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September 1983

**GENERAL MANAGEMENT PLAN  
DEVELOPMENT CONCEPT PLAN  
INTERPRETIVE PROSPECTUS**

**Timpanogos Cave  
National Monument**

**Utah County, Utah**

**United States Department of the Interior - National Park Service**

APPROVED:

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REGIONAL DIRECTOR, ROCKY MOUNTAIN REGION

9/27/83

DATE

GENERAL MANAGEMENT PLAN  
DEVELOPMENT CONCEPT PLAN  
AND  
INTERPRETIVE PROSPECTUS

TIMPANOGOS CAVE NATIONAL MONUMENT  
UTAH

Prepared By

Rocky Mountain Regional Office

and

Timpanogos Cave National Monument

National Park Service

United States Department of the Interior

Approved: September 1983



## I. SUMMARY

Timpanogos Cave National Monument is a small, well established park. Most of the programs and facilities needed for the operation, protection and maintenance of the park are in place. The purpose of this plan is to update the 1965 Master Plan and to address certain specific issues.

### A. The Issues

1. Pedestrian conflict with vehicle traffic on UT 92 near the Visitor Center.
2. Additional protection from falling rocks for visitors while on the cave trail.
3. Provide the visitor with a better comprehension of the Monument's primary resource-the cave.
4. Reduce natural resource damage.
5. Provide additional visitors the opportunity to visit the cave.
6. Determine the level of day use activities that should be provided in the park.

Of the several alternatives considered, the following have been selected as the most effective means of dealing with these issues.

### B. The Plan

Through coordination with and cooperation by the Utah State Highway Department, a plan of action has been developed which should greatly reduce the pedestrian/vehicle conflict on UT 92 near the Visitor Center. Road striping and new signing, including warning flashers for use during periods of heavy visitation, should provide a safer situation for the park visitors. In addition, the nature trail will be redesigned and rerouted so that it will start directly opposite the visitor center. This will eliminate the extremely hazardous situation created by visitors walking along the narrow road shoulder between the visitor center parking areas and the beginning of the present nature trail.

The rockfall hazard along the cave trail can never be completely eliminated. Many park visitors are not familiar with the steep canyon terrain and often cannot discern the areas of greatest rockfall danger. Identifying these areas for the visitor will prevent them from stopping in high hazard areas and will increase their awareness as they pass through these areas. Visitor safety on the cave trail will continue to be monitored and additional rockfall safety studies will be conducted as needed.

In order to provide the park visitor with a better understanding of the cave, most of the interpretive media will be redesigned to meet the special needs of visitors to Timpanogos Cave National Monument. Included in the redesign will be new and expanded museum exhibits, a redesigned audio visual program, improved interpretation at the Grotto waiting area and special interpretation for those visitors who cannot receive a cave tour.

Serious natural resource damage has been identified in three locations: along the river across from the visitor center, along the cave trail, and at the picnic area. The damage across from the visitor center is the result of extremely heavy use by people waiting for cave tours. This area will be redesigned and developed to meet the demands of the heavy visitor use. In addition, the redesign of the nature trail will provide additional space for waiting which will spread out the impact and the trail itself will provide an alternative activity which will lessen the impact along the river.

Most of the resource damage along the cave trail is caused by short-cutting the switchbacks. Barriers, such as buck and rail fencing, will be installed to prevent or at least greatly reduce short-cutting and allow the natural vegetation to recover. Supplemental plantings will be made as needed to assist recovery.

Barriers, such as stone walls or fences, will be installed in the picnic area to protect damaged areas until the natural vegetation recovers. These barriers will also prevent easy access to the steep bank behind the picnic area which will lessen erosion of these areas.

The very nature of the caves limits the number of visitors that are able to receive tours. The narrow passages, relatively small rooms and delicate cave formations make 20 the maximum number of visitors per tour. Since the tours must be spaced at least 10 minutes apart, the carrying capacity of the cave is 120 visitors per hour. Additional opportunities for visitors to tour the cave will be provided by extending the visitor use season in the spring and fall and by extending the tour day and number of tours per day during the summer. The cave will be closely monitored to assure that the increased number of visitors does not lead to damage to the cave resources.

The present level of development is appropriate. With the exception of the rerouting of the nature trail, no additional development or expanded day use activities are proposed.

### C. Environmental Consequences

Implementing these proposals will cause two unavoidable adverse effects to the environment:

1. The flashing lights on the roadside sign will detract from the esthetic value of the area.

2. The 800 yards of new nature trail will effect some talus slopes and rock outcrops which it will cross.

Neither of these actions will result in major deterioration of environmental qualities. The adverse effects will be mitigated by using the flashing lights only during periods of heavy visitation and by sensitive routing and construction of the nature trail.

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#### IV. PURPOSE AND NEED FOR PLAN

The general management plan is a parkwide plan for meeting the management objectives of the park. It contains both short and long-range strategies for resources management, visitor use, and development. These will be planned in compliance with National Park Service management policies, applicable legislation and executive requirements, in accordance with resource capabilities and limitations, and in recognition of public concerns. The plan considers the park as an integrated system and establishes the framework for major programs, facilities and management actions, as well as legislative and administrative requirements for implementing them.

The purpose of the General Management Plan is to update the Master Plan completed in 1965. While the 1965 Master Plan contains a wealth of good information on the monument, since that time many changes have taken place concerning the management of the monument. In addition to updating general information, a number of specific issues will be dealt with in this plan. The primary issues addressed in this document are:

##### A. Reduce the vehicle and pedestrian conflict along Utah Highway 92

Highway 92, the popular Alpine Scenic Routes, follows the south bank of the American Fork River through the Monument. This is a relatively narrow (20'-22'), winding road with short sight distances and little or no shoulder.

Almost half of the parking space at the visitor center is located across the highway from the building. These parking areas are heavily used during the summer afternoons and weekends. Because of the blind curve at the west end of the visitor center parking area, a dangerous situation is created for the visitors crossing the highway to reach the visitor center. Some methods of warning approaching drivers and reducing their speed is needed. The pedestrian crossing signs currently in use are not effective.

A second area of conflict is caused by visitors walking from the visitor center parking areas to the beginning of the nature trail (located across Highway 92 and 100 yards west of the visitor center). In order to reach the nature trail, the visitors must either cross the highway directly in front of the visitor center and walk along the extremely narrow shoulder between the highway and the river, or cross the highway at the blind curve at the west end of the visitor center parking area. Either way of reaching the nature trail places the visitor in an extremely dangerous position.

As park visitation and highway traffic continue to increase, the situation will become even more serious unless a means of resolving the pedestrian/vehicle conflict is found.

EXISTING DAILY TRAFFIC VOLUME

Year	A.A.D.T.C.*	July**	October***	July Visitors	October Visitors
1977	600	1050	870	1149	150
1978	660	1155	958	1122	139
1979	725	1270	1050	1139	182
1980	775	1355	1125	973	146
1981	775	1355	1125	989	98

\*A.A.D.T.C. - Average Annual Daily Traffic Counts.

\*\*Projected from traffic flow data-Junction SR-144, SE of Alpine-West Bound Timpanogos Cave National Monument; July 175 percent of A.A.D.T.C.

\*\*\*Projected by Utah Department of Transportation; October 145 percent of A.A.D.T.C.

B. Provide additional visitor protection from falling rock while on the cave trail

Visitor safety from falling rocks along the cave trail has been a matter of concern, discussion and even litigation at Timpanogos Cave National Monument for many years.

While rockfall can occur at any point along the trail, by far most rock fall incidents occur on the upper third of the trail. This upper portion of the trail is quite steep. It crosses and recrosses an extremely steep drainage seven times before reaching the cave entrance. This drainage acts as a chute which funnels rocks down the side of the canyon and across the trail.

In 1976, an Environmental Assessment: Rockfall Protection, was completed. Following the assessment, a rockfall barrier was constructed across the drainage above the trail. This barrier, which replaced a smaller barrier constructed in 1969, is designed to stop rocks at the head of the drainage, thereby preventing them from falling onto the trail below. Each season ten to twenty tons of rocks are retained by the barrier. (For a more detailed description of the rock barrier, see Facility Analysis, Appendix A.)

In addition to the rock barrier, a rockfall shelter has been constructed over the cave exit. Visitors are warned of the rockfall danger by two moving light signs at the visitor

center, a message printed on the tour tickets, and several signs along the trail itself. The cave trail is closed to visitors during periods of high winds or storms when the rockfall danger is extremely high.

Despite these measures, incidents of visitors being struck by falling rocks continue to occur. Given the steep, rugged terrain in American Fork Canyon and the unstable nature of the rock formations, it is probably impossible to completely eliminate the rockfall hazard. The problem, rather, is to determine the best means of providing the highest level of visitor safety without destroying the natural values of the area.

C. Provide the visitor with an opportunity to develop a better comprehension of the Monument's primary resource--the caves

Timpanogos Cave National Monument was established to preserve and protect Timpanogos Cave. Timpanogos Cave, along with Hansen Cave and Middle Cave, are the primary resources of the area. The primary objective of the interpretive program is to instill an understanding of the significance of these resources in the park visitor. The understanding will increase their appreciation and enjoyment of the resources and gain their cooperation and compliance with park regulations designed to preserve and protect those resources.

Due to the strenuous hike required to reach the caves and because of the limited number of visitors that can tour the caves on a given day, many visitors are not able to visit the caves. Each year 10,000 to 20,000 visitors are turned away from visiting the caves. In addition, because of snow and ice on the cave trail, the caves are closed to the public at least six months each year, limiting several thousand visitors to the facilities on the canyon floor. For all of these visitors the quality of the experience and their comprehension of the primary resource is almost totally dependent on the interpretive media.

Again, because of the limited number of tours and the great demand for cave tours, many visitors must wait from one to three hours at the visitor center before they can start up the trail for their tour and may have to wait an additional 30-45 minutes at the Grotto (cave entrance area) before they begin their cave tour. While these times are now a source of intense frustration for many visitors, with proper interpretive media they offer a chance for the visitor to greatly increase their comprehension of the resources of the park.

D. Reduce damage to natural resources

Most of the damage to the natural resources within the Monument is due to the impact of large numbers of visitors in a relatively small area. The damage includes compaction of the soil, loss of vegetation, and soil erosion along the river near

the visitor center and in the picnic area, and erosion, loss of vegetation, and increased rockfall caused by short-cutting along the cave trail. A management strategy is needed to eliminate or at least mitigate the damage.

E. Provide an opportunity for additional visitors to tour the caves

Both for the protection of the cave formations and for the enjoyment of the visitor, it is necessary to limit the tour size to no more than 20 people per tour. The narrow passages, small rooms, and extremely delicate formations require that groups be limited to a size which the tour guide can maintain as a cohesive tour. In order to allow enough space so that the tours do not conflict with each other, a minimum of 10 minutes must be allowed between tours. Therefore, the carrying capacity of the cave is no more than 120 visitors per hour.

