

development concept
may 1977

GRAND CANYON
GRAND CANYON VILLAGE



NATIONAL PARK/ARIZONA

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FOREWORD

The purpose of this document is to develop a long-range, conceptual plan for Grand Canyon Village, to define the physical implications of the master plan, and to respond to pressing problems in the park. Expedient solutions attempting to satisfy the immediate requirements of the park and the concessioners' construction commitments under the contract could easily repeat the pattern of scattered, unrelated efforts of the past. One of the basic recommendations of the master plan – that internal circulation be by public transportation – would alter functional relationships and requirements within the village. This change is potentially so basic that another era in the physical development of Grand Canyon Village is dawning. It is possibly as significant as Mission 66 or the early automobile era. As a result, broad, long-range planning direction is needed. Now is the time to start the process of effecting a major shift in the organization of the village. This report traces the planning rationale and outlines the basic concepts.

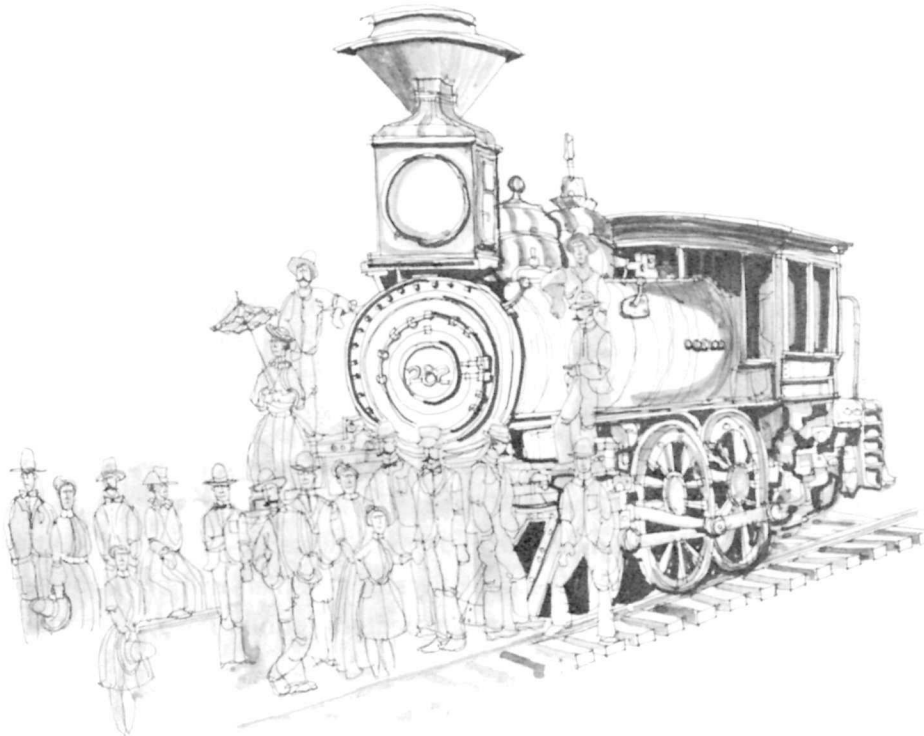
This planning publication provides the conceptual framework for future changes within Grand Canyon Village. The concepts contained herein will provide direction for development of the village as obsolete facilities are rehabilitated or replaced. The objectives of this plan will be followed until changes in technology, environmental factors, public need, or park policy necessitate revisions.

HISTORICAL EVOLUTION OF GRAND CANYON VILLAGE

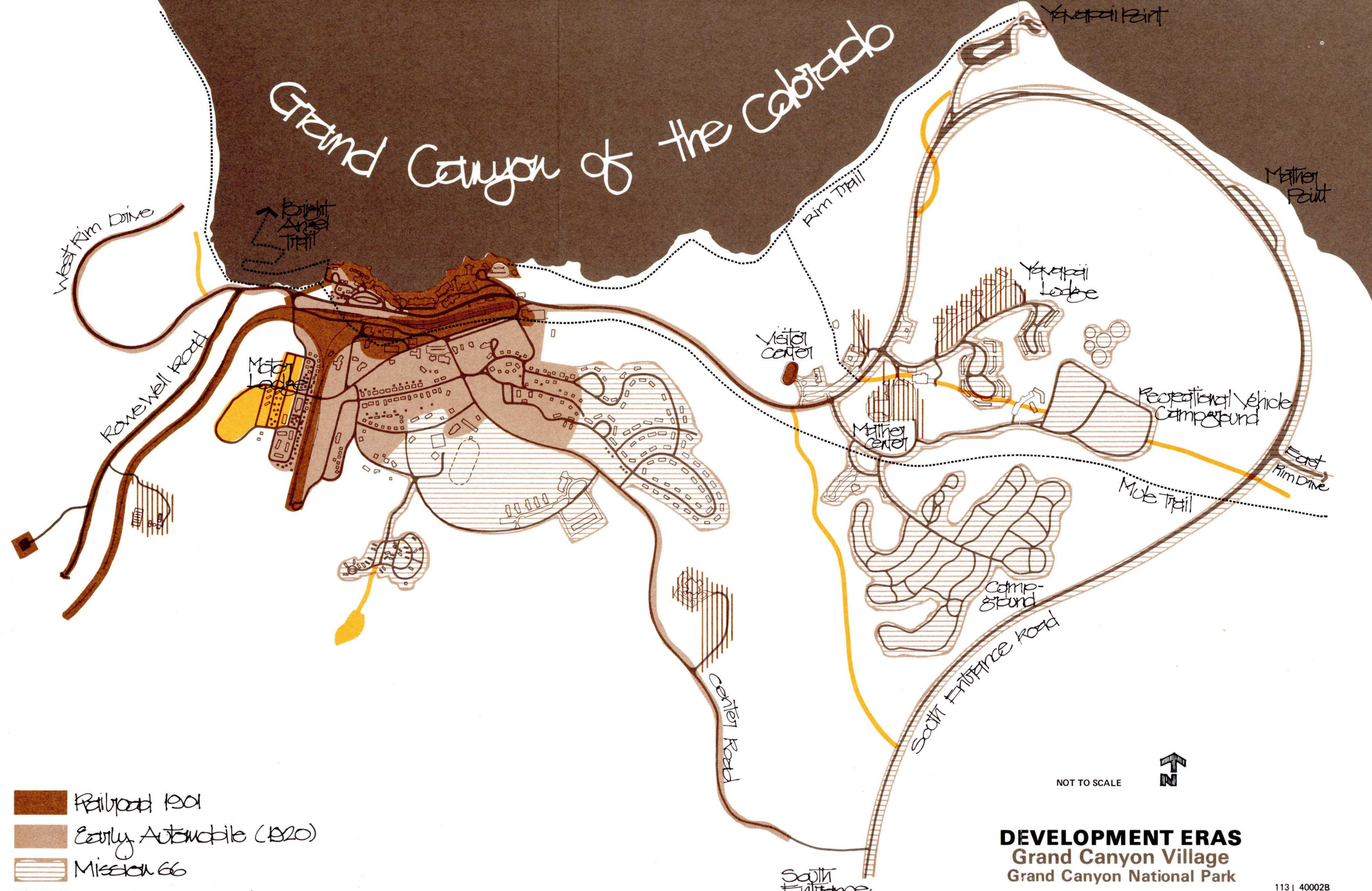
Although the evolution of man's presence at the site of Grand Canyon Village began several thousand years ago, only his more recent activities there have had any significant influence on the site. When the Santa Fe Railroad completed its tracks to the South Rim in 1901, development of the village as a tourist area began. The location offered a suitable railroad grade, an available source of water at Indian Gardens, an access point to the Inner Canyon and an exceptional view. This area of early development is referred to as the Historic Village.

