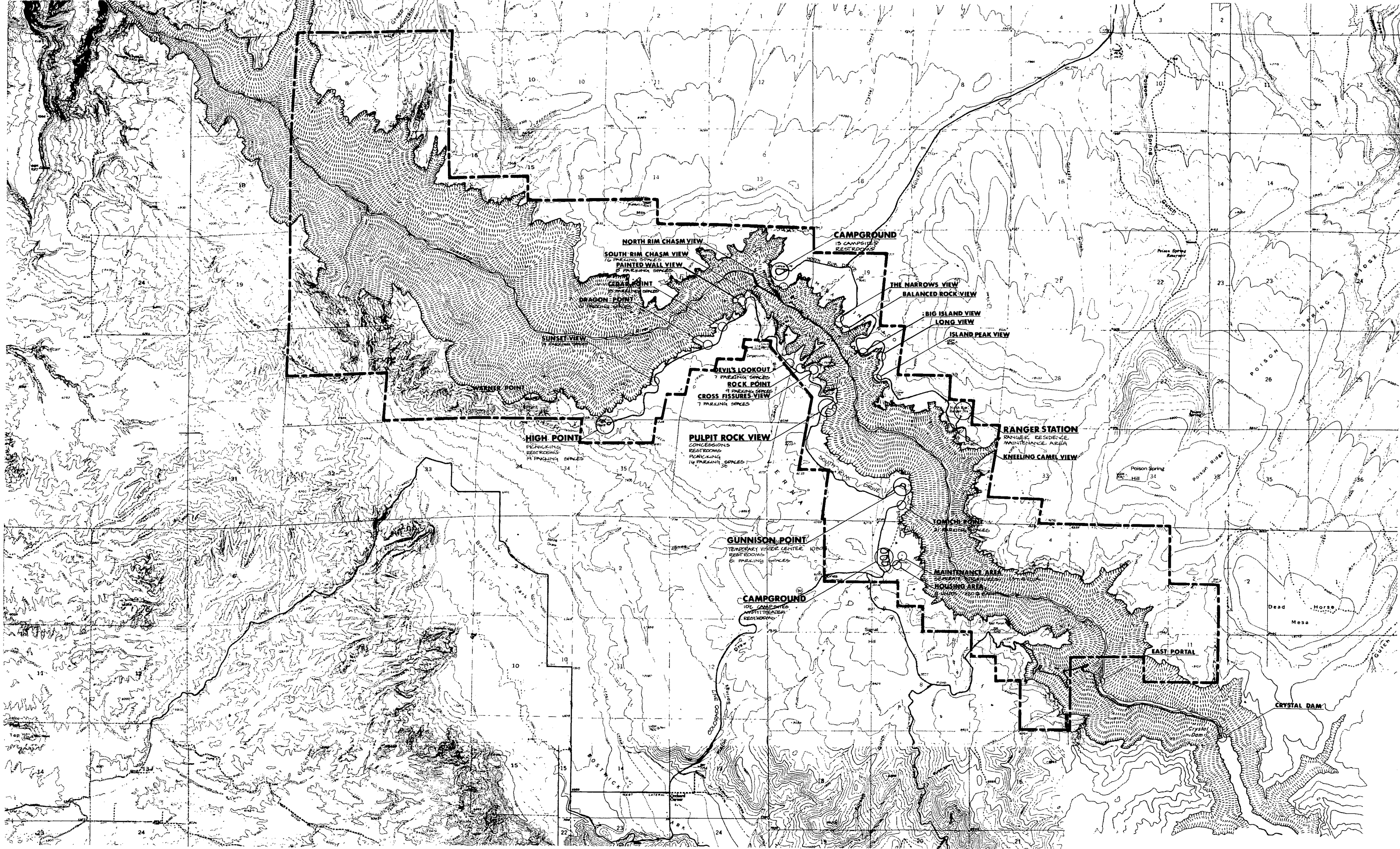
VICINITY MAP

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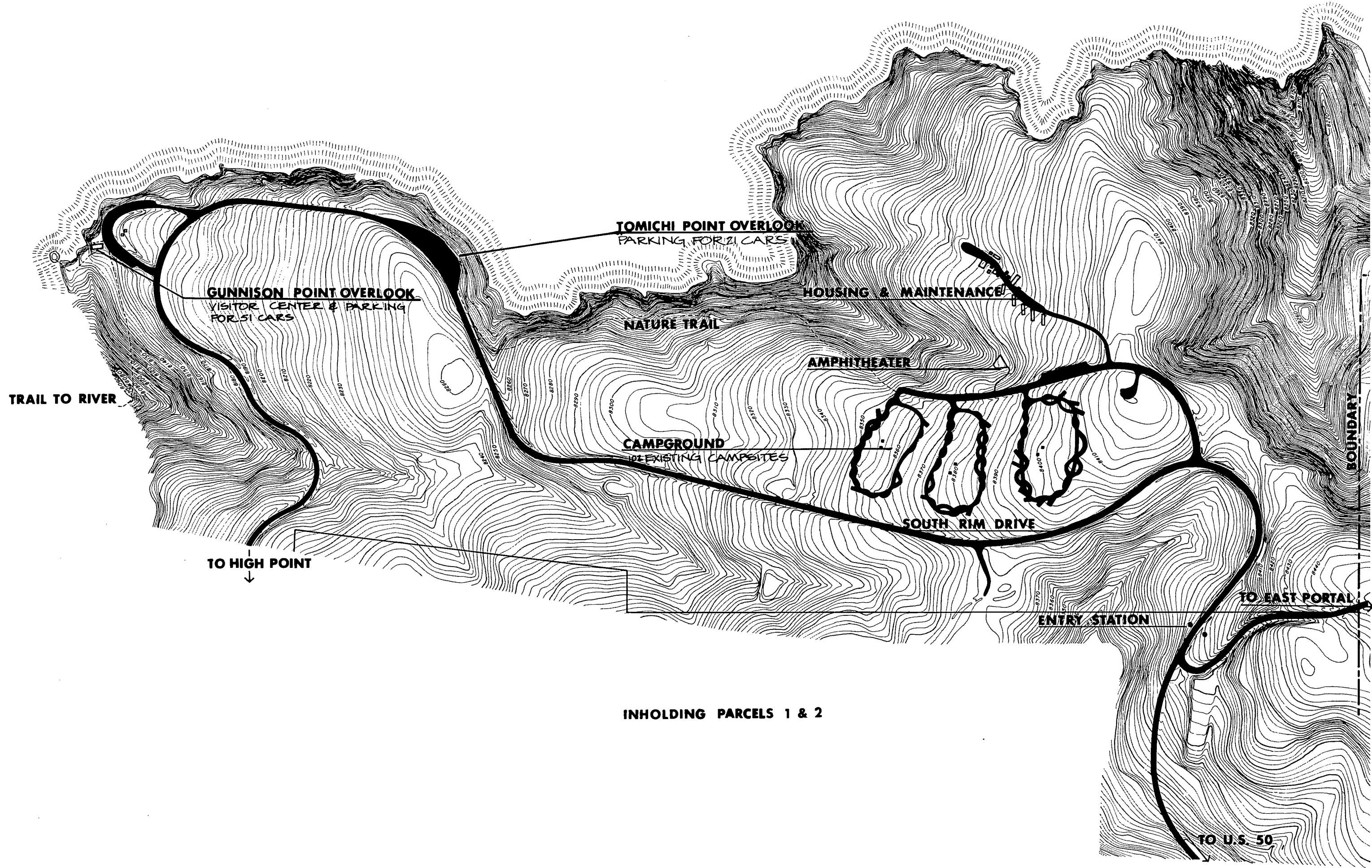


EXISTING FACILITIES

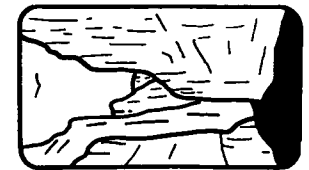
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IN HOLDING PARCELS 1 & 2



EXISTING FACILITIES - DETAIL

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B. Interpretation and Parkwide Issues

The monument's broadscale problems are addressed in this section. Solutions are presented for problems with the interpretive program, boundary, and trail system. Also, the monument's capacity to handle visitors is a parkwide issue that is discussed.

1. Interpretation

This interpretive planning section is the first step in a series of planning events that will formulate the Black Canyon interpretive program. It can be altered by the future steps of interpretive planning if more detailed analyses provide information that dictate needed changes.

a. Themes

To develop the interpretive proposals, the major themes had to be identified first. The canyon is the heart of all the themes and is the central element that has created the exciting and unique stories that can be told about this area. The continuing geologic processes created a great canyon. That canyon is a unique environment for many rare species and unusual ecological communities. It has been a barrier to several cultures and a place of adventure for its early explorers. The canyon and the distant mountain ranges visible from the canyon rim create a sublime spectacle for visitors. The canyon is also a place of hazards and dangers for the ill-prepared and naive. Thus, the major themes for interpretation are:

(1) Geology - The processes by which the canyon was formed and shaped.

(2) Ecology - Ecological communities, habitats, and rare species that are interrelated with the unique canyon environment.

(3) Cultural History - Prehistory and historic occupation and settlement patterns that were influenced by the canyon barrier and its water; exploration and surveys of the canyon.

(4) Aesthetics - Sensitivity, awareness and appreciation of the canyon's visual resources, ranging from the microenvironment to distant scenic vistas.

(5) Safety and Rules - Hazards associated with the canyon, the safe and responsible use of the resource, and the monument's rules and regulations.

(6) Information/Orientation - The monument's opportunities and how to find them.

b. Locations for Themes

For themes that were site-specific in their requirements for interpretation, two criteria were used to choose locations:

III. PLAN

A. Management Zoning

Black Canyon of the Gunnison National Monument lands and additional lands in a land protection (resource protection) area are proposed for inclusion in three different management zones according to their intended use (see Management Zoning Map). This proposed zoning is based on a consideration of the lands characteristics, existing and proposed developments, and future demands for visitor use. The purpose, size, percent of total park acreage, and key features in each of these three management zones are described as follows:

1. Park Development Zone

The 210 acres within this management zone make up 1 percent of the park and land protection area acreage. They include space for existing and proposed developments such as buildings, trails, roads, housing area, maintenance area, campgrounds, parking areas, overlooks, and utilities. These areas have the capacity to accommodate intensive visitor use and facility developments necessary to provide safe and convenient visitor access.

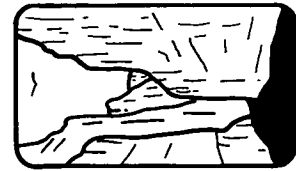
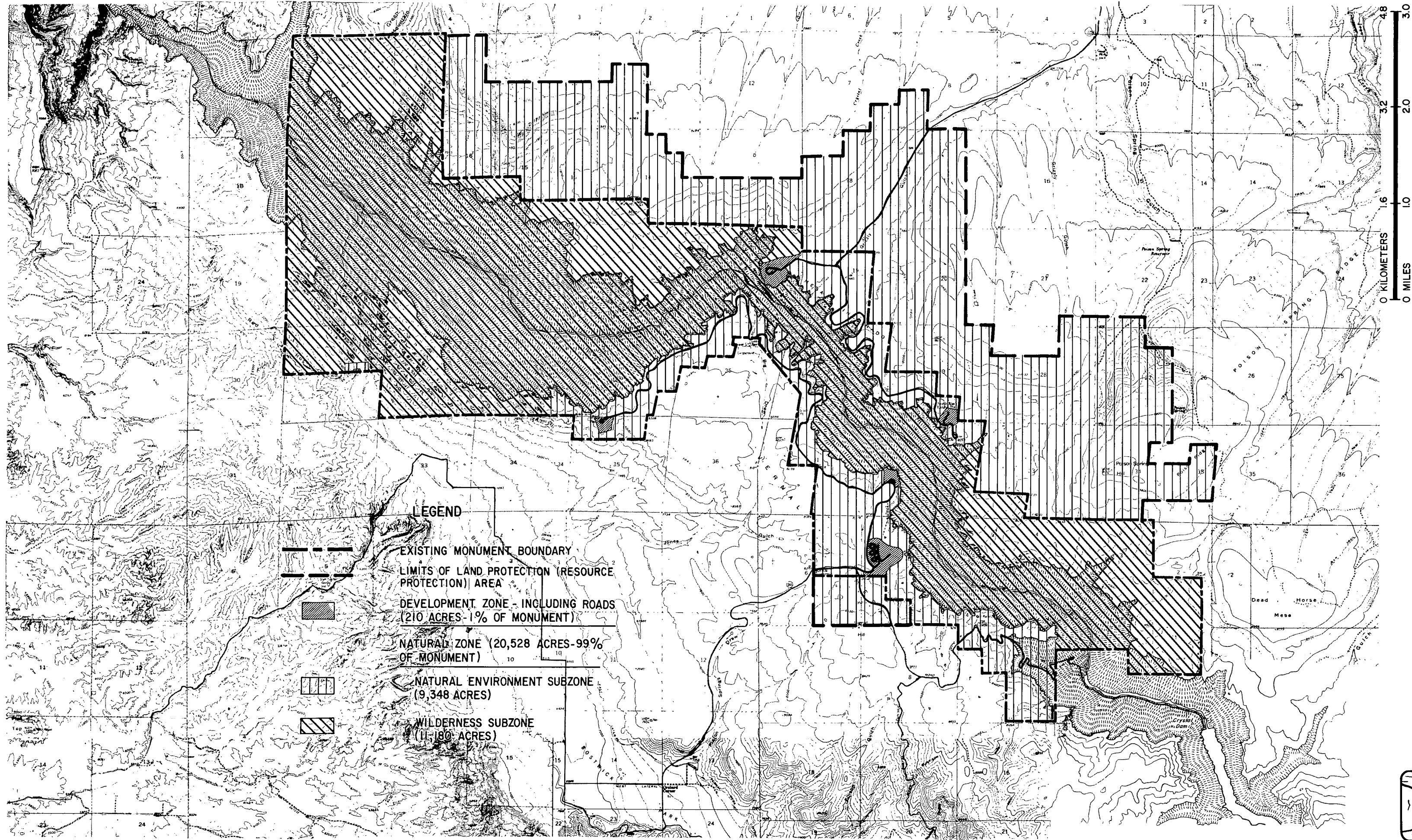
2. Natural Zone

The 20,448 acres proposed for inclusion in this zone comprise 99 percent of the total park and land protection area acreage and are separated into two subzones, the Natural Environment Subzone and the Wilderness Subzone.

