



A REPORT TO THE CONGRESS OF THE UNITED STATES

THE  
LOWER  
COLORADO  
RIVER  
VALLEY  
PARKWAY

ON MICROFILM

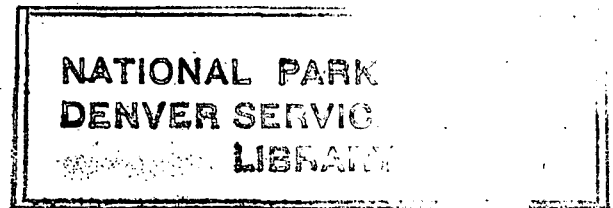
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THE LOWER COLORADO

RIVER VALLEY PARKWAY

A proposal for a National Parkway and  
Scenic Recreation Road System along  
the Lower Colorado River Valley in  
California, Arizona, and Nevada.



U. S. DEPARTMENT OF THE INTERIOR

National Park Service  
in cooperation with  
Lower Colorado River Office  
Bureau of Land Management

February 1969

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DENVER SERVICE CENTER  
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# United States Department of the Interior

OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20240

Dear Mr. President:

We are pleased to transmit herewith a report on the feasibility and desirability of developing a national parkway and scenic recreation road system within the Lower Colorado River Valley in Arizona, California, and Nevada, from the Lake Mead National Recreation Area and Davis Dam on the north to the International Boundary with Mexico on the south in the vicinity of San Luis, Arizona and Mexico.

This report is based on a study made by the Lower Colorado River Office and the National Park Service of this Department with engineering assistance by the Bureau of Public Roads of the Department of Transportation.

Sincerely yours,

Secretary of the Interior

Hon. Spiro T. Agnew  
President of the Senate  
Washington, D. C.

Enclosure



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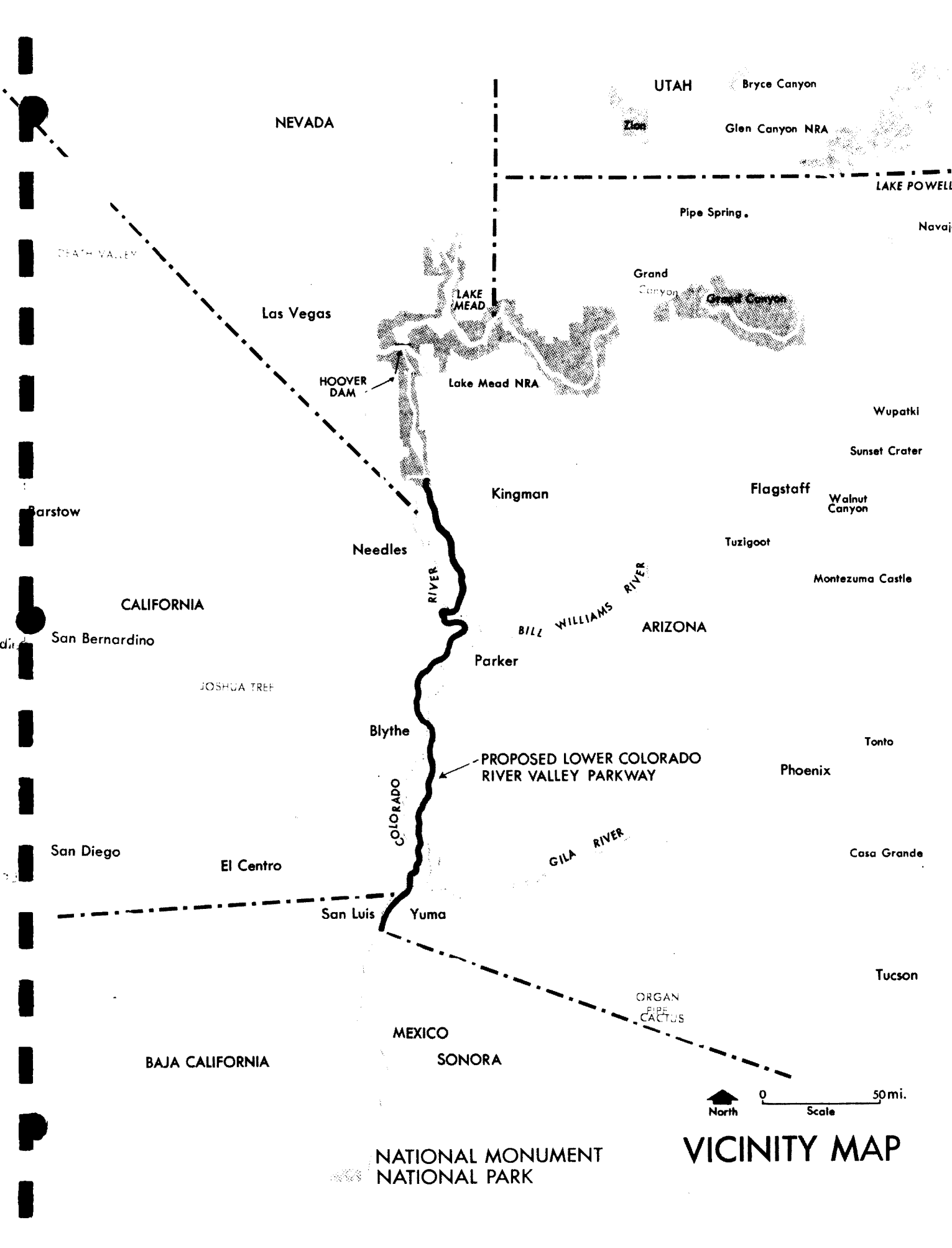
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Secretary of the Interior

Hon. John W. McCormack  
Speaker of the House of  
Representatives  
Washington, D. C.

Enclosure



NEVADA

UTAH

Bryce Canyon

Glen Canyon NRA

LAKE POWELL

DEATH VALLEY

Las Vegas

LAKE MEAD

Pipe Spring

Navaj

Grand Canyon

Grand Canyon

HOOVER DAM

Lake Mead NRA

Wupatki

Sunset Crater

Kingman

Flagstaff

Walnut Canyon

Barstow

Needles

Tuzigoot

Montezuma Castle

CALIFORNIA

San Bernardino

BILL WILLIAMS RIVER

ARIZONA

JOSHUA TREE

Parker

Tonto

PROPOSED LOWER COLORADO RIVER VALLEY PARKWAY

Phoenix

San Diego

Blythe

GILA RIVER

Casa Grande

El Centro

San Luis

Yuma

Tucson

ORGAN PIPE CACTUS

BAJA CALIFORNIA

MEXICO

SONORA



0 50mi. Scale

NATIONAL MONUMENT NATIONAL PARK

VICINITY MAP

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## *The Lower Colorado River Valley*



*...a land of varied  
and recurring  
contrasts*

SUMMARY

One of the Southwest's most precious natural resources is the Colorado, one of the world's great rivers. Once turbulent and muddy, the river now emerges as clear water from its great dams on its course to the Gulf of California. Man-made lakes and reservoirs in the midst of great desert regions have created in the people a mariner's zeal for water. Behind each dam, broad expanses of water lures millions of outdoor recreationists in a region now experiencing the fastest population growth in our Nation. Extending 265 miles along the Lower Colorado River from the southern boundary of Lake Mead National Recreation Area on the north to the International Boundary with Mexico on the south is an area containing valuable recreation resources and other scenic, scientific and historic values.

The Lower Colorado River Land Use Plan, a far-reaching Land Use Program for conservation and development along the Lower Colorado River, was adopted in January 1964 by Secretary of the Interior, Stewart L. Udall. It sets forth the basic objectives of land use in the area. In addition to preserving worthwhile wildlife, plant life and spectacular geological formations, the plan, which covers over 400,000 acres of Federal land, provides for public outdoor recreation to meet the recreation needs in this rapidly growing region. At present the



overall recreational use of the Lower Colorado River region is estimated at more than four million visitor days. Approximately 77 percent of the recreation users are from the southern California region where some 12 million people live within six hours' easy driving time from the valley. Another million abide within lesser distances from the river in Arizona. These numbers are expected to increase by over 60 percent in the next 17 years or by 1985 to nearly 20,000,000. In addition, the Lower Colorado River area annually plays host to a large number of winter visitors from the northwestern quadrant of the United States and western Canada.

One of the objectives contained in the 1964 plan concerns public access to and within the area. This current study is intended to evaluate these access needs, outline methods of meeting them and set forth some of the benefits which can be derived from a comprehensive Colorado River Valley Parkway and Recreation Road System.

The purpose of such a scenic recreation road system is threefold:

1. It will provide the increasing number of visitors to this area with convenient access to and through the river valley area;
2. It will display outstanding scenic, historic, prehistoric, cultural and recreational resources;

3. It will afford leisurely recreation motor travel free from the distractions and dangers of the ordinary high speed highways along the Lower Colorado River Valley.

Such a road system would offer recreation road access to the principal and varied interests of the river area and would connect many park and recreation developments, both existing and as proposed in the 1964 Lower Colorado River Land Use Plan.

In his Message on Natural Beauty to the United States Congress, President Johnson said:

"\*\*\*more than any other country, ours is an automobile society. For most Americans the automobile is a principal instrument of transportation, work, daily activity, vacation and pleasure. By making our roads highways for the enjoyment of nature and beauty, we can greatly enrich the life of nearly all our people in city and countryside alike.

"Our task is twofold. First, to ensure that roads themselves are not destructive of nature and natural beauty. Second, to make our roads ways to recreation and pleasure."

The 1962 Outdoor Recreation Resources Review Commission report to the President and the Congress also recommended the need for more opportunities for pleasure driving as part of the overall national recreational program. In another report, "A Proposed Program for Scenic Roads and Parkways" prepared for the President's Council on Recreation and Natural Beauty in June 1966, it states, "\*\*\*driving for pleasure is the Nation's most important outdoor recreation activity\*\*\* it accounts for 42 percent of all outdoor recreation."

A recent recreation use study, not yet complete, indicates that over 60 percent of the people visiting the Lower Colorado River area are doing so because of the warm weather and the fresh, smog-free air.

At the present time, over two-thirds of the population of this country live in or near cities. The expanding San Diego-Los Angeles Metropolitan Area will continue to provide ever increasing numbers of recreation users to the Lower Colorado River Valley. The outstanding existing recreation use and expanding development of the Lower Colorado River will draw ever increasing numbers of people to this area. The continued and additional development of recreation sites by Federal, State and local agencies will, of necessity, require a network of roads.

This intensive development of complementary recreational facilities in a scenic corridor will make available previously unused resources and make them more desirable to the recreation public. In the report, "A Proposed Program for Scenic Roads and Parkways," criteria for selecting and designating scenic roads, parkways and scenic highways was listed. The following criteria are of particular significance to the proposed Lower Colorado River Parkway, because it qualifies fully in each category:

1. Has a quality of existing or potential scenic features, or recreational, historical, educational, scientific or cultural values.
2. Has a variety of experience provided to persons using the highway and complementary facilities.
3. Has proximity to urban areas.
4. Has accessibility of scenic features and other facilities to persons using the highways.
5. Has economic feasibility which will be particularly beneficial to the surrounding communities.
6. Has adaptability to development and public use.
7. Has compatibility with recreation, esthetic, and conservation needs of the area and competing highway transportation needs.

This proposal for a Colorado River Valley parkway and recreation road system qualifies fully in each of the above categories. In addition, it should be noted that this proposed recreation road system would connect three major east-west routes travelled by the public. When adverse weather occurs along the northern routes, the Colorado River Valley becomes a target area for winter visitors and travelers from the north. A scenic road is more than a public highway.

Tourism is now considered among the world's largest businesses. The proposed Lower Colorado River Valley Parkway and Recreation access roads will provide diversion and dispersal of recreation traffic. Consequently, use will be spread out and pressure will be taken off the more heavily used areas such as Lake Mead National Recreation Area to the north with some 4.7 million visits in 1968. It will also provide new recreation experiences, as well as an attractive road length for the recreation users travelling from one recreation site to another.

The 1967-68 recreational uses survey of the Lower Colorado River Valley, lists the following predominant uses of this area: boating, fishing, sight-seeing, camping, swimming and water skiing.

The predominant reasons given in the users' survey by the people visiting the area are water based recreation in a warm climate with

"fresh, smog-free air," the opportunity to relax and "to get away from life's hustle," and the outstanding desert scenery. Some of the suggested improvements of the area include more and better campsites, improved and expanded sanitary accommodations, more commercial facilities, more boating facilities, more recreation interest for all ages, more and better trailer parks, and more and better roads. With these improvements accomplished, the estimated four million visitor days of recreation use presently existing will increase rapidly.

Geologically, the area is outstanding in scenery - varied and colorful - a land of spectacular fiordlike river gorges and tributary washes, placid reaches, and wide valleys; of rugged volcanic peaks, and gently rolling plains and mesas - an elongated oasis surrounded by extensive expanses of the Sonoran Desert, rich in geologic lore and a mecca for "rock hounds."

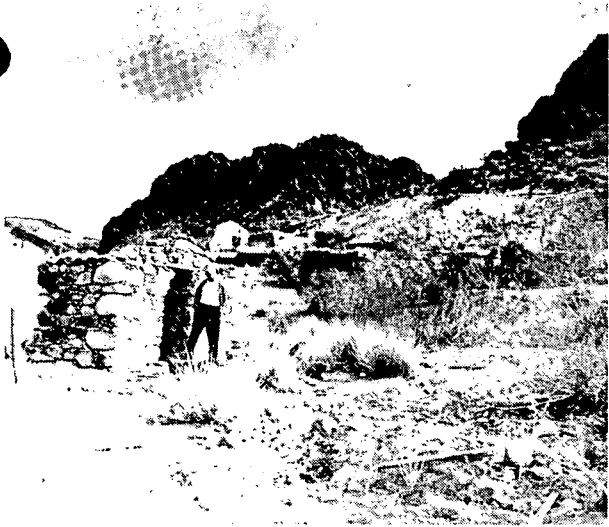
The biological values are significant, particularly from the standpoint of wildlife. The deer, burros, quail, and bighorn sheep range between the desert hills and the river's edge. Indigenous species of reptiles and water birds such as the heron, egret, various shorebirds and migratory waterfowl are of considerable esthetic value to the Lower Colorado River area. Together, with its wildlife, the fisheries of the

Lower Colorado are a great attraction to the sportsmen in the southwest and, to some extent, to those throughout the Nation.