THE RAILROAD ERA

The railroad era, most remnants of which exist to this day, was characterized by elegant accommodations for a leisurely elite. Several hotels were built during this period; among them were the El Tovar (1905) and the Bright Angel Lodge (1934), which are still in use. Other enterprises that currently exist from this period are Kolb Brothers' Studio (1902), Babbitt Brothers' Trading Company (started in a tent about 1905 at the Bright Angel Hotel), and Verkamp's Studio (1906).



Grand Canyon of the Colorado



- Railroad 1901
- Early Automobile (1920)
- Mission 66
- Recent (Post 1966)
- Abandoned ... returning to natural state

NOT TO SCALE

DEVELOPMENT ERAS Grand Canyon Village Grand Canyon National Park

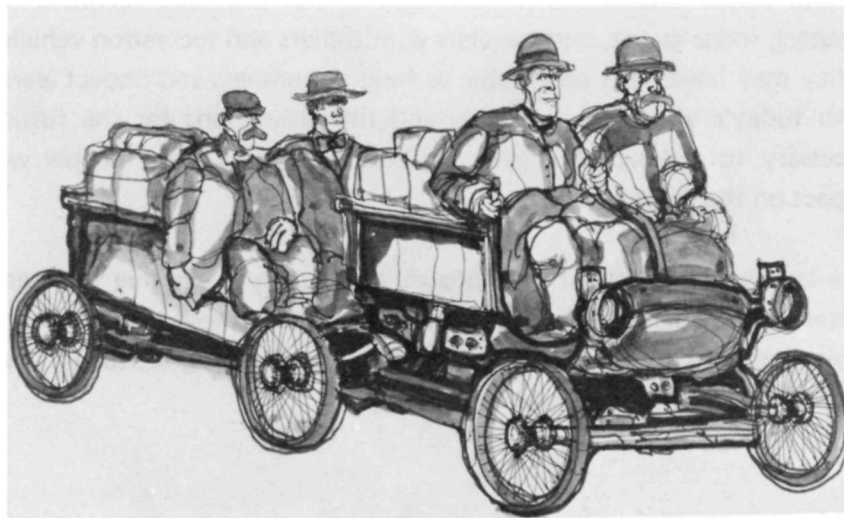
EARLY AUTOMOBILE ERA

Although the leisurely life-style of the railroad era continued for some time, the development of relatively inexpensive automobile travel gave the less affluent members of a growing middle class the opportunity to visit Grand Canyon. Wagon roads into the area had existed from the earliest days. However, while a few adventurers attempted the trip in the late 'teens, it wasn't until the mid-twenties that facilities for automobile parties started to develop. The motor lodge dates from this period (1926).

During the period of increasing visitation in the 1920s, most of the support facilities in the vicinity of the Historic Village were constructed. These facilities are still with us and include the powerhouse (1926), the laundry (1927), Babbitt's store (first building – 1921, second – 1925), park headquarters (1929 to replace the old 1921 structure), expansion of the old garage, and additional employee housing southeast of the village. The twenty-three buildings along Apache Street were built between 1924 and 1930 to house people employed by Fred Harvey and the Santa Fe Railroad. These buildings form a unique, architecturally unified group which are still used as residences.

In the 1930s, the Depression brought the Civilian Conservation Corps and a camp in what is now the residential area. There was little concession expansion during this period and most of the construction was of government facilities – walks and trails, the former hospital, and schools.

Most automobile visitors of this era chose to camp, parking among the trees wherever they found a suitable spot. As their numbers increased, the National Park Service found it necessary to relocate the scattered campers into organized automobile campgrounds. Auto visitors also preferred to occupy simple cabins, which encouraged their development. These solutions – serving to accommodate the automobile – set precedence for planning and visitor use of the park for some time to come.



MISSION 66 ERA TO PRESENT

The period beginning in the mid-1950s and continuing up until today has been characterized by burgeoning American middle class with time and income for travel. This has also been an era of technological revolution in travel and recreation equipment. The combination of these two factors has created tremendous demand on the park to accommodate more and more visitors – and perhaps more significantly, their vehicles and equipment. National Park Service policy under Mission 66 was to attempt to meet the needs of the visitor as the demand dictated. It is the thesis of this plan that having passed the point of diminishing returns at Grand Canyon Village in attempting to meet increasing demands on these terms, we are now at the beginning of a new era in its development. This era will be approached with initiative and imagination to provide more meaningful experiences for the visitor while maintaining the environmental integrity of the park.

Grand Canyon Village (the Village) is defined as the general area bounded by Rowe Well Road, the Rim, South Entrance Road, and the South Park boundary line. While this plan is primarily directed to this area, its relationship to the entire South Rim from Hermits Rest to Desert View has been considered.

THE PARK IN THE NATIONAL PERSPECTIVE

Trends and Projections

A review of past experience seems to indicate that the National Park Service has catered to the changing life-style demands of the visitor – providing the appropriate facilities to accommodate those demands even in the great natural areas. The National Park Service has provided facilities for tent campers, lodge guests, and travelers with trailers and recreation vehicles. This policy may have been acceptable as long as numbers and impact were small. With today's visitation, however, and the projections for the future, it is necessary to redesign the park facilities to handle more people with less impact on the environment.

The best way to estimate the probable future is to observe the trends and patterns of visitation over the years, to evaluate those experiences, and to project present trends with modifications for changing attitudes, life-styles, management philosophy, and technology.



- 533 Kolb Brothers Studio
- 526 Red Horse Stage Station
- 532 Lookout Studio
- 508 Bucky O'Neill Cabin
- 542 El Tovar Hotel
- 545 Hopi House
- 546 Verkamp's Canyon Souvenir Shop
- 1 Superintendent's Residence
- 549 Grand Canyon Railroad Depot
- 567 Grand Canyon Power House
- 562 Horse Barn
- 563 Mule Stable
- 564 Blacksmith Shop
- 166 Grand Canyon Post Office
- 103 Park Operations Building
- 76 Ranger's Dormitory
- 799-808 } Apache Street Residences
- 812-823 }
- 40 }