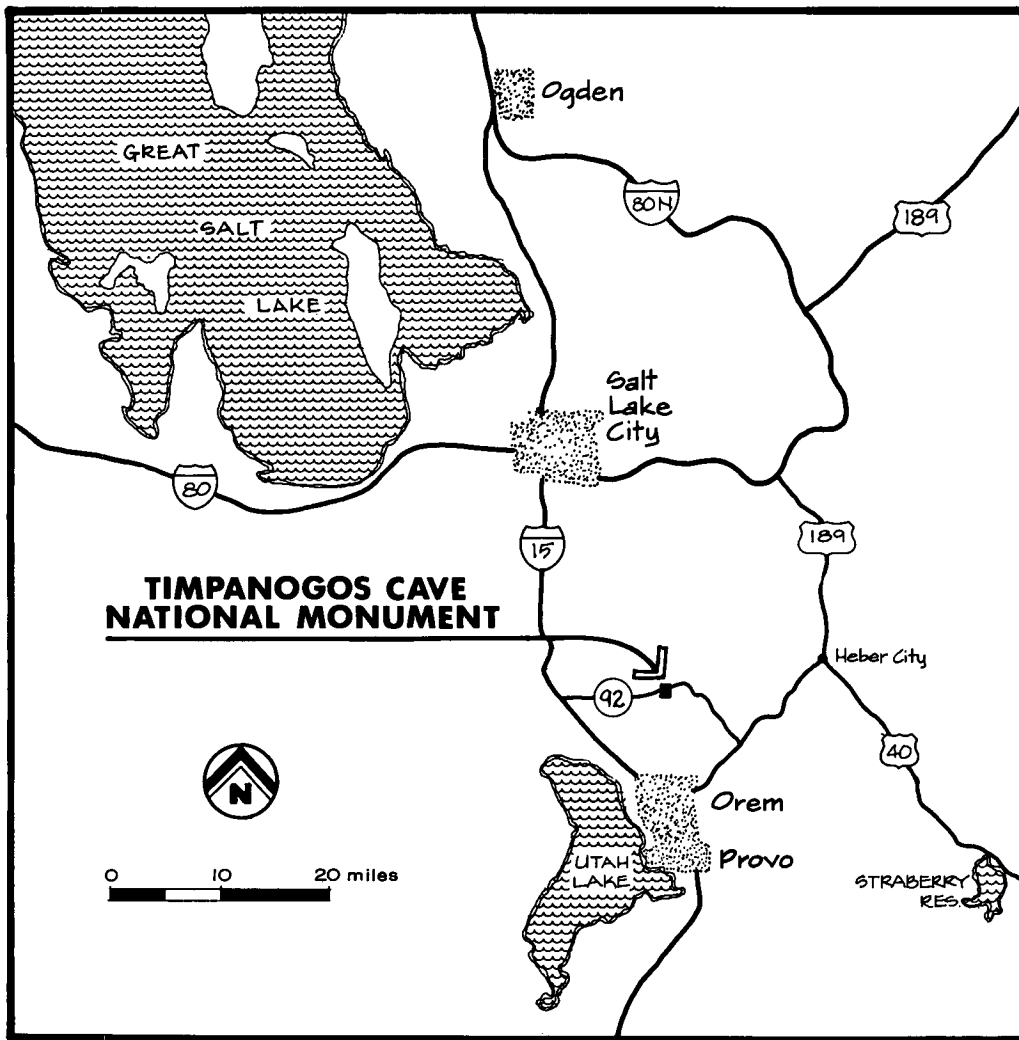
Because of ice and snow on the cave trail, the visitor season is normally limited to a maximum of 5 months (May through October). Access to the caves, during the tour season, must be limited to daylight hours since the steep canyon wall which the trail follows makes travel on the trail after dark extremely hazardous.

Within these limits and keeping in mind that the primary objective of the monument is the protection and preservation of the cave resources, methods should be explored to maximize the number of visitors given the opportunity to visit the caves.

F. Determine the level of day use activities that should be provided in the park

Day use facilities in the monument include the visitor center, the picnic area, and the nature trail. A small concession facility is located at the visitor center. (For further details, see Facility Analysis, Appendix A.)

All of these facilities are well used by park visitors. This plan should address the feasibility and need for further day use development.



# Vicinity Map

## Timpanogos Cave National Monument

U.S. Dept. of the Interior - National Park Service

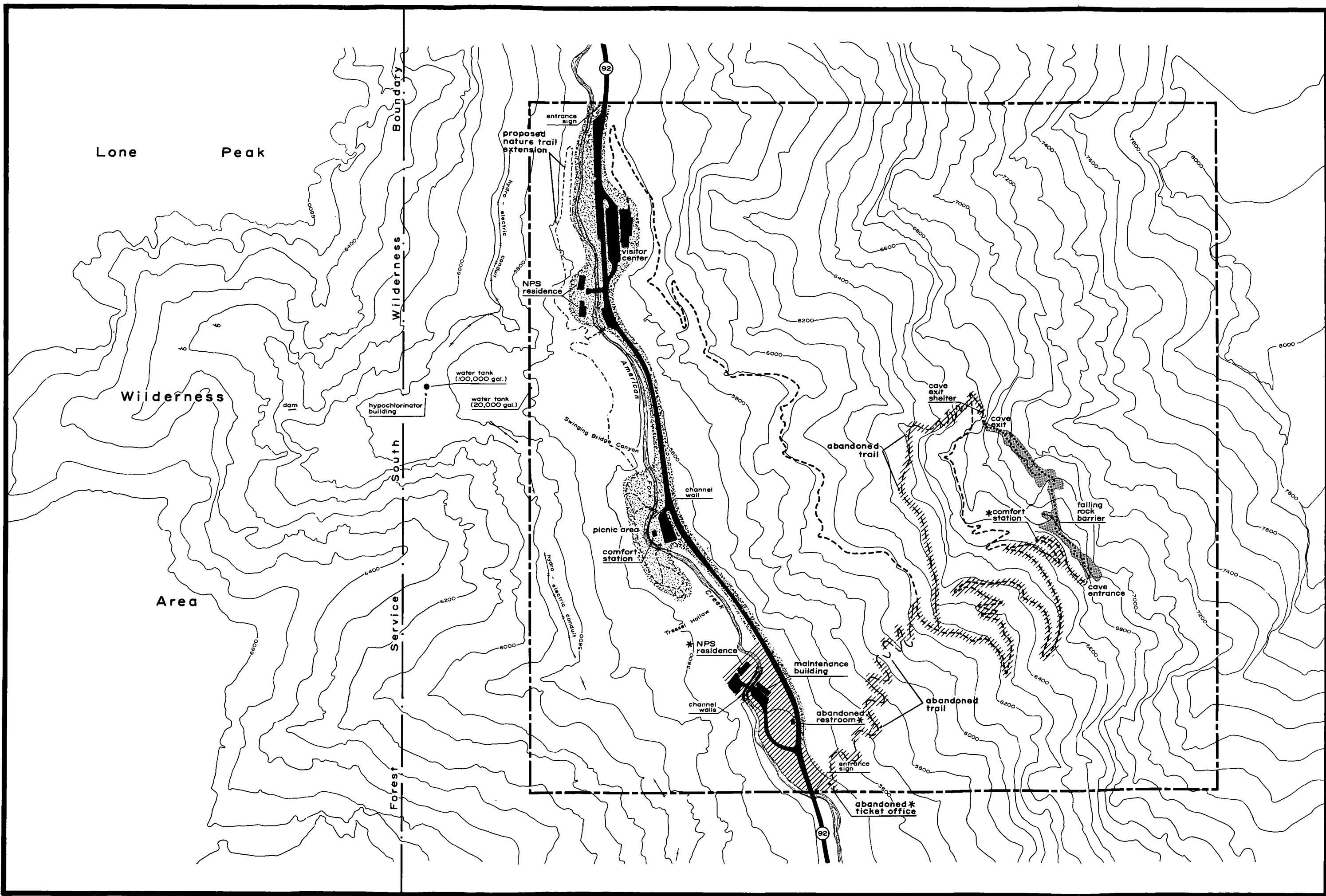
## V. BRIEF DESCRIPTION OF THE PARK

Timpanogos Cave National Monument is located in Utah County, Utah. The 250 acre monument is situated in rugged and scenic American Fork Canyon. The primary resources of the area are three limestone caves: Hansen, Middle, and Timpanogos, connected by manmade tunnels.

President Warren G. Harding by Proclamation No. 1640, dated October 14, 1922, under the authority of the Act of June 8, 1906, (34 Stat. 225), established Timpanogos Cave National Monument. The series of three limestone caves was placed under the jurisdiction of the National Forest Service to be protected for its "unusual scientific interest and importance." Executive Order No. 6166, dated June 10, 1933, placed all national monuments under the jurisdiction of the Department of the Interior and transfer of Timpanogos Cave to the National Park Service occurred on July 1, 1934. Under provision of the National Park Service Organic Act of 1916, the area is to be managed in a manner which will conserve the natural resources and provide for public use and enjoyment.

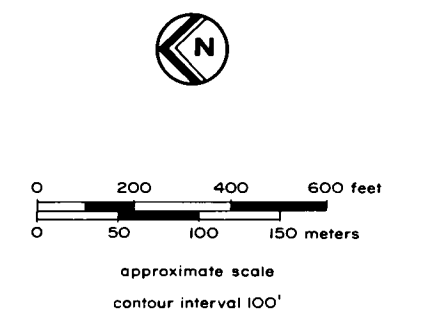
There have been no significant boundary changes since establishment of the monument in 1922. However, a subsequent survey (1945) determined that the boundary as marked on the ground did not coincide with the diagram which formed part of the 1922 proclamation. Therefore, the description of the boundary was changed to conform with the physical boundary by Presidential Proclamation 3458, dated March 27, 1962.





**Legend**

	monument boundary
	cave trail
	nature trail
	picnic trail
	cave access trail
	spring
	natural zone - 94%
	outstanding natural feature subzone (underground)
	development zone - 4.5%
	historic zone - 1.5%
	structure included in historic zone



**Existing Land Management and Use**

**Timpanogos Cave National Monument**  
Utah

U.S. Department of the Interior - National Park Service

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## VI. THE PROPOSAL AND ALTERNATIVES ADDRESSING THE ISSUES

The following constitutes the National Park Service's General Management Plan for Timpanogos Cave National Monument. The General Management Plan considers the park as an integrated system, and gives a broad framework for integrating resource management, visitor use, and development strategies with each other; provides the rationale behind them; and relates them to the plans and activities of other interests in the park and its vicinity. It proposes specific actions and programs for each of these areas of management concern, and provides the rationale behind these specific proposals.

In addition to the actions and management strategies selected for inclusion in this plan, a number of alternative actions and strategies were considered. At a minimum, the alternative of continuing present action was considered for each issue. A detailed description of the other alternatives considered may be found in the "Environmental Consequences of the Proposed Action and Alternatives," section of the Environmental Assessment dated May 1983.

### A. Land Use Management

Most of Timpanogos Cave National Monument is in a natural management zone. The cave itself is classified as an outstanding natural feature subzone. The natural zone comprises 94 percent of the park.

The remaining land is divided into an historic zone (1½ percent) and a development zone (4½ percent). The historic zone contains the Timpanogos Cave Historic District which is located on the National Register of Historic Places. Within the zone are found the old cave trail, cave trail restroom, and several stone structures dating from the 1930's and 1940's. The majority of the structures are located along Highway 92 just inside the west boundary of the monument.

The development zone includes the visitor center, parking areas, picnic area, residences and Utah Highway 92, all located on the canyon floor.

This proposal does not change the existing management zones nor are changes in the external boundary proposed.

### B. Resource Management

The caves, Hansen, Middle and particularly Timpanogos, are the prime resources of the area. A maximum carrying capacity of 120 visitors per hour has been established for the caves. The 120 visitors per hour would be divided into six tours of no more than 20 persons each, with tours spaced ten minutes apart. This carrying capacity is based in part on many years of experience in conducting tours of the cave. But the physical size of the caves is the principle factor in determining this carrying capacity.

The 120 visitors per hour carrying capacity is a maximum figure. Continuous monitoring will be required to determine the effect of visitors on the caves. Monitoring will include temperature, humidity, air flow, air quality, dust, and rate of formation growth/deterioration. Any change which adversely affects the cave formations will be mitigated or carrying capacity will be reduced to eliminate the damage. The reduction may be in annual, daily, or hourly capacity as appropriate to correct any problems which arise; however, reduced visitor use will be implemented only when there is no other feasible means of mitigating the damage.

The program of monitoring is also needed to detect any adverse impacts of outside activities, particularly airborne industrial pollutants and adjacent land uses on the caves.

#### 1. Reduce Rockfall Hazard

The steep canyon wall which the cave trail follows from the visitor center to the cave is the source of much of the beauty and charm of the area. Unfortunately, since it is subject to frequent rockfall, this canyon wall is also a source of danger to park visitors. The drainages on the upper third of the trail have the greatest number of rockfall incidents, yet these exposed areas are the very places many visitors choose to stop and rest. Not being familiar with the steep canyon terrain, these visitors feel a false security in the openness of these drainages.

While it is not possible to provide greater protection for the visitor without causing severe damage to the natural values of the area, it is possible to increase the safety of the visitor by making them aware of the potential danger areas.