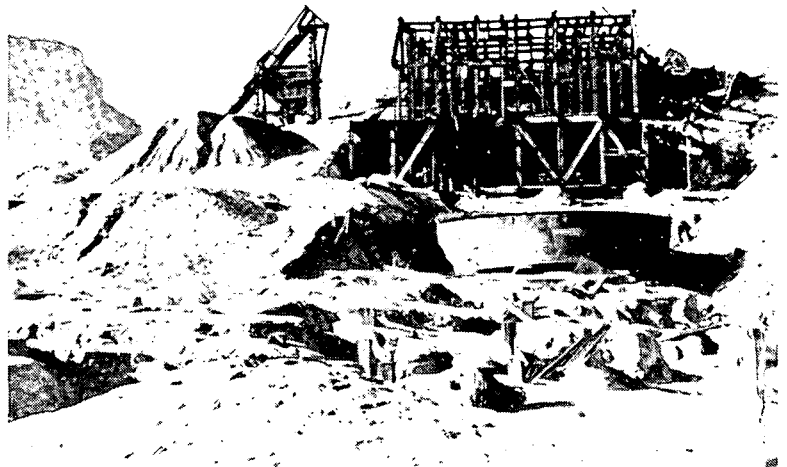
Botanically, the lower Sonoran Desert area has a unique variety of specialized desert plants, ranging from minute desert flowers and cacti to the giant saguaro and thorny trees.

Historic sites, though individually not of national significance, they collectively represent a colorful and important phase of early American history. They tell a story which can add greatly to the visitor's enjoyment and appreciation of the Lower Colorado River country. Prehistory dates to the 16th Century Christian Era and includes those earlier centuries when Indians lived in the valley and left behind artifacts, pictographs and petroglyphs. A few of these sites are within the immediate area of the river and parkway, and other archeological sites are presently being identified under a separate survey. Important interpretive opportunities lie in the story of exploration of the valley with its missionary and military activity; the coming of the steamboat, stage line, the river ferry and the railroad; the discovery of gold in California and the mining activities at Picacho, Ehrenberg, Parker and elsewhere near the river.

Man's manipulations of the land and water in more recent times is a story worthy of interpretive presentation throughout the length of the

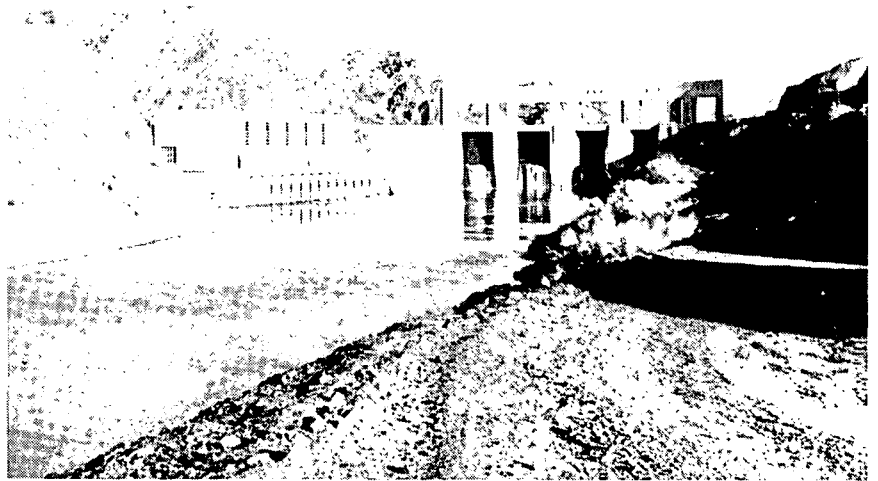


*Goldroad*



*Picacho Mine*

*Interpretation  
Opportunities  
of  
River Valley  
Features*



*Parker Dam*



*Desert Flora*



proposed parkway. Through these interpretive facilities, the visitor would learn the meaning of the various dams, reservoirs, water distribution works and canal systems; of their functions, and their relationships to the other units of the vast Colorado River Storage Project. The development of vast irrigation projects which help feed and clothe the nation are also of interpretive value. Such presentations could be done most effectively at overlooks and in visitor centers close to the dams, reservoirs and irrigated valleys through interpretive facilities jointly developed by the National Park Service and the Bureau of Reclamation.

Wildlife, including the history and problems of game management, warrant interpretation. In this endeavor, coordination with the Bureau of Sport Fisheries and Wildlife and appropriate State agencies can assure public enjoyment and understanding of the wildlife story of the Lower Colorado River area.

In summary, the Lower Colorado River Valley in its entirety is without peer and is a nationally significant outdoor recreation resource. The recreation developments proposed by the agencies concerned in the Lower Colorado River region will, of necessity, require a network of scenic and recreation roads. It becomes a question as to whether these new roads will be haphazardly selected for local individual purposes

or be coordinated into a planned system to provide a multitude of values.

A national parkway, thus authorized and established by Congress would be a vital recreation link in the recreation road system. It would make readily accessible the many resources of the Land Use Plan area to the recreation traveler. It would materially reduce the needs for many of the independently anticipated roads in the valley.

In addition, such a proposal could be extended northward to feature such attractions as Lake Mead National Recreation Area, Grand Canyon, and other park areas in northern Arizona, southern and eastern Utah, Colorado, Wyoming and Montana.

Therefore, it is feasible as an economic project, as an engineering project and as a user feature. It does have national significance and qualifies as a national parkway.



Lower Colorado River Panorama - Looking north into the  
Needles and Upper Lake Havasu, Arizona and California.

## II

### CONCLUSIONS

A. The recently completed study by the National Park Service and the Lower Colorado River Land Use Office,<sup>1</sup> with the engineering assistance of the Bureau of Public Roads, discloses that a scenic parkway traversing the Lower Colorado River Valley and complemented by a connecting recreation road system is feasible and desirable. The area possesses a magnificent array of recreation resources in addition to a rich variety of scenic locations embracing the river valley area. It fully qualifies as a national parkway in accordance with the following National Park Service definition:

"A national parkway is a federally owned, elongated park featuring a road designed for pleasure travel, and embracing scenic, recreational or historic features of national significance. Access from adjoining properties is limited and commercial traffic is not permitted. A national parkway has sufficient merit and character to make it a national attraction and not merely a means of travel from one region to another. National parkways are authorized by special act of Congress for administration pursuant to the Act of August 25, 1916 (39 Stat. 535) as amended and supplemented."

<sup>1</sup>. Now the Lower Colorado River Office, Bureau of Land Management

B. The parkway and scenic road system would provide an adequately coordinated system of access routes to the many recreation developments and the scenic and recreation resources in the Lower Colorado River Valley. It would link together the Lower Colorado River region with the Lake Mead National Recreation Area. It would provide access to or traverse a wide range of recreation and scenic areas. Included in this set of features are three national wildlife refuges, five dams and reservoirs, five Indian reservations, and some fifty areas existing and proposed for park and recreation use under the Lower Colorado River Land Use Plan. Easy and pleasant access to these points of interest would benefit many millions of recreationists now being attracted to this desert river playground as well as many additional visitors who would be brought to the area by the parkway.

C. The parkway would make greatly needed outdoor recreation opportunities more easily available to the heavily populated southern California region which include the metropolitan areas of Los Angeles, Long Beach, San Diego and the San Bernardino complex. This concentrated population of some twelve million persons is within an easy day's driving distance of the Lower Colorado River Valley. Southern California and Arizona are now experiencing the fastest population growth in the nation.

D. The network of scenic and recreation spur and loop roads which would originate or tie in with the national parkway route, as shown on the map in this report, would provide the traveler with an opportunity for an outstanding travel experience. A network of roads is needed to offer the visitor a leisurely vacation route free from the ever-increasing volume of high speed traffic found on ordinary highways and the opportunities for pleasant, safe and day-by-day motoring through the river valley area.

E. The parkway and recreation road system is feasible and the developments costs are well within practical limits.

1. Parkway Costs:

The Federal portion of the project includes the construction and development of the 245.8 mile parkway and the 21.5 miles of connecting spur roads with their drainage and bridge structures. The following is a breakdown by State of the mileage and estimated cost:

<u>State</u>	<u>Mileage</u>	<u>Construction Cost</u>
<u>Arizona</u>		
Main Route	128.4	\$41,111,000
Spur Routes	2.2	559,000
	<u>130.6</u>	<u>\$41,670,000</u>
<u>California</u>		
Main Route	117.4	\$42,929,000
Spur Routes	19.3	4,710,000
	<u>136.7</u>	<u>\$47,639,000</u>
 TOTAL	 267.3	 \$89,309,000

This total 267.3-mile package includes the necessary road maintenance area units as well as concessioner, campground, and picnic area roads, trails, utilities and comfort stations.

The estimated cost of all of these features including engineering and contingencies averages about \$561,000 per parkway and spur road mile for a total of about \$150 million. All concessioner buildings are proposed to be constructed by private capital under concession contracts. Land costs are not included. However, nearly all of the land needed is still in public ownership at this time. (See Table II, Section IX page 95)

## 2. Parkway Design Features:

The roadway will be designed for leisurely travel with ample opportunity for visitor enjoyment and appreciation of park resources. The design standards will be in accordance with Park Road Standards approved by the Secretary of the Interior in 1968. (See Appendix.)

The roadway will be a single two-way road with paved width of 24 feet plus widening on the curves. It will have 8-foot wide stabilized shoulders for an overall roadway width of 40 feet. The maximum gradient will be seven per cent compensated but grades of eight or nine per cent may be considered for short distances to avoid excessive cuts and fills.

In some areas a one-way roadway which would involve a wide separation of lanes is proposed on several scenic sections of the main roadway to give the north and south bound traffic an opportunity to view the different features and to enjoy them in safety. The one-way roadway may have a pavement width sufficient for safe passing with ample turnouts to allow visitors to view the scenery and features at a leisurely pace.

Frequent turnouts and parking areas will be provided for vistas, scenic overlooks, nature trails, interpretive exhibits, and recreational, historical, or geological features.

Grade separations will be constructed at railroads, public roads and highway crossings. State, county, or other public roads disturbed by the parkway construction will be relocated to preserve their continuity.

### 3. Scenic Recreation Road System Costs:

The development of the system will necessitate active collaboration of public agencies, particularly the counties in both States, the State highway departments and Federal and State agencies. This collaboration would take the form of financial assistance, construction of new roads and the improvement of existing roads. It would also include maintenance and operation, and effectuation of scenic corridor measures. As an inter-county-interstate



system the scenic recreation road network plan could be developed, programmed and executed by cooperative agreement between the Lower Colorado River Office and the responsible administrative State and local agencies to achieve the intent of the recreation road system.

The ultimate cost of this local system has not been precisely estimated. Estimates will vary widely depending on such items as the traffic volumes, terrain, land values, the extent of scenic corridor protection required and the variety of roadside facilities to be provided.

The Bureau of Public Roads has estimated that the proposed 312-mile system divided among the 6 counties could be developed as follows:

<u>State</u>	<u>Existing Location</u>	<u>Cost</u>	<u>Reconstruction &amp; New Location</u>	<u>Cost</u>
Arizona	175.9 mi.	\$1,759,000	10.1 mi.	\$1,790,000
California	96.8 mi.	968,000	22.7 mi.	4,148,000
Nevada	<u>7.0 mi.</u>	<u>70,000</u>	<u>0.0 mi.</u>	<u>---</u>
	279.7 mi.	\$2,797,000	32.8 mi.	\$5,938,000

The total estimated cost for the 312.5-mile scenic road system is \$8,735,000.

The above costs for new construction, landscaping, and corridor protection were based on suggested costs developed for the Scenic Roads and Parkway Study. The estimated costs do not include costs for engineering and contingencies.

### III

#### RECOMMENDATIONS

##### A. National Parkway

The Department of the Interior recommends:

1. Congressional authorization of a national parkway in Arizona and California as a unit of the National Park System. Said parkway, to be known as the Lower Colorado River Valley Parkway, to extend approximately 246 miles in length from Lake Mead National Recreation Area to the vicinity of the International Boundary at San Luis, Arizona, near the border city of San Luis, Sonora, Mexico. It would generally traverse the Lower Colorado River Valley as shown on the location map in this report.
2. Congressional appropriation, at the time of authorization, of planning funds to enable the National Park Service and the Lower Colorado River Office to proceed with the detailed engineering surveys needed for public lands withdrawal and private land acquisition.
3. Acquisition costs for the proportionately small percentage of private land be assumed by the Federal Government

in addition to the normally assumed costs of construction and maintenance of the parkway road and associated recreation and public service developments.

4. Construction, maintenance, and administration of the proposed national parkway be by the National Park Service in accordance with national parkway policy.
5. Construction of tourist facility developments such as lodges, restaurants, and motor service facilities on parkway lands be by private concessioners.
6. Close cooperation with the land administering agencies (Bureau of Land Management, Bureau of Sport Fisheries and Wildlife, Bureau of Indian Affairs and Tribal Councils, Bureau of Reclamation, Department of Defense, and State, city and county governments) in the planning of the parkway road and facilities for public recreation use to provide the best public services and the least disturbance to their land uses.
7. Development of overnight and day-use areas at selected scenic locations along the route to supplement the existing

parks and other adjoining public areas and to accommodate the millions of additional visitors brought by the parkway.