NOT TO SCALE



HISTORIC DISTRICT
Grand Canyon Village
Grand Canyon National Park

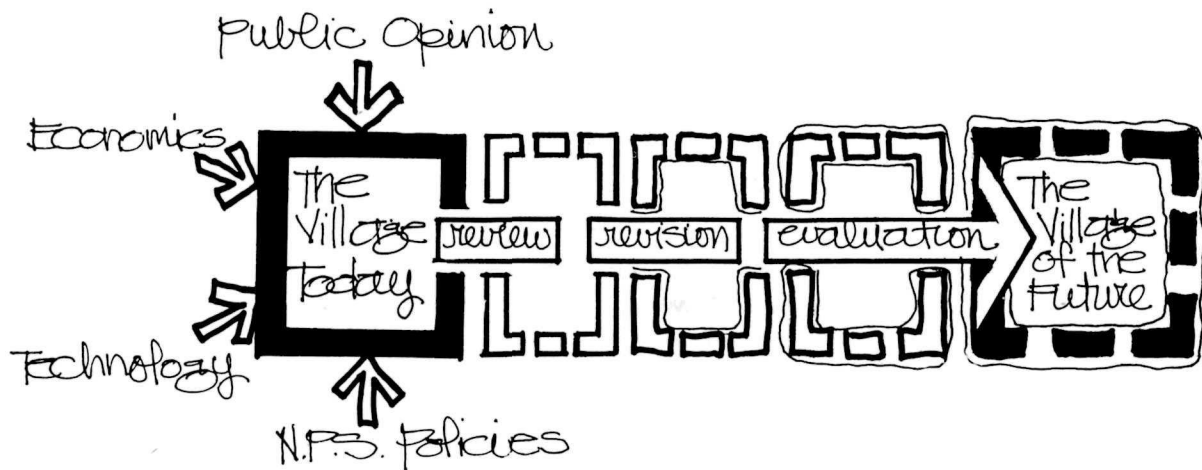
Projections of visitation to the South Rim should consider changes in visitor preferences, need for various facilities, economic conditions, energy availability, transportation technology, the use of leisure time, and patterns of social change. Projections of probable conditions, as opposed to predictions of the future, are indispensable planning tools. Pertinent projections are necessary to plan comprehensively for long range goals as required by the master plan. However, new or adapted facilities should not be implemented until a definite need is established. Long range projections are the basic means of avoiding piecemeal response in current planning decisions.

It is fair to say that technology has had as much to do with these trends in visitation as other factors such as free choice. In the future, available technology (primarily in the form of modes of transportation and equipment) will continue to strongly influence life-style choices within the park. An increased environmental consciousness on the part of the public will have impact regarding the use of available technology. Furthermore, the increasing availability of air travel and the development of mass surface transportation, combined with more stringent restrictions on automobile use and performance – emission standards, horsepower and size limitations – at some point may significantly alter trends in transportation mode.

The National Park Service should use the necessary physical changes in the Village, resulting from changes in transportation, to improve the visitors' experience of the park and to lessen the environmental impact of manmade development.

Park land can be utilized more efficiently as automobile – oriented sprawling development is eliminated. Pedestrian orientation can result in a more attractive environment for the park visitor.

This plan outlines the policies and processes necessary to switch from planning for visitors in cars to planning for visitors on foot or on public transit. The actions implied must be governed by economic factors, changing technology, energy conservation, and public opinion as well as by National Park Service policies.



Note: The dashed lines represent the necessary flexibility of the development process. The system must allow for change in a continuous process of review, evaluation, and revision.

It is essential that long-range objectives be identified in broad terms. While the stages in attaining them must be flexible enough to allow for changes and adaptation, the essence of these objectives should not be lost or abandoned in the planning process. Impacts of proposed changes must have comprehensive review. Development must be consistent with the objectives of this plan, and the National Park Service must avoid the trap of filling any convenient vacancy with a facility for which there is no real need.

DESIGN ANALYSIS

GENERAL PROBLEM STATEMENT

The primary planning problem is to satisfy the needs of both the park visitor (day-use and overnight) and the park resident with the least amount of conflict, while meeting the objectives of the National Park Service as stated in the master plan:

To preserve the Grand Canyon in as natural a state as possible;

To provide a high-quality viewing experience, enabling the visitor to understand and feel the significance of the Grand Canyon;

To facilitate optimum visitor use as determined by ecological factors, the quality of the visitor experience, and visitor safety;

To preserve structures of historical or architectural significance by continuing their use or by adaptive restoration.

The first step in meeting these criteria is to examine and analyze what exists in terms of needs for today and for the future.

MAJOR AREAS OF CONCERN

As implied in the historical section of this analysis, today's Grand Canyon Village has incorporated the artifacts of visitor use since the turn of the century. The cluster of buildings around the railroad station and tracks of the Historic Village occupy an important site which is highly accessible to both visitors and residents. At present, a number of the old buildings are used for storage or service operations.

PROBLEM AREAS

Facilities are inadequate to cope with visitation at peak periods in nearly all categories – food, lodging, camping, interpretation, and roads and parking for private vehicles.

Some existing facilities are decaying and obsolete and must be replaced or rehabilitated for structural or functional reasons.

Visitor facilities built since the railroad era are designed for the automobile traveler, and automobiles may decline in importance. Little consideration was given to pedestrian traffic.

The facilities of Mission 66, too far from the rim to encourage walking, stimulate the visitor to use automobile transportation unnecessarily. The character and arrangement of these facilities are uninteresting.

Use patterns in the Village are not adequately separated: park support service facilities are mixed with visitor facilities; resident and visitor traffic conflict; and the unused rail yard is located in the heart of the visitor-use zone.

A prime visitor-use area of the Village is located on the Rim above the old railroad station. The Rim facilities have grown haphazardly over the years, resulting in urban clutter with little distinction.

The Santa Fe Railroad discontinued passenger service to the Village in 1968. It is doubtful the tracks will be used in the near future to move visitors due to current economic and technological conditions. The tracks and station remain the focal points of development in the Historic Village.

There is a need for a visitor reception/orientation facility where the arriving visitor can get information and plan his visit. There will be an even greater need for this facility if visitation increases and public transit is the required mode for travel in the Village.