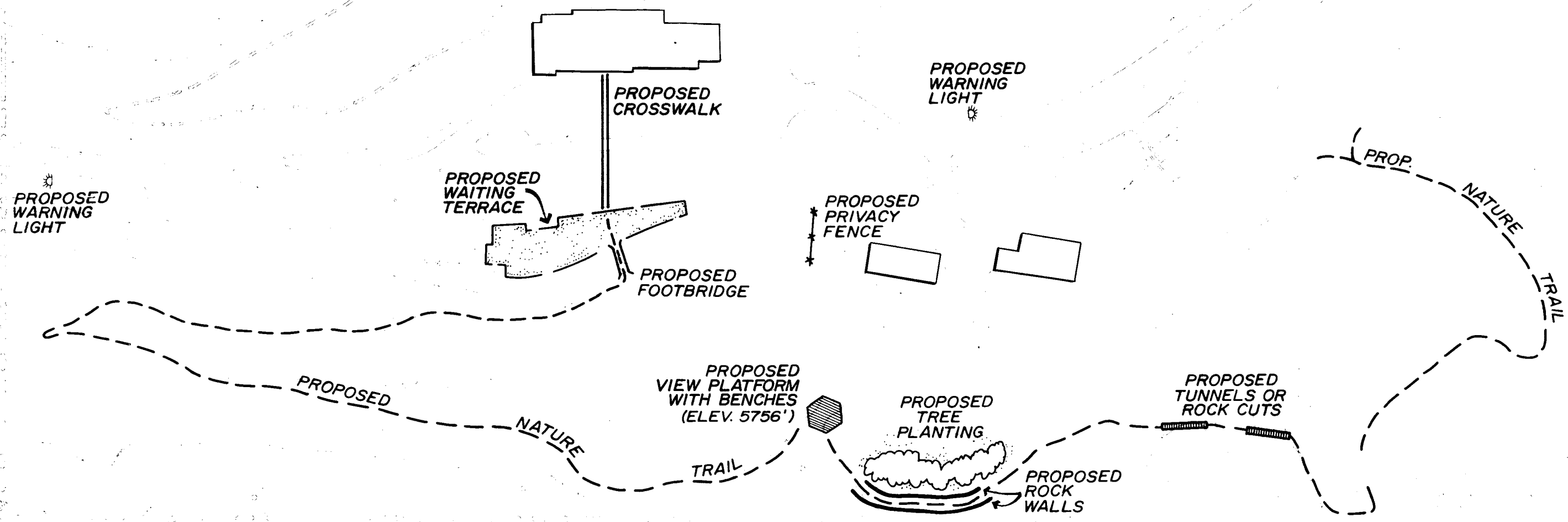
The areas of greatest rockfall hazard will be identified by actually striping the trail surface with a noticeable but not obtrusive color of paint. The striping, along with appropriate signing, is intended to increase the visitors awareness for relatively short, but critical, sections of the trail. If the visitors alertness can be increased while crossing the areas of greatest rockfall, many rockfall injuries can be eliminated.

If rockfall incidents continue, further study may be needed to examine additional safety measures.

#### 2. Mitigate Natural Resources Problems

Action is needed to mitigate or eliminate the adverse effects of the heavy visitation on the natural environment.

Along the cave trail, shortcutting of the switchbacks especially on the upper trail, is causing loss of vegetation and considerable soil erosion and greatly increased rockfall danger. To correct the situation, the shortcutting must be



PROPOSED WARNING LIGHT

PROPOSED WAITING TERRACE

PROPOSED CROSSWALK

PROPOSED FOOTBRIDGE

PROPOSED PRIVACY FENCE

PROPOSED WARNING LIGHT

PROP.

NATURE TRAIL

TRAIL

PROPOSED

NATURE

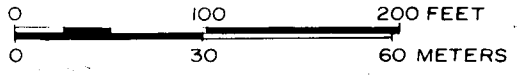
TRAIL

PROPOSED VIEW PLATFORM WITH BENCHES (ELEV. 5756')

PROPOSED TREE PLANTING

PROPOSED ROCK WALLS

PROPOSED TUNNELS OR ROCK CUTS



PARK SERVICE/  
FOREST SERVICE BOUNDARY  
CAVE ACCESS TRAIL  
EXISTING NATURE TRAIL  
POWER POLE

**DEVELOPMENT CONCEPT PLAN**  
**TIMPANOGOS CAVE NATIONAL MONUMENT**  
U.S. DEPARTMENT OF THE INTERIOR-NATIONAL PARK SERVICE

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stopped. In order to do this, buck and rail fences will be constructed in areas subject to shortcutting, or in areas where they are more appropriate and effective, sections of fir trees with branches intact will be used. Appropriate signing will be used to inform visitors of the purpose of the fencing and to gain the cooperation of the vast majority of trail users. Once the source of the problem is eliminated, a variety of techniques may be used to stabilize the slopes, including mulching, water bars, and netting. This will allow natural regeneration of the vegetation. Supplemental plantings will be used as necessary to insure adequate revegetation.

The area between the highway and the river directly in front of the visitor center is heavily used by visitors waiting for cave tours. This heavy use has resulted in almost total loss of ground cover vegetation, soil compaction, and erosion severe enough to expose tree roots in many places. In order to correct this situation, a specific site plan will be needed. This plan will include artificial ground covering to reduce the soil compaction and erosion, plantings to restore ground cover where possible, a drinking fountain, and seating for waiting visitors.

In conjunction with the proposed nature trail, an area on the north bank of the river will also be available for waiting visitors. This additional area will spread out the impact and reduce the resource damage. In addition, the trail itself will provide an alternative activity which will reduce the length of time and number of visitors in this area.

Heavy use is also resulting in loss of vegetation and erosion in the picnic area. Since the area has paved walks, the damage is already mitigated to some extent. Where necessary, temporary fencing will be constructed and plantings used to re-establish ground cover. Climbing the steep slope along the north side of the picnic area has resulted in rocks sliding into some of the sites. Stone retaining walls will be used to prevent sliding rocks from reaching the picnic sites and injuring visitors using those sites. The retaining walls along with the appropriate signing will eliminate, to some extent, climbing on the slope.

The rerouting of the nature trail is the only part of this plan which will have a negative effect on the natural resources of the monument. The new trail is needed for the safety of park visitors and for their enjoyment of the area. The anticipated adverse affects (loss of vegetation, disruption of soil and rock formations) are minor. These impacts will be minimized by careful routing of the trail. The only irreversible impact will be the removal of rock along a short portion of the trail which must pass through a rock outcrop.

### 3. Cultural Resources:

The cultural resources of the area are largely included in the Timpanogos Cave Historic District or park museum collection. No change in the use or management of these resources is proposed.

#### C. Visitor Use

The primary visitor activity is touring the caves. To a great extent other activities are secondary to the cave tour and are engaged in mainly by visitors either waiting for or returning from the cave tour. Other activities include picnicking, use of the visitor center and concession facilities, and walking the nature trail.

##### 1. Reduce Vehicle/Pedestrian Conflict on Utah 92

With the cooperation and assistance of the Utah Highway Department, a plan has been devised to reduce the vehicle/pedestrian conflict along Utah 92 near the visitor center and provide safer conditions for the visitors using the park facilities.

In order to warn approaching drivers of the congested conditions, the State will provide pedestrian crossing signs including flashing yellow lights. The park will provide the electric power and operate the flashers. The yellow flashers will be operated only when visitors are actually using the parking areas north of the highway and a hazardous condition exists. By using the flashing light only when needed, even local drivers will be aware of them and reduce their speed. (If the flashers were use full-time, the local drivers would soon become so used to them that they would begin to ignore the signs.) To further reinforce the flashing lights, law enforcement activities will be geared to coincide with their use.

Under the present conditions, it is difficult to distinguish the highway lanes from the parking area and drivers attempting to park on the road shoulder often leave their vehicles partially in the traffic lane. In order to define the traffic lane and reduce these problems, the State will provide shoulder striping through the monument. Again with the cooperation of the State highway Department "No Parking" signs will be installed to prevent parking on the road shoulder. These signs will be kept to a minimum and will be placed only in areas in which a persistant problem exists.

Probably the most hazardous situation is created by visitors attempting to reach the nature trail from the visitor center area. By rerouting the nature trail so that it begins directly across the highway from the visitor center, the need for visitors to walk along the narrow road shoulder or cross the highway at a blind curve will be eliminated.

2. Provide Better Comprehension of Primary Resources (see Interpretive Prospectus)

3. Provide Opportunities for Additional Visitors to Tour the Caves:

Touring the caves is the primary reason visitors come to Timpanogos Cave National Monument. Tours should be provided for the maximum number of visitors consistent with protection and preservation of the resource and within realistic fiscal limits.

Presently 60-70 thousand visitors tour the caves each year. However, 20 thousand or nearly one-fourth of those wanting cave tours are turned away. Some of these turn-aways are unavoidable, such as those physically unable to hike to the cave or those arriving too late in the day, but the vast majority are the result of all tours for the day being full.

Several strategies will be used to provide tours for additional visitors. However, in no case will the carrying capacity of 120 visitors per hour be exceeded. It must be recognized that on certain days; 4th of July, 24th of July, and most summer Saturdays, the demand far exceeds the carrying capacity of the caves and regardless of the strategies adopted, sizeable number of visitors will be turned away.

The most severe problems with turn-aways exists from mid-June until schools begin opening in late August. Two strategies are proposed for reducing the number of turn-aways during this period. First, the number of tours presented on weekdays can be increased. Since the cave is operating well below the carrying capacity during weekdays, by increasing the number of tours per day most of these turnaways can be eliminated during the week.

The second strategy is to lengthen the tour day by beginning tours earlier and possibly extending them later in the day. These tours are the only means of accommodating additional visitors on heavy visitation days. Since the tours will be presented during the least heavily visited parts of the day, they will be presented largely as special theme tours in order to encourage visitors to use these tours. These special themes will include photographers tours, historic tours, flashlight tours, and cave tours in conjunction with nature walks up the cave trail. In addition to the primary purpose of spreading visitation more evenly over the day, these special theme tours will have a secondary, but important benefit for the interpretive program. They will provide variety in the interpretive tour program. Not only will this variety enhance the visitor's experience, but hopefully it will increase the effectiveness of tour guides by reducing "guide burnout", a condition resulting from presenting basically the same material tour after tour, for the entire season. The special theme tours will allow the guides to use their creativity and will add much needed variety to the job.

On an annual basis, more opportunities to tour the caves can be made available by extending the visitor season. Most years weather conditions will allow cave tours to safely operate from the first of May until the end of October. This would allow tours to be given six weeks longer than at present. Based on the present spring and fall operation, it is expected that tours during this additional time will be 75 percent full (compared with 90 percent during the summer).

#### 4. Day Use

No further day use development is proposed. While the existing facilities are heavily used, the lack of space on the canyon floor within the monument and the existence of numerous day use areas operated by the Forest Service in the canyon were the major factors in determining not to increase these facilities within the monument.

#### D. General Development

Construction of the rerouted nature trail is the only development proposed in this plan. The new section of nature trail will be approximately one-half mile in length. Because of the steep, erosion prone slopes and because an anticipated 100,000 visitors will use the trail each year, a four-foot wide, hard surface trail is proposed.

The construction of the trail will include construction of a foot bridge across the American Fork River. Also, at one point on the trail, in order to cross a rock outcropping, tunnels will be required or a notch will need to be cut in the rock for approximately 50 feet.

### VII. INTERPRETIVE PROSPECTUS

The following section of this plan will serve as the Interpretive Prospectus for Timpanogos Cave National Monument. The purpose of this prospectus is to define the primary and secondary themes for Timpanogos Cave and insure that the interpretive media 1) meet management and interpretive objectives, 2) interpret park themes, 3) correct existing deficiencies, and 4) make appropriate use of media.

#### A. Interpretive Objectives

The primary objective of the interpretive program is to provide an opportunity for the visitors to gain an understanding of the significance of Timpanogos Cave. Through an understanding of the importance and uniqueness of the cave the visitor's appreciation and enjoyment of the area will be increased and their cooperation can be gained in protecting the resource.

Specific objectives for the interpretive media are:



1. To provide a range of secondary visitor activities and interpretive programs to supplement the primary activity of the guided cave tour and associated three-mile hike over the scenic surfaced trail.
2. To give visual interpretation of the caves to visitors who are not able to visit them.
3. To provide background information for visitors waiting for cave tours.
4. To provide interpretation of park resources management problems thus giving visitors an opportunity to cooperate in their solution.
5. To provide media interpretation that focuses on the resources of this park; the human and natural history of the area, cave formation, speleothems and the geology of the area.
6. To deploy a methodology devised to gauge the efficiency of our efforts and achievement of above stated objectives.

B. Interpretive Themes

The interpretive themes for the park are:

1. Primary Theme

The geologic processes which led to the creation of Timpanogos Cave and it's exquisite cave formations.

2. Secondary Themes

a. The Human History

The presence of man in American Fork Canyon.

1. Exploration and settlement (1776-1930).
2. Discovery of the caves (1887-1921).
3. Man caused changes in the canyon environment (1870-present).

b. The Natural History of American Fork Canyon.

1. The ongoing geologic processes which shape the canyon.
2. Natural communities within the canyon.

An environmental theme should be integrated into all interpretive programs whenever possible and desirable. While the major emphasis will be on interpreting the primary theme, a balance should be achieved between the geologic, human history, and natural history themes.

### C. Deficiencies

The following deficiencies have been noted in the present interpretive media:

1. The audio visual program with its broad environmental theme does not meet the specific needs of the park visitors. The program and equipment are outdated.
2. The museum exhibits do not effectively present park interpretive themes and do not make efficient use of available floor space.
3. More effective interpretive media are needed at the Grotto.
4. Interpretive publications dealing with Timpanogos Cave are practically non-existent.