8. Development or appropriate treatment of sites having values for exhibiting archeological, historical, natural, geological, wildlife, agricultural, or other public interest aspects of the region be provided through parkway administration.
9. Explore with appropriate Mexican officials the possibility for a connecting interpretation link in the vicinity of San Luis to inform the parkway traveler of the many cultural interests, travel routes and recreational and scenic areas in Mexico.
10. Development of interpretive programs with:
  - a. The Bureau of Reclamation to tell the story of the various dams, reservoirs, water distribution works, desilting plants, canal systems, and other water control projects; their functions and their relationships to the other units of the Colorado River Storage Project which would add immeasurably to the visitor's understanding of these man-made values.
  - b. The Bureau of Sport Fisheries and Wildlife and its

state counterpart agencies to tell the story of wildlife, its management, use, development and conservation.

c. The Bureau of Indian Affairs and the five Indian Tribes along the lower Colorado River have an important cultural story to tell.

d. The appropriate Federal, State and local interests of the wide range historic sites and features.

11. Further planning studies be made by the National Park Service as to parkway extension proposals as they would relate to Lake Mead National Recreation Area and to other park areas to the north and east to provide a continuous combined parkway and park road for a variety of recreation use.

B. Recreation Road System

1. A recreation road system consisting of approximately 312.5 miles as delineated on the system plan, be designated and developed cooperatively by Federal, State, and county agencies to facilitate circulation within the river valley and provide adequate access to and from the parkway and to the park and recreational opportunities provided through the development of the Lower Colorado River Land Use Plan.

2. Federal, State and county agencies be encouraged to designate and provide those recreation roads as shown on the overall system plan in accordance with scenic road standards and criteria jointly approved by the local agency, the National Park Service and the Lower Colorado River Office to ensure permanent protection of the recreation road corridor.
3. Construction by administering agencies of additional roads within or leading to the park and recreation areas of the Land Use Plan as needed to serve their recreational use.
4. The planning and development of the road system plan be coordinated through the Lower Colorado River Office by all public agencies and local jurisdictions involved to insure continuity.
5. Provision of visitor information and interpretive centers at key locations along the system to inform the public of the full recreation opportunities available for the enjoyment of the area.

#### IV

### BACKGROUND OF LOWER COLORADO RIVER VALLEY STUDIES

In early historic times, since 1540, intermittent exploration of the general river valley was motivated by gold, religion, the fur trade, and needs for transportation and migration routes. Exploration routes first followed along the river. Then, migration routes were established east-west across the river. Now, there is again a need for a longitudinal route. With the control of the historic recurring river floods, more intensive and varied uses of the valley have occurred. The economy of the general area rapidly became more stable. Since 1935 and particularly during the last twenty years, there have been spectacular population shifts to the Southwest. This has been especially notable for the valley and its neighboring state sections. The river area, particularly, has received its portion of this shift as well as becoming a mecca for year-round recreation and winter vacations.

Among the rapidly developing new uses of the valley, its water and its land, is a wide range of recreation activity. This became significant not only for the local residents but even for those living elsewhere, in the Southwest and in more distant areas, for whom the long travel distances involved are no obstacle. To meet the many new resulting problems, studies relating to optimum land uses were intensified.

An early overall reference work in the pursuit of these studies was "A Survey of the Recreational Resources of the Colorado River Basin," by the National Park Service, 1946. This was followed, during the ensuing fourteen years, by a series of at least six special studies focused specifically on the distinctively scenic downstream stretch of the river, from Davis Dam to the International Boundary.

These earlier studies are listed in Section XIII, references. They brought out the need for an in-depth, coordinated study and a recommended general plan of development. The Secretary of the Interior appointed a group of Federal, State and local leaders as his Lower Colorado River Land Use Advisory Committee. Their studies and recommendations were documented as "The Lower Colorado River Land Use Plan" which the Secretary approved January, 1964. This Plan report identified optimum uses of the various sectors of the area. Recreation use was among the most significant uses. The Secretary's Plan emphasized the need for a planned system of inter-related recreation access roads.

Several research projects, needed to implement the Plan, have resulted in special studies, both of the entire Lower Colorado River Valley and of its individual units or segments. The Land Use Office enlisted the



cooperative assistance of the National Park Service and other agencies in further special studies. One of these, a recreation public use survey of the Lower Colorado River Valley, has been undertaken by the University of Southern California. Another, specifically centered on the need for a coordinated recreation road system, has culminated in this Feasibility Report which recommends The Lower Colorado River Parkway and Recreation Road System Plan.

RECREATION RESOURCES

The basic recreation resource is the country itself with its innate characteristics of an everpresent interplay between the river, the mountains and desert elements as well as the climate. Added to this is the interesting ecology, the indigenous plants and animals in their relationship to these particular environmental influences. In full combination, all of these are the extensive natural ingredients which make the area distinctive, probably unique. Then, there is the added influence of man, extending back in prehistory, but of greater impact in more recent times. Both the romance of his activities in the past and the existing effect of his manipulations of the land and water are substantial recreation resource factors. An introduction to each of these and their relationship to each other follows:

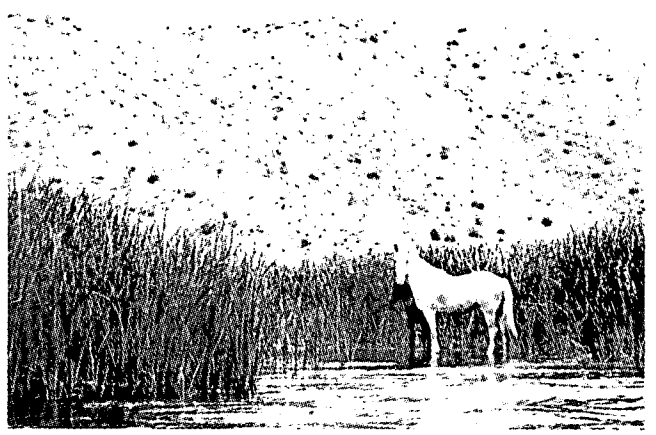
A. General Scenic or Basic Recreational Resources

The Lower Colorado River Valley is a land of varied and recurring contrasts. These involve assorted and diverse land forms which include narrow river gorges, abrupt slopes, wide valleys, gently rolling plains and mesas, rugged volcanic peaks. Also, the contrast is markedly distinct between areas of lush growth along the river and areas superficially barren beyond the rivers' influence. This contrast is often

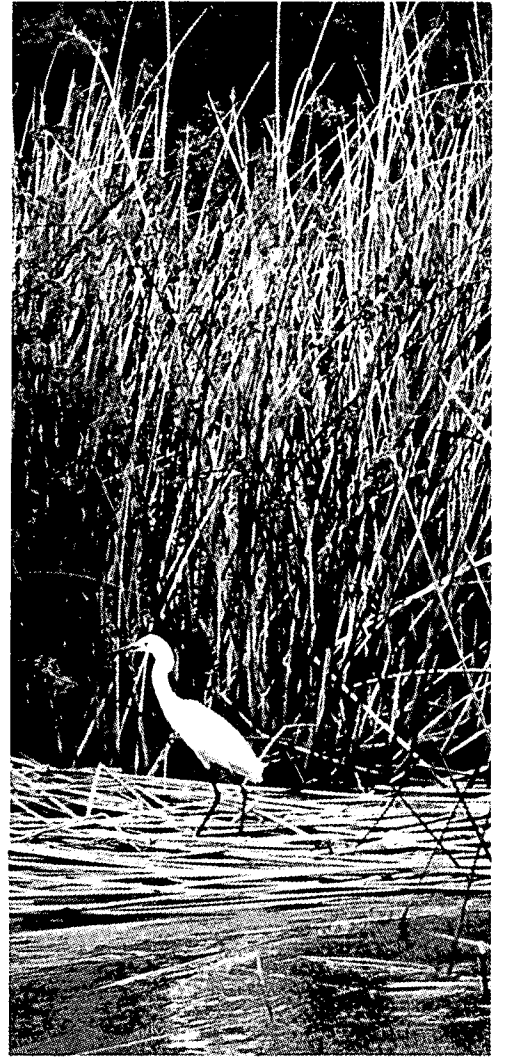
characterized by rapid change from one to the other. Vegetation, its profusion or relative absence, is directly a product of a particular microzone of ecological environment. These are zones intermingled and typically narrow. The Valley, then, is essentially an elongated oasis of water loving plants surrounded by broad expanses of the Sonoran Desert with its drought defying plant species.

This variety results in a major attraction of the Lower Colorado River area. It is far more than a river. It is a combination of water, sand and gravel; of mountain and valley. It is an opportunity to experience the riverside first hand, or to view it from the nearby desert, or conversely, to enjoy the desert within its own dominance, or as a background or offscape to the river setting.

In the weave of the fabric which is the charm of the Valley, the woof contains the resources extending out from any given point of the river. A vista or a panorama of jagged skyline, sometimes close, sometimes 50 to 100 miles distant is almost always present. A dominant characteristic of the warp also is variety. Lengthwise, the river and landscape is everchanging from swift to placid, the river flows from lake to gorge and from swamp to deep open water expanse. The land forms change from congested mountain masses to open desert valleys.



*River Valley  
Wildlife*



#### 4. Recreation Resource Enhancement from Ecological Factors

Wildlife types, both plant and animal, are diverse, including both the more familiar as well as the species distinctive to the Lower Sonoran life zone. Even the water loving plants, the phreatophytes, vary. In some riverside or river swamp sections, extensive colonies of arrowweed predominate. In other sectors, the principal species may be salt cedar, willow, cottonwood, bulrush, cane, cattail, or interesting combinations of them. In areas further from the river dominance as soil and water table changes, the palo verde, desert ironwood, screwbean and smoketree occur. These in turn give way, as the influence of the desert holds full sway, to assorted formidable cactus species, to creosota bush, or to barren expanse where sand and colored rock form both the foreground and distant elements.

The native animals tend to concentrate where there is food, water, and cover. They include many small animal species such as beaver, muskrat, kangaroo rat and rabbit, as well as several predators including fox, coyote and, less frequently, a member of the cat or lion family. Deer, bighorn sheep, and feral burros and wild horses range between the river and the foothills or mountains. In both the desert and water environments there are many additional forms of life which can also reward the observant visitor with an occasional

glimpse of horned toads, lizards and other reptiles including several varieties of snakes.

Bird life in the Valley is widespread, and numerous in both water influenced and seemingly parched environmental areas. Among the more common birds are the seasonally present doves, the wide ranging quail, and a host of songbirds. A wealth of waterfowl, both migratory and indigenous are recorded as visitors or year-round residents. These include a dozen or so species of ducks, three species of geese, various wading birds, and shorebirds in great variety. The road runner, owl and hawk are important residents. All are of interest to the observant visitor, as well as to the bird watcher who can record many species whose range is limited to this region.

A variety of aquatic life is in the river, its swamps, and lakes. The fishery resources include trout in the cold lake water releases just downstream from Davis Dam, as well as in Lake Mohave itself. Bass, crappie, bluegill, catfish and other types of fish are found in the warmer waters elsewhere in the river and lakes further south. Not only is fishing itself an important recreational attraction, but to quite a segment of visitors there is a significant contribution to the recreation scene stemming from the diverse and often picturesque appearances of the fishermen and their various methods of fishing, be it by cane pole or rod and reel, from bank or boat.



Petrographs on Picture Rock along Topock Gorge, Arizona

Climate has had a strong hand in modifying the land and water, the plants and animals. But its influence does not stop there. It tempers the environment for man himself. It is a significant recreation resource. For truly this is a land of climatic distinctives. While summers are a period of searing heat and brilliant sunshine, more than half of the year is pleasantly mild, with sunshine and sustained low humidity. It is the very antithesis of the winter period typical of "nearly everywhere else." During the winter period the influx of visitors and seasonal residents from the north is so great it is an important element in a description and evaluation of recreational uses.

#### C. Recreation Resources Stemming from Man's Activities

Archeological studies within the Valley reveal that man, during prehistory, recurringly occupied or visited the area. His impact on the present, however, is not extensive, being limited largely, from the standpoint of recreational interest, to occasional finds of artifacts, pictographs, and petroglyphs. Also, of popular interest, are the intaglios, "giant desert figures," which were outlined by clearing lines in the "desert pavement," gravel, to outline a figure of a man and several animals. These intaglios are located on a mesa some 18 miles north of Blythe. The State of California has designated this area Historical Landmark No. 101.



Archeological exploration of the prehistory era of the aborigine has yet to be systematically undertaken within the valley area.

With the coming of Europeans, man began to modify the area more extensively and with more permanent effect. Details of this River and Valley historical activity fill many volumes. Today man's impact involving the use of the resources for recreation should be noted here in contrast to historical records which concentrated on exploration and exploitation.