The Natural Environment Subzone includes private lands within the present park boundary and private and BLM lands in the land protection area. Areas within the Natural Environment Subzone will be managed primarily to conserve natural resources. Facilities are limited to those necessary for access to and interpretation of the natural environment. Typical facilities permitted in this zone include foot trails, interpretive signs, and displays. Lands within the Wilderness Subzone are managed in accordance with the Wilderness Act of 1964 to preserve and protect their primeval character. This Act defines wilderness as "an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain." Facilities such as foot trails and pit toilets are permitted in this zone only as necessary to meet the minimum requirements for administration of the wilderness area.

3. Lands in Private Ownership

Three hundred and nine acres in two private inholding parcels located within the present park boundary and some 7,040 acres in the land protection area are in private ownership. Some 400 acres of BLM land are also included in the land protection area. They could be a part of the Natural Environment Subzone of the Natural Zone when these lands are protected.



MANAGEMENT ZONING

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(1) where most of the visitors already stop and the prime resource to interpret is present, and (2) where there is a prime resource to interpret and to where most of the visitors could easily be directed with information or road and trail design changes. Using these criteria, the following text explains the locations for interpreting the various themes. To best understand the sequencing refer to the Interpretive Facilities map. While the discussion considers one theme at a time, as if they were independent, they must be integrated in order to produce a meaningful interpretive story.

(1) Geology

The geologic story should be told in two levels. The first level, for visitors with little or no background in geology, will focus on the processes by which the canyon came to be (volcanism, uplift, and erosion). The second level, for the geology enthusiast, will provide an in-depth explanation of the processes, rock types, time relationships, erosional features, and structural features (see Overlook Analysis, Appendix D).

The processes of canyon formation will be interpreted (first level) at Gunnison Point Overlook (South Rim), and at the North Rim Entrance Road kiosk. Gunnison Point was selected because it is the first overlook where most visitors stop. Visitors will be wondering about the canyon's origins, and these questions should be answered early. The North Rim Entrance Road kiosk was selected because this is the only location on the North Rim where most of the visitors would be expected to stop.

The detailed geologic story (second interpretive level) can be told to interested visitors by developing a tour of all the overlooks (one comprehensive tour for each rim). The tour on the North Rim will also include the major views from the proposed Serpent Point and Green Mountain Trails. A booklet or wayside exhibits are examples of the types of media that could be used for the detailed geologic story.

Books, maps, and other publications will go into even greater detail and will be made available free or for sale by the Natural History Association.

On the North Rim Chasm View interpretive trail, geology will be one of the subjects presented on this integrated theme trail.

(2) Ecology

The ecology story has two parts: (1) how certain biotic communities and habitats are related to the monument's unique canyon environment and geologic structure, and (2) why so many rare species (often legally designated as threatened and endangered species) are found in the monument's unique environment.

The first part will be interpreted on the Warner Point and Rim Rock trails. The Warner Point Trail will emphasize the pinyon-

juniper and mountain-brush communities and mention the canyon-rim, in-canyon, and riparian/river communities. The Rim Rock Trail will do just the opposite - emphasize the canyon-rim, in-canyon, and riparian/river communities and mention the pinyon-juniper and mountain-brush communities. These two trails were selected for the ecology story because of their inherent resources, and because they start from major visitor use areas.

The Rim Rock Trail's views into the canyon and the views into the canyon from Warner Point itself will allow interpretation of the monument's rare species, since most of them are associated with the canyon environment (see Appendix C). Books, maps, and other publications will go into greater detail and will be made available free or for sale by the Natural History Association. There are so many rare species in the monument that a free brochure about them would be of great interest to many visitors. Additionally, such a brochure could assist in the management of these species by stressing their irreplaceable value and the need for their protection and preservation.

The rare, and threatened or endangered fish of the Gunnison River will be interpreted at all trailheads that fishermen will use. These trailheads include Red Rock Canyon, Gunnison Point, S.O.B. Draw, and East Portal (in Curecanti National Recreation Area). The interpretation will encourage fishermen to protect and preserve these rare fish.

On the North Rim Chasm View interpretive trail, ecology will be one of the integrated themes presented.

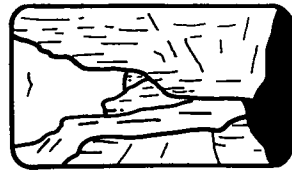
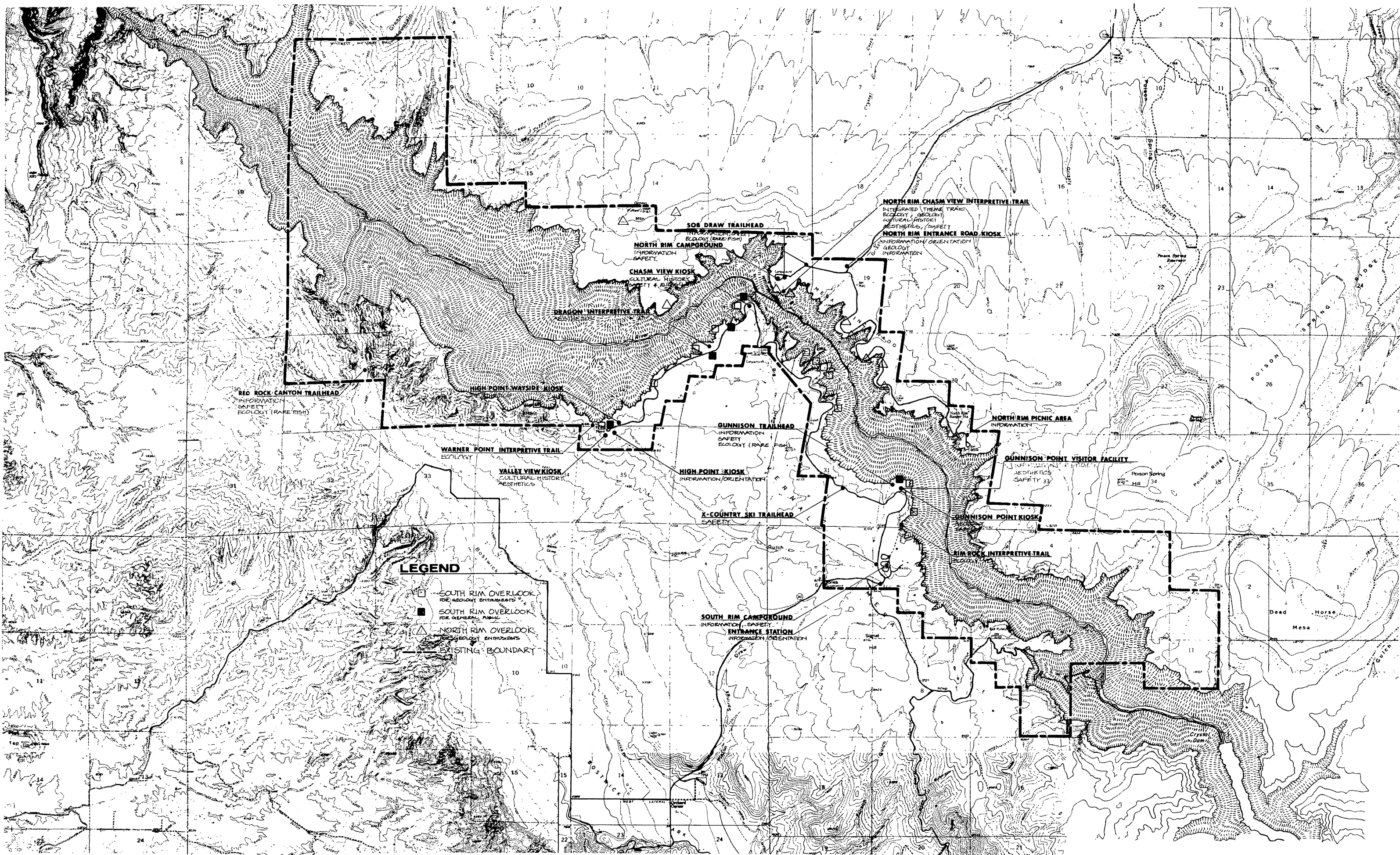
(3) Cultural History

Like the ecology story, the cultural history story also has two parts: (1) how occupation and settlement of the region was affected by the canyon barrier and its water, and (2) canyon exploration and survey.

The first part will be told at the new overlook proposed for development at High Point (see Section III. C.). Visitors already congregate at High Point and this new overlook will offer excellent views of the Uncompahgre Valley where settlement patterns are visible. Diversion of water from the Gunnison River to the Uncompahgre Valley for agriculture and Indian occupation of the monument and region (also a portion of the first part of the cultural history story) can be interpreted here.

The second part of the cultural history story will be told at Chasm View, a location where most of the visitors stop to enjoy spectacular views into the canyon. Here the visitors will be able to sense the thrill and desperation that the early canyon explorers experienced.

Books or other publications will go into even greater detail and will be made available free or for sale by the Natural History Association.



INTERPRETIVE FACILITIES

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On the North Rim Chasm View interpretive trail, cultural history will be one of the integrated themes presented.

(4) Aesthetics

The supreme aesthetic value and scenic qualities of the canyon and surrounding region are the major reasons why most visitors come to Black Canyon of the Gunnison. However, the canyon's beauty has a special subtlety and many visitors stay in the monument only briefly. Without interpreting the special and unique qualities of the canyon scene and making visitors sensitive to it, many of them may not fully appreciate the beauties of the canyon.

For this reason, the aesthetics theme will be presented in the visitor facility where most visitors are expected to stop. Sensitivity to and awareness of the canyon's and region's visual resources will be promoted.

Because of the importance of aesthetics/scenery to all visitors, a location on the canyon rim was sought that would be accessible to all visitors. While Dragon Point is not visited by a majority of visitors, it offers one of the best views of the canyon and region (see Overlook Analysis in the appendix), and can be made easily assessable for ALL visitors (see Section III. C.). The existing trail to the overlook was once a road and, with minor improvements near the overlook, will be accessible to disabled as well as able-bodied visitors. Therefore, the Dragon Point Trail and overlook will be developed to promote awareness and sensitivity of aesthetics/scenery.

Because of its superlative regional views, High Point's existing and proposed overlook (Valley View is the proposed overlook) will be used to promote awareness and sensitivity of those visual resources. To avoid overlap, the wayside exhibits or interpretive kiosks at High Point and Valley View will emphasize the regional perspective, while the Dragon Point Trail will emphasize the microenvironment and canyon environment.

On the North Rim Chasm View interpretive trail, aesthetics will be one of the integrated themes presented.

(5) Safety and Rules

Interpreting safety and rules goes beyond mere information and presents reasons, implications, and rationale for the rules or safety measures. As with all interpretation, graphics can be used very effectively to present many of the concepts. The main concerns are: (1) canyon rim safety (constrain children, watch your step, and don't throw rocks), (2) in-canyon travel safety, (3) winter hazards/safety (in season), and (4) why the animals shouldn't be fed.

All of these should be interpreted at the visitor facility, North Rim Road kiosk, and both campgrounds. All of these locations are where most of the visitors will stop or spend time.

The first concept will also be interpreted at Gunnison Point, since Gunnison is the first major overlook where most visitors stop and where they first come in contact with the canyon rim.