OTHER SIGNIFICANT FACTORS

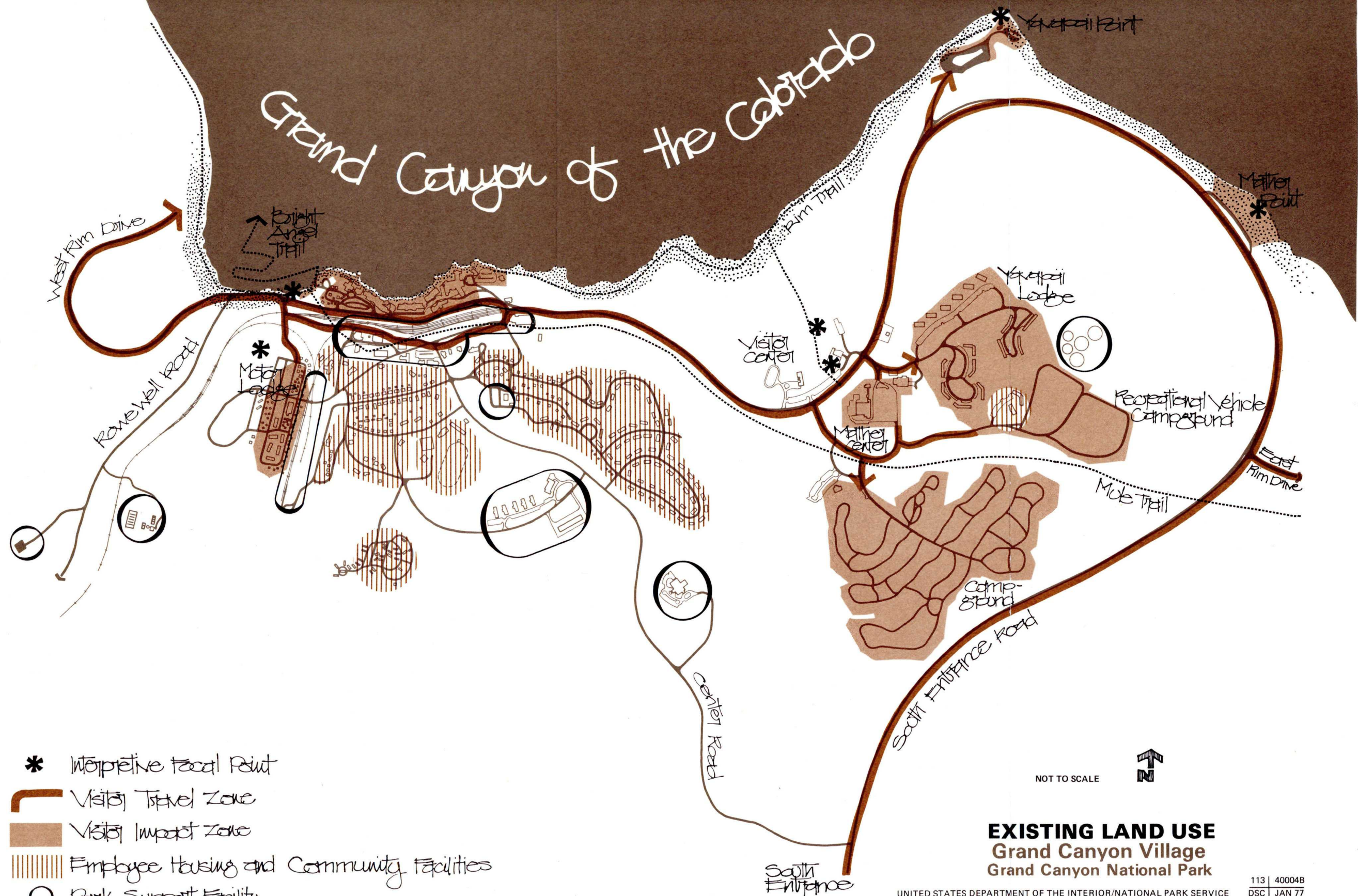
Grand Canyon has a unique visitor pattern as compared to most other parks:

Most park visitors stay less than one day.

Visitor activity is primarily concentrated in the narrow experience zone along the canyon rim.

The range of visitor activities is limited by the nature of the resource. Most visitor activity is related to viewing the canyon and participating in interpretation.

Many needs of Village residents are met by the same facilities that serve the park visitor.



Grand Canyon of the Colorado

- * Interpretive focal point
- Visitor Travel Zone
- Visitor Impact Zone
- Employee Housing and Community Facilities
- Park Support Facility
- Rim Experience Zone

EXISTING LAND USE
Grand Canyon Village
Grand Canyon National Park

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The park will have an increasingly larger portion of day visitors as day visitation is allowed to expand to the capacity of the Village and overnight accommodations remain fixed.

Most visitors are first-time visitors.

A LARGE RESIDENTIAL COMMUNITY

Grand Canyon Village has several characteristics which distinguish it from conventional small towns:

It includes a large residential population with significant seasonal fluctuations. The transiency of the population precludes development of a sense of stability, permanence, and care for the residential environment. The relatively short tenure of employees makes adequate visitor service difficult to achieve.

There is considerable separation from urban services – 60 miles to Williams, 80 miles to Flagstaff, and 200 miles to Phoenix. The range of urban amenities within the Village is limited, few social outlets are available for the residents, and present employee housing is inadequate.

If current levels of service are maintained, the residential community must grow in response to increased visitation. If additional visitor facilities and services are introduced, housing for present and additional employees is also required.

The Village also differs from the normal urban community in other respects that need to be recognized. It is a community of young families but also has a high proportion of young people without family affiliation. Parts of its economy are highly seasonal and there is a corresponding fluctuation in this segment of the population. In addition, there is the high rate of turnover in personnel common to both the resort business and National Park Service. Its young people are active – many of them without family restraint seeking distractions. Socially, its older family-centered segment reflects the hierarchy of the employer – both concessioner and government. The community is thus dependent on enlightened paternalism from both the concessioner and the government to provide facilities for normal community life.

The demands for water, sewage treatment, educational facilities, and other public and personal services will increase with the increased population to serve visitors. Due to its isolation, the Village requires its own range of services and facilities.

The rapidly developing community of Tusayan, a commercial enclave in Kaibab National Forest, is situated about 8 miles south of the Village and has potential for limited additional services to the residential community as well as the visitors.

PLANNING OBJECTIVES

General

- 1. Protect the strong natural and architectural forms of the Village to enhance its character.**

These forms include the stands of ponderosa pines that follow the drainage patterns and the topographic bowl in which the railroad station and tracks are nestled. The bowl is emphasized at present by the man-made development along the sides – the Rim facilities on the north and the old service buildings on the south.

No development should be permitted in the Ponderosa stands. No new structures should be built in the lowest elevation of the Historic Village bowl.

- 2. Build on impacted areas to minimize environmental impact if additional facilities are needed.**

Ponderosa and pinyon pines require 300 to 350 years to mature at Grand Canyon National Park. Because of the extremely long time required for revegetation, no virgin areas should be disturbed if there is a reasonable, previously disturbed alternative site.

Examples of design applications include:

New houses should be built along existing roads and sewers, minimizing economic as well as environmental cost.

New roads should be located along existing alignments or on existing cuts for utility lines.

Existing buildings should be considered for recycling before construction of new structures.

3. Recognize, protect, and utilize the architectural heritage.

Prime areas of historic interest include the original site of the Village's development around the railroad station. The early rim hotels, the powerhouse, and other service buildings from the 1920s are in this area now referred to as the Historic Village.

Several buildings in the Historic Village have been listed on the National Register of Historic Places and the entire area, including the housing along Apache Street, has been designated as the Grand Canyon Village Historic District.

The "historic" designation means buildings of both historical and architectural significance. A number of structures possess external architectural significance, and adaptive restoration will be considered as a method to preserve the structures, to utilize them, and to maintain them in an attractive condition.

Buildings within a historic district may be removed if they are not essential to its character. New buildings may be added as necessary provided they do not destroy the integrity of the historic elements.

The above actions will require compliance with the National Historic Preservation Act of 1966.

4. Provide attractive alternatives to automobile transportation.

Alternative transportation systems should be provided to minimize auto use — its roads, parking, and pollution.

Design alternatives to realize this objective include:

Provide a convenient public transit system. Such a system is essential for visitors and has been initiated during the peak season in the Village (existing bus routes shown on the map). Service to residential and park support people is also desirable.