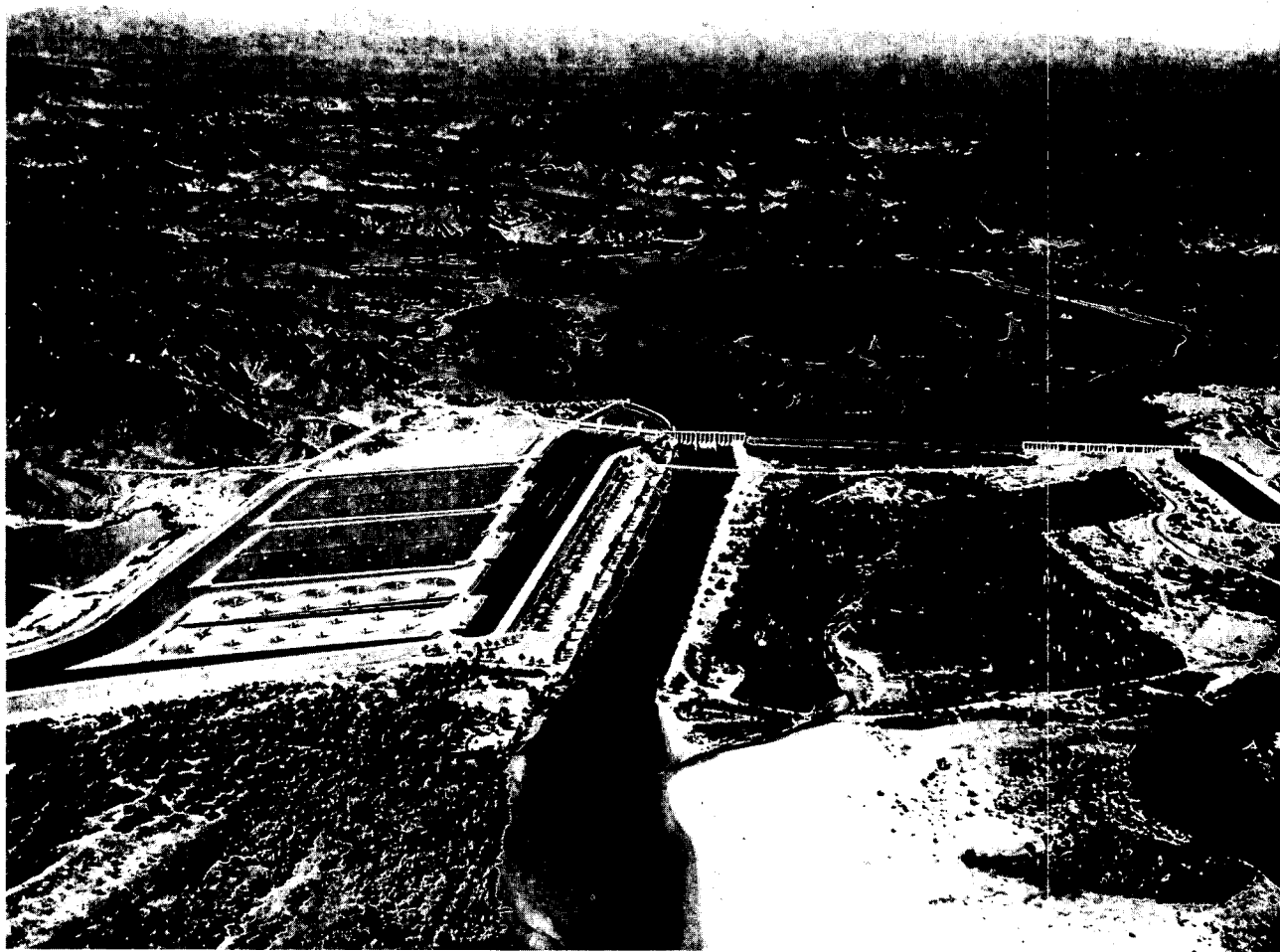
Of major significance is the early development of sites and structures which today, can add to visitor interest through preservation and interpretation. While by no means limited to the more southerly river sector, the visible or more identifiable evidences of man's pre-twentieth century activities center around the Yuma river sector. The influence of the several centuries of exploration with its military and missionary activity, the increase in cross country travel and in mining, the coming of the steamboat, the stage line, the river ferry, and the railroad and the establishment of permanent settlements, occurred in the general sector around Yuma and in varying degrees all along the lower Colorado River.

These significant features, include Fort Mohave at the southern tip of Nevada, typical old mining sites, important upstream east-west

river crossings with their early settlements. They are indicative of the cultural recreation resources of the proposed parkway route.

With the entrance of the 20th century, man's activities began the modification of the Valley. This modification has continued in ever increasing measures. One chief activity recurringly revolved around combatting the unruly Colorado River. Its flow, which almost every year ranged from volumes too small to support agriculture and commerce, to raging floods, was finally brought under control by the construction of Hoover and other dams. Prior to this achievement, ineffectual or only partially successful control projects gave way to major disasters. In 1904, 1905, and 1906, the Colorado River, downstream from Yuma, breached its bank in Mexico. The flood flows recrossed the International Boundary and flowed into the Imperial Valley, greatly enlarging the volume of Salton Sea. The river was again confined to its bank at great effort and expense.

Upstream from Yuma, construction of Laguna Dam was undertaken in 1905 and completed in 1909. This first permanent structure permitted diversion of water for agriculture. Hoover Dam, upstream from the immediate study area, was the next permanent control. Besides permitting control of the river flows after 1935, it impounded the large reservoir known as Lake Mead. That area,



Imperial Dam - Its intriguing desilting plant and the All American Canal, a manmade "river" on the left. Above the dam, the Imperial National Wildlife Refuge and proposed county recreation areas.

along with a second reservoir, Lake Mohave, created by the construction of Davis Dam, is administered for recreational use by the National Park Service as the Lake Mead National Recreation Area. The recreational resources of these lakes is certainly complementary to and interrelated with that of the lower Colorado River.

Other projects were initiated during the first half of the 20th century. Parker Dam was built. It impounded Lake Havasu. The Metropolitan Water District of Southern California built its diversion intake structure, pump lifts, the Gene Wash and Copper Basin Reservoirs, high in the Whipple mountains to the west of Lake Havasu, and the aqueduct system which supplies Colorado River water to Southern California. These works provide interest values. They are visible elements of the romance of man's abilities and how he has used them in the development of the Valley and the southwest region.

Another project provides irrigation water for use in the Imperial Valley, and to other areas in Southern California and Arizona, is of great significance. It is Imperial Dam, just upstream from Laguna Dam. Besides creating additional reservoir recreation resources, it has distinctive features which are attractions for visitors to the area. Its intriguing desilting plant and the All American Canal, a

man-made "river" carrying more water than the river itself below Imperial Dam, are focal points of many recreation visits to that area.

These various water control projects have created more than just extensive high quality recreation potential in themselves. By-products include increased recreation desirability of neighboring areas resulting from use and dependable availability of the water they control. Growth of the several Valley towns, such as Yuma, Parker, Needles, Blythe, Lake Havasu City, Las Vegas and others, has been made possible. These are all visitor-serving focal points and, as typical desert-river oriented communities, have a tourist interest in their own right.

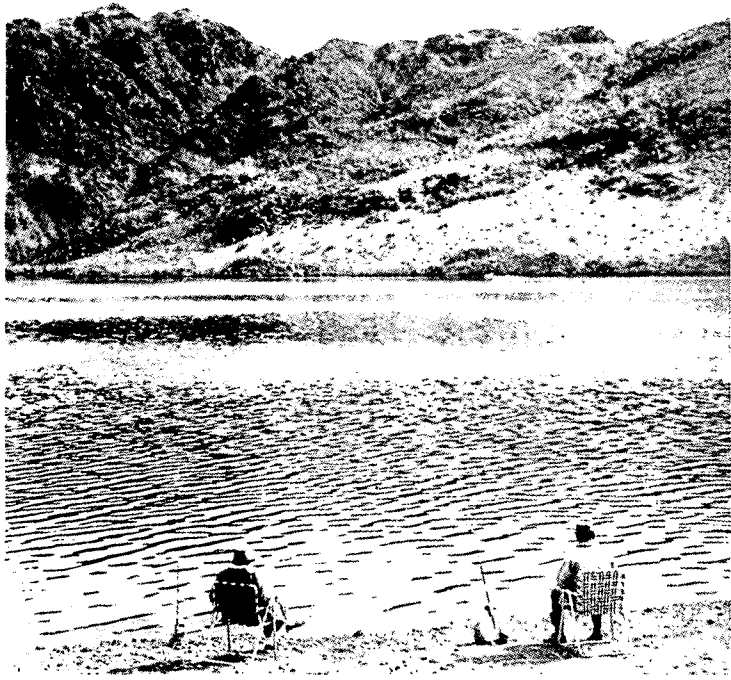
Another by-product of man's efforts include the changes in the natural environment as it affects wildlife. These changes have made necessary the creation of management and protection projects. Refuges and game management areas make it possible to maintain some of the great dividends from wildlife. One of these dividends is sustained populations of game for hunting. Another is the increased recognition of the values attributed to the scenic experience provided by plants and animals in a natural setting. These in themselves are recreation resources of the first order.

VI

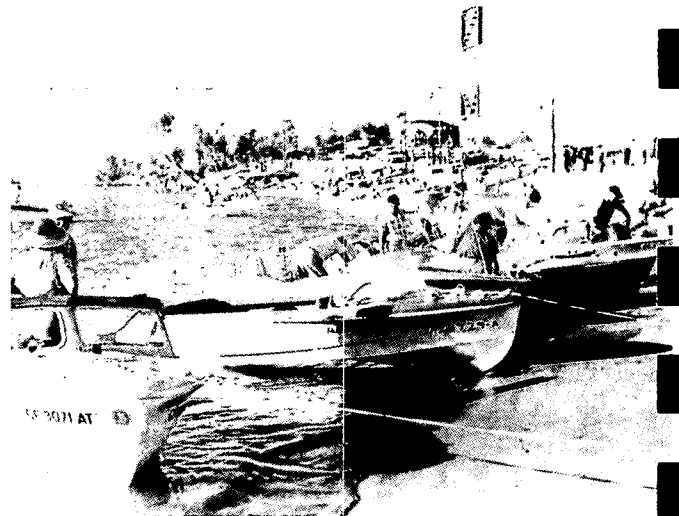
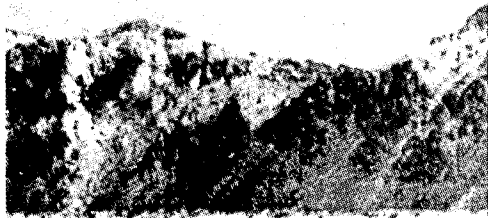
RECREATION DEVELOPMENTS - EXISTING and PROPOSED

The planning program of the Lower Colorado River Land Use Plan Advisory Committee during the 1961-63 studies brought together comprehensive information on the existing and proposed public recreation, wildlife and river control developments and facilities of the various concerned agencies. The committee's responsibilities were diverse but were all either directly or indirectly concerned with public use. The Federal agencies most involved included the Interior Department's Bureaus of Reclamation, Land Management, Sport Fisheries and Wildlife, and Indian Affairs. The interests of the State governments were represented by the park and fish and game departments. County interests in recreation were provided by adjoining counties and local communities. The Indians of the five reservations were also concerned with recreation as a resource use.

It was at this stage of study that general agency interest and attention was vividly directed to the magnitude of the use by visitors to the river valley, and to the need to provide additional facilities to meet the rapidly expanding recreation user needs. The various proposals of these agencies were coordinated and presented in the Lower Colorado River Land Use Plan, approved in January 1964.



*River  
Recreation  
Activities*



In the execution of the Plan, as it relates to recreation development, it became obvious that basic information on the public-use and recreation facilities and resources should be kept current. In late 1967, the Lower Colorado River Land Use Office completed a comprehensive Recreation Facilities Inventory. The information contained in this inventory permits an even more clear concept of the scale of development which is taking place to serve the public needs of the recreation visitors along the river.

In the river valley length from Davis Dam to the International Boundary, inventory data were recorded on 69 recreational developments in Arizona, two in Nevada, and 46 in California, for a total of 117 developments occupying Federal and Indian land. The summary tabulation of the overall recreation facilities available to the public in these developments is reproduced in Table I herein. It permits an analysis by kinds. For example, there were 1963 campsites, 3732 trailer spaces and 2200 boat slips available at the end of 1967.

Many of the developments are independently operated. Others have been provided in parks and recreation areas administered by State, county, city, or Federal agencies. All are important, but a number are quite significant as primary focal points for visitors. They are all, collectively and individually, important to the visitors who will enjoy the



TABLE I

TOTAL OF ALL RECREATION FACILITIES  
Lower Colorado River Land Use Plan Area

CAMPSITES	Developed	1374	1963
	Undeveloped	589	
TRAILER SPACES	Permanent	3336	3732
	Transient	396	
	Rental Trailer Units	104	
MOTEL ROOMS and Related	Without Cooking	187	
	With Cooking	186	
Commercial rental Units Within Con- cession Develop- ments (not for rent)	Cabin Sites	45	
	Cabins	3	
	Houses	4	
	Lodges	5	
	Private Management Units	9	
CABANA or RAMADA UNITS (6 with BBQ Units)		317	
PICNIC TABLES		1164	
BOAT RAMPS		95	
GAS STATIONS	Boat	45	
	Car	10	
BOAT SLIPS		2200	
REPAIR SHOPS		19	
TACKLE OR BAIT SHOPS		34	
BOAT & MOTOR RENTAL	Boats only	194	
	Motors only	69	
	Boats with motor	30	
FISH CLEANING		43	
RESTAURANT-CAFE		22	
SNACK SHOP		19	
STORES		41	
SKI SHOP		4	
BARS		23	
SWIM BEACHES		64	
PARKING		4442	
BOAT TRAILER STORAGE		1457	
HOUSE TRAILER STORAGE		442	
BOAT TRAILER OR HOUSE TRAILER STORAGE		989	

1 GRANDSTAND seating 700

Lower Colorado River Land Use Office  
Yuma, Arizona

Summary of 1967  
Inventory

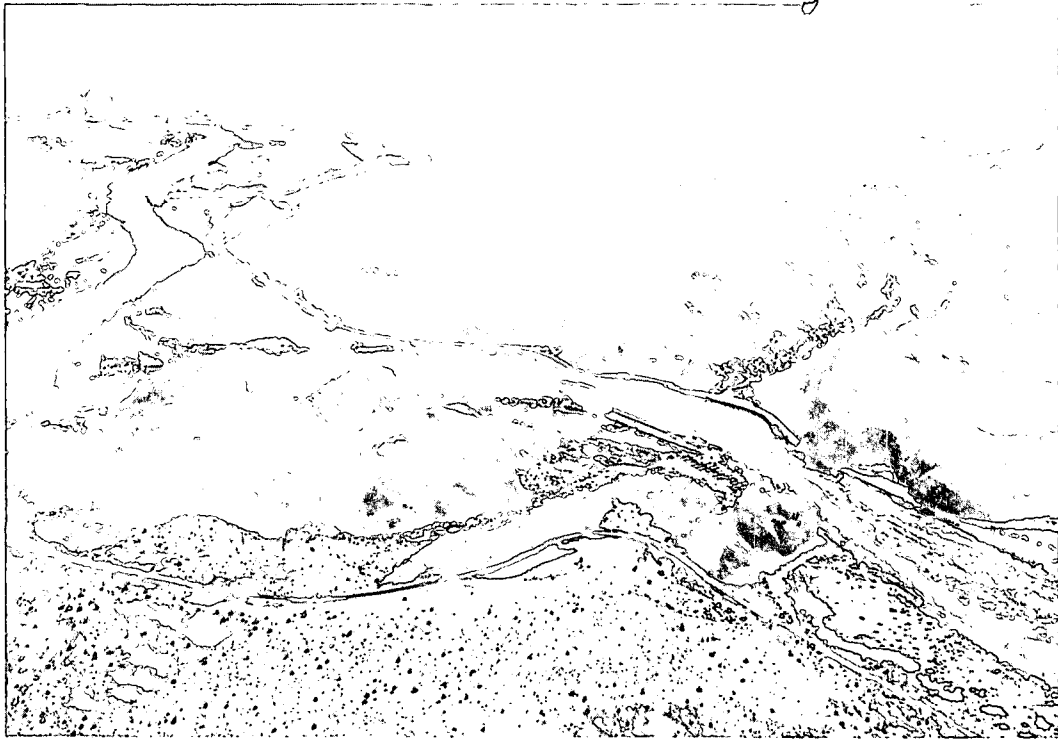
recreational use of the proposed parkway. An introduction to a few of the areas is appropriate here.