In-canyon travel safety will be interpreted at all major trailheads in the monument (Gunnison, Red Rock, and S.O.B.) and at East Portal (in Curecanti National Recreation Area) which is a major trailhead for canyon travel into the monument.

Chasm View is a major overlook where visitors are frequently observed feeding rodents and birds. For this reason, it is a good location for the interpretation of why wild animals should not be fed.

Winter safety will be interpreted at all cross-country ski trailheads during the winter.

On the North Rim Chasm View interpretive trail, safety (don't throw rocks, watch your step near the rim edge, and constrain your children) will be one of the integrated themes interpreted.

(6) Information/Orientation

Information and orientation are the most vital and basic of visitor services. Visitors need to know what opportunities are available and how to find them. At the South Rim entrance station, visitors will be given the monument's brochure. This brochure will be designed to give comprehensive coverage of the monument's programs, services, and facilities and how to locate them. This same comprehensive coverage will be provided in the visitor facility and at the North Rim Road kiosk, because most visitors stop at these locations and will expect to be informed and oriented. Facilities accessible to handicapped persons will be one of the topics covered in the general information.

Other locations where visitors will congregate, and where information/orientation will be offered, include both campgrounds, the North Rim picnic area, and on walls or doors at restrooms throughout the monument. Also, information about a specific trail will be provided at the trailheads (hiking and cross-country ski trails). Information kiosks will be provided at High Point to orient visitors to the many diverse opportunities (and their locations) available there.

Books, brochures, and other publications will be made available free or for sale by the Natural History Association. These will provide additional information and orientation, and will provide greater details about the monument's rules/regulations and hazards/safety.

Another function of the information/orientation program on the South Rim will be to distinguish between the most scenic overlooks and those that are oriented more toward geology. The Overlook Analysis (see appendix) analysed the landscape/aesthetic qualities (i.e., scenic qualities) of the overlooks. This analysis was used to determine the four or five overlooks which should be distinguished as the scenic overlooks for the casual visitor. The eight highest scoring overlooks

(approximately the upper half) were considered acceptable for their scenic qualities. Next, other factors such as parking capacity, location of proposed interpretive facilities, and similarity of overlook perspective were considered.

Resulting from these considerations the overlooks to be distinguished as the most scenic are: Chasm View and Gunnison Point due to their large parking capacities, proposed interpretive facilities, and high view qualities; both Cedar Point and Dragon Point because they have similar excellent view qualities but neither has large parking capacity; and High Point because of its large parking capacity, proposed interpretive facilities and superlative views of the surrounding region. One way to promote these overlooks would be to publicize them as the main photography stops in the monument, but many other strategies could be used as well.

Because the views from Cedar Point and Dragon Point are so similar, but neither has a large parking capacity, visitors should be encouraged to stop at one or the other, but not both. It would not be desirable to expand Dragon Point's parking much beyond what is proposed because large crowds are not compatible with an interpretive trail promoting visual sensitivity. At the same time, if Cedar Point were the only one of the two marked as "scenic" fewer visitors would visit the interpretive trail at Dragon Point. Thus, both should be indicated as "scenic."

(7) Summary of Interpretive Program

General Themes	Location
Geology	Gunnison Point Overlook (interpretive level one) All South Tim overlooks (interpretive level two) Publications North Rim information kiosk (interpretive level one) North Rim overlooks (interpretive level two)
Ecology	Rim Rock Trail Warner Point Trail Red Rock Canyon, Gunnison Point, S.O.B. Draw, and East Portal Trailheads (message to fishermen on rare and legally protected fish species) Publications North Rim Chasm View Trail
Cultural History	Chasm View (South Rim) High Point Publications North Rim Chasm View Trail

Aesthetics	Visitor Facility Dragon Point Trail High Point North Rim Chasm View Trail
Safety and Rules	Visitor Facility South Rim Campground Gunnison Point Overlook (constrain children and do not throw rocks) Gunnison, Red Rock Canyon, and S.O.B. Draw Trailheads (in-canyon travel safety) Cross-country Ski Trailheads (winter hazards/safety) Chasm View Overlook (South Rim)(do not feed animals) East Portal in Curecanti National Recreation Area (in-canyon travel safety) North Rim Entrance Road North Rim Chasm View Trail (constrain children and do not throw rocks) North Rim Campground
Information/Orientation	South Rim Entrance Station Visitor Facility (including vending area) South Rim Campground Major Trailheads (about the trail) High Point (what there is to do at High Point and general monument information/orientation) Toilets throughout the monument Publications North Rim Entrance Road North Rim Campground and Picnic Area

c. Sequencing of the Interpretive Program

The sequencing of the interpretive program is crucial for the program to be effective. On the South Rim, information and orientation are offered to visitors first at the entrance station and then at the visitor facility. The foremost interpretive themes also are offered early in the sequence: aesthetics at the visitor facility, and geology and safety at the first major overlook.

The sequencing of the other themes is not as important and their locations were selected more by the location of the resource to be interpreted and the patterns of visitation.

Entering North Rim visitors encounter information/orientation, the monument's main interpretive story (geology), and the mandatory safety story at the information kiosk. This location is ideal since it is before the North Rim visitors have any directional choices to make and before they reach the overlooks. Also, this may be the only location on the North Rim where a majority of the visitors would be expected to stop. The detailed geology story told at the overlooks and

for the Serpent Point and Green Mountain Trails (probably by a leaflet or waysides) and the integrated theme interpretive trail at Chasm View that relates the other interpretive themes are the bulk of the remaining interpretive program.

d. Constraints on Interpretive Program

There are several constraints on the interpretive media that will eventually be designed for use at Black Canyon. Commercial electricity will be available only at the South Rim entrance station and visitor facility. Thus, media that do not require electricity will be most appropriate for most of the interpretive facilities. Also, any of the kiosk, wayside exhibits, signs, etc. that remain in the field will have to be designed to withstand vandalism, cloudbursts, blizzards, scorching sun, and high winds.

2. Resource Protection (Land Protection)

a. Inholding Lands

Parcels 1 & 2 (as shown on the Resource Protection map) are the only remaining parcels within the authorized boundary which are in private ownership. These parcels, which total approximately 309 acres, currently restrict use of land along South Rim Drive, which crosses this private acreage at several points. While currently used for grazing, future incompatible land use changes of these parcels could cause severe impacts to resources within the boundary. In 1977, the Superintendent and the present owner reached an agreement on terms of the sale of Parcels 1 and 2. Before that agreement could be consummated, however, a Congressional freeze on the purchase of National Park Service inholdings was enacted. Land protection action on Parcels 1 and 2 will proceed as soon as possible.

b. Resource Protection Lands

There are about 7,040 acres of private and 400 acres of BLM land which lie between the current monument boundary and adjoining ridge lines. Being highly visible from the monument and susceptible to changes in land use, disturbance of this area could affect enjoyment of the national monument by visitors. Accordingly, it is recommended that these lands be protected from activities which would adversely affect their visual and natural resources. Portions of this area are needed to construct trails to provide access in the Green Mountain area west of the existing North Rim campground.

All forms of vegetation manipulation (conversion to cropland, chaining, clearing, herbicide spraying, etc.) should be prohibited. The construction of structures, roads, utilities and similar developments which would be visible from within the existing monument boundary should not be allowed. Hunting could continue except within one mile of overlooks, trails and developed areas to assure visitor safety.

The National Park Service will pursue a variety of methods to assure protection of these lands' visual and natural qualities. Some of these may include acquisition of fee title, acquisition of fee title

with lease-back, swap for other Federal lands, and acquisition of scenic or conservation easements. Some of these alternatives would involve a boundary change and thus require congressional action.

The concept of protecting these lands has been supported by several previous studies including, Natural Resources Basic Data for Curecanti and Black Canyon, a National Park Service Scientific Field Team Report by James W. Larson et. al., 1968.

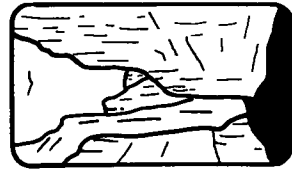
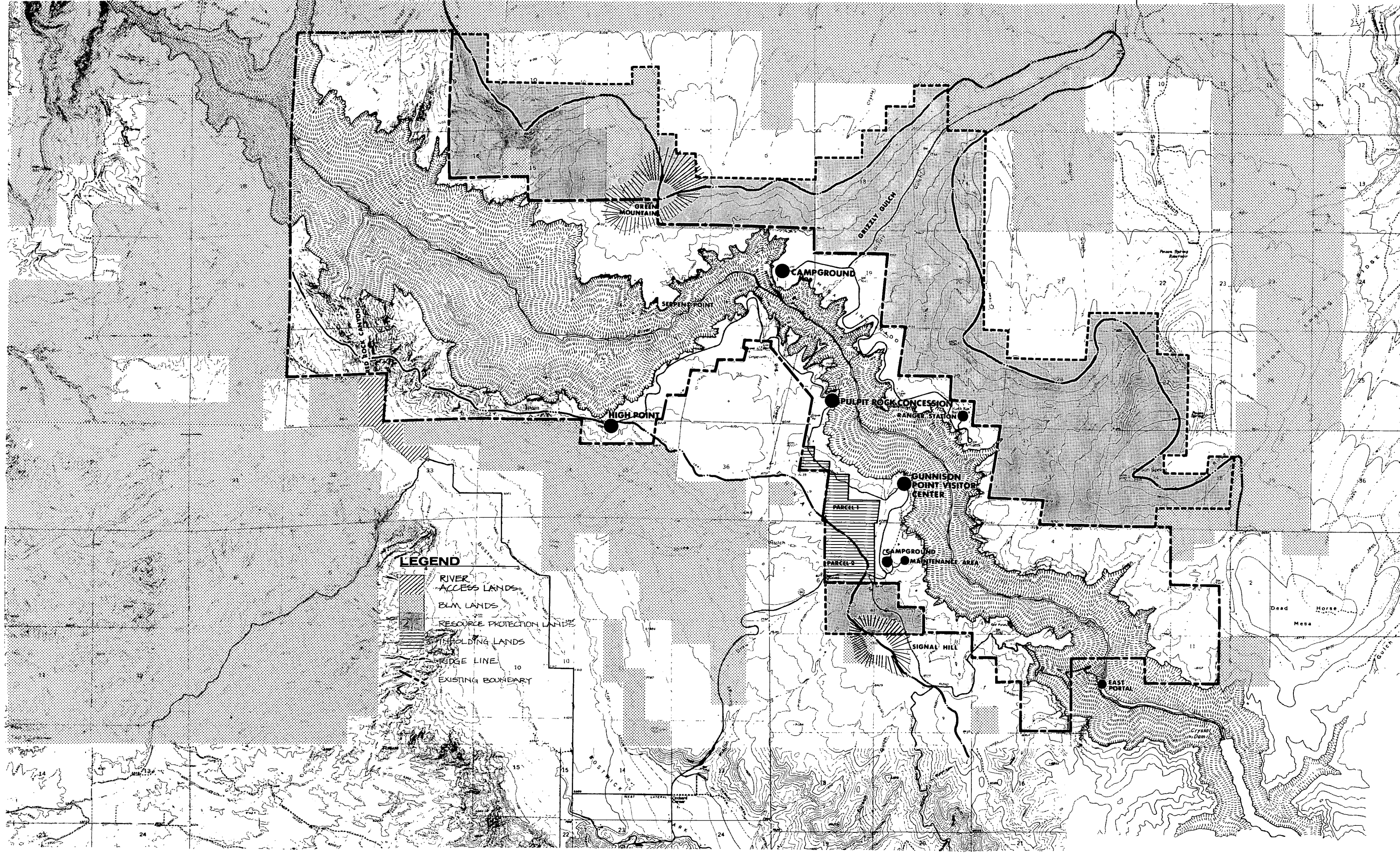
c. River Access Lands

Red Rock Canyon. There are very few points at which hikers can descend the steep slopes of the Black Canyon and gain access to the Gunnison River. One of the most feasible routes is through Red Rock Canyon near the western edge of the monument. At present, however, private lands preclude access between the nearest public road and the monument boundary. To provide access through Red Rock Canyon, as described in the "Trails" section of this report, it is recommended that an appropriate form of right-of-way access be obtained. The access simply could be foot access on the existing abandoned road with no trespassing permitted on the private land on either side.