### D. Media

While the guided cave tour will continue to be the basis of the interpretive program, the interpretive experience of those visitors not able to tour the cave will be almost totally dependent on the quality and content of the interpretive media. Because of the limited carrying capacity of the caves, a large percentage of the visitors are not able to tour the cave. This number will increase as park visitation grows, while the carrying capacity of the cave remains constant.

For those visitors waiting for cave tours, the interpretive media should provide background information which will enhance the actual cave tour and will make the entire park experience more meaningful and enjoyable.

The interpretive media should communicate resource management problems to park visitors to gain their cooperation in solving these problems. Through understanding the fragile nature of the cave environment, the extremely slow growth rate of the formations and the damage caused by human contact, the visitors will more willingly accept the restrictions placed on their activities in the cave. Likewise, through awareness and understanding of the ongoing geologic processes in the canyon, the visitors will become aware of the cause of the rockfall hazard and will more readily comply with trail use regulations designed for their protection.

Interpretive media is needed at three locations: 1) the visitor center, 2) the Grotto, and 3) along the trails.

#### 1. Visitor Center - Lobby

The primary functions of the visitor center lobby are the scheduling of cave tours, collecting of tour fees, and the dissemination of information through printed material and contact with a ranger/interpreter. Cooperating association

sales items are also available in the lobby. The lobby design and message arrangement should encourage visitor use of the museum and its exhibits.

a. Audiovisual

The current audiovisual program is a 12 minute slide/tape program presented in a 100-seat auditorium. Much of this program is devoted to a rather broad environmental theme which does not meet the specific needs of the park visitors nor meet the interpretive objectives of the area. The slides and equipment used are outdated.

A new long range program should be designed which will: 1) provide a good visual understanding of the cave for those visitors that cannot tour the cave, and 2) graphically interpret the geologic process at work in the cave. Since motion would greatly enhance the interpretation of the geologic process, a 12-15 minute motion picture (video-disc) is the preferred media.

Immediate: The immediate goal is to produce a new slide program, meeting the stated objectives, under the Harpers Ferry AU Minor Rehabilitation program.

b. Exhibits

There are presently nine exhibits in the museum, seven of which are flat panels and the remaining two are wall mounted glass-cased exhibits. These exhibits focus on the geologic and human history of the area.

The museum receives relatively little use, even though thousands of visitors pass through the visitor center each year. While the focus of the exhibits is appropriate, the exhibits themselves are inadequate. New exhibits are needed which are much more dynamic and make better use of the available floor space (860 sq. ft.).

In addition to those presently displayed, several spelothems from the caves are in the park museum collection and may be incorporated into exhibits interpreting the cave geology. While these exhibits cannot replace the experience of a cave tour, they will give those visitors that are unable to tour the caves some contact with the actual resource.

Much of the interpretation of the human history theme will be accomplished with museum exhibits. The exhibits should cover the following historic periods:

1. Lake Bonneville (Pre-history).
2. First European Contact.
3. The Fur Trade Era.

4. Mormon Settlement.

5. Mining Era.

Objects and artifacts can be obtained which will support these exhibit themes.

2. The Grotto

The Grotto is a rock overhang located at the end of the cave trail just outside the entrance to Hansen Cave. This area is used as a waiting area for visitors who arrive before time for their tour. Although some visitors wait as long as an hour, a 25-30 minute wait would be normal. Drinking water and benches for resting are available at the Grotto. The only interpretive media is one flat panel exhibit dealing with the discovery of Hansen Cave.

In order to take advantage of the excellent view of the canyon, interpretation should be through easel mounted wayside exhibits. Since electric power and a secure room are available at the Grotto, visitor activated tape messages could easily be incorporated into these exhibits but are not proposed pending further investigation.

The wayside exhibits should be a continuation and expansion of the cave trail interpretation. The following subject would be appropriate for interpretation at the Grotto.

- a. The Discovery of the Caves.
- b. The Fossils found in the Limestone near the Cave Entrance.
- c. The Canyon.

3. Trails

a. The Cave Trail

A self-guiding trail booklet, available at the visitor center, interprets geology and plantlife along the cave trail. In addition, the geologic strata is interpreted through a large wayside near the beginning of the trail and small markers as each strata is reached along the trail. Since the primary purpose of this trail is to provide access to the caves, the present level of interpretation is satisfactory.

b. Nature Trail

With appropriate interpretation, the rerouted nature trail will provide an excellent facility for park visitors. The new trail will be 3/4 miles in length as opposed to the present 1/4 mile trail. It will cover a much greater range of elevation and will provide excellent views of the canyon. Since it will be located on the south facing canyon wall, this trail will be

open for visitor use most of the year (April-November). This will provide an appropriate and enjoyable activity for many of the visitors who cannot visit the caves.

Because of the anticipated nature-of-use on this trail (a secondary activity while waiting for cave tours or off-season use) and the extremely poor experience this area has had with trail guides placed at the trail head, a series of waysite markers with ample graphics and supporting text will be used to interpret this trail. In addition, the markers will offer different interpretive opportunities than the media found elsewhere in the park. One major wayside exhibit will be located at the viewing terrace.

The nature trail will provide the principle opportunity to interpret the natural history theme. Keyed to scenes along the trail, the markers will interpret the natural communities in the canyon and the canyon's effect on these communities.

#### c. Publications

A number of publications, dealing primarily with natural history, are sold at the visitor center through the Southwest Park and Monuments Association (SPMA). However, interpretive publications dealing specifically with Timpanogos Cave are practically non-existent. The cave trail self-guiding booklet is the only quality interpretive publication available. However, a full-color, high quality book produced by SPMA is nearing completion. This book will form the basis of a publications program for the area. Work will continue through the SPMA to develop appropriate, high quality publications.

#### d. Museum Collections

The museum collections will be limited to items which are unique to the park and are relevant to the purpose of the park or those items needed for specific interpretive uses. (For more detailed information see "Scope of Collections Statement", Appendix C.)

#### E. Staffing

The interpretive staff consists of one permanent employee, Chief, of Interpretation and Resource Management, and 12 Seasonal Cave Guides.

### VIII. PLAN IMPLEMENTATION:

The following actions are needed to implement the plan. Since the plan contains minimal development, a set sequence is not necessary. Actions to implement the plans will be initiated as funding is available.

A. Reduce Vehicle/Pedestrian Conflict:

<u>Action</u>	<u>Cost</u>
Install New Pedestrian Crossing Signs with Flashing Lights	Signs: Provided by Utah Highway Department Install Power Source and Controls: \$ 1,000  Utilities Annual: \$ 60
-----	
Shoulder Striping and "No Parking" Signs	Providing by Utah State Highway Department
-----	
Reroute Nature Trails: ½ Mile of New Trail (with view platform, benches, and tunnels)	Construction: \$72,000 Annual Operating Costs: \$ 2,000  Chipseal (On 3 Year Cycle): \$ 4,000
-----	

B. Provide Additional Rockfall Warning:

<u>Action</u>	<u>Cost</u>
Stipe Most Dangerous Sections of the Cave Trail Including Appropriate Signing	Initial Cost: \$ 750 Annual Maint: \$ 200
-----	

C. Increase Visitors Comprehension of the Monument's Resources:

<u>Action</u>	<u>Cost</u>
Revise Slide Program provide new 16 mm. motion picture	Production: \$75,000  Annual Operating Cost: No In-crease
-----	
New Museum Exhibits	Design and Production \$129,000  Annual Operating Cost Variable
-----	

C. Increase Visitors Comprehension of the Monument's Resources  
(Continued):

<u>Action</u>	<u>Cost</u>
Media For Grotto	Design and Produce Four Waysides \$15,000 (two with audio)
Trail Markers For Nature Trail	Design and Produce Trail Markers \$ 8,000 (Approx. 15)
	Annual Operating Costs \$ 1,000

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D. Reduce Damage to the Natural Resources

<u>Action</u>	<u>Cost</u>
Stop Shortcutting On Cave Trail and revegetate areas; 5-year program	Annual Costs: Year 1 Personnel \$ 1,000 Materials \$ 500
	Annual Costs: Year 2-5 Personnel \$ 500 Materials \$ 200
Mitigate Visitor Impact Along River at the Visitor Center (waiting terrace)	Site Plan A Construction \$63,000 (Includes area at the beginning of the Nature Trail North of the River)
Mitigate Damage In Picnic Area; 5 Year Program	Annual Cost: Year 1 Personnel \$ 1,000 Materials \$ 500
	Annual Cost: Year 2-5 Personnel \$ 200 Materials \$ 200

---

E. Provide Additional Cave Tours

Action  
Provide Additional  
Tours On Weekdays  
During Summer

Cost  
Personnel:  
0.6 Work-Years           \$7,700

Benefits: 700 Tours  
For Approximately 12,600  
Additional Visitors and  
\$12,600 Additional In  
Fees\*

Extend Hours Of  
Operation During Summer

Personnel:  
0.3 Work-Years           \$3,900

Benefits: 250 Tours  
For Approximately 3,750  
Additional Visitors and  
\$3,750 Additional In  
Fees\*

Extend Visitor Season  
In Spring and Fall  
(6 Weeks)

Personnel:  
0.5 Work Years           \$6,800

Benefits: 690 Tour  
For Approximately 7,300  
Additional Visitors and  
\$4,300 Additional In  
Fees (Fees are less due  
to large number of school  
groups during this time  
of year)\*

\*Fee level is assumed to be \$2.00 for visitors age 18 and  
over; \$1.00 for visitors 16 to 18.

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CONSTRUCTION COST ESTIMATE SUMMARY

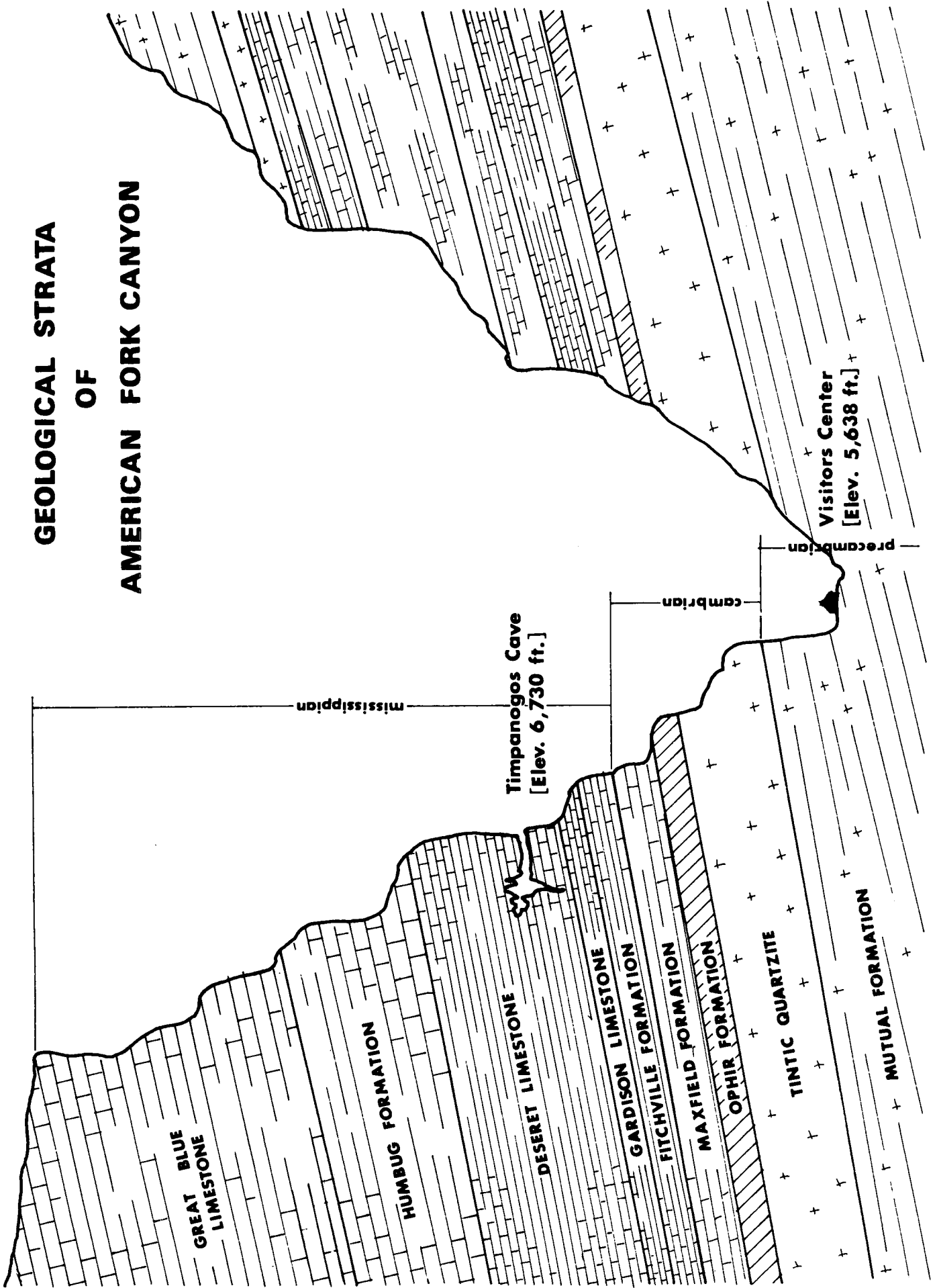
ITEM	CONSTRUCTION NET	ESTIMATE *GROSS
<u>Reduce Vehicle/Pedestrian Conflict:</u>		
Install Power Source and Controls	\$ 1,000	\$ 2,000
New Nature Trail Addition	\$ 72,000	\$105,000
 <u>Increase Visitors Comprehension of Monuments Resources:</u>		
Audio-Visual Program	\$ 75,000	\$126,000
Museum Exhibits	\$129,000	\$217,000
Wayside Exhibits - Grotto Area	\$ 15,000	\$ 25,000
Trail Markers - New Nature Trail	\$ 8,000	\$ 13,000
 <u>Reduce Damage to Natural Resources</u>		
Shortcut Barriers and		
Revegetation - Cave Trail	\$ 7,000	\$ 9,000
Waiting Terrace	\$ 63,000	\$ 92,000
Resource Protection Barriers and		
Revegetation - Picnic Area	\$ 3,000	\$ 5,000
<u>Total Construction Cost Estimate</u>	<u>\$373,000</u>	<u>\$594,000</u>