#### State

The Arizona State Parks presently administers three of the areas closely related to the Lower Colorado River Valley.

Lake Havasu State Park, upstream from Parker Dam, embraces 13,000 acres, including some 9,000 acres of spectacular desert-mountain environment. The park has about 24 miles of lakeshore. Related resort facilities include a motel, marina, transient trailer courts, campgrounds and accompanying services for the boater, water skier, fisherman and sightseer.

Buckskin Mountain State Park lies to the south of Parker Dam and the Bill Williams arm of Lake Havasu. The initial phase of its development has recently been completed and includes attractive campgrounds and picnic areas, with facilities for swimming, boating, hiking, and a visitor center for the interpretation of the general area. At this time, the park consists of 1,800 acres of impressive mountain country. It has two miles of Colorado River frontage. Later phases of development propose expansion of the park to include an extensive additional area within the Buckskin Mountains. Its use, after one full year of operation, is in excess of 100,000 visitor use days annually.



The most intensively developed section of the Colorado River, the Parker Strip. View upstream and into Arizona's Buckskin Mountain State Park. Proposed county recreation developments in foreground, California.



The Picacho area includes extensive washes, rugged volcanic mountains and river bottom lands with many sloughs and backwater lakes.

Yuma Territorial Prison State Historical Park is on an eight-acre tract adjoining the river near the city of Yuma. It presently attracts about 200,000 visitors annually. Besides the interests engendered by the old prison and museum, picnicking and overlook facilities are popular.

In addition to the three existing state parks there are three more areas proposed by the Arizona State Parks Board for future development and use. These are based on resource areas of the Lower Colorado River Valley. They include the Fort Mohave-River State Park, about eleven miles south of State Route 68; the Topock-Needles Mountain State Park, a 4,800 acre proposal just south of Interstate 40; and the Ehrenberg-Colorado River Recreation Park, a 17,280 acre river front strip extending about 13 miles south from Ehrenberg. All of these potential development areas would be made easily accessible by the proposed parkway.

The California Division of Beaches and Parks has proposed three areas along the river for development as units of its State Park System.

Picacho State Recreation Area is one of these. The initial phase of construction has provided shore-vicinity trailer and general camping, and picnic facilities. Its initial area is over 4,000 acres. Its potential expanse is 37 square miles, which will extend south and westward from the headwaters of Imperial Reservoir. The river-related

portion of the recreation area is closely oriented to the neighboring wildlife resources of the Imperial National Wildlife Refuge. The rugged volcanic mountains and extensive washes which surround the present park area present an outstanding and distinctive scenic attraction.

The other two proposed California State Park projects are the Whipple Mountain-Lake Havasu State Recreation area and the Chemehuevi Mountains-Topock Gorge area with Lake Havasu frontage. The Whipple Mountain proposal has a potential expanse of 286 square miles of rugged, spectacular desert-mountains. The Chemehuevi Mountain proposal is related to extensive desert environment, and the scenic Topock Gorge and wildlife values within the Havasu Lake National Wildlife Refuge. Both of these projects are still under study by California.

The California Department of Fish and Game has started development of wildlife enhancement features within one of six proposed State wildlife management and habitat areas. Establishment of three national cooperative land and wildlife management areas is also proposed.

The Arizona Game and Fish Department has proposed the establishment of five wildlife management areas, which so long as they remain in a natural state will provide wildlife habitat. A major dividend from all such area will be sustained prevalence of wildlife not only therein but also in adjoining or related areas developed for general recreation use.

### County and City

In Arizona, Mohave County has already sponsored public facilities at one of the three areas south of Bullhead City proposed for county recreation use along the river. These three areas are well related to a number of supporting concession developments.

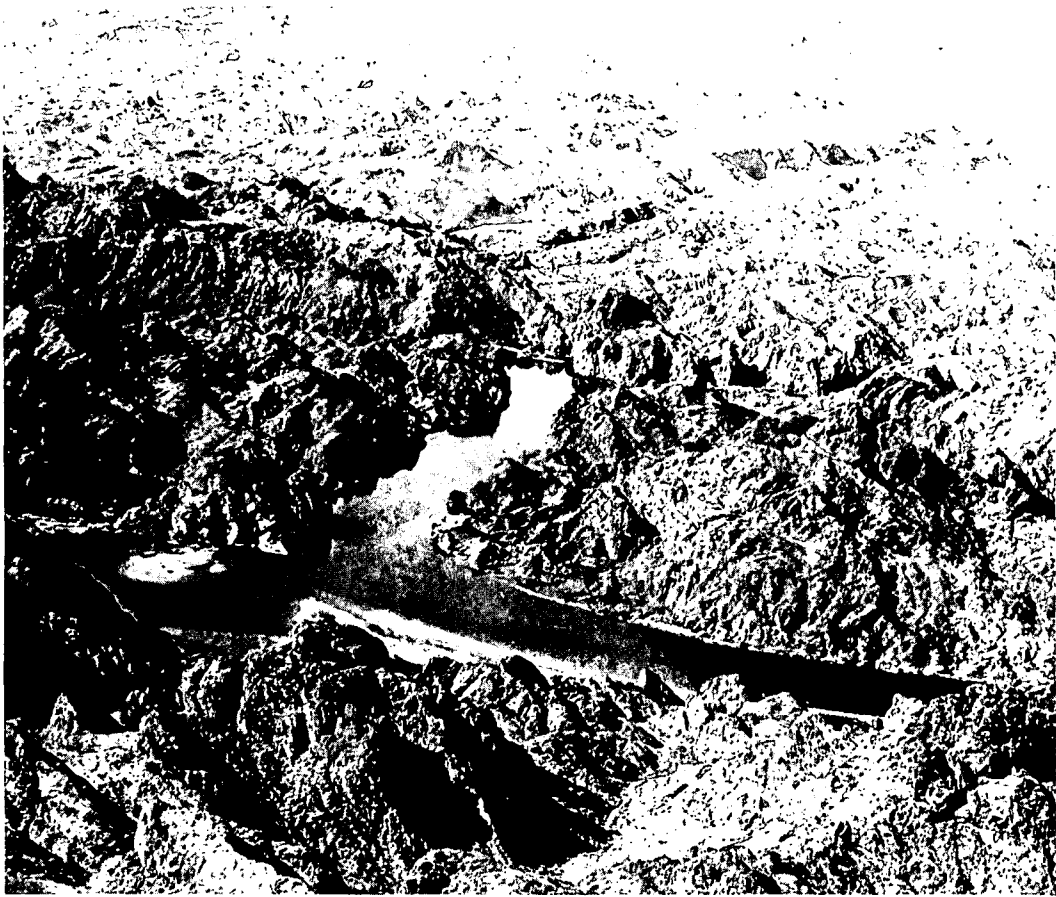
Yuma County has begun development planning at two of seven county recreation areas. These include a county portion of the Parker Strip northeast of Parker and the Yuma Riverside Park immediately upstream and to the east of Yuma. Other anticipated developments relate to Imperial Dam-Martinez Lake and to Laguna Dam-Mittry Lake. Also consideration is underway relative to cooperative planning for the Yuma Regional Riverfront Complex which extends from the international boundary near San Luis upstream to the City of Yuma. Besides the strictly river-related recreational units, this comprehensive plan embraces a cluster of historic sites situated in or near Yuma in both States. Administration of the various existing and proposed parks and sites is, or will be, by the concerned county, city or state agencies.

In California, Imperial County plans county administration for eight proposed recreation areas. These are well located and range from the small Andrade Circle unit near Pilot Knob on the south, to the County Line Park on the north.

Riverside County has begun development of four of the six recreation areas proposed for county administration. Its 38th Avenue County Park, along with the Imperial County Line Park, will when fully developed, provide an intercounty park of about 60 acres. Other Riverside County areas, at which initial river-use facilities are already available, include Peter McIntyre (26th Avenue), Mayflower (6th Avenue), and the Blythe Marina. The large Quien Sabe Point area is still on Riverside County's potential area list. It includes about fourteen miles of riverfront, and envisions some 13 concession development units. About half of the Quien Sabe area will be devoted to cooperative wildlife management. The Indian intaglios or gravel-cleared pictographs are now designated as California Historic Landmark 101. They lie within the Quien Sabe Point project area.

San Bernardino County's comprehensive planning for developments along the river includes administrative proposals for the "Eleven Mile Strip" in California below Parker Dam, and the Park Moabi area south of Needles, California which contains over 1,000 acres has been leased in part to the county and presently has public-use facilities which include a trailer park, boat ramp, boat slips and store.

The City of Needles, California, administers its popularly patronized Needles park, marina and golf course.



The Lower Colorado River winding its way through Topock Gorge, a magnificent steep-walled rocky canyon, an area of proposed enlargement of the Havasu Lake National Wildlife Refuge.





In Arizona, the planning and development of the rapidly growing Lake Havasu City is to provide a full range of urban facilities outside the Arizona State Park at the Pittsburg Point peninsula. Also, at some distance from the river, southeast of Bullhead City, local interests have provided for tourist interpretation of the once thriving gold mining operations near the ghost-town communities of Oatman and Goldroad. All of these are a part of the attractions which would be made accessible by the parkway and its related recreation road system.

#### Federal

The Bureau of Sport Fisheries and Wildlife administers three wildlife refuges interwoven with the Lower Colorado River resources in addition to their primary function of enhancing wildlife resources, especially migratory bird management, these areas provide the setting for wildlife related activities. Such activities include observing wildlife, hunting, and fishing as important end products.

Havasu Lake National Wildlife Refuge embraces three extensive areas.

They are Topock Swamp, Topock Gorge and the Bill Williams River estuary on Havasu Lake. Topock Swamp is across the river and southward from Needles. Topock Gorge is a spectacular 14 mile steep mountain gorge section of the river south of Topock Swamp where the river flows

through and separates the Needles Mountains in Arizona, and the Chemehuevi Mountains in California. The Bill Williams River estuary lies east of the new Arizona route 95 bridge crossing. Several public use developments are so located as to make the resources of the refuge easily accessible by car or boat.

Imperial National Wildlife Refuge includes the river and adjoining lands having prime wildlife resources, upstream from Ferguson and Martinez Lakes northward to Walker Lake. Recreational use of the area is permitted through existing developments, including Picacho State Recreation Area.

Cibola National Wildlife Refuge extends from the northern limit of Imperial National Wildlife Refuge upstream about 12 miles to the Gila and Salt River Meridian Base Line. The majority of the refuge is in Arizona.

#### Other

Numerous other recreation developments are operated as concessions under lease or permit on Federal land and Indian Reservation land or on privately owned land. These accommodations contribute to the user capacity of the entire area and are located in many different river valley sectors. Individually and collectively, the use-impact on public and private facilities is significant. From the standpoint of concentration of facilities catering to recreation related to water resources, the most intensively developed section of the Lower Colorado River is the fourteen

mile stretch downstream from Parker Dam, known as the Parker Strip. The relatively stable water level within the river banks regulated by Headgate Rock Dam, is known as Moovalya Lake, and the shore on both the California and Arizona sides is dotted with developments.

The Land Use Office inventory identified 45 developments catering to public use in the Parker Strip. Lands involved include privately-owned tracts, Reclamation lands, and Colorado River Indian Reservation land. Facilities in the Parker Strip include marinas, beaches, picnic and campgrounds, cafes, trailer parks, boat storage sheds and motel rooms. Private residences are accommodated on private land and Indian reservation land.