East Portal. Access to the canyon bottom and river will continue to be provided at East Portal, an area adjacent to the monument in Curecanti National Recreation Area and also managed by the National Park Service for recreation use. This area is downstream from Crystal Dam at the site of the historic Gunnison River Diversion Dam and Tunnel. Vehicular access to the site is via a steep, narrow, 7-mile long, asphalt road which intersects Colorado Highway 347 near the Black Canyon of the Gunnison National Monument entrance. This road was constructed primarily to provide access to Crystal Dam. The East Portal site is separated into three areas for management purposes. The Uncompaghere Water Users manage the Gunnison Diversion Dam and Tunnel and about 3 acres of land including a caretakers residence and several maintenance buildings near the tunnel entrance. The Bureau of Reclamation manages the area around Crystal Dam and Powerhouse and the 7-mile entrance road. The National Park Service manages the rest of East Portal area (44 acres) for public recreation use. Traditionally, the area downstream from the Gunnison Diversion Dam has been used for fishing. More recently the area has attracted more diverse uses including camping, picnicking, sightseeing, and hiking. Existing recreation facilities at this area include temporary picnicking and walk-in camping areas, parking, restrooms and seasonal employee housing. Much of East Portal's visitor use is shared with Black Canyon of the Gunnison National Monument. East Portal is a favorite public access point to the canyon floor for hikers, rafters and fishermen. Because of its close association with Black Canyon of the Gunnison National Monument, the East Portal area is managed to assure compatibility with the monument.

d. BLM Lands

In addition to those lands already discussed, the Bureau of Land Management (BLM) administers lands within the land protection area which could significantly affect, or be affected by, future



RESOURCE PROTECTION

BLACK CANYON OF THE GUNNISON N.M., COLORADO
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0 MILES 1 2 3



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management of the national monument. Generally the goals of the BLM and the National Park Service are compatible, and mutual cooperation regarding adjoining lands is relatively easy to accomplish. There are, however, several areas near Black Canyon that warrant specific consideration.

A portion of Grizzly Gulch that lies within the land protection area is highly visible from several overlooks on the South Rim. If the planned Fruitland Mesa project is constructed in the future, this valley will become irrigated croplands. The resulting change in color and texture of the landscape would disrupt the visual integrity of the Black Canyon viewshed. Accordingly, the National Park Service should seek a cooperative agreement with the Bureau of Land Management and the Bureau of Reclamation to maintain this area in its present state.

The National Park Service is expecting to place an increased emphasis on interpreting the view south from High Point (see the section on High Point). The contrast between undisturbed native vegetation of the slopes immediately south of the boundary with the irrigated land in Bostwick Park and the Uncompahgre Valley and San Juan Mountains in the distance is dependent on the maintenance of Bureau of Land Management lands in their present condition. The Park Service should pursue an agreement with BLM to achieve this end.

The Gunnison Gorge Recreation Lands, which lie west, or downstream, from the national monument, are administered by the Bureau of Land Management. This area was established by Public Land Order 5261 in 1972. Motorized access to trail heads is permitted within the recreation lands, but BLM policy prohibits motorized use within the rims of the gorge. Plans for future use of this area are centered around an expansion of the present hiking, fishing and whitewater boating uses. Gunnison Gorge has been withdrawn by BLM from mining and other uses which would alter its primitive character. BLM's goals for management of the recreation lands closely coincide with the Park Service plans for the western part of the national monument. There are, however, several specific concerns for which cooperative management agreements should be negotiated:

Whitewater boating

A current agreement with the Bureau of Reclamation provides for a minimum flow in the Gunnison River of 200 CFS, which is too low for whitewater boating. The three agencies should seek a management system that would coordinate boater use with water releases from Crystal Dam.

Hiking Trails

Both BLM and the Park Service plan on expanding the network of trails within their respective areas. Every effort should be made to tie the trail systems together.

Interpretation

Outstanding potential exists for geologic interpretation of the area now included in the Gunnison Gorge Recreation Lands. A cooperative agreement should be established which would permit National Park Service interpreters to lead trips into BLM lands.

3. Trail System

a. Gorge Access

To provide access to the Black Canyon gorge, (see Trails Map) trailhead parking will continue to be provided at East Portal (in Curecanti National Recreation Area), but due to the sheer canyon walls, trails along the Gunnison River in the monument will not be improved to encourage use at this location.

The one-mile trail from Gunnison Point to the river will be upgraded and rerouted to include long switchbacks and a gentler slope. The trail will be of moderate standard where it is physically possible to build and maintain to that level. It will be negotiable by visitors in adequate health and condition. The trailhead for this trail will be Gunnison Point.

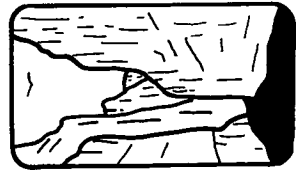
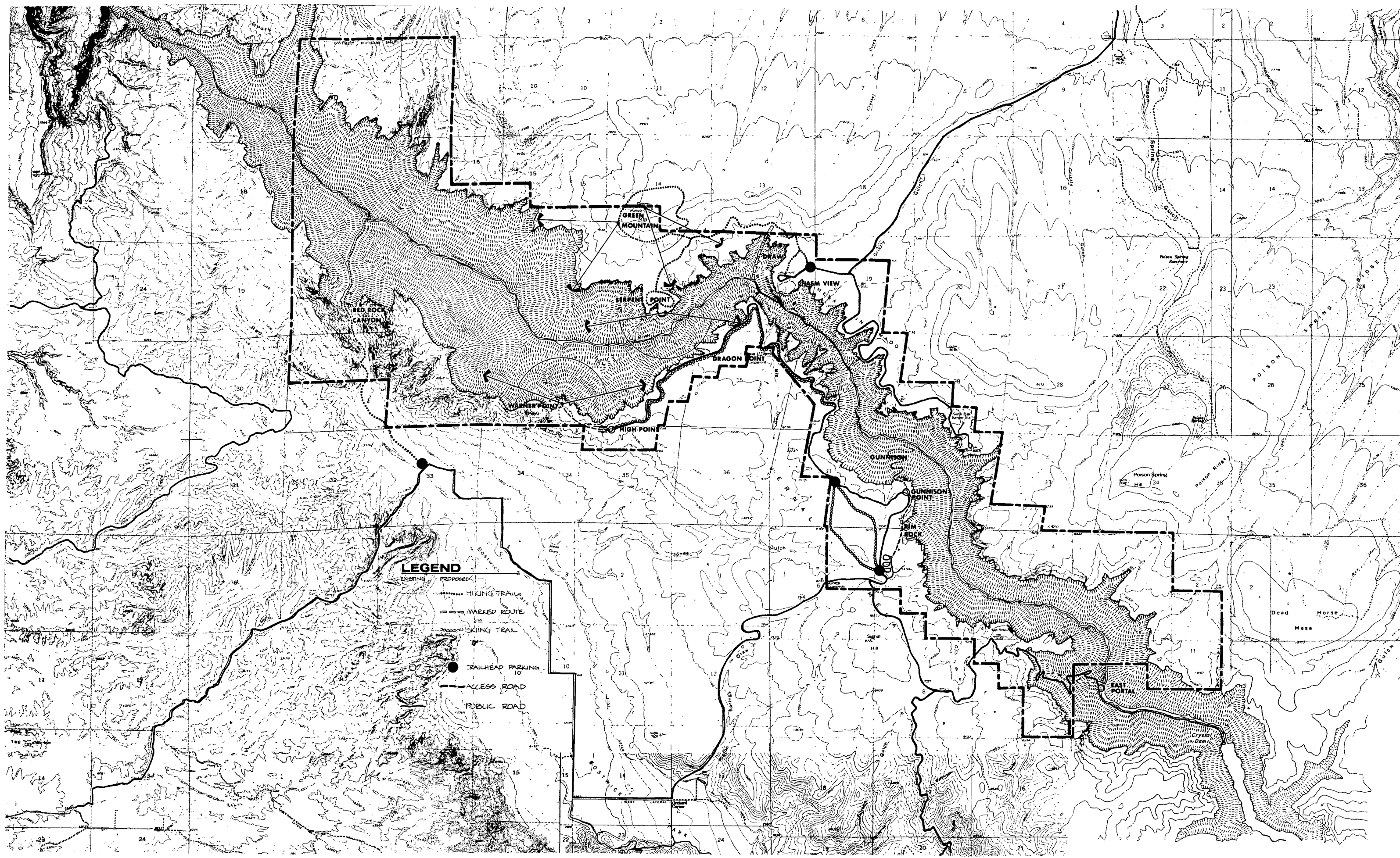
Additionally, a dirt trailhead parking area to accommodate 15 cars will be developed just outside the monument boundary at Red Rock Canyon (see River Access Lands in the Resource Protection Section), and a trail will be developed down Red Rock Canyon to the Gunnison River. This trail will be low standard, but will be easily traversed by most visitors due to the relatively gentle terrain.

On the North Rim, the route down S.O.B. Draw will be marked. This will be a marked route (painted blazes on boulders for example) rather than a trail, because a trail would be impossible to construct and a marked route is more compatible with the "rustic" and less highly developed character that is being maintained on the North Rim. However, marking the route will keep visitors from losing their way. To reduce erosion and mass-wasting accelerated by hikers in the draw, "trail" improvements will be constructed where necessary.

In summary, hiking access to the river gorge will be provided but not encouraged at East Portal, improved at Gunnison Point, encouraged at Red Rock Canyon where the trail will be easiest for visitors to travel, and the way marked in S.O.B. Draw for improved canyon access on the north rim.

b. Upland Trails on North Rim

Following the implementation of land protection methods (see Resource Protection section) a 5.5 mile trail system on the North Rim will be developed to provide access to the upper end of S.O.B. Draw, the top of Green Mountain, and Serpent Point. This trail system will be low standard and will require very little construction. Two trailheads will be developed. One will be in the campground without



TRAILS

BLACK CANYON OF THE GUNNISON NM., COLORADO
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parking (for campers) and the second will be a gravel trailhead parking area with room for ten to fifteen cars about a quarter mile east of the campground (at the proposed ranger station).

c. Cross-Country Ski Trails

A cross-country ski and snowshoe loop trail about two miles long will be marked in the area northwest of the campground on the South Rim. The trailhead near the campground will be on an area that is an existing dirt road. The trailhead along the road between Gunnison Point and Pulpit Rock will be placed in oak chaparral. Each trailhead will provide parking for five cars and two oversized vehicles, and room for future expansion if it becomes necessary.

To provide additional cross-country skiing and snowshoeing opportunities, part of the main South Rim road will be closed to vehicles and will not be snowplowed. The road will be plowed to Pulpit Rock when there is abundant snowpack, but when the snowpack is minimal the road will be plowed to Chasm View. Skiers and snowshoers will be able to travel over the remainder of the road to the overlooks, including High Point or even Warner Point.

d. Interpretive trails

There will be four interpretive trails provided in the monument. Section III. B. 1. of this document explains the themes that will be interpreted on them. The interpretive trails will be: Rim Rock, between the campground and Gunnison Point; Dragon Point, a trail accessible to all persons; Warner Point, the longest and steepest of these four trails (but still negotiable by most visitors); and North Rim Chasm View, the only loop of the four.

All four trails are existing except for a short section of the Rim Rock Trail. The North Rim Chasm View parking area and trailhead will be relocated (see Section III. C.) and the Dragon Point parking will be expanded from 6 parallel to 12 parallel parking spaces, but the Warner Point and Rim Rock trails will use existing or proposed parking.

4. Carrying Capacities and Planned Lifespan

The number of visitors at a given time within Black Canyon of the Gunnison National Monument is strongly affected by the size of the existing/proposed facilities and programs. The carrying capacity of the monument is established by the most constraining or limiting of these facilities. At Black Canyon, parking capacity is the ultimate constraint. Changes in the sizes of parking facilities are an excellent indication of the magnitude of change in the monument carrying capacity. To display how the general management plan proposals could potentially affect the carrying capacity, the following two tables summarize the changes in parking capacity for the South and North Rim respectively.

The planned lifespan of proposed new developments is tied directly to the number of visitors in the monument at a given time. For the purpose of planning facilities for this document, the year 2000 has been used. This is not to say that all facilities will be obsolete by that date, but rather, that under current visitor use projections, facilities at that time will experience full utilization (capacity) on peak summer days. The actual lifespan of a structure will depend on future management policies, such as, expanding facilities, limiting visitation or opening new visitor use areas. All facilities are planned for eventual expansion, if needed. In summary, it is impossible to accurately predict the true lifespan of facilities, but under current visitor use projections the useful lifespan of the facilities should extend well beyond the year 2000.

SOUTH RIM DEVELOPMENT
CHANGE IN PARKING AREA CARRYING CAPACITY
(In Spaces)

Parking Area

Tomichi	21	-21	0
Gunnison	51	+42	93
Pulpit	16	-5	11
Cross Fissures	7	--	7
Rock	9	-9	0
Devil's	7	+9	16
Chasm	16	+34	50
Painted	5	-5	0
Cedar	8	--	8
Dragon	6	+7	13
Sunset	14	--	14
High	19	+18	37
New Trailheads	--	+29	29
TOTAL	179	+99	278

NORTH RIM DEVELOPMENT
CHANGE IN PARKING AREA CARRYING CAPACITY*
(In Spaces)

Chasm	+8
Narrows	--
Balanced Rock	--
Big Island	--
Long View	--
Islands Peak	--
Kneeling Camel	--
End of Road	--
New Picnic Area	+12
Existing Kiosk	remove all
New Kiosk	+8
Trailheads	+15
New Ranger Station	+15**
TOTAL	+43

* Most overlooks do not have capacities listed because they are gravel and undefined. In general, each overlook has space for 3 to 7 automobiles.