Provide a network of pedestrian paths and districts. Care must be taken to avoid impacting soils in natural areas.

Develop a network of bicycle lanes throughout the Village. Use existing roads and existing cleared areas wherever possible. Develop bicycle rental facilities for visitors. The relatively flat topography of the Village makes it suitable for even the inexperienced cyclist.

Locate transit stops within easy walking distance of major visitor destinations.

Retain the rail transit corridor for possible future use.

Build any necessary additional housing as close as possible to existing community facilities, schools, and recreation.

5. Separate and buffer conflicting land uses.

Growth beyond the Historic Village has produced a number of land-use conflicts. When it is necessary to build new facilities for the functions involved, conflicts should be eliminated.

Sources of conflicts include traffic congestion, noise, safety hazards, and visual clutter.

As illustrated on the following diagrammatic section of land uses throughout the Village, land uses requiring separation and buffering include:

Rim Interpretive Zone. Both the visitors' and the residents' experience of the Rim should be natural with the exception of the existing Rim facilities. Noise must be minimized, the auto eliminated, and the Rim paths buffered visually from man-made development by existing stands of vegetation. Any additional interpretive features should be unobtrusive and inaudible in the Inner Canyon.

Visitor and residential areas. These land uses should be separated. The visitor should be kept unaware of the extent of the permanent settlement. The resident should be protected from the noise and traffic of the visitor facilities.

Park Support. With the exception of National Park Service headquarters and operations, and the mule facilities, park support facilities should be located in a zone established for these uses and buffered from all other land uses. This zone would provide facilities for the truck and bus traffic, emergency vehicles, and helicopter. It would be characterized by large warehouses and maintenance facilities which are necessary to realize time and labor economies with today's technology. Thus, the zone is a source of visual and aural pollution and should be buffered from other land uses.

6. Build new facilities or expand existing facilities only when a clearly demonstrated, continuing need exists.

Facilities which anticipate rather than respond to demand may in themselves create additional demand. The creation of additional visitor demand should be avoided.

All facilities and support systems should be designed to be provided in incremental sections.

There are few exceptions to this rule. Those rare buildings which realize significant economies of scale such as warehouses and schools may be constructed to realize these economies after a trend in demand is apparent.

Visitor Facilities

1. Limit overnight accommodations to current authorized levels:

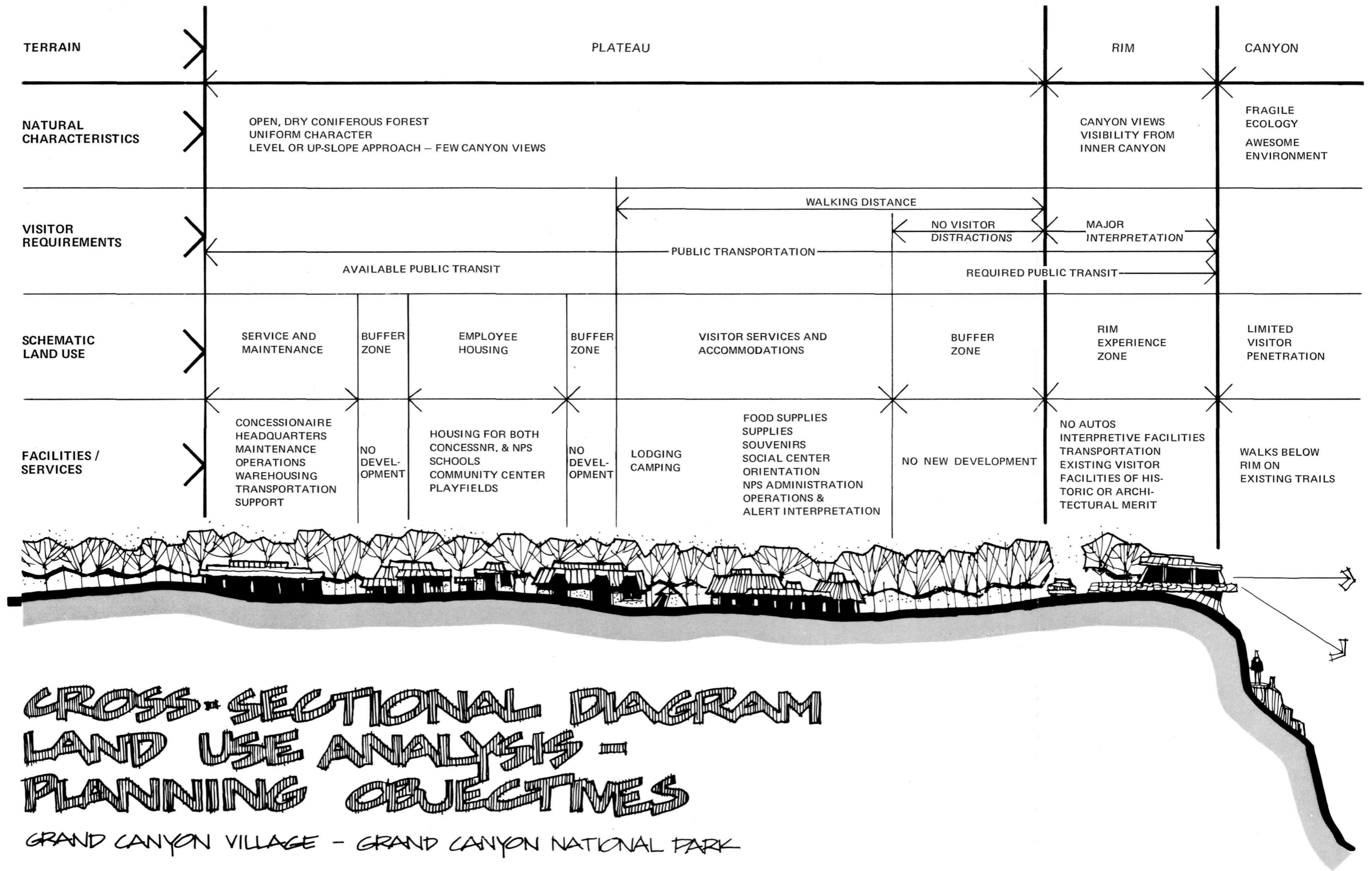
Lodging units	871
Camp and recreational vehicle sites	353
Recreational vehicle sites	195
Total overnight units	1,419

(56 lodging units and 49 recreational vehicle sites are currently used for employee housing)

If existing overnight units are demolished or removed, new units with the same capacity may be built to replace them. Lodge units will not replace camp and recreational vehicle sites.

2. Establish a day-use capacity within the environs of the South Rim Village.

Rather than allowing day visitation to respond to demand, a capacity within the environs of the South Rim Village will be established. To accomplish this, further analysis will be undertaken to (1) project potential limitations of water availability, and (2) determine the physical capacity of the Canyon Rim viewing areas consistent with providing a quality experience.