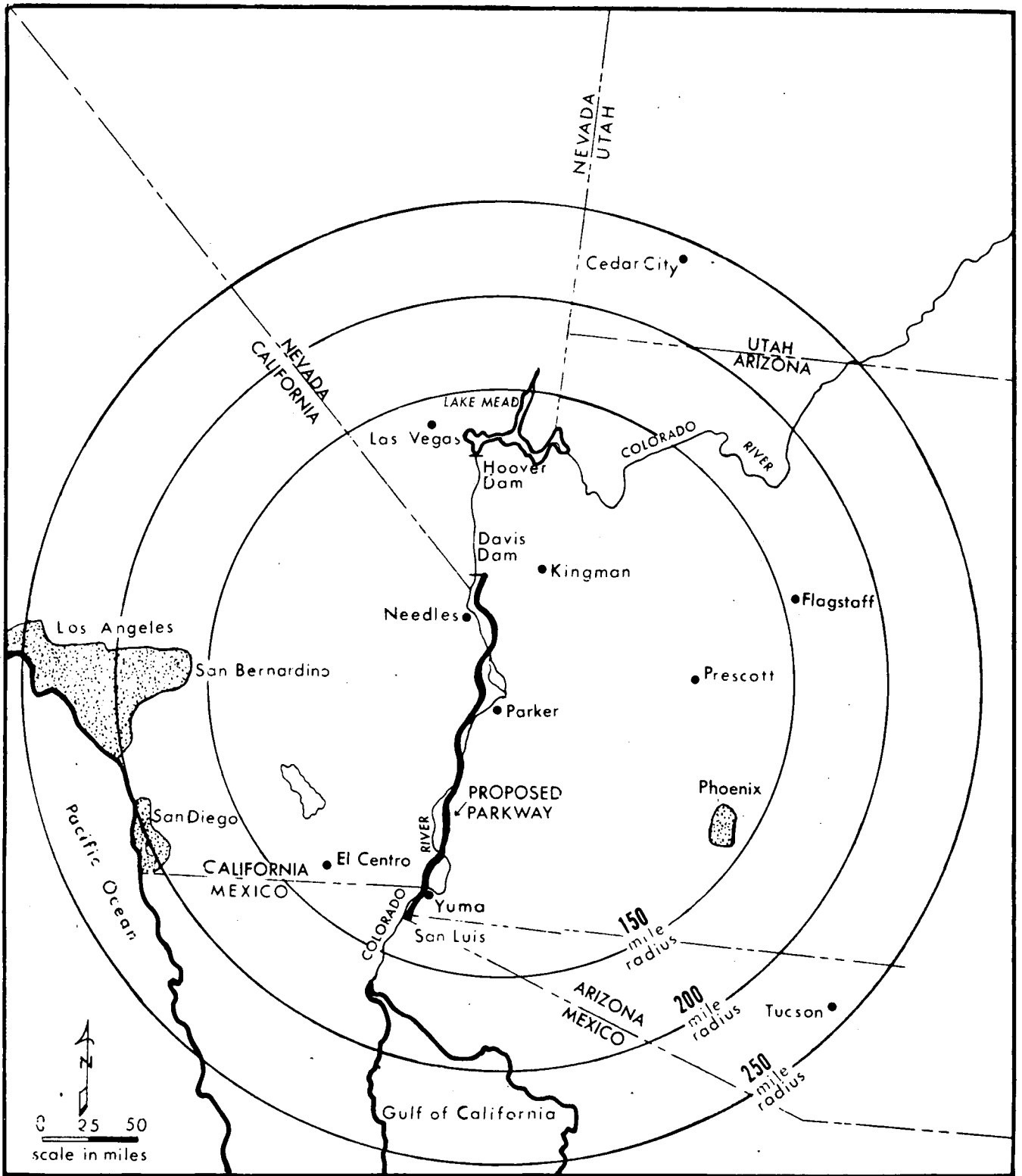
The Parker Strip is also the focal point or hub from which originates much of the visitor use of Lake Havasu, nearby state parks and mountain exploring, as well as downstream river excursions. This as well as the other recreation uses of the Lower Colorado River Valley, would be better related and unified into an ever developing kaleidoscopic experience through the establishment of the recreation-oriented national parkway and its system of recreation access roads.

## VII

### VISITOR USE OF THE LOWER COLORADO RIVER VALLEY

Widespread participation by more people in tourist travel, including increasing numbers of extended vacations, weekend excursions, and one-day, non-urban trips, has become an overall national trend. Among the underlying motivating causes are those referred to as T.I.M. (available Time, expendable Income, increased Mobility). Recurring shortening of the workday, lengthening of the work-free weekend, and increases in both the length and flexibility of vacation periods have added to the Time available for recreation. Perennially rising income and vacations with pay have provided more expendable Income. Technological advances in vehicles, road construction, and sports equipment have contributed to the increased Mobility. The speed, comfort, available accommodations and activities have added Incentive for travel from home to somewhere else and back. The flexibility of outdoor diversion while away from home has also occurred. Combined, these factors of Time, Income, Mobility and Incentive are creating excessive tourist demands.

The Lower Colorado River Valley has felt the influence of still other factors. One of these is population migration. It has resulted in above-average increases in the census counts of the sections of the



NEARBY POPULATION CENTERS

three states which border the Lower Colorado River Valley. The population of the twelve counties within the principal weekend travel distance of the River Valley was six million in 1950 and almost 10 million in 1960. (U.S. Census).<sup>1/</sup> The 1966 population of the same counties was estimated at nearly 13 million. The projections for 1970 total around 14 million, and for 1985, over 20 million, a 330% increase over 1950.<sup>2/</sup> The growth of urban population within this twelve-county region has been phenomenal during the past two decades. It includes the metropolitan areas of Phoenix and Las Vegas and the great megalapolis which contains Los Angeles, San Bernardino, Riverside and San Diego.

Another Lower Colorado River Valley factor affecting its attractiveness and degree of recreation visitation is its unique combination of climatic characteristics and the variety of desert and river resources. During the winter and most of the fall and spring, while most other regions are experiencing snow and ice, the weather in the Lower Colorado River area is quite comfortable. The days are typically warm and

<sup>1/</sup> Yuma, Mohave, Maricopa, in Arizona; Clark in Nevada; Imperial, Riverside, San Bernardino, San Diego, Orange, Los Angeles, Ventura, Kern, in California.

<sup>2/</sup> Estimates, in 1967, by California State Department of Finance, and by County Planning Departments, in Arizona.

sunny. On the other hand, temperatures throughout the four to five summer months are hot, but of comparatively low humidity. However, the clear, dry air so modifies the physical experience that it tends to belie the high thermometer readings to encourage year round visitation.

Air conditioning is still another factor which has materially contributed to an increase in general tourist travel and recreation use during the customary summer vacation period. Recent technological advances have permitted almost universal air conditioning of motels, homes, automobiles, stores, and even entire shopping complexes. No longer is high summer temperatures a formidable deterrent to living in, traveling through, or vacationing in hot climates. The effect of air conditioning has been particularly significant in the Valley.

It is not surprising, then, that the public use survey by the University of Southern California has found slightly more recreation patronage during the summer season than during the winter season. Most of this summer use originates from the neighboring twelve-county regional area, notably the southern California section. Most of these people come from a similar hot climate, but usually one far higher in humidity, and having an atmosphere filled with smog.

A popular terminus for large numbers of visitors on summer jaunts to the Valley is the upstream sector, particularly from Lake Mohave south

to Parker. The lake and river resources in that sector are quite favorable to the types of recreational activity sought by summer visitors. At this season, swimming, water skiing, speed boating and related open water sports lead the activity list. As the fall weather advances, there is a gradual shift in emphasis. Fishing, always popular, reaches first place among the recreational pursuits of the winter visitors from the north.

The University survey has found that there is a significant influx of Valley visitors of different characteristics, and of somewhat differing vacation objectives during the cooler part of the year. The people in this category, while many come from the same twelve-county area, are predominantly from greater distances. Their homes are more apt to be northern California, or the full range of northern states, especially the upper midwest and northwest, and even Canada. At this period the more popular target is the downstream Valley area, generally southward from Blythe and most notably the Yuma sector.

The University survey disclosed that in the hotter season three-fourths of the parties made relatively short visits, of a week or less, but usually made a number of such visits during the summer. Others spend one or two weeks of a summer vacation in the Valley. However, in the



cooler season the majority extend their Valley visit to a month or longer. A substantial proportion of the Yuma complex visitors "come for the winter."

Thus, visitors to the Lower Colorado River Valley come from "all over" throughout the year. As a type, the summer visitors come in air-conditioned cars and expect to experience similar comforts of home in their resort accommodations or in the breeze-cooled water oriented campgrounds. They like active participation, enjoy the sunshine and smog-free air. These people generally tend to take their sight-seeing at a relatively rapid tempo. Their answers to the visitor use survey questionnaires indicate they would take in more and see more of the Valley while there, if it were easier to get from place to place within the time available.

The long-term visitors, the ones who live much farther away, typically vacation at a somewhat slower tempo. This group includes both retired people and those whose off-the-job time is more flexible. A greater number like to fish, to try out one site, then another. They like to sight-see leisurely and to relax. Many may visit, or even stay a few days, at a number of different places up and down the river as well as in remote desert areas. They are accommodated by including both the resorts and the less-frequented sites. During their stay they move

from one temporary home base to another while in the Valley. These people are the ones who are intensively participating, in effect, as day-use visitors. They are another important group who feel the need for more and better access roads, between sites. A goodly portion of these winter visitors will "set up" and stay the winter in one location, taking side trips from an established home base.

As specified in the visitors' comments on the University public-use questionnaires, many would like to include even more of the Valley in their recreation experience but are currently inhibited by lack of direct routes and ease of circulation from site to site. The combination of the parkway and the related network of recreation access roads would correct this.

## VIII

### DESCRIPTION OF THE PARKWAY ROUTE AND SCENIC RECREATION ROAD SYSTEM

#### General

The Lower Colorado River Valley is a land of vast expanse and big sky. The landscape scene is everchanging from flat plain to mesas to rugged mountains, from flowering desert to green irrigated fields, from shifting sand to craggy stable rock. Distant views and intimate detail are a part of the picture.

The Colorado River threads its way through these varied land values and ties them together with a variety all its own. Its character changes from fast-flowing narrow channels to placid empoundments, from marsh to steep canyons, from man-made channels to natural river bed.

The study revealed that several opportunities for parkway location appear likely for consideration. Based on aerial and ground reconnaissance, a general parkway and scenic roads locations, as shown on the pullout map on page 116, represent the study team's considered preference in achieving the desired objectives for a scenic parkway and recreation road system along the Lower Colorado River. The parkway provides a backbone for the system and stands alone in its own right. However, when combined with the recreation roads and parkway spur roads, the

parkway takes on a far greater depth of character. Together the parkway and upgraded local roads can provide not only needed access to features and developments, but also increased opportunities for the parkway traveler.

For clarity, the following discussion is divided into two parts: First, the parkway route itself is described. Then the scenic recreation road system units are discussed.

#### The Parkway Route

##### Lake Mead National Recreation Area to Topock (Interstate Route 40) (Mile 0 to Mile 40.) -- 39.9 Miles

The Lake Mohave unit of the Lake Mead National Recreation Area in Arizona and Nevada is proposed as the northern terminus of the proposed parkway. The National Recreation Area with its two large man-made reservoirs, Lake Mohave and Lake Mead, formed by dams of the Colorado is located in a highly scenic region which provides a multitude of recreational opportunities. Access to Davis Dam and the Nevada side of Lake Mohave to the west would be provided by scenic routes, Arizona Route 68 and Nevada Route 77. A park road leads north from Route 77 to Grapevine Canyon with its interesting geological formations and ancient Indian petroglyphs. The diversified recreation facilities of Katherine Landing, a popular resort area on the Arizona side of

Lake Mohave would be available a few miles from the northern parkway terminus over a park road.

Starting at Arizona Route 68, about two miles east of Davis Dam, the main parkway route heads south to the east of Davis Dam Village and Bullhead City along a high bench offering far-reaching views of the Black Mountains to the north and east and the rugged Newberry Mountains to the northwest in Nevada. About six miles south of Route 68, the parkway intersects a local road proposed to be improved to scenic road standards. (See Scenic Road System on page 67 .) Proceeding south the parkway route skirts the vast Mohave Valley and the Fort Mojave Indian Reservation and continues along a bench at an elevation of about 950 feet or 500 feet above the river valley allowing sweeping views to the west of the Valley as well as the rugged Sacramento and Dead Mountains in California.

As the route approaches Topock the tall mountain spires of the Needles Peaks become prominent along with glimpses on the west of the Topock Marsh and the city of Needles, California. The marsh, located in the uppermost waters of Lake Havasu and in the 26-mile long Havasu Lake National Wildlife Refuge, is one of the nation's great waterfowl areas.

At Mile 26 the parkway route would have for the first time close views of the riverside, lake and marsh areas which make up the Topock area

of the refuge. The route skirts its eastern edge where there would be many opportunities to view the many species of wildlife and be informed by interpretive exhibits which would describe their values.

About four miles east of Topock the route would cross Interstate 40, a new four-lane facility replacing the famous old U.S. 66. Besides being a major visitor contact point, I-40 would provide convenient access to Needles, California, with its many visitor services and also to the San Bernardino County Recreation Areas. One of the areas, the 1,000-acre Park Moabi area has direct access from I-40 and presently has a large trailer park, marina harbor, and other public use facilities.

Access from the parkway and via I-40 above the north end of scenic Topock Gorge would provide opportunities for exciting boat trips through the swamp and down the magnificent steep-walled rocky gorge, to Devil's Elbow and Mohave Rock. Picture Rock, where there are extensive petrographs, can be reached by boat and a short trail from the shore.

Interstate Route 40 to Colorado River (Castle Rock) (Mile 40. to Mile 53.0) -- 13. Miles

From Interstate 40, the route continues south and enters the future Topock-Needles Mountain State Park. This park would be the gateway to the highly scenic and scientific area of the Needles formation and Topock Gorge area. The parkway skirts the eastern boundary of the

proposed State park making readily accessible facilities and the spectacular scenery of the Needles Peaks of the Mohave Mountains. A short spur road or a trail to a point near Powell Peak (elevation 2,353 feet) would provide panorama views of the distant Chemehuevi Range in California and the surrounding Needles Peaks. The area possesses an outstanding growth of the Arizona Jumping Cholla or "Teddy bear cactus" as well as a host of other desert plants.

The proposed State park of some 4,800 acres will include a State information center, tent trailer village, primitive campground, public launching and loading ramps, and a day-use area in close proximity to I-40.