\*Includes: Planning, Project Supervision and Contingencies

ANNUAL OPERATIONS COST ESTIMATE INCREASE SUMMARY

<u>ITEM</u>	<u>PERSONNEL</u>	<u>OTHER</u>
<u>Reduce Vehicle/Pedestrian Conflict</u>		
Warning Light Utilities		\$ 60
Annual Operating Cost		\$2,000
Chip Seal (3-Year Cycle)		\$1,300
<u>Provide Additional Rockfall Warning</u>		
Striping		\$ 750
Annual Maintenance		\$ 200
<u>Increase Visitor Comprehension of</u>		
<u>Monuments Resources</u>		
Annual Operating Costs		\$1,000
<u>Provide Additional Cave Tours</u>		
<u>Additional Week Day Tours -</u>		
During Summer	\$ 7,700	
<u>Extend Hours of Operation -</u>		
During Summer	\$ 3,900	
Extend Visitor Use Season	\$ 6,800	
	SUBTOTALS:	
	\$18,400	\$5,300
<u>TOTAL ANNUAL OPERATIONS INCREASE COST ESTIMATE \$23,700</u>		

# GEOLOGICAL STRATA OF AMERICAN FORK CANYON



## IX. THE AFFECTED ENVIRONMENT

### A. Natural Resources

Timpanogos Cave National Monument is located in American Fork Canyon on the north flank of Mount Timpanogos (elevation 11,722'). Geologically, the canyon is young and, therefore, steep sided, narrow, and rugged. Elevation within the 250 acre monument ranges from 5,485' at river level to 8,035' near the southeast corner. A great variety of rock is found in the canyon (see Geological Strata diagram).

The canyon was formed (over thousands of years) by the erosive action of the American Fork River. Today the river continues its work on the canyon floor. The river varies from a small brook during the winter months to an extremely swift and dangerous river caused by the large snowmelt upcanyon during the early summer.

The climate is moderate. Summer highs are normally in the upper 80 degree range with extremes slightly over 100 degrees. Winter lows are normally above zero with extremes around -10 degrees. Several foot of snow falls in the canyon each winter. The snow melts quickly on the south facing slopes, but due to the lack of direct sunlight, accumulates throughout the winter on the north facing slopes. Snow and ice are normally found at the cave elevation from early November until mid-May.

Because of the depth and narrowness of the canyon, high winds are rare; however, direct sunlight does not reach the canyon floor for three months each winter.

The primary resource of the area is Timpanogos Cave located in the south wall of American Fork Canyon, 1,065 feet above the visitor center. Timpanogos Cave and nearby Hansen and Middle Caves are connected by manmade tunnels so that visitors enter the caves at Hansen Cave, travel through Middle Cave, and exit through Timpanogos Cave. The caves are small with no huge rooms or large passageways. Following the tour route, the total distance through the caves is 1,800 feet.

Stalactites, stalagmites, and other common features are found in the caves, but it is the tremendous number of helectites which make these caves unique. Helectites are small cave formations which twist and turn into strange and fantastic shapes as they grow from the cave walls or roof.

Due to changes in elevation and exposure, a wide variety of plants are found within the monument. These plants may generally be grouped into three categories by the location in which they are found. The south and west facing slopes, a warm, relatively dry environment, are dominated by gambrel oak. Other plants usually associated with this environment include Rocky Mountain juniper, hackberry, narrow and broad leaf mountain mahogany, squaw bush, big sage, and cliff rose.

The canyon floor provides a moist environment suitable for such large trees as cottonwood, box elder, and white fir mixed with choke cherry, Utah juniper, Oregon grape, and redosier dogwood.

The cool, moist, shaded environment of the north facing slopes support white fir, Douglas fir, redosier dogwood, bit tooth and mountain maple, elderberry, jamesia, dwarf juniper, and a variety of other plants.

Despite its small size, a variety of animals are found within the monument. Common animals include mule deer, skunks, raccoons, chipmunks, mice, and ground squirrels of several types. A few bats may be found in the caves, but they are not common. Cougars also live in the area; however, they are seldom seen.

Birdlife abounds in the monument. The most common types are wrens, thrashers, thrushes, kinglets, waxwings, vireos, and woodwarblers.

Several types of snakes, including the great basin rattlesnake, are found in the park and lizards are common on the rocky slopes.

There are no known endangered plants or animals in the monument.

The most serious resource problem is keeping the caves in a natural state despite the large number of visitors passing through them each year. Dust and lint brought in by visitors cling to the formations and cover the surface of the cave pools. Algae is growing on several of the features in the cave because of the artificial lighting.

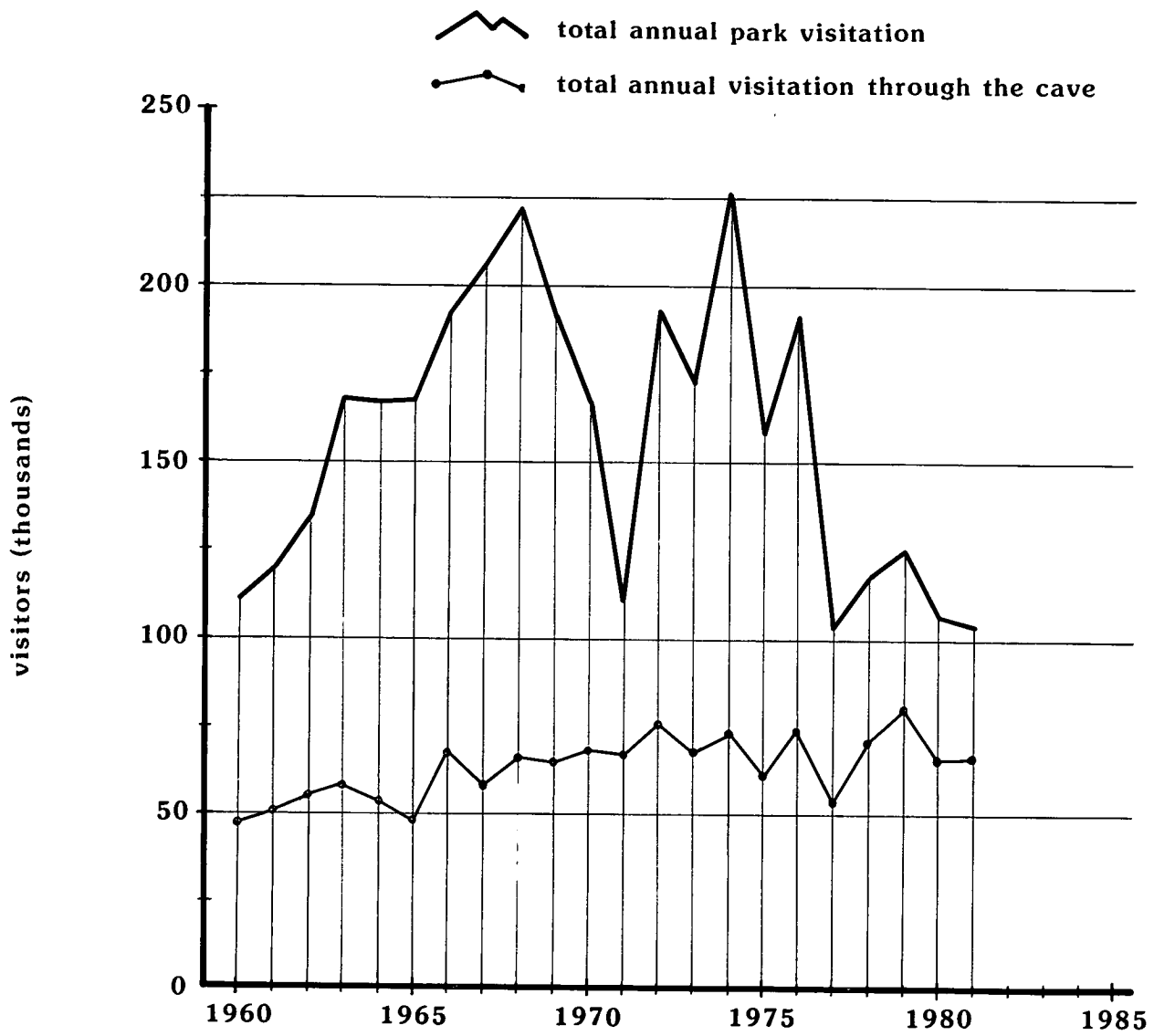
It is also likely that the unnatural airflow caused by the manmade tunnels and air pollutants from nearby industrial areas are damaging the cave formations. However, further research is needed to determine the exact nature and extent of this damage.

Short cutting along the upper section of the cave trail presents another major problem. This short cutting leads to loss of vegetation and erosion in an area in which it is extremely difficult to maintain ground cover or stabilize the slopes.

Because of the tremendous number of people using the area, ground cover is also being lost along the American Fork River across the highway from the visitor center and, to some extent, in the Swinging Bridge picnic area.