CROSS-SECTIONAL DIAGRAM LAND USE ANALYSIS - PLANNING OBJECTIVES

GRAND CANYON VILLAGE - GRAND CANYON NATIONAL PARK



Grand Canyon of the Colorado

- West Rim Drive Shuttle
- Main Village Shuttle
- ... Village Feeder
- ★ Transfer Point
- Bus Stop

EXISTING BUS ROUTES
 Grand Canyon Village
 Grand Canyon National Park

- 3. Provide public transit connections to all visitor destinations and eliminate use of private vehicles by visitors.**

Shuttle bus service has already been initiated in the Village, as indicated on the Existing Bus Routes map, but the Village remains congested with private vehicles due to the lack of adequate parking for day-use visitors.

- 4. Locate any new replacements of overnight accommodations within walking distance of the Rim.**

Since the purpose of overnight facilities (including camping) is to permit leisurely canyon viewing at one's own pace under varying light conditions, overnight facilities should be placed as close to the Rim as environmentally acceptable. Overnight accommodations should be within walking distance of the Rim if other objectives for their development can be met.

- 5. Cluster visitor services within walking distance of transit stops.**

This will permit elimination of private vehicles.

- 6. Through adaptive reuse, utilize vacated service buildings in the Historic Village to provide necessary expansion of visitor facilities.**

These buildings are sufficiently close to and visible from the Rim facilities to attract pedestrian traffic and relieve congestion on the Rim.

- 7. Expand, strengthen, and diversify interpretive facilities as recommended in the master plan.**

- 8. Improve information/orientation services.**

Arriving visitors at Grand Canyon Village are faced with a bewildering choice of destinations with little orientation. The information of public transit has helped direct the visitor to various destinations, but there remains a need for information and orientation prior to boarding the transit system. With early assistance, the day visitors can be guided into utilizing their available time to maximum advantage. When private automobiles are eliminated from the Village, initial information and orientation will become essential to inform visitors of their options and to answer questions.

The feasibility of a centralized transportation/reception center will be tested at various sites in and around the Village. Temporary facilities will be developed on previously impacted sites. Parking, information/orientation facilities, and access to the transit system will be provided. Visitor reaction to and acceptance of the concept will be evaluated. If proven feasible, a permanent site (or sites) for the facilities will be selected.

9. Mitigate the haphazard and unsightly development and congestion along the Rim in the Historic Village.

The older buildings on the Rim are generally acceptable on the grounds of their historic and architectural merit. They are major destinations for day as well as overnight visitors. The heritage represented by these buildings should be protected and enhanced by the elimination of less desirable development in the area. Design alternatives to achieve this objective may include:

Eliminate Rim parking.

Landscape bare areas.

Surface pedestrian paths.

Screen service areas.

Remove buildings with no architectural or historic merit as they are amortized or become functionally obsolete.

Prohibit additional Rim development except for unobtrusive interpretive facilities.

10. Develop attractive pedestrian links and convenient shuttle service to the south section of the Historic Village.

Any necessary new visitor facilities in the recycled buildings must be easily accessible from the Rim to disperse crowds and to avoid bottlenecks.

11. Provide visitors with a genuine choice of options.

Avoid channeling and manipulating visitors.

Residential Community

- 1. Aid in providing a stable employment population for visitor services by replacing, remodeling, and expanding housing.**

Replace existing housing that is beyond repair.

Enlarge selected housing units to accommodate the typical family size and to satisfy the housing expectations of permanent residents.

Provide new housing with the style and quality appropriate for a national park.

Housing should be designed to conserve land and to provide privacy.

- 2. Provide a supportive community structure for permanent residents.**

Make schools responsive to community needs.

Provide recreational opportunities including sports facilities, arts and crafts rooms, and a community/school library.

- 3. Provide adequate housing for seasonal employees close to work destinations.**

Park Support

- 1. Both the National Park Service and the concessionaire should consolidate their warehousing, maintenance, and transportation support facilities.**

Each major employer group's service operations should be consolidated in order to reduce the costs of maintenance and handling materials.

- 2. Centralize National Park Service administration, operations, and the communications center in the visitor use zone.**

Due to the high degree of contact and the functional relationship between the National Park Service and visitors, National Park Service headquarters and related functions should be centralized and remain in the visitor use zone.

- 3. Both concessionaire and National Park Service operations and maintenance should be screened from visitor areas.**

4. **Service access and circulation should be separated from visitor circulation and transportation systems, and service vehicles should not circulate through the residential community.**
5. **The areas planned for support facilities should have room for expansion.**

Changes in technology and services that can result in additional space requirements for back-up facilities should be anticipated.

6. **Utilities and telephone service should be developed only as needed, and alternative energy systems to minimize energy consumption and environmental impact should be investigated.**

Utility systems (including power and telephone lines) should be designed to be implemented incrementally as needed for new developments.

Electric heat should be investigated to preserve petroleum reserves, reduce heating costs, and eliminate unsightly oil containers.

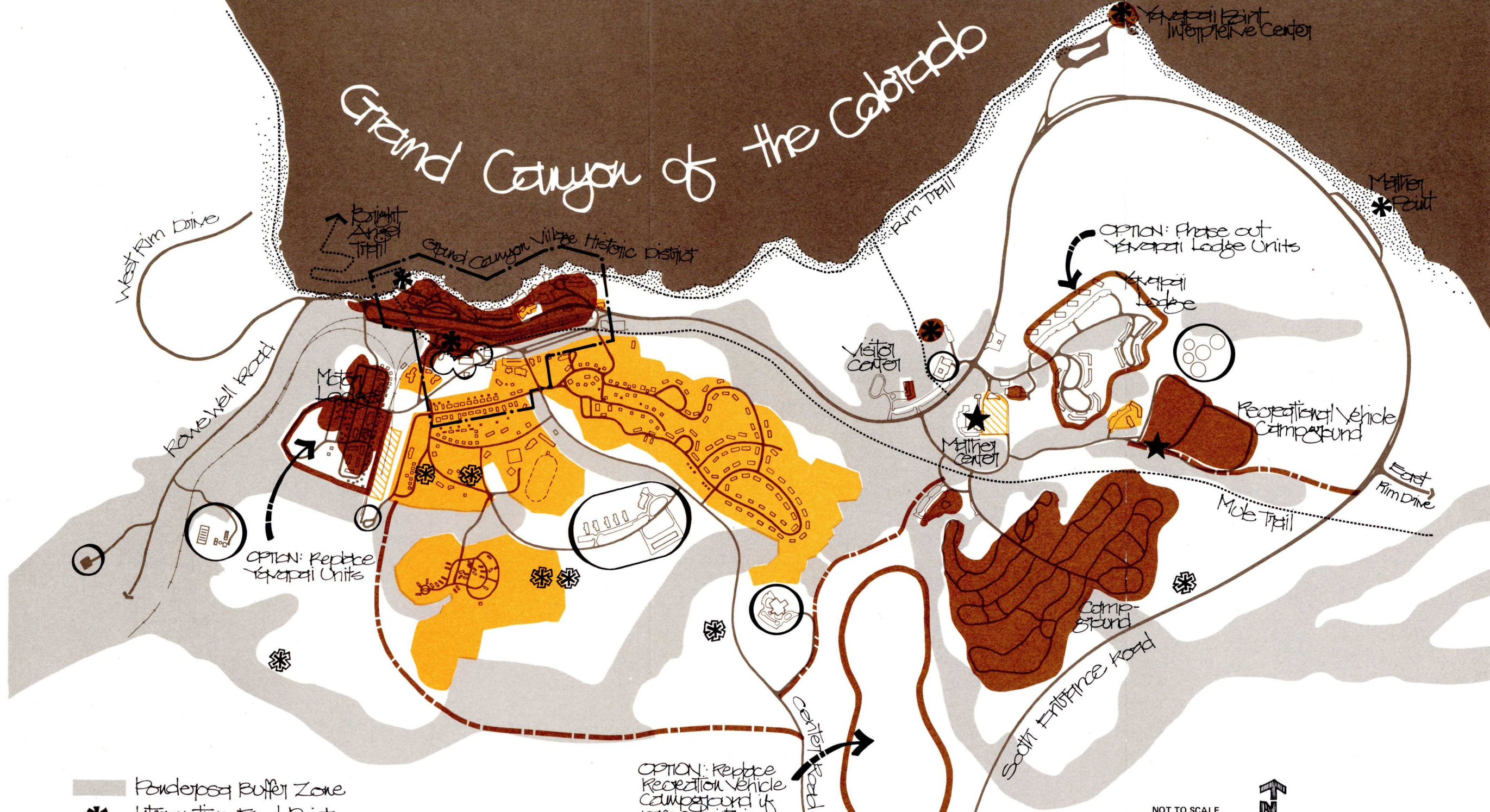
7. **Expand and improve the water supply and reclamation systems to insure a maximum supply of potable water and maximum use of reclaimed water within the Village.**