South of the Needles Mountains area the route suddenly bursts out into the open and descends into the upper end of Blankenship Valley. It skirts the proposed wilderness area within the National Wildlife Refuge lands. Access to Lake Havasu City, a newly planned community occupying 26 square miles of desert valley land nine miles to the south would be easily available by a short spur connection to Arizona Route 95 at Mile 49. (See Scenic Road System on page 68 .)

At Castle Rock some two miles below Blankenship Valley, the route crosses the Colorado River affording fine views of the lower end of Topock Gorge to the north and Lake Havasu on the south. The crossing

would also allow the traveler to observe wildlife in the migratory bird feeding area lying to the north.

Colorado River (Castle Rock) to Parker (Parker Dam Highway) (Mile 53.0 to Mile 101.0) -- 48 Miles

On entering California, the route would cross the northern and western portion of the north section of the Chemehuevi Indian Reservation and mount the foothills of the Chemehuevi Mountains. Spectacular views to the east and south would be obtainable of the Chemehuevi Valley, the Arizona shoreline with its Aubrey Hills, the Mohave Mountains in the background and the blue waters of Havasu Lake in the foreground.

The route would by-pass the Chemehuevi Mountains-Topock Gorge (Mohave Canyon) area proposed for establishment as a State project, primarily for wilderness area experience.

An existing local road is proposed for improvement to scenic road standards as access from the parkway to the Needles Landing area, with its existing lakeshore concession facilities, located between the southern boundary of the north section of the Chemehuevi Indian Reservation and the Havasu Lake Shore.

From this point the route would cross an extensive wash area and pass to the west and south of the southern section of the Chemehuevi Indian



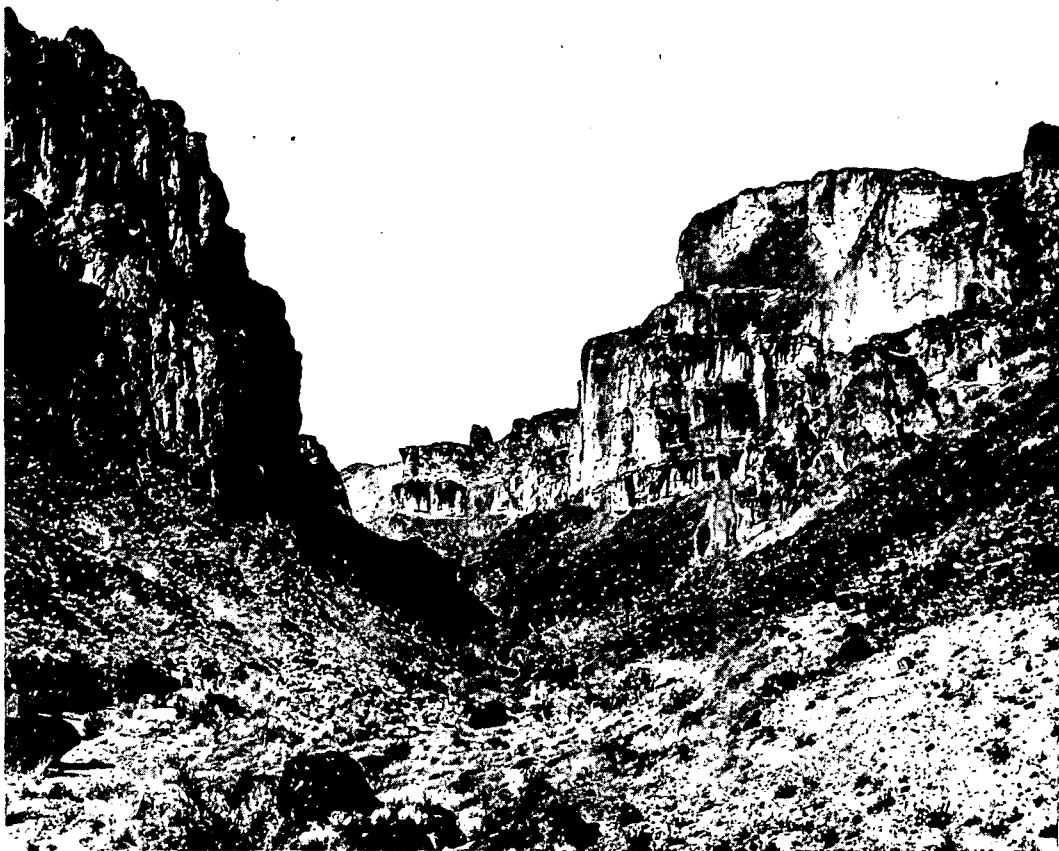
Reservation and begin its climb into the Whipple Mountains--an unspoiled desert area which has the potential of becoming one of the most popular desert-mountain recreation areas in California. For 30 miles the parkway traverses a spectacular scenic area of massive barren peaks, (the highest peak is 4,131 feet.) Here there are narrow, deep, picturesque canyons, a striking desert landscape with a variety of desert flora and fauna, large man-made bodies of clear water and far-reaching vistas. The location offers magnificent panoramas to the east over the deep-blue waters of Lake Havasu and the Aubrey Hills and the Bill Williams Mountains beyond. Numerous sites are available for parking overlooks and small picnic ground developments.

A State park is proposed for the Whipple Mountain area and along the shores of Lake Havasu. Direct access will be provided to the park development as well as to lakeshore concession operations of Havasu Palms and Black Meadow Landing.

In this stretch of parkway the elevation averages over 1,000 feet, the highest on the entire parkway. The highest point is in the area of Copper Basin, a kind of hidden mountain valley, studded with tall staghorn cactus and Joshua Trees. Nearby is Monument Peak, an eroded pinnacle of dark volcanic rock dominating the skyline as the proposed route winds through the mountain valley and follows Bowmans Wash southward. The Whipple Mountain Moss is an ecological island.



Copper Basin Reservoir, a blue jewel in a desert mountain setting, a short side trip from the proposed parkway in California.



Steep-walled canyon of Whipple Wash near parkway route in the Whipple Mountain State Recreation Area, California.

Access would be provided at Mile 85 to Parker Dam and to nearby Metropolitan Water District Reservoirs, Copper Basin and Gene Wash, where some water oriented recreation facilities might be developed in cooperation with the Water District.

Interpretive features dealing with the story of the Metropolitan Water District aqueduct system which supplies Colorado River water to southern California could also be developed.

Near the end of its descent of this massive mountain area, a short parkway spur would give direct access to the recreation features on the river in the vicinity of Crossroads.

After emerging from the Whipples the route would descend in gentle grades crossing over wide desert washes to an interchange with the Parker-Vidal Junction highway presenting views of the vast Colorado River Indian Reservation to the south and many isolated mountain ranges on the west. The intersection would provide a possible easement site for a visitor contact station to inform visitors of the numerous attractions in the Parker area. Access from this point would be provided over a proposed scenic route to Earp as well as to Parker Dam and the Parker Strip along both the California and Arizona sides of the river. (See Scenic Road System on page 70 .)

Junction with Parker Dam Road to Ehrenberg (Interstate Route 10)  
(Mile 101.0 to Mile 152.0) -- 51 Miles

The parkway route continues southward just outside the Colorado River Indian Reservation boundaries and passes near the Colorado River offering views of the river, and to the south the broad expanses of irrigated Indian lands and surrounding desert hills and mountains.

The location overlooking the Indian Reservation would afford opportunities for an interpretive center and possibly a concession operation to be developed in cooperation with the Indian Tribal Council.

The next five miles, the route traverses Vidal Valley and its extensive wash to a crossing of U. S. Route 95 where an access to a major highway and the communities of Vidal and Vidal Junction to the north could be provided. U. S. Route 95 south to Palo Verde Diversion Dam could become a scenic recreation road offering motorists a loop route to the extensive riverside development planned by the State and county. (See Scenic Road System on page 70 .)

After the crossing of Route 95 the route enters Riverside County and begins its climb through a pass in the Riverside Mountains. The route generally parallels the old historic Blythe Vidal Road for several miles. At an elevation of about 1,200 feet the route reaches Riverside Pass and follows closely the existing old road for three miles. The route

leaves the mountain terrain crossing an open desert plateau for a short distance, then rises gradually into another mountain range, the Big Marias.

These rugged mountains, sparsely clothed with vegetation, includes several peaks of over 2,500 feet in elevation. The road in this area would have a sidehill location which could present commanding views of Parker Valley and the distant peaks of the Dome Rock Mountains in Arizona to the southeast. Two short spur roads would allow access to U.S. Route 95 and the 14 miles water front of the Quien Sabe Point area. About half of the area is planned to be devoted to cooperative wildlife management by the State and the remaining is planned for recreation facilities by Riverside County. Within the county's Quien Sabe Point project area are several Indian intaglios now designated as California Historic Landmarks. These giant gravel-cleared pictographs located on a mesa three miles to the east of the proposed motor road would be made accessible by an interpretive access spur road.

After descending the Big Maria Mountains the route crosses U.S. Route 95 and the Colorado River into Yuma County, Arizona, just above the Palo Verde Diversion Dam. The location from this point, for about 7 miles, is through presently undeveloped river bottom lands within the Colorado River Indian Reservation.

At Mile 152.0 the route crosses Interstate 10 (U.S. 60-70) about a mile east of Ehrenberg. Like Interstate 40 at Topock, this crossing would become another major visitor contact point, providing convenient access to Blythe, California, with its many facilities for lodging, meals and other visitor services only two miles away.

I-10 would also provide access to the resort community of Palo Verde and five river-related recreation areas in construction by Riverside County.

Ehrenberg (Interstate Route 10) to Yuma (Interstate Route 8) (Mile 152.0 to Mile 226.5) -- 74.5 Miles

From I-10 the route would become a river location with direct access provided to Arizona State's proposed Ehrenberg-Colorado River Recreation Park, a 17,280-acre riverfront strip extending about 13 miles south from Ehrenberg. For about fifteen miles the route would be in close association with the river, and river bottom environment, affording close views and water access of the river. At Mile 168.0 the parkway leaves the river just to the east of Cibola Bridge and heads up the north side of Crazy Woman Wash in its climb of the Trigo Mountains. The levee road continuing south along the river would become a loop scenic recreation road of the rich farming and wildlife refuge area of Cibola Valley and points of interest in Imperial County in California. (See Scenic Road System on page 71 .)

Proceeding southward the parkway would traverse 20 miles of canyon type location through rugged mountain terrain skirting the western boundary of the Yuma Proving Ground and descending along Red Cloud Wash and an unnamed wash to the east end of Island Lake, a backwater bay off the main channel. Before the road descent of the Trigos, a scenic recreation road would provide access to Cibola Lake and the National Wildlife and a State Game and Fish Refuge area to the west. (See Scenic Road System on page 71 .)

The location through the Trigos would be spectacular with a variety of desert flora and fauna, colorful rock formations, narrow-deep canyons, and sweeping views to the west over Imperial Reservoir and south into the Picacho Mountains in California. In both the Trigo and Picacho Mountains many abandoned mines would become easily accessible, as interpretive features, by short trails from the route. Primitive campgrounds with minimum facilities, served by foot or horse trail, would be developed in cooperation with the Bureau of Land Management.

The parkway crossing of the Colorado River would be about two miles downstream from Picacho State Park headquarters. It would cross the Imperial National Wildlife Refuge in Arizona and Picacho State Park in California. The location, acceptable to the Bureau of Sport Fisheries and Wildlife, would provide opportunities for the traveler to observe

wildlife and gain access into fishing and hunting areas along the river.

On entering California (Imperial County) the location follows along an old jeep trail into Marcus Wash, just inside the eastern boundary of the Picacho State Recreation Area. This area now consisting of over 4,000 acres has a planned expansion to 37 square miles, extending south and west from its present boundaries.

The Picacho Mountains are an outstanding scenic, historic and recreation area in California. The area is a combination of extensive washes, rugged volcanic mountains and river bottom lands with many sloughs and backwater lakes. The State has provided shore vicinity trailer, general camping, and picnic facilities and more are being planned. These State facilities provides excellent access to the river and the Imperial National Wildlife Refuge. At Parkway Mile 213.2 the outstanding scenic and recreation features of Picacho Park would be readily available from the Parkway over the existing Picacho Road. Besides giving access to the State park facilities this scenic road would allow close-up views of Picacho Peak, Little Picacho Peak, Pebble Mountain as well as spectacular views of several prominent ranges in Arizona. Several abandoned mines and old grave sites are scattered along this scenic route.



Prior to the Picacho Road intersection, the Imperial Dam-Laguna Dam complex to the east, with its many recreational developments, will be accessible over a parkway spur proposed at Parkway Mile 207.6. This five mile spur would generally parallel Senator Wash and would connect with the recreation road system serving the Squaw Lake-Senator Wash and Ferguson Lake areas. (See Scenic Road System on page 72 .)

For the next 30 miles the parkway route traverses a typical open Sonoran desert. It crosses several extensive washes in its gradual descent into the Yuma Valley from the Picacho Mountains. In this long stretch, far reaching views of the surrounding desert country are available. The Cargo Muchacho Mountains are to the west. Beyond on the horizon the Sahara-like sand hills stretch for miles toward the Mexican Border. Views to the south overlook the green irrigated fields of the vast Yuma Valley and to the east distant rugged mountain ranges and peaks line the horizon as far as one can see. Pilot Knob near the California-Mexico boundary is a dominant feature as the parkway approaches Yuma.

The parkway and interchange of either Interstate Route 8 or U. S. Highway 80 is about six miles west of Yuma. This interchange will be another major entrance point for river area visitors coming from the



Green irrigated fields would be the landscape scene from the parkway riverfront location between Yuma and San Luis. The location would serve as a major recreation access to the several day use developments planned between the river and the levee, as shown on the right and left bank in background.