#### B. Cultural Resources

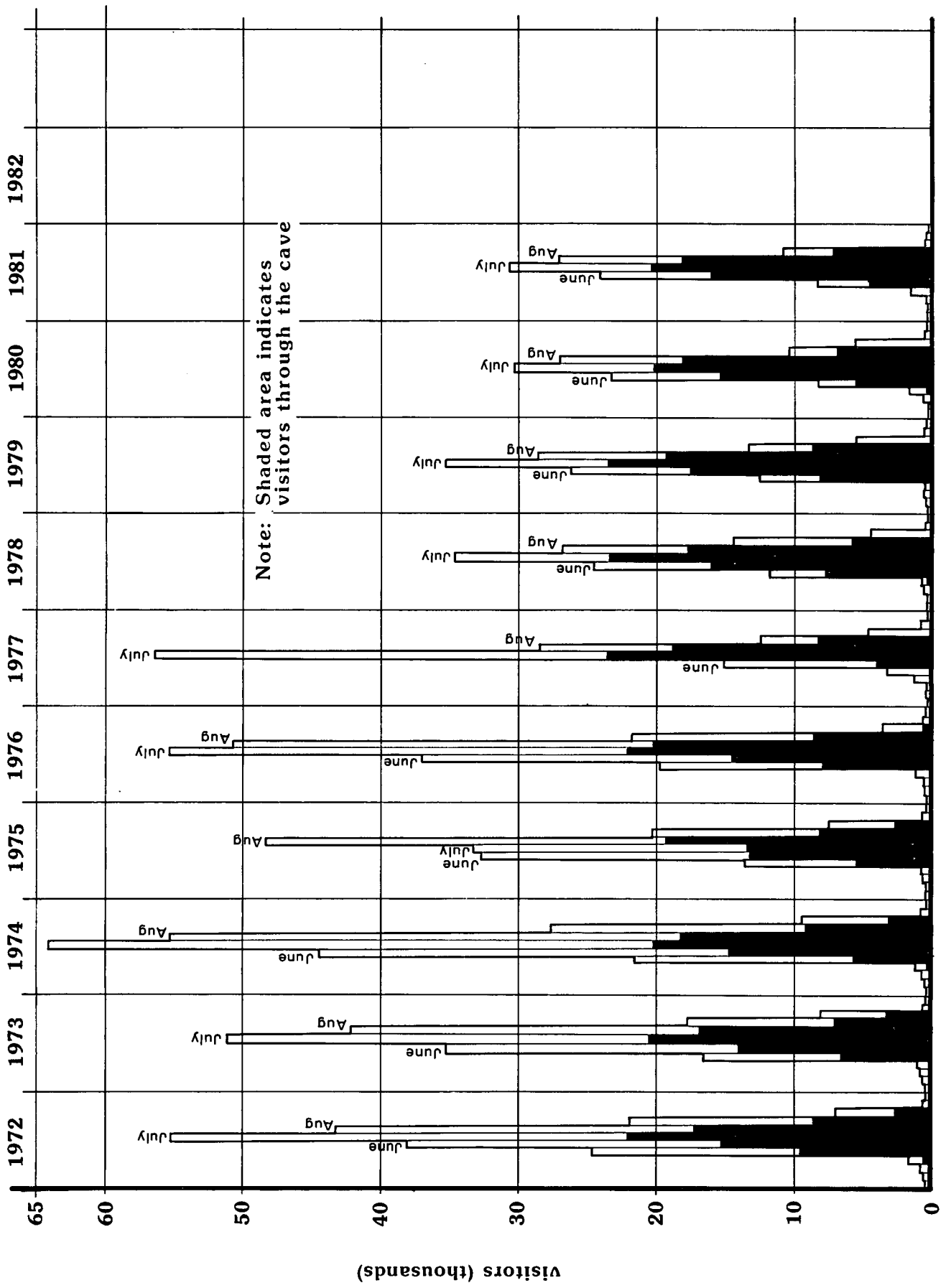
An archeological survey has been carried out in accordance with Executive Order 11593. The one site found, a Fremont style



# Annual Visitation

## Timpanogos Cave National Monument

U.S. Dept. of the Interior - National Park Service



# Visitation Trends

## Timpanogos Cave National Monument

U.S. Dept. of the Interior - National Park Service

anthropomorphic figure, does not meet the criteria for nomination to the National Register of Historic Places. The site is protected and inaccessible to the public due to its location in the backyard of a park residence. The survey report was completed in November 1975.

A List of Classified Structures Inventory was carried out in November 1975. A National Register nomination was submitted in February 1982 for the Timpanogos Cave Historical District which was placed on the Register October 13, 1982. The contributing structures of the Historic District are the following: Superintendent's Residence, Bridge, Comfort Station Building #126, Comfort Station Building #127, Two Cold Cellars, the Stone Storage Building, and the Timpanogos Cave Trail. All of these structures except the Cave Trail and Comfort Station #127 are located in the park residential area. (For a more detailed description, see Facility Analysis, Appendix A.)

C. Visitor Use Data

The 1981 visitor year is a fair example of visitation at Timpanogos Cave. The cave was open from May 17 through October 3 and 3,786 cave tours were conducted. These figures are very representative with current staffing.

PEAK DAYS

<u>DATE</u>	<u>NUMBER TOURS</u>	<u>CAVE VISITORS</u>	<u>TOTAL VISITORS</u>
7/18	53	1,082	2,794
7/4	55	1,116	2,727
8/22	53	1,085	2,671
7/25	54	1,087	2,264
8/15	53	1,052	2,241
8/8	46	1,010	2,225
7/24	54	1,074	2,112
7/11	54	1,078	2,111
6/27	53	1,050	2,090
8/1	50	991	1,971

Average Daily Visitation for July - 990 Visitors.

Visitation Analysis by Site and Activities:

Breakdown by area and facilities used:  
 Cave Visitors = 62 percent  
 Other Visitors = 38 percent

Approximately 75 percent of the park visitation occurs during June, July, and August. Visitation is comparatively light



during the first half of June because Highway 92 is still closed just past the monument and because of the cool weather. From mid-June until schools are open in late August, visitation is consistently heavy. During this period of heavy visitation, visitors who arrive before 10 a.m. may start up the trail for their cave tour immediately. Visitors arriving after 10 a.m. usually must wait at the visitor center before starting up the trail. On a normal weekday the wait will be from one to three hours by midafternoon. Quite often all tours for the day will be filled by 3 p.m.

This daily visitation pattern is consistent for all weekdays. The visitation pattern is similar on Sundays except visitation is extremely light during the morning. Saturday by far receives the heaviest visitation. Quite often there will be a line of visitors waiting at the door of the visitor center by 8 a.m. All tours for the day are usually filled by early afternoon and may fill as early as 11 a.m.

The Visitation Trends Graph illustrates a major decline in park visitation after 1977. This is an inaccurate picture since park visitation has always been calculated as a percentage of the cave tours. The percentage used to calculate present visitation figures were reversed in 1978. Note that cave tours on the Visitation Graph illustrate a more consistent trend. Cave tours are derived from actual count.

#### D. Regional Land Use and Regional Visitor Facilities and Services

Timpanogos Cave is surrounded by the Uinta National Forest. North of Utah Highway 92 (which bisects the park) the park is enclosed by the 30,088 acre Lone Peak Wilderness Area. Wilderness recreation is the primary use of this area and it will be managed to protect the integrity of the scenic beauty, watershed quality, wildlife habitat and other wilderness resource values. South of Highway 92, the Pleasant Grove Management Area surrounds the park. This area, which includes Provo Canyon and American Fork Canyon, is heavily used by local residents for various types of recreation such as sightseeing, camping, picnicking, hunting, fishing, and gathering forest products. Forest Service facilities in American Fork Canyon include three picnic areas and eight campgrounds (71 individual sites and several group sites).

Over the past few decades, the Wasatch front from Ogden to Provo has become increasingly urbanized. The population of Utah County, in which Timpanogos Cave is located, increased 58.3 percent in the decade of 1970-1980. While the area just outside the mouth of American Fork Canyon was largely small grain and livestock farms or fruit orchards 15 years ago, today it is predominately subdivided housing tracts. While this trend towards urbanization is expected to continue through at least the next decade, it should be much less intense than in the late 1970's. Because the monument is buffered by the

UINTA NATIONAL FOREST

WASATCH MOUNTAIN STATE PARK

Alpine

Alpine

Scenic

TIMPANOGOS CAVE NATIONAL MONUMENT

Deer Creek Res.

TO HEBER CITY

TO SALT LAKE CITY

92

74

146

92

Loop

American Fork

Pleasant Grove

114

189

Loop

Scenic

TO SALT LAKE CITY

15

Alpine

Utah Lake

Orem

UINTA NATIONAL FOREST

Provo

# AREA MAP

# ON MICROFILM

TIMPANOGOS CAVE NATIONAL MONUMENT - UTAH  
U.S. DEPARTMENT OF THE INTERIOR · NATIONAL PARK SERVICE



0 1 2 miles

surrounding national forest and because visitation is already approaching the carrying capacity of the caves, the effect of the increased urbanization will be minimized. Foreseeable problems include possible damage to the resource from increased air pollution originating in the expanding urban areas and the need for increased law enforcement to protect both the park resources and park visitors.

The increased number of people living in the region has created a strong demand for recreation facilities. In addition to the many facilities provided by the Forest Service, other major recreation facilities near Timpanogos Cave include Wasatch and Utah Lake State Parks, six ski areas (the closest, Sundance, is located 15 miles from the monument) and local attractions such as Bridal Veil Falls in Provo Canyon. Museums, art galleries, and commercial recreation facilities may be found in the larger cities such as Salt Lake City and Provo.

Nearby National Park Service areas include:

Golden Spike National Historic Site	120 Miles Northwest
Dinosaur National Monument	195 Miles Northeast
Capitol Reef National Park	202 Miles Southeast
Lehman Cave National Monument	233 Miles Southwest
Cedar Breaks National Monument	235 Miles South

#### E. Facilities

All of the facilities at Timpanogos Cave National Monument date from either the early days of the monument (1928-1940) or Mission 66 (1956-1966-a major National Park Service facility improvement program). The facilities dating from the early period are now part of the Timpanogos Cave Historic District.

The major visitor facility at Timpanogos Cave is the visitor center located beside Utah Highway 92 near the east boundary of the monument. The trail to the cave begins at the visitor center. General information and cave tour ticket sales are provided at the counter in the lobby. A 12-minute slide program presented in the 100-seat auditorium and exhibits available in the exhibit room interpret the history and geology of the area. Other services at the visitor center include public restrooms, Southwest Parks and Monument Association (SPMA) sales, and a concessioner operated snack bar/gift shop. The building also contains the administrative offices for the park.

Other visitor facilities on the canyon floor include a quarter mile nature trail and a 16-site picnic area. Restrooms are

available in the picnic area. In addition to visitor facilities, a four bay maintenance shop and three employee residences are located in the canyon.

A major part of the visitor experience is provided by the 1.5 mile cave trail which climbs 1,065 feet above the visitor center. This paved trail provides the only access to the Timpanogos Cave, the primary resource for the area. A restroom is located along the trail just below the cave entrance and water is provided at the Grotto.

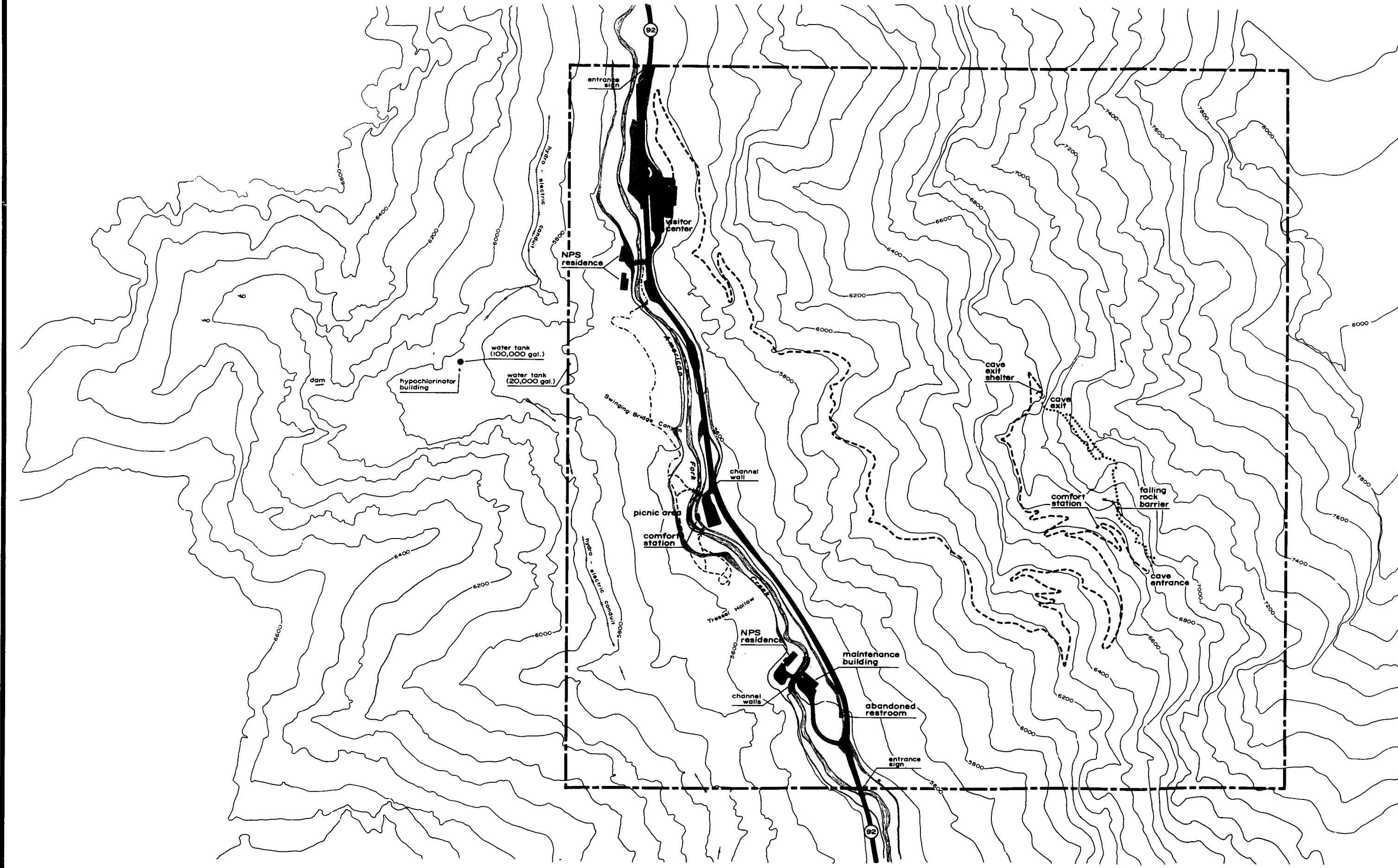
Within the cave, a paved trail, steps, and handrails provide a safe passage for visitors through the cave. Over one hundred lights are used to illuminate the cave.