Since 1928, reclaimed water has been used within the Village for a variety of purposes. The system was constructed during the railroad era to provide water for locomotives and to flush water in concessionaire facilities along the Rim. In recent years, the use of reclaimed water has become increasingly important for landscape management. The system should be expanded by constructing a village-wide distribution system for use in landscape management and National Park Service concessionaire/employee facilities. In addition, methods should be sought to collect natural precipitation to supplement water needs for vehicle washing, irrigation, and other suitable uses.

The reclamation plant, one of the first constructed in the United States, is listed on the National Register of Historic Places. Expansion of the system would not affect the integrity of the plant.

Further studies will be made to determine the amount of water reaching Indian Gardens from Roaring Springs that cannot be delivered to the Village by the present system. A method will be developed for the delivery of this additional water to the Village and to maintain the integrity of Garden Creek.

Grand Canyon of the Colorado



- Ponderosa Buffer Zone
- Interpretive focal Point
- Rim Experience Zone
- Visitor Facilities Zone
- Housing & Community Facilities Zone
- Park Support Facility
- Parking
- Retail/Community Services
- Significant Archeological Site

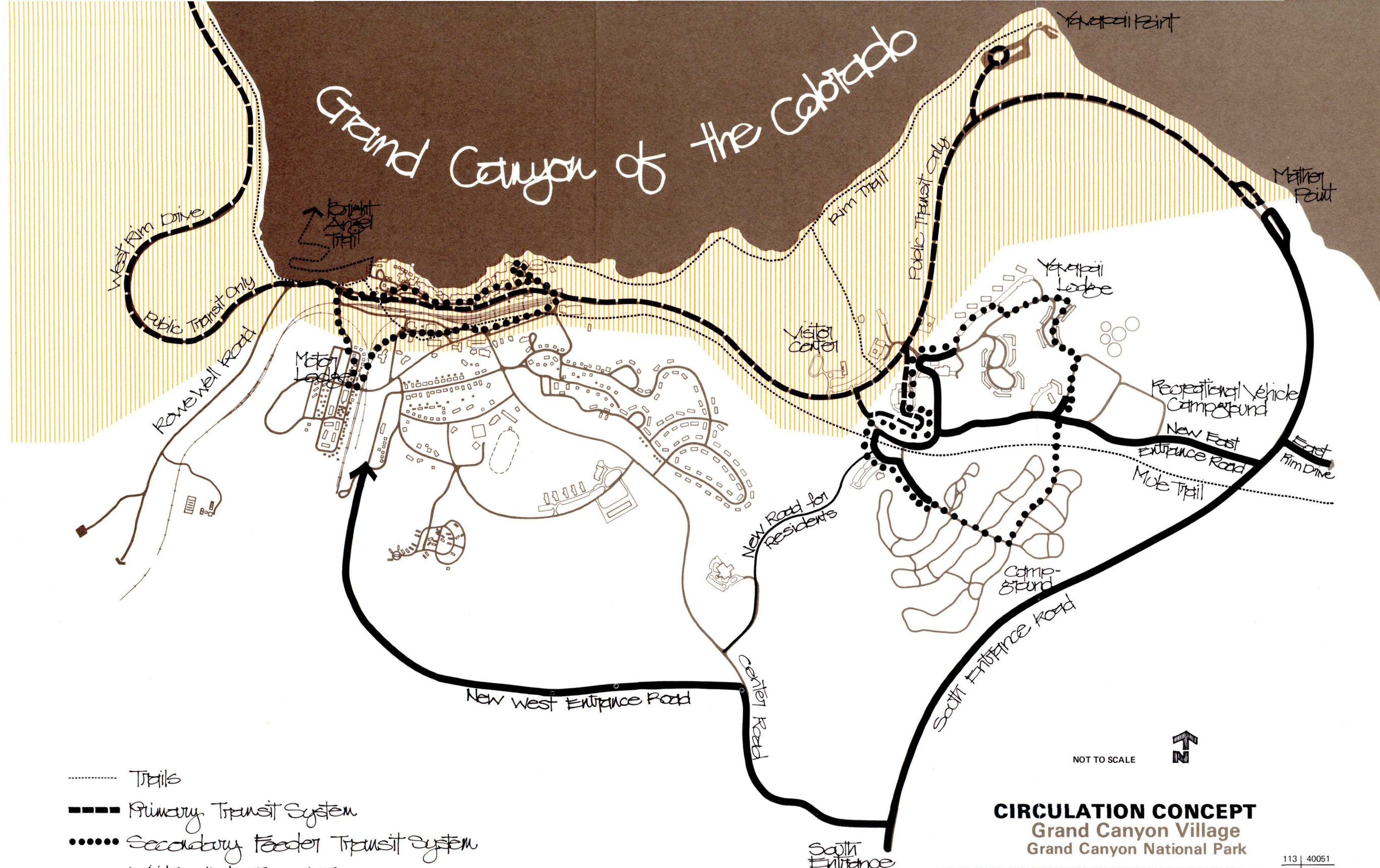
OPTION: Replace Recreation Vehicle Campground if present site is selected for orientation/reception center

Transportation/Reception Center site to be located following further testing and analysis

LAND USE CONCEPT Grand Canyon Village Grand Canyon National Park

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Grand Canyon of the Colorado

- Trails
- Primary Transit System
- Secondary Feeder Transit System
- Visitor Auto Travel Zone
- ||||| Auto Free Zone

CIRCULATION CONCEPT Grand Canyon Village Grand Canyon National Park

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THE DEVELOPMENT CONCEPT

The Land-Use Concept map shows the land-use patterns needed to achieve harmony between conflicting activities and to facilitate the functions of the Village. Implementation will be in phases. The phases must be flexible in order to respond to changes in technology, public opinion, National Park Service policies, and economic factors. Thus they provide a guide to plan for the probable future course of events.