**This 15 is the same 15 as shown for Trailheads.

C. General Development

This section presents specific development proposals that solve many of the monument's problems or fulfill various needs. Plans are presented for a visitor facility, vending area, seasonal housing, maintenance area, overlook improvements, development changes needed for the north rim, utilities and energy/resource conservation, and improving accessibility for disabled visitors (see General Development Plan map).

1. South Rim Main Development (Visitor Facility, Vending Area, Housing, and Maintenance)

One of the monument's most pressing concerns is a need for visitor contact, staff housing, maintenance, and vending facilities on the South Rim. At the present time, these facilities occur in proximity to one another along the main park road from the entrance station to Pulpit Rock. These facilities occupy parts of what historically has been considered the prime developable land on the South Rim.

The visitor facility will remain at Gunnison Point, however the proposed building will be situated to the west of the existing site (see Gunnison Point map). This location offers a partial view of the canyon and an easy walk to the existing overlook. The building is proposed as a multistory structure with the entrance and main viewing areas in the upper level. A bridge or ramp will be used to gain access from the existing parking area as the site drops off quite steeply from the parking area to a level bench approximately 15 feet below. A new road alignment will be constructed to increase parking at Gunnison Point. Tomichi Point will be obliterated, boulders placed at the road shoulder to prevent visitors from pulling over (if necessary), and a sign placed there indicating that the visitor facility is just ahead. This makes Gunnison Point the first major stop after entering the park and greatly improves the sequencing of the visitor experience compared to the current situation. Forty-two additional parking spaces will be needed at Gunnison Point.

Design considerations which will be incorporated into the visitor facility include: Lobby orientation toward the best view, administrative area and restrooms situated in the non-view portions of the building, the color/texture/form and scale of the facility will blend with the surrounding environment, passive cooling and passive solar heating will be designed into the building and the facility will be designed to accommodate possible future expansion.

The visitor facility will be an open-air, pavilion-type structure. This concept is envisioned as a facility with enclosed offices, storage space, mechanical, and vending space; but interpretive displays, information, and reference materials will be located in an open-air section covered by a roof. An enclosed information desk, lobby, and publication sales area will be designed so that it can function well when staffed or unstaffed. Exhibits will be designed to withstand a wide range of environmental conditions. A small, stand-up audio-visual display could be provided.

A bulletin board will be located in each of the three campground loops to inform visitors of pertinent information. The bulletin boards also will be used for interpretive purposes -- particularly to announce evening programs in the amphitheater.

The amphitheater will undergo minor improvements. Additional lighting will be provided to better illuminate the amphitheater and the path leading to it. This lighting will be designed to avoid glare into the audience. Several additional rows of benches will be constructed in back of the present seats to provide additional capacity. A permanent screen, projection booth and storage area will also be constructed.

The maintenance and housing area will remain in their existing location. However, housing will be moved across the access road, to the east of the existing site. This action reduces conflicts between housing and the amphitheater and lessens traffic problems in the housing and maintenance areas. The maintenance facility will consolidate existing functions into a single facility.

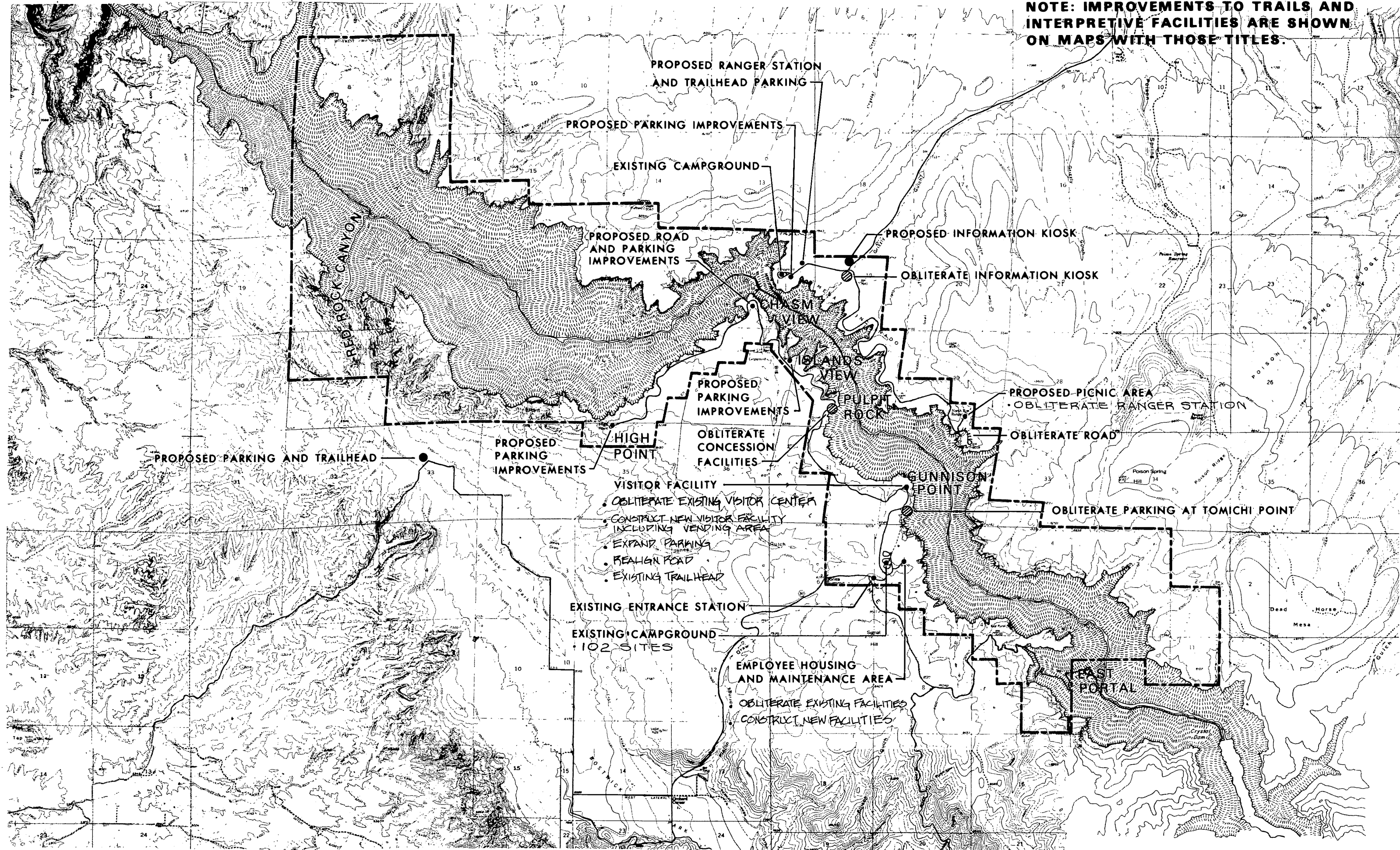
Park projections point out a need for four housing units totalling 3,000 square feet. Each unit will be designed to house two seasonal employees at one time. The housing will be single story, low profile structures designed to blend with surrounding vegetation. Passive cooling and passive solar heating, along with solar domestic hot water heating (if economically justifiable), will be incorporated. This housing will be designed to accommodate the future possible addition of new 2-person units if the need arises.

The maintenance facility will incorporate many of the design principles stated above including a single story, low profile structure designed to blend with surrounding vegetation; passive cooling, passive solar heating, and solar hot water heating; and design flexibility to allow for possible future expansion. In addition the parking bays will be faced south to take advantage of heating from the winter sun and aid in keeping doorways free of snow. The maintenance building will be 3,000 square feet, with a 1,600 square foot surfaced work pad constructed outside. An additional 4,000 -5,000 square foot asphalt parking, work, and storage area will be included within the maintenance area. The building will include protected parking space for 5 vehicles, a warehouse, shop, fire cache, and standby generator.

2. High Point Overlook

The parking facilities at High Point will be expanded to accommodate more vehicles and improve parking for vehicles with trailers. There will be 27 parking spaces for cars and 10 parallel spaces for cars pulling trailers (see High Point Overlook map). Two or three information/ orientation kiosks will be provided near the parking areas and trailhead to better inform visitors of the availability of visitor use facilities at High Point.

A new wooden viewing platform, approximately 30 by 30 feet, will be constructed off of the Warner Nature Trail - 150 feet south of the existing restrooms. This platform will be placed in a clearing that



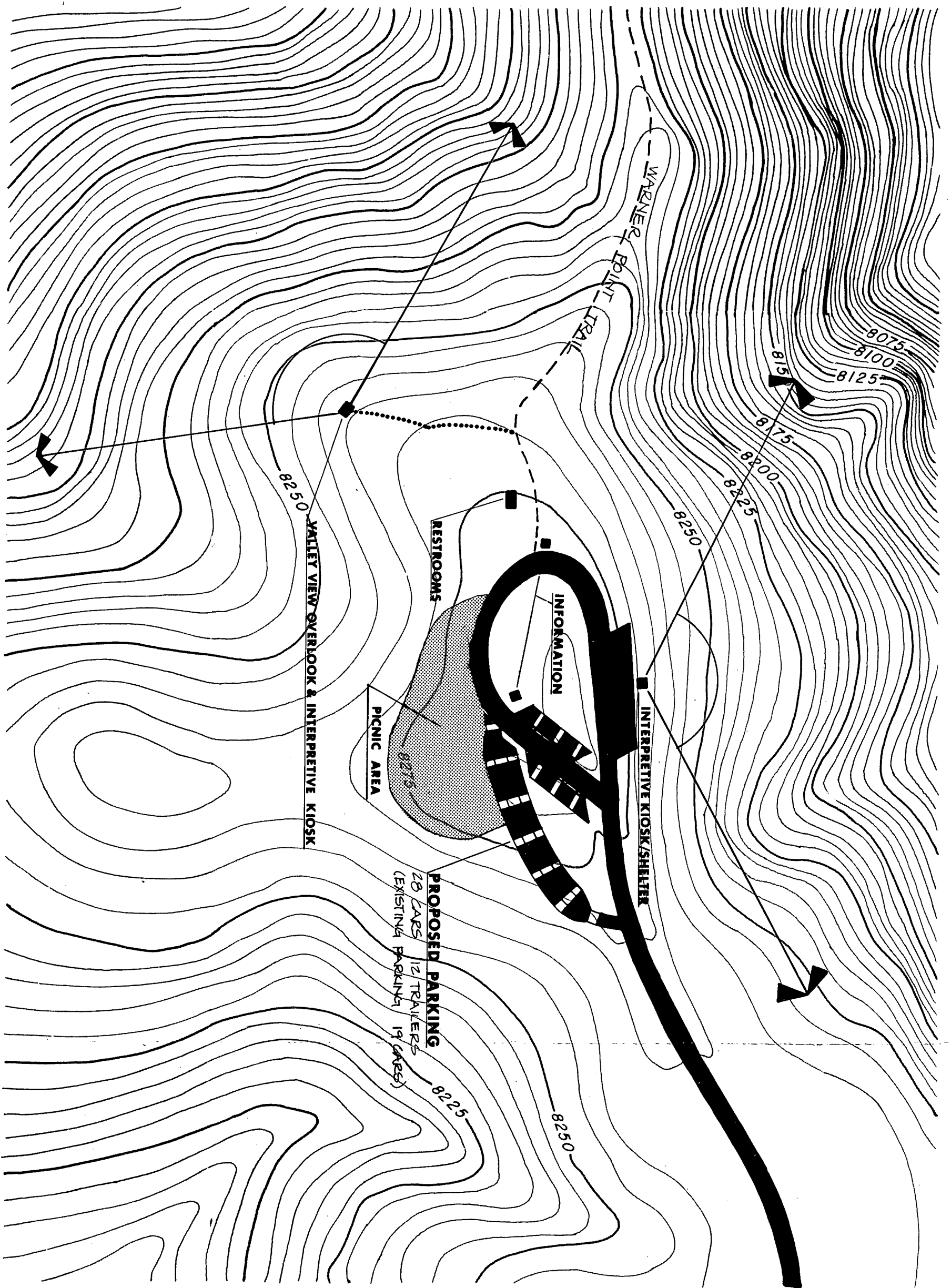
GENERAL DEVELOPMENT PLAN

BLACK CANYON OF THE GUNNISON NM, COLORADO
NATIONAL PARK SERVICE - UNITED STATES DEPARTMENT OF THE INTERIOR



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0 KILOMETERS 1.6 3.2 4.8
0 MILES 1 2 3



HIGH POINT OVERLOOK

BLACK CANYON OF THE GUNNISON N.M., COLORADO
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METERS 0 15.2 30.5 45.7 61
FEET 0 50 100 150 200

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is mostly unvegetated soil and rock. A formalized trail will be developed linking the viewing platform to the Warner Point Trail. The overlook will be known as Valley View.