(For further information see Appendix A: Facility Analysis.)

A 100- and 500-year flood plain map of the American Fork River through the park was produced by the Army Corps of Engineers in accordance with Executive Order #11988 (see Appendix B). All buildings are out of the flood plains except the maintenance building and residence #2 (a historic structure). Both of these structures are within the flood plains. If, in the future, these buildings are damaged beyond repair by a flood, only the maintenance building will be replaced in a location outside of the flood plain.

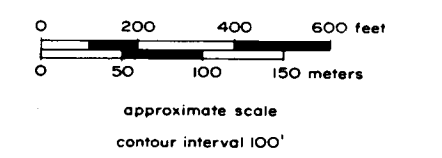
An official early warning flood system for the park does not exist. Such a system is nearly impossible since flash floods can originate any place in the American Fork Canyon. The last flood in the monument came down Swinging Bridge Canyon, a southfacing slope side canyon in the park.

The plan would perpetuate use of public areas within the flood plain since this is no practical alternative due to the narrow, steepwalled canyon. The plan is excepted from compliance with Executive Order #11988 according to National Park Service guidelines (47 FR 35916; 47FR36718, Section 5.B.). No critical actions, as defined by National Park Service guidelines will take place within the 500-year flood plain.



**Legend**

- — — — — monument boundary
- ..... cave trail
- - - - - nature trail
- - - - - picnic trail
- · - · - cave access trail
- 100 year flood plain
- 500 year flood plain



**ON MICROFILM**

**100 & 500 Year  
 Flood Plain**

**Timpanogos Cave  
 National Monument**  
 Utah

U. S. Department of the Interior · National Park Service

## X. ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION AND ALTERNATIVES

For each issue dealt with in this plan a group of alternative actions was developed. From these alternatives actions the most appropriate were selected and form the proposal presented in this plan. For each issue the alternative of continuing present conditions was considered. However, with the exception of the Day Use Facility issue, further action was needed to resolve these issues. (For a full description of existing conditions, see Purpose and Need For Plan.) The following is a list and brief discussion of the alternatives considered for each issue.

### A. The Alternatives

#### 1. Vehicle/Pedestrian Conflict of Utah 92:

a. Install a pedestrian crosswalk incorporating a red/green traffic signal over the crosswalk and two flashing yellow warning lights with signs located near the highway shoulder in both directions from the crosswalk.

b. Install two flashing yellow lights with warning signs located near the highway shoulder in both directions from the crosswalk.

c. Install speed bumps on the highway along with appropriate signing at a speed control zone.

d. Develop an "Alpine Scenic Loop" shuttle system.

e. Develop a Timpanogos Cave National Monument shuttle system with a terminal staging area at the mouth of the canyon.

f. Install chatter bumps in the highway surface with flashing yellow warning lights and signs indicating caution and a slow speed zone. Bumps and lights to be located on the edge of the highway in both directions from the visitor center area.

g. Eliminate all vehicle parking on the road shoulders within the national monument.

h. Develop an off-road walkway between the highway and the river. The walkway would parallel the road and connect a crosswalk in front of the visitor center with the nature trail. Extend nature trail 2,500 feet.

i. Increase the cave tour fee.

j. Install two over-the-highway lighted message signs--one at the mouth of the canyon and the second east of the park boundary.

k. Modify the Visitor Information System (VIS)--a radio transmitter presently located at the mouth of the canyon to broadcast messages to visitors.

l. Develop additional off-highway parking within Timpanogos Cave National Monument. Two potential parking expansion spaces exist: 1) a 15 to 20 car parking area at the existing bus and oversize vehicle parking on the east boundary of the monument and, 2) a potential 10 to 20 car parking area between Highway 92 and the river near the swinging bridge.

m. Increase enforcement of highway speed limits and no parking areas.

n. Reduce speed limits within the heavily congested visitor center area of the national monument.

o. Widen highway shoulders to permit parking where the terrain will accommodate widening.

p. Cut talus slope and construct retaining wall west of visitor center parking area entrance (to improve sight distance of entrance from highway).

q. Reroute the nature trail to begin opposite the visitor center.

The plan is a combination of alternative b, g, m, and q.

The red/green traffic light proposed in alternative a would be extremely intrusive on the park scene and may create an even greater hazard by stopping traffic on a narrow, winding road. Alternatives c and f were rejected for the same reason. Alternative d and e were not practical because of the lack of a staging area at the mouth of the canyon and because they would do nothing to reduce the conflict with traffic passing through the monument.

When all parking spaces are filled, the facilities in the park are being used to capacity; therefore, alternatives l and o would be of little benefit. Likewise, increased cave tour fees, Alternative i, would have minimal effect on visitation so it would do little to alleviate traffic problems.

Alternative j was rejected because of the cost and the extremely high potential for vandalism. Reduce speed limits, Alternative n, are not needed, rather the problem is to gain compliance with existing limits. Alternative p was not selected because rerouting the nature trail should eliminate much of the problem in this area.

Alternative h, the off-road walkway, and k, use of the VIS, were realistic and potentially effective alternatives. Alternative k was not selected because of the extremely poor

performance of the present VIS. Alternative q was selected over Alternative h for several reasons. First, because of the narrow space between the river and road surface, construction would be difficult and expensive. Second, for adequate visitor safety, a barrier would be needed between the walk and highway; however, this would severely hamper snow removal. And finally, Alternative h would add little to the visitor experience and it would add nothing to the interpretive program.

## 2. Rockfall Protection

- a. Relocate trail from drainage (upper third).
- b. Cover most dangerous sections with rock proof shield.
- c. Install aerial tram or elevator.
- d. Identify most hazardous sections of the trail.

Alternative d was selected. All of the other alternatives would be extremely expensive and would have severe impacts on the natural environment.

## 3. Increase Visitors Comprehension of the Primary Resources

- a. Revise slide program.
- b. Revise museum exhibits.
- c. Upgrade nature trail.
- d. Provide interpretation for those that cannot receive a cave tour.
- e. Evening Programs.
- f. Improve interpretation in the Grotto waiting area.
- g. Televised cave tours or use of other video tape presentations.

Alternatives a, b, c, d, and f were incorporated in the proposal. Evening programs and video tape were viable alternatives; however, they were not considered essential to the basic operation of the area.

## 4. Reduce Natural Resource Damage

- a. Stop short cutting on cave trail; repair damage areas.
- b. Improve the visitor use area along the river across from the visitor center.
- c. Protect banks behind picnic area and repair damage.

Alternatives a, b, and c were incorporated in the proposal.



5. Provide Additional Visitors the Opportunity To Tour the Caves

- a. Extend the length of the tour day.
- b. Install aerial tram or elevator.
- c. Extend visitor use season.
- d. Increase cave tours fees.
- e. Conduct additional weekday tours.

Alternative a, c, and e were selected for the proposal. A tram or elevator, Alternative b, would do little to resolve the issue since the total number of visitors who can tour the cave is determined by the carrying capacity of the cave, not the manner of access. Increased fees would have minimal effect on demand.

6. Determine level of day use activities

- a. Expand picnic facilities and associated parking.

Considering the limited space suitable for development in the park and the numerous facilities outside the park, expanding the picnic facilities was not considered desirable.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES  
TIMPANOGOS CAVE NATIONAL MONUMENT

ALTERNATIVES	COMPARATIVE EFFECTS OF THE PROPOSED ACTION OF EACH ALTERNATIVE ON THE ENVIRONMENT			Means of mitigating adverse environmental impacts.
	Adverse effects that cannot be avoided.	Relationship between short term use of man's environment and the maintenance and enhancement of long term productivity.	Irreversible or irretrievable commitments of resources.	Conflicts between proposed actions and objectives of local land use plans.
<p>"A"</p> <p>Continuation of existing conditions alternative.</p>	<p>Potential pedestrian and vehicle conflict problem will increase as traffic on U-92 increases. Visitors will be subject to same falling rock danger on cave access trail. Outdated interpretive program will continue. The number of turn ways for cave tours will continue. Natural resource damage will continue.</p>	<p>Soil erosion and damage to vegetation will continue - caused by visitor trampling fragile off trail areas.</p>	<p>None.</p>	<p>None.</p>
<p>"B"</p> <p>The Plan</p>	<p>Two flashing lights will be installed on a park roadside. Eight hundred feet of new trail construction will affect some talus slopes and outcroppings.</p>	<p>Visitor safety to the nature trail will be improved by elimination of pedestrians walking on the highway shoulder.</p>	<p>May require cutting a walkway in a short section of rock outcropping.</p>	<p>None.</p> <p>Visitor safety will be improved. Installation of buck and rail fences and surfacing of heavily used high public use areas will concentrate public use to areas designed for public use. Public use will help eliminate vegetation trampling and resultant soil erosion. Buck and rail fence to stop short cutting along cave access trail which will reduce vegetation damage and reduce falling rock hazard.</p>

XI. LIST OF PREPARERS

1. National Park Service Team

James M. O'Shea, Jr., Team Captain, Park Planning, Rocky Mountain Region  
William Wellman, Superintendent, Timpanogos Cave National Monument  
Sherma Bierhaus, former Superintendent, Timpanogos Cave National Monument  
Marcy Shivers Culpin, Historian, Science and Resource Preservation, Rocky Mountain Region  
Adrienne B. Anderson, Archeologist, Science and Resource Preservation, Rocky Mountain Region  
Margo Oliver, Interpretive Technician, Interpretation, Rocky Mountain Region  
James M. Dempsey, Safety Officer, Safety, Rocky Mountain Region  
Cecil D. Lewis, Air Quality and Acid Rain, Executive Assistant, Rocky Mountain Region  
Robert B. Kasperek, NEPA Compliance, Compliance and Construction, Rocky Mountain Region  
Michael Schene, Regional Historian, Science and Resource Preservation, Rocky Mountain Region  
James D. Harpster, Communication, Communication and Public Affairs, Rocky Mountain Region  
Lori J. Kinser, Cartographic Technician, Park Planning, Rocky Mountain Region

XII. COORDINATION WITH OTHER AGENCIES

National Park Service, Assistant to the Regional Director, Utah  
Utah Highway Department  
Utah State Highway Patrol  
Forest Service, Uinta National Forest  
Utah County Planning Commission  
Wasatch Mountain State Parks  
Utah Lake Park  
U.S. Army Corps of Engineers

### XIII. APPENDIX A

#### General Management Plan

##### Facility Analysis

##### Visitor Center - Constructed 1965; 6,700 square feet

Contains administrative offices (4) and visitor facilities including exhibit area, information and ticket sales counter, SPMA sales display, 100 seat auditorium with a 12 minute slide/tape program, and public restrooms. A concession area is separated from the main visitor center by a roofed patio contains a snack bar and souvenir area. The structure is in good operating condition.

##### Maintenance Shop - Constructed 1965; 2,194 square feet

Contains four 18' x 24' bays used for equipment and vehicle storage, supplies storage, workspace, and office space for the maintenance foreman. A 10' x 18' storage shed was added to the east end of the building in 1971. The structure is in good condition; the heating system is poorly designed.

##### Houses - Constructed: Residence #2 in 1945; Residences #8 and #9 in 1965; 1400 square feet each.

Residence #2 is a stone two-bedroom house without garage. This structure is part of the Timpanogos Cave Historic District. Even though the floor plan is rather awkward, this is an extremely attractive structure. The structure is in fair condition.

Residences #8 and #9 are typical three-bedroom Mission 66 houses with attached garages. Both houses are in good condition. Free standing wood stoves have been installed in each residence.

##### Picnic Area Restroom - Constructed 1965; 375 square feet

Unheated comfort station containing men's (2 lavatories, 1 urinal, 2 toilets) and women's (2 lavatories, 3 toilets) restrooms, and utility rooms. Effluent from this restroom is pumped to the main leach field for disposal. The structure is in good condition.

##### Old Bath House - Constructed 1928; 336 square feet

This stone structure is part of the Timpanogos Cave Historic District. Originally used as the bathhouse for the cave campground, the building is presently used only for storage. The structure is in fair condition.