Each phase represents a distinct period in the implementation of the concept:

Phase I.

Provision of public transportation; identification of Village heritage and methods of enhancement; improvement of living environment for permanent residents; movement of undesirable services out of the Historic Village; replacement of obsolete lodge units away from Rim; development of bicycle and pedestrian paths; testing of transportation/reception center concepts; construction of new access roads.

Phase II.

Construction of a transportation/reception center upon completion of testing; expansion of interpretation facilities; ban of visitors' private autos in the Historic Village; removal of auto parking lots and replanting in the Historic Village; development of pedestrian districts and connecting paths; adaptive reuse and restoration of buildings with external architectural merit; expansion as required of facilities to serve increases in day visitation; enhancement of the Historic Village and Apache Street historic district; extension of public transportation system to new visitor facilities and residential and park support zones; construction of needed community facilities for permanent residents; construction of road between residential areas and retail center.

Phase III.

Modification and expansion of visitor-use and park management facilities in response to current needs to assure that adequate facilities

and services are available within the constraints and capacities established.

The phases will overlap in reality, and modifications within the guidelines of the master plan will of course be necessary as practical implementation occurs. However, the phasing breakdown illustrates the pattern of effort, financing, and development that will be necessary to implement the plan. An initial period of tentative investigative commitment with a limited, moderately costly program will be followed by a second period requiring a relatively large capital investment, with firm, long-range commitments, and substantial, fundamental and comparatively irreversible changes. The final period will consist mainly of relatively minor changes and expenditures to provide for any increases in day visitation up to the established capacity.

PHASES OF DEVELOPMENT

PHASE I

The major change for Phase I has been the introduction of a public transportation system that will eventually replace the private automobile within the Village. This stage is characterized by the phasing out of obsolete facilities – to be subsequently replaced and relocated.

Circulation

Private automobiles have been excluded from West Rim Drive during the peak season; shuttle bus service operates on West Rim Drive with interpretation available at stops along the way. Shuttle service from the Bright Angel Lodge area to the Mather Business Center and Yavapai Point has been established. This public transit serves the primary parking facilities for private vehicles presently at Mather Center, the visitor center, and the motor lodge; however, these parking facilities are inadequate for the increasing number of day visitors. Bicycle paths and rental facilities will be initiated, and the pedestrian walk system expanded and improved. Construction of a new access road to the motor lodge area will begin as the first step in the elimination of automobiles from the Historic Village.

Visitor and Park Support Facilities

Obsolete and intrusive service and maintenance facilities will begin to be removed from conflicting use zones. New facilities will replace them in the maintenance area. The new space and buildings will become a reserve for open space or additional, needed facilities. Buildings suitable for rehabilitation will be dedicated to appropriate uses. The relocated maintenance facility will provide service and storage for the public transportation system.

The concept of a centralized transportation/reception center facility will be tested. Alternative locations will be further explored, small scale, experimental facilities developed for the test periods, and visitor reaction to the concepts evaluated.

A number of old cabins west of the Bright Angel Lodge which are not of historic significance will be replaced by new units in the motor lodge area.

Historic Structures

Historic structures will be preserved in their present condition or studied to determine possible reuse through adaptive restoration.

Employee Structures

New staff housing (both NPS and concessioner) will be infilled along existing roads and sewer lines.

Rehabilitation of the employee trailer village will be undertaken during this phase with the objective of creating an attractive and functional living area, in contrast to the traditional trailer court. New housing and trailer sites will be developed to free recreational vehicle sites and lodging units for visitor use.

PHASE II

The main focus of this phase will be to further the replacement of the automobile with public transportation by excluding private vehicles from the Village area during the heavy visitor season and from the Rim during all seasons. If proven feasible in Phase I, construction of the transportation/reception center to serve as an information/orientation, reservation, and transportation terminal will occur.

Circulation

The public transportation system will be expanded to include connections to new visitor facilities. The shuttle system will augment the

transportation/reception center by informing visitors of alternatives relating to the length of visit and visitor interests. The shuttle service will be expanded to provide better service for the residential community. Because of the reduction in traffic created by the elimination of the automobile, bicycle use can be expected to increase, and bike lanes will be provided.

A road between Center Road and the present camper service center will be built to link the residential areas with the major retail area at Mather Center. The road will be built along an existing utility/trail cut. The road will remove residential vehicular traffic from the South Entrance Road, enhancing the visitors' experience of both the Rim and the Village.

A new road from the South Entrance Road to Mather Center will be built along an old road scar. This road will bring visitors to Mather Center, the campground, and the trailer village, allowing the present road from Mather Point to Mather Center and the Historic Village to be closed to automobile traffic.

Facilities

The transportation/ reception center will most likely provide initial parking for day visitors (including tour buses), information and orientation, restrooms, and transit connections. Site evaluation will determine the exact location.

Interpretive facilities will be expanded during this phase, and the space occupied by the present visitor center will be converted to administrative uses.

Employee Community

Old National Park Service facilities east of Center Road on Sunset Road will be removed and the space utilized for housing and community facilities. Additional housing will be constructed as needed. Community recreation facilities will be provided.

Visitors Services

Required additional facilities, including meeting rooms for evening attractions and interpretive programs, will be provided within existing structures in the Historic Village. These facilities will be designed as a group in the historic zone and linked by pedestrian circulation and a mini-shuttle system. A group-feeding facility will be provided in the motor lodge area. This will relieve the impact of large tour groups on present restaurant facilities.

PHASE III

The objective of this phase is to expand existing facilities only as necessary to accommodate any increases in day visitation.

Circulation

The existing transportation system will be modified to reflect changes in usage, technology, and visitor preferences.

Facilities

Mather Campground will be retained as part of the visitor-service facilities. If any recreational vehicle camping sites are removed for the construction of a transportation/reception center, they may be replaced near the Mather Campground. However, no utility hook-ups would be provided.

The Yavapai Lodge units (1972 construction) are expected to be obsolete or at least amortized by this time, and may be relocated to the motor lodge area, depending upon further study at the time. Any space vacated by Yavapai would go to open-space/reserve status.

Employee Community

Since staff requirements increase with increases in day visitation, the residential community must also expand. Any new housing required would be built immediately east and south of the present residential area. New housing should emphasize quality and environmental sensitivity.

Under the concepts of this plan, the Rim and Historic Village will revert to a pedestrian zone free of the noise, congestion, and pollution of the automobile. Overnight visitors may drive to their lodging units (except those on the Rim), campsites, or recreational vehicle sites. The day visitors will be encouraged to leave their cars at a central transportation/reception center where they will receive information and orientation to assist in planning their visit. Numerous options will be available depending upon the time they have available. Whether it be a brief view of the Grand Canyon with relatively little interpretation or an extended visit with a deeper level of experience, visitors will be able to appreciate and enjoy the Grand Canyon in a quality environment.

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