3. Chasm and Painted Wall Views

The parking areas at Chasm and Painted Wall will be consolidated by eliminating the parking at Painted Wall and expanding the Chasm View parking (see Chasm and Painted Wall Views map). This new parking area will hold 40 cars and 10 oversized vehicles. Between 0.1 and 0.25 acres will be needed for the expanded parking. This area will be taken in a narrow band requiring a cut-slope along the south edge of the road across from the existing Chasm View parking. The asphalt and concrete of the Painted Wall parking areas will be removed and topsoil brought in to cover this 0.1 acre area that will be revegetated with species like those in the adjacent vegetation.

A new section of two-lane asphalt-surfaced road of the same standard as the remainder of the South Rim Drive will be constructed, bypassing Chasm and Painted Wall overlooks. This new road and two short legs to tie into the Chasm View parking area will require from 900 to 1,200 feet of new road (0.7 to 0.9 acres of area). The new parking area will be part of a one-way pull off loop.

Approximately 250 feet of the existing Painted Wall trail will be scarified and revegetated, and 400 feet of new trail added to join the expanded parking area and the Painted Wall Trail. Also, as mentioned later (in section III. C. 7) the 60 foot long trail to Chasm View will be made accessible to all people by improving its grade and surfacing it with concrete.

Because Chasm is a central location between Gunnison and High Points where most of the visitors will stop, restrooms will be located here. They will not require electricity or water (e.g., vault type or composting).

4. Islands Views

The existing parking facility at Rock Point will be eliminated and the parking at Devils Lookout will be expanded from 7 to 16 spaces (see Islands Views map). In addition, three 40-foot parking stalls will be provided for recreational vehicles or automobiles with trailers. This parking area will serve as the trailhead for both overlooks and will be renamed Islands Views.

The trails will be realigned to encourage greater use of Rock Point. The first one-third of Rock Point's 320-yard trail will no longer be needed for visitor use. This section of trail will be scarified and revegetated. One of the many social trails which now exist between Devils Lookout trail and Rock Point will be widened, formalized and identified as the access path from the new combined parking area to Rock Point. Likewise, the first one-half of Devils Lookout 450-yard trail will be scarified and revegetated. This closed portion will be replaced by a new trail that will branch off the trail to Rock Point.

5. North Rim Development

Combined at one location will be the ranger's quarters (bedroom, kitchen, bathroom, and an office that can also be used for visitor contact) and trail head parking for Green Mountain, Serpent Point and S.O.B. Draw (see North Rim Development map). The ranger station and trailhead parking will be about 1,300 feet east of the campground on the west leg of the North Rim Road. The combined parking area for the trailhead and ranger station will accommodate approximately 15 vehicles. As this location is relatively flat, the residence cannot be constructed into a slope, but other architectural means for passive cooling of the residence will be used.

The unmanned orientation/information kiosk will be developed on the North Rim access road, and the visitor parking area will accommodate approximately 4 vehicles.

At Chasm View, a 6 to 8 space gravel parking area will be developed in a location that will allow day-use visitors access without driving through the campground. The trail will be extended approximately 150 feet to this new parking area and a trailhead formalized at this location.

The existing campground could be expanded by 10 sites within the limits of the existing development.

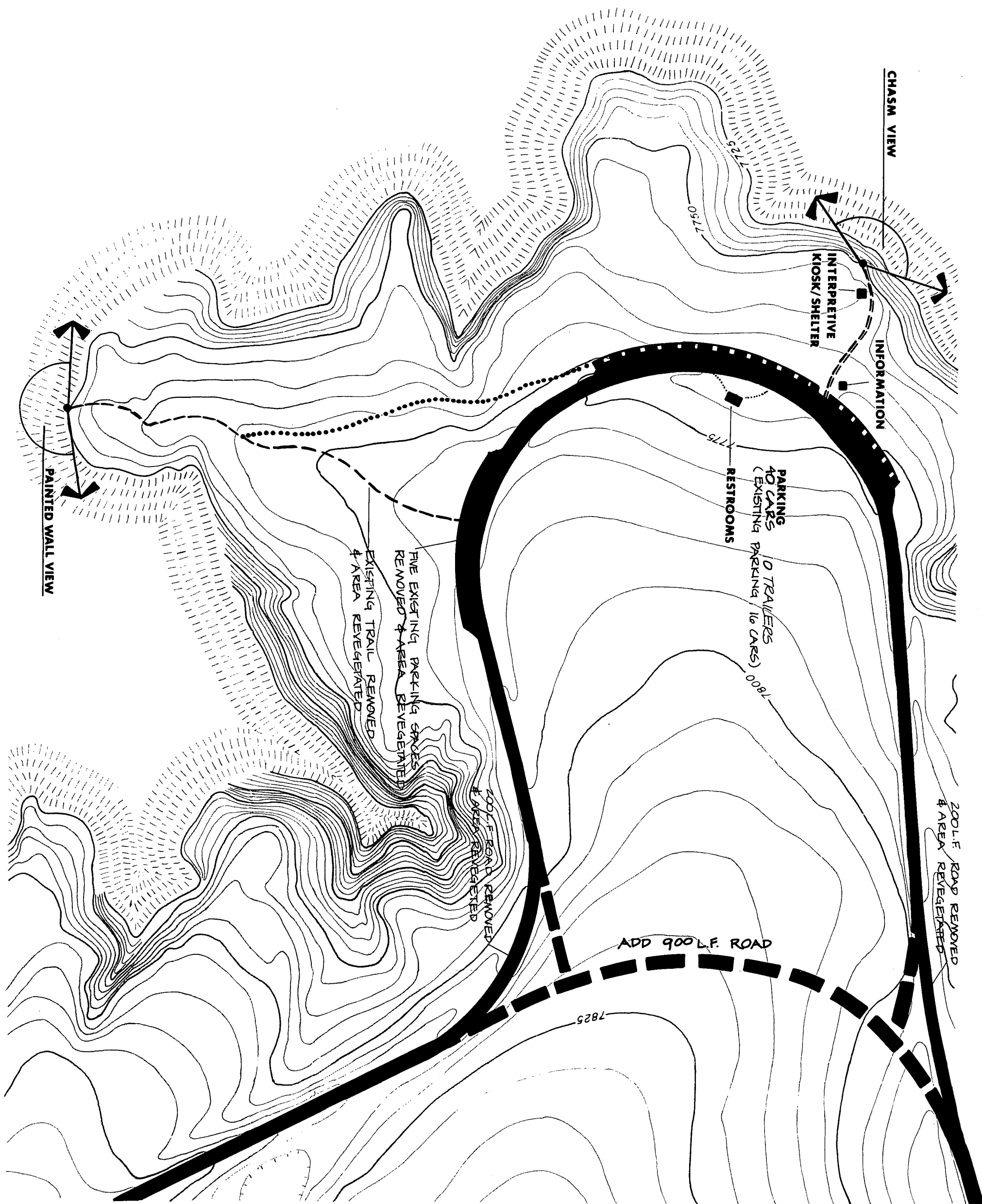
Once the buildings at the existing ranger residence area are removed, a 6 to 8 site day use picnic area and toilets will be developed at this location. A gravel parking area to accommodate 10 to 12 vehicles and the locations of the picnic tables and toilets will utilize old structure sites and other disturbed sites to the fullest extent possible. The main road beyond the turn to the new picnic area (one-third mile) will be closed. A loop turnaround will be provided in the picnic area and the existing loop turnaround at Kneeling Camel Overlook will be retained.

The existing kiosk and parking area, and the closed one-third mile of road and vault toilets at the end of the road will be obliterated and these areas revegetated with native species found in the adjacent vegetation.

A "yield" sign will be placed so entering visitors on the entrance road must yield to traffic on the North Rim Drive.

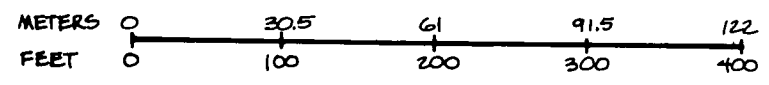
6. Utilities and Energy/Resource Conservation

The constraints are very restrictive. Commercial electricity will be available only to the South Rim housing/maintenance area and visitor facility. Due to the lack of adequate aquifers on either rim, and the unreasonably high costs of piping water up from the river, all water on both rims will continue to be hauled in by truck. Steep slopes and shallow soils tend to constrain sewage disposal options.