Cave Restroom - Constructed 1939; 153 square feet

This stone structure is part of the Timpanogos Cave Historic District. The building contains men's and women's restrooms and a small storage room. The toilets are vault type. There is no water or heat in the building. Sewage is retained in 2,000 gallon concrete vault below the restroom. A small exhaust fan causes air to flow in through the toilets and out a small stack which keeps odors within reasonable limits. Each fall the holding vault is drained into a sludge pit located 160 feet down the mountain side. This structure is in good condition.

Water System - Canyon Floor - The entire water system is gravity operated. The water source is two boxed springs (located 510 feet higher than the visitor center elevation) on National Forest Service land in Swinging Bridge Canyon. From the springs water flows through a 6" iron pipe to the hypochlorinator building; a distance of approximately 1,300 feet with an elevation loss of 334'. At this point the water for the park is treated with chlorine gas and the volume of the water metered (water excess to the park's needs continue down the 6" line and feeds into the UP&L 24" line). After treatment and metering, the water is fed through a 2" line into a 100,000 gallon above ground steel tank.

From this tank, water flows to the facilities in the canyon floor through 4" and 6" mains and 2" lateral pipes. A 20,000 gallon underground concrete tank is located along the line to the utility area. This tank is used for additional storage and allows manual operation of the system when the steel tank and chlorinator are out of service. The water system is in good condition.

Sewage System - Canyon Floor - The sewer system is composed of septic tanks and drain fields. An 11,000 gallon septic tank serves the visitor center and residences 8 and 9. The Swinging Bridge picnic area restroom has a separate septic tank. The drain field for both tanks is located across the highway from the picnic area. Since the drain field is located slightly higher than the restroom, effluent is held in an underground vault at the restroom. When the vault is full, the effluent is automatically pumped up to the drain field. A secondary pump automatically takes over should the primary pump fail.

The utility area and residence 2 have a separate tank and drain field. Both systems are in fair condition and operating smoothly.

Water System - Cave - The water source is a pool approximately 300 feet into Hansen Cave in a part of the cave closed to the public. The water is pumped from the pool into two 2,500 gallon redwood tanks. From the tank the water flows by gravity to a 125 gallon steel tank where it is batch chlorinated. It then flows to the water fountain in the Grotto. The system works quite well although it requires a substantial amount of manual operation.

Swinging Bridge Picnic Area - 16 sites, 24 tables.

The picnic area is located along the American Fork River,  $\frac{1}{4}$  mile down the canyon from the visitor center. In order to reduce damage to the natural vegetation,  $\frac{1}{4}$  mile of paved trail leads from the parking area through the picnic area. Tables, fire grills, trash receptacles, and water faucets are provided. Despite extremely heavy use, this facility is in generally good condition.

Roads and Trails - 600 feet of roadway, four parking lots (129 spaces), 1.87 miles of paved trails.

The main road through the monument is Utah Route 92 and is maintained by the State Highway Department. The only roads maintained by the park are the 500 foot road leading to the utility area and residence 2, and the 100-foot road leading to residences 8 and 9. There is a 56-space parking lot at the visitor center, a 35-space parking lot across Highway 92 from the visitor center, a 13-space lot at the nature trail and a 25-space lot at the picnic area.

The  $1\frac{1}{2}$  mile trail from the visitor center to the cave is one of the major facilities in the park. This trail climbs 1,065 feet along the steep south wall of American Fork Canyon. Due to the large number of visitors using this trail, it has been paved since 1957. Because of the extreme weather conditions in the canyon and constant rockfall damage, the trail requires continuous maintenance. One third of the trail is resurfaced each year. The trail is generally in good condition.

The trail through the cave is also paved and has stairs and handrails provided in the more difficult passages. This trail is in good condition, but some of the handrails and steps need to be improved.

In addition to the cave trail, a quarter mile nature trail follows the American Fork River from the visitor center to the picnic area. Due to the considerably milder weather conditions on the canyon floor, this trail requires much less maintenance and is in good condition.

There are two roadway bridges (one at the utility area, the other at residences 8 and 9), 3 foot bridges (2 in the picnic area, one on the nature trail) across the American Fork River within the monument. All of these bridges are maintained by the park and are in good condition.

Cave Trail Rock Barrier - Installed in 1977.

The rock barrier is located in the exposed drainage above the cave restroom. The drainage is crossed seven times by the cave trail and is the most hazardous portion of the trail. The rock barrier is designed to stop rocks at the head of the drainage, thereby preventing them from falling onto the trail below.

The barrier is constructed of heavy gauge chain link screen suspended from a wire cable. This screen is pulled to one side each fall to allow snow slides to pass through during the winter.

Rocks striking the barrier fall behind a concrete retaining wall at its base. Metal gates in the retaining wall allow the rocks accumulated behind the wall to be emptied each spring.

While this barrier has been effective in decreasing rock fall incidents on the trail, it has several operational problems. The screen does not slide along the cable as designed; therefore, the maintenance staff must climb up and pull it across by hand, a most hazardous activity. Also, the rocks do not slide freely out of the metal gates so that a great deal of hand shoveling is needed to empty the rock each year.

Utilities: Electric, Phone, Radio, Garbage - Three phase electric service is provided to the park by the Utah Power and Light Company. Considering the rather difficult access to the park's facilities, service to the area is good.

Telephone service to the area is provided by Mountain Bell. Three lines are utilized by the park; two office lines and one to the visitor information system. The quality of the telephone service, traditionally, has been rather poor; however, the lines and equipment are being upgraded which should result in better service.

Communication with the cave is by park radio. The system consists of a base station at the visitor center, two mobile units, and numerous handsets used by the maintenance crew and trail guides. The condition of the system is only fair since many of the handsets are outdated and in poor condition. The performance of the system is generally good although it could be improved by upgrading and revising the present equipment.

Garbage is collected by the park maintenance staff and carried to the Orem City Landfill in the park truck. Usually two trips per week are needed in the summer and one trip or less during the rest of the year.

Visitor Information System - The visitor information system of a 2-10 watt transmitter and antenna located on private land just outside of American Fork Canyon. The transmitter is connected to a message repeater at the visitor center via a telephone line. The system is operated in cooperation with the Uinta National Forest and is designed to provide information concerning both National Park Service and Forest Service facilities in American Fork Canyon. The performance of this system is bad. During the three seasons since the system was installed, it has been out of operation two-thirds of the time.

Cave Lighting System - Installed 1979, 124 lights.

Power for the cave lighting system is supplied through an overhead powerline originating at the visitor center and entering the cave through the natural entrance to the Middle Cave. Four types of lights are used in the cave. Nineteen low pressure sodium lights are used in the two manmade tunnels. Although these are low wattage lights, a 200 volt current is required when starting them up. Within the caves, 19 metal haloid (220 volt), 84 quartz (110 volt), and 8 incandescent lights are used. The system is controlled by magnetic and manual switches and mercury relays. The system is in good condition.





DEPARTMENT OF THE ARMY  
SACRAMENTO DISTRICT, CORPS OF ENGINEERS  
650 CAPITOL MALL  
SACRAMENTO, CALIFORNIA 95814

REPLY TO  
ATTENTION OF SPKED-T

2 June 1982

Mr. Richard A. Strait  
Associate Regional Director  
Rocky Mountain Regional Office  
National Park Service  
P. O. Box 25287  
Denver, Colorado 80225

Dear Mr. Strait:

We have developed the 100- and 500-year flood plains for the portion of the American Fork River that flows through the Timpanogos Cave National Monument, Utah, as requested in your 26 March letter. The 100-year flood plain has been delineated in blue and the 500-year in red on your topographic map (Inclosure 1). As indicated in red on the map, the location of Bridge Number 3 should be approximately 50 feet downstream from the location shown in pencil. This change is based on photographs of the area and an on-site determination by District personnel who made a field reconnaissance of the study area to verify flood plain delineations.

We have also inclosed a water surface profile of the 100- and 500-year flows (Inclosure 2) and a xerox copy of a portion of your topographic map (Inclosure 3) showing some areas with discrepancies such as:

- a. Too many contour lines along the streambed.
- b. Difference in elevation between Stations 7 and TP-7 appears to be about 15 feet instead of 2.18 feet as shown.

Certain assumptions were made during the flood plain analyses due to the steep grade in the area, the great amount of turbulence, little specific runoff data, and the errors in the topographic data. Energy losses due to stream turbulence were included in our studies; however, only an approximation of the losses was possible because of the lack of good historical flood data for the area. Invert elevations for Bridge Number 1 and Highway Number 92 bridge were selected based on adjacent contour lines and a constant slope between them was assumed. There is evidence of alluvial deposits; however, phenomenon such as debris flow cannot be accurately or reliably predicted and, therefore, was not included in this evaluation. The 100- and 500-year flood plains are based on unobstructed flow. For our backwater analyses, we used peak discharges of 2,400 cfs and 3,600 cfs, respectively.

The delineations are as accurate as possible on the topographic maps furnished. However, corrections of the map discrepancies possibly might alter some portions of the flood plain.

SPKED-T  
Mr. Richard A. Strait

2 June 1982

If you have any questions concerning this evaluation, please call Mr. George Alexander, FTS 448-3105.

Sincerely,

3 Incl  
As stated

*w/o*

*Carl K. Van Dam*  
GEORGE C. WEDDELL  
Chief, Engineering Division

## APPENDIX C

### Scope of Collections Statement

Timpanogos Cave National Monument

January, 1978

#### Introduction

The park museum collection is identified as being those objects determined to be of such relevance to the park story and its significance to this nation's past that they shall receive the care necessary to preserve them in perpetuity. The "museum collection" is restricted to those objects as are catalogued into the National Park Service museum records system.

The National Park Service permits and encourages the acquisition of museum objects by field collecting, gift, loan, exchange, or purchase, in accordance with established procedures when those objects are clearly significant to Service areas.

The successful execution of this policy requires that day to day decisions on what museum objects to acquire, and which to reject or eliminate, be wise and well planned. This statement is a guide to sound growth and is a guide against the random expansion of the museum collection.

The goal of this collection is that it will not contain any more or any less than is both useful and necessary.

#### Acquisition

There shall be no indiscriminate collecting permitted within the park. All collecting must be done in accordance with

established rules and regulations. Gifts shall be unconditional. Loans shall be for a specific purpose and for a definite length of time.

There is no current need for the active acquisition of museum objects. However, the acquisition of objects is encouraged under carefully controlled conditions; specifically where a need is documented and a collection program has been approved by the Superintendent.

The acquisition of museum objects may become involved with the donation of objects and the request for the Service to place a value on them for income tax deduction purposes. No values will be put on museum objects for such purposes. Donors are to be advised that this is a personal matter between the donor and the Internal Revenue Service.

There is the possibility that cave formations may be vandalized or broken. These should be repaired if at all possible. If this is not possible then the pieces should be considered for inclusion in the museum collection.

#### Type of Collection

##### Geology

Timpanogos Cave National Monument was established to protect three limestone caves for their "unusual scientific interest and importance." The museum collection should reflect this emphasis and concentrate upon geology; and cave formations in

particular. It is appropriate that representative examples of the different cave formations be included in the museum collection. One specimen of each type is sufficient.

### History

The histories of cave discovery, exploration, and development are important aspects of the park story. Historic objects for addition to the museum collection should be restricted to those items actually used at what is now Timpanogos Cave National Monument during any of the above three phases.

The history of the park relating to areas outside the cave environments should be restricted to pre-1950 items and to those items used in or found in the American Fork Canyon portion of the park.

### Plants, Mammals, Birds, Insects

These are important in a very special way; the inter-relationship between the environments inside and outside the caverns. Specimens in these categories are suitable for collecting where that relationship can be demonstrated. Normally these specimens are not catalogued into the museum collection unless the individual specimen is considered rare. They do form the contents of study collections, with appropriate records and safeguards provided. These categories are secondary to the main park theme; geology.

### Use of the Collection

The proper use of the museum collection is strongly encouraged.

The following are suggestions for such use that management should consider:

1. To train employees, both seasonal and permanent.
2. To guide administrative decision making.
3. As permanent documentation of park resources.
4. As a reserve for future exhibitory.
5. To illustrate interpretive programs.

It is important to differentiate between use and abuse. Any use of a museum object must not contribute to the damage or destruction of that object.

#### Restrictions

The catalogued museum collection does not normally contain plants, mammals, birds, or insects unless the object is a particularly rare one. This also holds true for publications, photographs, and the like. Again, these are catalogued if they are rare or very valuable objects.

#### Conclusion

In order to safeguard the integrity of the collections and to ensure their proper administration, exceptions to this Scope of Collections Statement shall be made only upon the written permission of the Superintendent.

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.