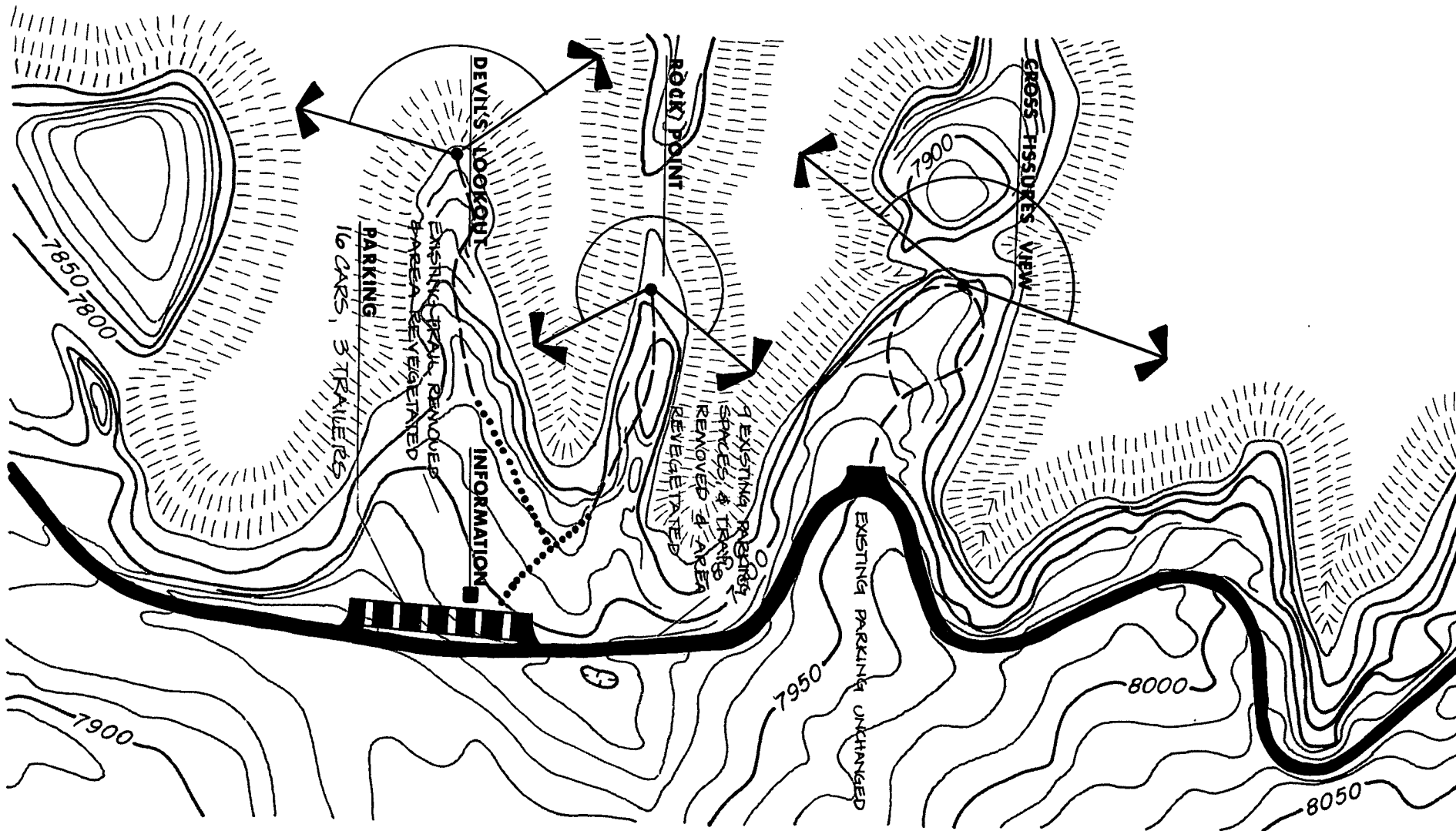
CHASM AND PAINTED WALL VIEWS

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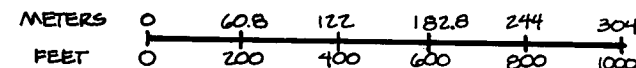
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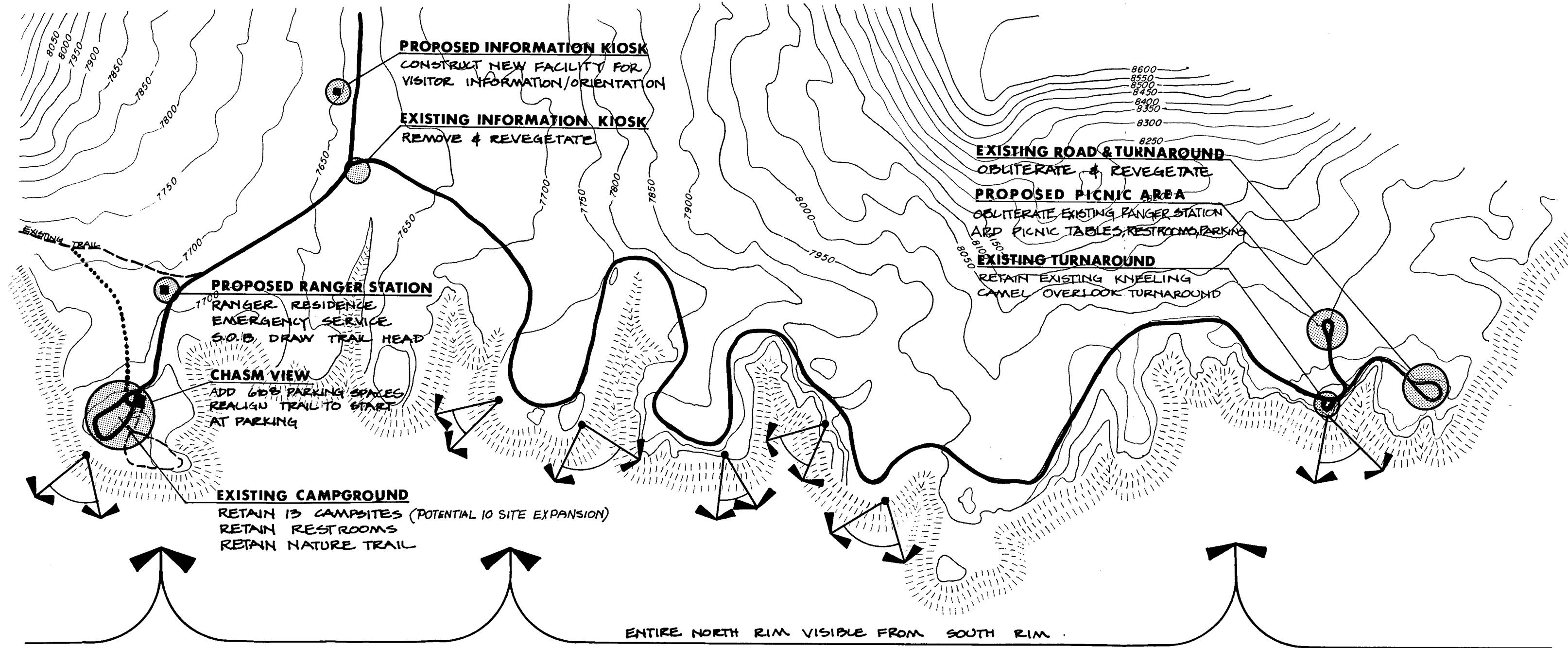
ISLANDS VIEWS

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NORTH RIM DEVELOPMENT

BLACK CANYON OF THE GUNNISON NM., COLORADO
NATIONAL PARK SERVICE - UNITED STATES DEPARTMENT OF THE INTERIOR

To work within these constraints, and to minimize water and energy consumption by visitors and the monument's staff, the following utility criteria should be observed:

Toilets - The toilets at High Point, Chasm View, the North Rim residence, North and South Rim campgrounds, and North Rim picnic area should be designed to use no water or electricity in their operation. Vault or composting toilets are examples of types that would satisfy these criteria. At the South Rim visitor facility, housing area, and maintenance area toilets will require no water, or extremely low water volumes. Composting or oil recirculating toilets are examples of types that would be appropriate.

Space Heating and Cooling - The North Rim ranger station and South Rim maintenance, housing, and visitor facilities will all be designed to be heated and cooled by passive means (not requiring sophisticated technology or non-renewable energy for their operation, but rather relying on solar architectural design, adequate insulation, windows, moveable insulation, etc. for heating and cooling). While most of these buildings will not be used in the winter, they will need auxiliary heat for spring and fall use. This could be provided by electric heaters, propane heaters (with electronic ignitions to save energy), or "airtight" woodburning stoves.

Domestic Hot Water and Cooking - If economically justifiable for seasonally used residences or the year-round maintenance operation, solar domestic hot water systems will be used. Otherwise the most cost effective means for hot water and cooking (propane with electronic ignitions or electricity) will be used. Water conserving faucets and showerheads will be used to minimize all water consumption.

Lighting - To conserve electricity all lighting will be with fluorescent lights or the newly developed incandescent bulbs that are more energy efficient than traditional incandescent bulbs.

Waste Disposal - Solid waste will continue to be hauled out of the monument and disposed of in the Montrose landfill. Sewage will be hauled out of the monument for disposal, composted in individual units (such as Clivus Multrums), or composted at a central location in the monument. Other liquid/semi-liquid wastes will be disposed of in existing or new septic tank and leach field systems.

Water Conservation - Beyond the ways previously described to conserve water, a public education program will be initiated to encourage water conservation. For example, information signs will be placed at all public water taps that explain the expense and effort required in hauling water to the monument. These also should encourage water conservation and prohibit visitors from using the water for filling or rinsing trailer and recreational vehicle water tanks.

7. Accessibility for Disabled Visitors

Accessibility to and use of facilities at Black Canyon of the Gunnison National Monument by physically and mentally handicapped

visitors will be provided in conformance with applicable laws and regulations. To the greatest extent possible, commensurate with their physical abilities, the handicapped will be able to enjoy the park and participate in recreational activities, using the same facilities and programs as the able-bodied. Sensitive design of park facilities will facilitate this goal. Consultation and coordination of accessibility considerations will be developed where possible with local clubs and organizations whose members are disabled.

Expanded accessibility opportunities for Black Canyon's disabled visitors will be provided. These opportunities include a specified number of signed, reserved parking sites within the visitor facility parking area. These sites will be located within reasonably close and easy access to the visitor facility. The visitor facility entrance, information services, interpretive displays, and restrooms will be fully accessible.

A number of campsites within the campground are located within reasonably close proximity to the comfort stations. These campsites will be equipped with an accessible picnic table, the grounds leveled, and signed with the international symbol of accessibility.

All comfort stations in the monument will be barrier-free, with a minimum of one handicap stall per side. An exception will be in the South Rim Campground, where only the comfort stations in one loop will be modified to be accessible to the handicapped.

The picnic area at High Point will have several accessible picnic tables and trash receptacles within easy reach of the parking area.

Selected overlooks, and the trails leading to them, such as Chasm View, Dragon Point, Sunset View, High Point, and the first third of Gunnison Point, which represent a significant cross-section of the area's resources, will be accessible to the disabled. Treadway improvements (trails, curb ramps, etc.) will be made with concrete instead of asphalt because on hot days asphalt sticks to wheelchair wheels and then gets all over their operators.

The existing 60 foot long path leading to Chasm View overlook will be widened to six feet, the grade improved to be less than 8.33 percent, the dips and bumps removed by making minor cuts and fills, and paved with concrete.

Sunset View overlook is now accessible to the disabled visitor with a minimum of effort. An existing concrete pad which faces the view will be provided with a native stone protection barrier which will prevent visitors from inadvertently falling over the edge. Ramps will be constructed to facilitate access to the existing concrete pad.

The path leading to Dragon Point overlook is accessible with a minimum of assistance except for the last 40 feet. These last 40 feet will require some soil and bedrock removal (cuts) to provide disabled visitors with a path that does not exceed 8.33 percent grade.

There are two existing equally impressive overlook sites at Gunnison Point. When a new visitor facility is constructed and the existing temporary visitor facility at Gunnison is obliterated, a new trail will be constructed to the first overlook. To facilitate handicap access to this first site, the existing trail, which has a grade in excess of 14 percent, will be obliterated and revegetated. A new, six foot wide trail will be developed. The necessary switchbacks will take advantage of the site's natural topography. As a result, no grades in that portion of the trail will exceed 8.33 percent. This trail will be paved with concrete.

The existing visitor information folder at Black Canyon will be expanded and updated to reflect these accommodations.

D. Resource Management

The objectives of resource management at Black Canyon of the Gunnison National Monument are to preserve cultural resources and artifacts, and to perpetuate ecosystems within the monument. These objectives are attained through the various resource management programs outlined in the area's resource management plan, prepared in draft form in 1980. A summary of actions proposed in this draft plan is given as follows:

1. Wildlife

a. Mule Deer - The monument's limited land base and this species' seasonal migratory patterns dictate a "hands off" policy. The number of mule deer in the park is somewhat regulated by hunting outside the park. A monitoring program to determine the herd size, conditions, and habitat condition is recommended.

b. Black Bear - The objective for bear management is to perpetuate a natural population with the normal interrelationships with the park's ecosystems and to minimize human disturbance upon the population. The current course of no action is recommended for continuation. An ecological study of Black Canyon bears is needed to determine the status and trend of the bear population.

c. Porcupine - Winter feeding habits of the porcupine population is thought to be killing beautiful huge old specimens of pinyon. Growth habits of the pinyon are such that wounds left by porcupines do not heal and the trees are soon victims of insects and disease which is killing these trees. Some of these pinyons are the oldest in Colorado and are well worth preserving. Monitoring of porcupine population size and density needs to be determined and watched for several years. Extent of damage to trees needs to be documented before any control action is considered.

d. River Otter - Reintroduction of this native Colorado endangered species is proposed in cooperation with the Colorado Division of Wildlife. That Agency currently has a program for reintroduction of the river otter at the East Portal upstream and the Gunnison Gorge downstream from Black Canyon of the Gunnison National Monument. Since August 1976, a total of 20 otters have been released at these sites.

e. Bighorn Sheep - It is recommended that the National Park Service cooperate with the Colorado Division of Wildlife to reintroduce bighorn sheep to Black Canyon of the Gunnison National Monument. Other management proposals related to this could include vegetation management, reduction in grazing competition from domestic animals, and closure of selected areas to public use during the spring lambing season.

f. Peregrine Falcon - This native endangered wildlife species is recommended for reintroduction at Black Canyon of the Gunnison National Monument. Components of the proposed reintroduction program include evaluation of potential sites for release, evaluation of other raptors, and study of pesticide contamination in prey species.

g. Bald Eagle - The bald eagle is an endangered species that frequently winters along the Gunnison River in the monument. The eagles are rarely disturbed, since so few visitors venture down into the canyon in the winter. However, a monitoring program should be developed in conjunction with Colorado Division of Wildlife to evaluate the status of the bald eagle in the monument.

2. Fishery

Fish species in the Gunnison River within Black Canyon of the Gunnison National Monument are predominantly introduced brown and rainbow trout. The native cutthroat trout is no longer present within the monument. The Gunnison River in the monument is important habitat for the razorback sucker, which is a threatened species in Colorado. It is recommended that river flows be managed to approximate natural flows as closely as possible. A monitoring program to gain basic information about the river ecology and to determine trends is also recommended. This program should determine if the bonytail chub or humpback chub are present. Both are endangered species, but are thought to be extirpated in the monument. (See Appendix C for a more thorough discussion of the Gunnison River ecology and the threatened and endangered fish species.)

3. Vegetation

Human activities, both past and present, have resulted in deterioration of the park's vegetative resources. Management of the area's vegetative resources seeks to reestablish native vegetation lost through overgrazing, vehicular and pedestrian use, and fire, and to eradicate exotic species. Part of this program will be the development of a land reclamation plan. It will prescribe formulas for soil treatment and revegetation of the various vegetation types that are found in the monument. The end product will be step by step procedures to be followed for revegetating disturbed areas.

There are several plants that are proposed threatened or endangered species that could be or are found in the monument. Research should be conducted to determine their status and location within the monument. (See Appendix C for a more thorough discussion of the monument's vegetation ecology and threatened and endangered plant species.)

4. Fire

The policy of Black Canyon of the Gunnison National Monument is to suppress all fires whether natural or man caused except in remote inner canyon areas. Wildfire is controlled as is possible and necessary to prevent unacceptable loss of wilderness values, loss of life, and property damage. The area has a current approved fire management plan.

5. Backcountry Use

Some 13,666 acres within Black Canyon of the Gunnison National Monument are managed as backcountry for hiking, rock climbing, rafting, camping, and fishing use. This area includes the Black Canyon of the Gunnison National Monument wilderness. Use of this backcountry is managed through a permit system. The objective of management is to allow use of the backcountry without unacceptable resource deterioration.

6. Noise

Unacceptable noise levels are sometimes caused by aircraft passing over Black Canyon of the Gunnison National Monument. This is in violation of the 500-foot ceiling limit above the canyon rim specified by FAA regulations. Actions to manage this problem include working with local airport officials, the FAA, and military installations to develop flight regulations and increased enforcement over the canyon.

7. Hunting

Hunting is prohibited within the existing boundaries of Black Canyon of the Gunnison National Monument. These lands will remain closed to public hunting. Lands proposed for addition to the monument on the north side of the canyon will be open to public hunting except within one mile of overlooks and developed areas to assure visitor safety. Provisions for hunting on lands in the land protection (resource protection) area should be considered at the time these lands are protected. Hunting will be subject to regulation by the Colorado Division of Wildlife.

8. Cultural Resources

In accordance with applicable laws and National Park Service policy, Black Canyon of the Gunnison National Monument's cultural resources will be managed to identify, evaluate, and protect these resources. Survey requirements of Executive Order 11593 have been met and it has been determined in consultation with the Colorado State Historic Preservation Officer that no cultural properties at Black Canyon of the Gunnison National Monument are eligible for inclusion on the National Register of Historic Places. In addition to archeological surveys, referred to in the Environmental Assessment, a structure and buildings survey was done in 1977. Planning shall attempt to avoid impacts to cultural resources caused by development and increased visitor use. Cultural resources will be managed in accordance with NPS-28. Specific measures for management of known cultural resource sites are as follows:

a. Subsurface testing and comprehensive excavation of sites 5MN182, 5MN184, and 5MN208 is required by NPS-28.

b. Protection of sites near the North Rim Campground from vandalism.

The Colorado State Historic Preservation Officer will be given an opportunity to comment on any projects that would have the potential to affect properties eligible for inclusion of the National Register.

IV. PRIORITIES, FACILITY COST ESTIMATES, STAFFING AND OPERATION NEEDS

Following are all items proposed in the plan that require funding. All costs are class "C" estimates in 1982 dollars. These estimates do not include planning, design or construction supervision costs. A separate estimate is provided for staffing and operation needs.

All items are placed into packages that represent a coherent group of work that needs to be accomplished. These packages are then priority ranked from AAA to JJJ, indicating the National Park Service's highest priority is package AAA and lowest is JJJ.

GUNNISON POINT AREA

PACKAGE AAA

FACILITIES

Remove Tomichi Point Parking (10,000 SF)	\$ 15,000
Remove existing visitor center (800 SF)	\$ 4,000
Remove existing Pulpit Rock buildings (concessioner responsibility)	---
Revegetate, build mounds and landscape Tomichi Point, former visitor center and Pulpit Rock sites (3.5 acres)	\$ 27,000
Install landscaping using native species at the new visitor center	\$ 20,000
Build partially open air visitor facility (2500 SF)	\$150,000
Produce visitor facility media and exhibits (lump sum)	\$ 75,000
Build vending area for visitor facility (choose one only)	\$ 8,000-39,000

Dispersed Alternative

install vending machines in exterior wall of building	\$5,000
install picnic tables in wooded area (10 each)	\$3,000

Patio Alternative

install vending machines and build trellis (500 SF) and hard surface paving (1,000 SF)	\$35,000
install picnic tables (10 each)	\$ 4,000

Build bridge/ramp to visitor facility (50 LF, 12' wide)	\$ 30,000
Build utilities (water, sewage, disposal, electricity)	\$ 20,000
Remove asphalt road (600 LF, 24' wide)	\$ 11,000
Build asphalt road (1,000 LF, 24' wide)	\$ 68,000
Build asphalt parking (40 spaces)	\$ 48,000
Build handicapped accessible concrete trail (300 LF, 6' wide)	\$ 10,000
Build additional Rim Rock Trail (2000 LF)	\$ 20,000
Build Rim Rock Trailhead signs (2 each)	\$ 1,000
Produce interpretive trail leaflet or posts (lump sum)	\$ 5,000
Build interpretive kiosk	\$ 18,000

TOTAL \$ 530,000-\$561,000
(depending on selected vending area alternative)

STAFFING AND OPERATION

Park Technician, permanent GS-6	.6 work-years	\$ 8,400
Maintenance Worker, GS-5	.3 work-years	\$ 4,500
Supplies and equipment		\$ 1,500
Utilities		\$ 1,200

Land Protection costs are too variable to accurately estimate at this time. Costs will be available in a Land Protection Analysis that will be developed later to thoroughly consider a wide range of land protection methods and techniques.

<u>SOUTH RIM TRAIL SYSTEM</u>	PACKAGE CCC
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FACILITIES

River Access Trails

Gunnison Point:

Build medium standard trail including retaining walls and switchback (1 mile)	\$150,000
Build trailhead sign (1 each)	\$ 300

Red Rock Canyon:

Build low standard trail (2.5 miles)	\$ 19,000
Build trailhead sign (1 each)	\$ 300
Build dirt parking area (15 spaces)	\$ 5,000
subtotal	<u>\$174,600</u>

Cross-Country Ski Trails

Build parking areas with access drive (2 locations at 4,000 SF each)	\$ 10,000
Build portable trailhead signs (3 each)	\$ 1,000
subtotal	<u>\$ 11,000</u>

Dragon Point Trail

Build asphalt parallel parking spaces (2100 SF)	\$ 11,000
Build trailhead sign (1 each)	\$ 300
Reconstruct existing trail to provide for handicapped accessibility -- remove soil and bedrock, grade and provide firm gravel surface (40 LF, 6' wide)	\$ 2,000
Produce interpretive trail leaflet or posts	\$ 5,000
subtotal	<u>\$ 18,300</u>

TOTAL	<u>\$203,900</u>
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STAFFING AND OPERATION

Maintenance Worker, WG-5	.2 work-years	\$ 3,100
Supplies and equipment		\$ 1,150

SOUTH RIM CAMPGROUND & AMPHITHEATER

PACKAGE DDD

FACILITIES

Build bulletin boards in campground (3 each)	\$ 1,000
Modify vault toilets in campground to be handicapped accessible (2 each)	\$ 10,000
Build additional seats in amphitheater (50 seats)	\$ 15,000
Improve lighting in amphitheater	\$ 10,000
Build permanent projection screen, booth and storage area	\$ 10,000

TOTAL

\$ 46,000

<u>MAINTENANCE AREA</u>	.	.	.	.	.	.	.	PACKAGE EEE
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FACILITIES

Build maintenance structure to provide space for warehouse, shop, fire cache and 5 vehicles; provide for passive heating and cooling and solar hot water (3,000 SF)	.	.	.	.	.	.	.	\$180,000
Build utilities (water, sewage disposal, electricity)	.	.	.	.	.	.	.	\$ 50,000
Build paved maintenance yard (1,600 SF)	.	.	.	.	.	.	.	\$ 6,000
Build unpaved maintenance yard (5,000 SF)	.	.	.	.	.	.	.	\$ 8,000
Build chain link fence (400 LF)	.	.	.	.	.	.	.	\$ 6,000
Remove existing maintenance facilities (200 SF)	.	.	.	.	.	.	.	\$ 12,000
Revegetate existing maintenance site (2 acres)	.	.	.	.	.	.	.	<u>\$ 4,000</u>
TOTAL								\$226,000

STAFFING AND OPERATION

Maintenance Worker, WG-5	.2 work-years	\$ 3,100
Supplies and equipment		\$ 1,000
Utilities		\$ 1,200

HOUSING PACKAGE FFF

FACILITIES

Build four - 2 person apartments, structure to be single story and provide passive heating and cooling and solar hot water	\$215,000
Build utilities (water, sewage disposal, electricity)	\$ 50,000
Build asphalt parking area (12 spaces)	\$ 18,000
Install landscaping using native species	\$ 10,000
Remove existing mobile homes (5 each)	\$ 1,000
Revegetate 1.5 acres	<u>\$ 3,000</u>
TOTAL	\$297,000

STAFFING AND OPERATION

Maintenance Worker, WG-5	.1 work-year	\$ 1,550
Supplies and equipment		\$ 600

HIGH POINT OVERLOOK

PACKAGE GGG

FACILITIES

Build asphalt parallel parking area (12-40' spaces)	.	.	\$ 30,000
Build asphalt parking area (9 spaces)	.	.	\$ 12,000
Build viewing platform (900 SF)	.	.	\$ 30,000
Build interpretative/information kiosks (4 each)	.	.	\$ 72,000
Build Warner Point trailhead sign (1 each)	.	.	\$ 300
Produce interpretive trail leaflet or posts	.	.	\$ 5,000
Reuse existing picnic tables	.	.	\$ --
Modify vault toilets to be handicapped accessible (2 each)	.	.	<u>\$ 10,000</u>
TOTAL			\$159,300

CHASM, PAINTED WALL, SUNSET AND PULPIT ROCK . . . PACKAGE HHH

VIEWS FACILITIES

Build asphalt road (1,300 LF, 24' wide)		\$ 87,000
Build asphalt parking area (40 spaces)		\$ 48,000
Build asphalt parallel parking area (10 spaces)		\$ 30,000
Remove asphalt road and parking area (600 LF)		\$ 14,000
Revegetate site (.4 acres)		\$ 1,000
Build vault or compost-type restrooms (4 seats)		\$ 24,000
Build medium standard trail (500 LF)		\$ 5,000
Build concrete handicapped accessible trail to Chasm View (60 LF, 6' wide)		\$ 2,000
Build information board		\$ 300
Build interpretive kiosk		\$ 18,000

Sunset

Build stone wall (60 LF)		\$ 21,000
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Pulpit Rock

Build asphalt parallel parking spaces (1400 SF)		\$ 10,000
Resue existing picnic tables		---
Modify vault toilets to be handicapped accessible (2 each)		<u>\$ 10,000</u>

TOTAL \$270,300

PACKAGE III

Build asphalt parking area (9 spaces)	\$ 14,000
Build asphalt parallel parking area (3-40' spaces)	\$ 9,000
Remove asphalt parking area (9 spaces)	\$ 1,000
Revegetate site (.1 acre)	\$ 4,000
Build medium standard trail (800 LF)	<u>\$ 8,000</u>
TOTAL	\$ 36,000

NORTH RIM PACKAGE JJJ

FACILITIES

Ranger Station and Upland Trails

Build ranger station/residence (750 SF)	\$ 70,000
Build maintenance shed (400 SF)	\$ 25,000
Build utilities (water, sewage disposal, electricity)	\$ 42,000
Build low standard trail (5.5 miles)	\$ 42,000
Build Trailhead Signs - at ranger station and in campground (2 each)	\$ 600
Build gravel parking area for trailhead and ranger station (15 spaces)	\$ 9,000
subtotal	\$196,600

Picnic Area

Remove ranger station (1500 SF)	\$ 2,000
Install picnic tables (8 each)	\$ 3,000
Build vault or compost-type restrooms (2 seats)	\$ 12,000
Build gravel parking area (12 spaces)	\$ 7,000
Build bulletin board	\$ 300
Remove gravel road (1500 SF)	\$ 5,000
Revegetate road and old picnic site (2.5 acres)	\$ 7,000
subtotal	\$ 36,300

Information Kiosk

Remove existing kiosk and revegetate site	\$ 2,000
Build new information kiosk	\$ 18,000
Build gravel parking area (4 spaces)	\$ 2,500
subtotal	\$ 22,500

Chasm View and Campground

Build gravel parking area (8 spaces)	\$ 5,000
Build low standard trail (250 LF)	\$ 400
Build trailhead sign (1 each)	\$ 300
Produce interpretive trail leaflet or posts	\$ 5,000
Build campground bulletin board (1 each)	\$ 300
Modify vault toilets in campground to be handicapped accessible (2 each)	\$ 10,000
subtotal	\$ 21,000

TOTAL \$271,400

STAFFING AND OPERATION

Park Technician, GS-6	.2 work-years	\$ 2,800
Maintenance Worker, WG-5	.3 work-years	\$ 4,500
Utilities		600
Supplies and Equipment		500
Pick-up Truck		600

V. PLANNING TEAM

PRIMARY CONTRIBUTORS

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VI. APPENDIX

The appendix is not included in order to reduce printing costs. It includes the following topics.

- A. Bibliography
- B. Legislation
- C. Description of the Environment
- D. Overlook Analysis
- E. Concessions Economic Feasibility Study
- F. Visitor Facility Concept and Size Calculations
- G. Future Data/Research Needs
- H. Subsequent Planning, Design, and Legislation Needs

The appendix for the General Management Plan for Black Canyon of the Gunnison National Monument is available upon request from:

Superintendent
Black Canyon of the Gunnison
National Monument
P.O. Box 1648
Montrose, Colorado 81401

As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, parks and recreation areas, and to ensure the wise use of all these resources. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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