San Diego metropolitan area and Imperial Valley on the west and the Phoenix, Tucson, and El Paso areas on the east. An interchange with the Interstate just to the west of the All-American Canal will provide access to the historic Arizona Territorial Prison, Old Fort Yuma, and other points of interest in the Yuma region.

Yuma (Interstate Route 8) to San Luis, Arizona (Mile 226.5 to Mile 246) -- 19.5 Miles

The parkway route continues southward, crossing the All-American Canal and the Colorado River into Arizona about a mile below the I-8 intersection. It then follows the levee road on the east bank of the river. The existing levee road, running to the east, would become a designated scenic recreation road providing access to Yuma's waterfront development immediately upstream and to the proposed county recreation facilities to the east of Yuma.

The parkway would continue southward along the levee road for about 17 miles, sometimes close to the river bank with views of the river and the Mexican countryside and sometimes away from the river along the bordering irrigated farmland and citrus orchards. The landscape would now be green fields of alfalfa, cotton, flax, vegetables, melons and citrus groves with occasional open wooded areas along the river bottom lands. Opportunities to develop day-use areas in conjunction with the parkway are present along the east bank.

The southern terminus of the parkway would be at San Luis, Arizona, just across the International Boundary from San Luis, Sonora, Mexico, a quaint town of some 40,000 and the Gateway to the Gulf of California, about 80 miles to the south. After leaving the parkway the traveler could cross into Mexico and continue his explorations along Mexican Federal Highway 2 either to the east or the west of San Luis.

### The Scenic Recreation System

#### General

The river valley area contains many Federal, State and local recreation developments and areas of great recreation value and potential. Unfortunately, they are served by only a few connecting roads. The roads that do traverse this highly scenic region do not provide adequate access to the opportunities being afforded through the development of the Lower Colorado River Land Use Plan. The realization of this portion of the total recreation road system is primarily dependent upon implementation by State and county highway departments. To assist in this effort, the study team has made the following observations and evaluations.

The routes as delineated on the location plan and described below were selected for their scenic, recreational, scientific and historic qualities,

as well as their ability to provide easy and pleasant access to the many recreational and scenic resources not otherwise appropriately available to the public. The recreation road network would give the motorist the choice of leaving the parkway for a leisurely drive through other areas of scenic and recreational interest, and then returning to the main parkway route. This arrangement would afford the traveler with a continuous route of high quality motoring experience. The following discussions describe such side trips over scenic recreation roads.

Parkway Mile 6.1 east to Oatman and Sitgreaves Pass (Arizona)

A side trip to the east of the parkway would lead to the old gold mining towns of Oatman, which is sparsely inhabited, and Gold Road, a real ghost town in ruins. These historic towns nestled in the Black Mountains were one of the world's great mining camps in their day and are now used occasionally as a location for motion pictures. Opportunities to develop parking areas exist along this road for the interpretation of features dealing with the gold mining operations and for spectacular views of the unusual geological formations of the Black Mountains, the largest desert mountain range along the Lower Colorado River. The scenic route would terminate in Sitgreaves Pass located immediately above the Gold Road mines. This terminus provides views to the west of the fluted peaks of the "Blacks" rising up into the sky and

of the jumbled desert landscape beyond. East of Sitgreaves Pass the traveler could continue on the existing road to Kingman. From Oatman south the scenic route would follow the existing road location and return to the main parkway in the vicinity of Topock Marsh.

Parkway Mile 6.1 west to Colorado River (Arizona)

To the west, the scenic road system would lead to Bullhead City, with its many resort and marina facilities and three proposed Mohave County recreational developments fronting the river south of Bullhead City. It would lead to the site of Arizona's proposed Fort Mohave-River State Park located eight miles below Bullhead City where a large back-bay marina, bathing beach, campground, service center, and other facilities are planned. The route would continue south over existing roads allowing access to historic Fort Mohave, and into Mohave Valley. The route would follow along the levee road for 17 miles and then turn east providing access to the city of Needles and the proposed San Bernardino County recreation area. Continuing east the route would connect with the parkway again at the upper end of the Topock Marsh area.

Arizona Route 95, Between I-40 (Route U. S. 66) South to Parker (Arizona Side)

Arizona State Route 95 is in the process of being improved to modern two-way highway standards between Interstate 40 and Parker. The highway has been partially improved from Parker to a point about five

miles north of the Bill Williams River where a new pre-stressed concrete, five span, bridge has been constructed. For this entire distance the proposed scenic route would be divorced from the parkway. However, connections with the parkway at each end (on the north over I-40 and at Parker over the Parker Dam road) and at a midway point below the Needles Mountain area would provide a loop route of many varied interests in California and Arizona.

From I-40, State Route 95 will pass well to the east of the Needles Mountain area offering grand views of these spectacular formations as well as views of the Chemehuevi Mountains in California. Conspicuous to the south would be placid Lake Havasu with the massive Whipples dominating the distant view on the California side.

About 25 miles below I-40 the route will pass through Lake Havasu City, a planned community now arising from the desert in a dramatic setting of lake and mountains. Lake Havasu State Park, with its 24 miles of lakefront and related facilities would be accessible from this route. The route continues southward and to the east of Aubrey Hills. It then runs parallel, for about ten miles, to the shore of Lake Havasu to a crossing of the Bill Williams River.

From there to Parker Dam and Parker the route will parallel the river for 17 miles giving access to the most intensively developed section of the Colorado River, known as the Parker Strip.

Facilities include marinas, picnic and campgrounds, trailer parks,

boat storage sheds, cafes, and motels. The Red Rock unit of Buckskin Mountain State Park with two miles of river frontage and the impressive Buckskin Mountains, serving as a backdrop, has high quality facilities for boat launching and docking, waterfront cabanas for overnight use, tent and trailer camping areas, a river historical museum and visitor center. Other features of interest along the strip are Headgate Rock Dam and the Buckskin Mountain area proposed for State park expansion.

At Parker the scenic route would cross the existing Colorado River bridge into California and continue west along the road to Vidal Junction to the parkway junction at Mile 101.0.

Vidal Junction Road Junction to Parker Dam and Whipple Mountain Area (California Side)

The Parker Dam road on the California side of the river would be designated as a scenic road. It would afford access to the developments in the "Eleven Mile Strip" between Earp and Parker Dam. The portion of this area above the Colorado River Indian Reservation is presently being planned by San Bernardino County for extensive recreational development. As shown on the location map, the scenic road system and the proposed parkway would provide two interesting loop drives through the Parker Strip and the Whipple Mountain area.

U. S. Route 95 Junction to Palo Verde Diversion Dam (California Side)

For about 25 miles, existing U. S. Route 95 would be designated a scenic



recreation route. The present highway closely parallels the river, allowing direct access to the planned county recreation facilities at Quien Sabe and to the State's wildlife management area at Quien Sabe Point. Two short spur roads would connect this local route to the parkway to allow the motorist to resume his journey on the motor road. One of the connecting roads would lead to the Indian intaglios, a designated California Historic Landmark.

Parkway to Cibola Valley, Palo Verde Mountains, Three Fingers Lake and Cibola Lake (Arizona and California)

This segment of the recreation road system would allow access into the rich farmlands of Cibola and Palo Verde Valleys, the Palo Verde Mountain region in Imperial County, California and the Colorado River. The route would begin at Parkway Mile 168.0 to the east of Cibola Bridge. From this point, it would follow the levee road along the river into California over the existing Bureau of Reclamation bridge. One fork of the scenic route would continue on the Arizona side along the levee road to Cibola Lake where it would join again the route from the west. The portion through the rugged mountain area in California would follow an existing road (Ogilby Road) and would return again to the river by way of Milpitas Wash. The route would cross the river below Three Fingers Lake (Paymaster Landing) into Arizona and join the scenic levee route. The route would then return to the parkway by

way of an existing jeep road running easterly into the Trigo Mountains. Spectacular views of both the Trigo and Palo Verde Mountains would be available from numerous points along the route, as well as of the river valley. During critical wildlife management periods, that portion of the scenic recreation road along the levee through the Cibola Wildlife Refuge may be closed to travel.

#### Parkway Spur east to Imperial Dam-Laguna Dam Area

The parkway spur along Senator Wash will afford easy access to the area embracing several existing features and proposed county recreation developments including Imperial County's proposed Ferguson Lake and Squaw Lake-Senator Wash complex just above Imperial Dam. Across the Colorado River in Arizona, Yuma County's proposed recreation and wildlife areas at Imperial Dam-Martinez Lake and Laguna Dam-Laguna Mountain will also be readily accessible by a scenic road system.

Lying between Imperial and Laguna Dams are two State fish and game refuge areas, Mittry Lake in Arizona and the California Swamp area in Imperial County, both have prime wildlife resource values. The scenic road would continue south below Laguna Dam along the levee road through the proposed county recreation developments to the east of Yuma. It would continue to follow the levee westerly through Yuma and connect with the parkway just below the crossing of the Colorado River.

## IX

### IMPLEMENTATION

#### NATIONAL PARKWAY

##### General

A national parkway is described as a Federally owned, elongated park featuring a road designed especially for low speed motor recreation. It embraces scenic, recreation and cultural features of national significance. Because national parkways are not open to commercial traffic, and provide only indirect access from abutting properties, they provide unadulterated motoring recreation pleasures. National parkways can only be authorized by a special act of Congress for establishment and development by the Department of the Interior, through the National Park Service, subject to the provisions of the Basic Act of August 25, 1916, establishing the National Park Service.

In order that the concepts and principles governing national parkways may be employed for the development of the Lower Colorado River Valley Parkway, certain steps must be taken to insure the quality of parkway development as well as uniformity of implementation procedures.

If the parkway is authorized by Congress, its planning, location and development is proposed to be carried out in accordance with the following principles:

## Initial Planning

The proposed Lower Colorado River Valley Parkway, planned to accommodate driving as an unhurried recreation activity, represents a new conception in roads and related recreation activities in the southwest. It is not just another highway. It is a quiet way through the countryside to display a spectrum of regional features. These include an ever changing landscape scene of rugged desert mountains and plains, lush irrigated valleys, man-made lakes, native flora and fauna, and historic and pre-historic sites. It is a road intended for leisurely travel on the ride-a-while, stop-a-while basis to afford a memorable motoring adventure.

The ride-a-while, stop-a-while characteristics govern:

1. The location of park widenings for recreation developments, provision of scenic overlooks, roadside recreation developments, visitor information and interpretive devices at frequent intervals enroute. In the Lower Colorado River area, existing and proposed neighboring recreational developments will help to meet this requirement.
2. The assurance of necessary visitor facilities for overnight accommodations, food and motor services to support the parkway traveler. In the instance of the Lower Colorado

River area, some of these needed facilities are also found in the State, county, or other parks or recreation concessions being developed in connection with the recreation resources of the river. The parkway will cross three interstate routes where there will be additional opportunities for access to private enterprise which provides food, lodging and motor services in neighboring towns.

3. The location and design of the motor road to provide frequent opportunities for pull-offs and overlooks of broad vistas embracing nearby and distant scenery. Roadside parking areas are provided where exhibits of natural history, human history, and current land uses may be seen. Short trails from these parking areas would invite the traveler to see and experience these features.

All of these elements are conceived, planned and embodied in a master plan well in advance of the initial land acquisition and transfer of lands. After the authorization of the parkway by Congress, the National Park Service, working cooperatively with the Lower Colorado River Land Use Office and the responsible Federal and State agencies, will prepare a master plan for the parkway.

In planning the parkway, master planning must take into account the total environment or region through which the route passes. These considerations include the plans of agencies at all levels of government for park and recreation facilities and wildlife habitat areas within the river valley area, as well as the role of private enterprise in the recreation industry. Transportation, access, wildlife, agriculture and urban development are also planning considerations.

The purpose of the master plan is: 1. To implement the general and specific mandates of Congress, 2. To provide a basis for cooperative agreements with other bureaus affecting the management of the area, and 3. To illustrate the administrative policies of the Service. The plan will cover all programs of Resource Use, Resource Management, Scientific Investigation and Physical Development. An approved master plan will be required before any development program can be executed on the parkway.

#### Land Acquisition

Land acquisition for parkway development includes many considerations. The acquisition of the proportionately small percentage of private land is recommended as a Federal Government responsibility. This is different from the practice followed on eastern national parkways where the States have acquired the larger proportion of private land necessary

for those parkways. In this instance, 200 miles or over 80% of the presently proposed parkway location is on Federal land. Less than 18 miles or 7% is on mostly undeveloped individual private ownership. See Table II for a complete breakdown of land ownership by parkway mileage.

Depending on topographic considerations and the resources involved, the width of parkway lands, involving the public domain will vary and may require exceeding past normal widths on such lands. On Indian and wildlife refuge lands the width will be reduced to the minimum on the basis of agreements with the Tribal Councils and the administering agencies concerned.

The following considerations are proposed to be used as the basis for selecting and designating the parkway lands:

1. Provision of sufficient width to accommodate the roadway and all appurtenances including roadway, grade separation structures and the necessary access roads.
2. Provision for service roads where necessary to accommodate local traffic or to replace existing county or State roads which the parkway location may displace.

3. Provision for relocation and possible undergrounding of power, telephone, or other overhead wire crossings.
4. Elimination, insofar as possible, of adverse residual parcels of land on one side or the other of the parkway road, thus cancelling the need for the former owner to cross the parkway land and motor road in his daily agricultural work.
5. Conserving sufficient acreage within the 125 acres per mile total to provide widenings required for visitor use and service facilities at proper intervals. This is accomplished by reducing the width of the parkway lands as much as possible to accommodate the items listed above and then widening at strategic points to take in exceptionally scenic recreation resources. Such widenings are also planned to provide sufficient lands to accommodate interpretive facilities, picnic and parking areas, campgrounds and trailer areas, coffee shops and gasoline stations, lodges and other overnight developments. Administrative Service facilities such as utility buildings, shops, maintenance, warehouses and equipment storage yards are also located on parkway lands.
6. From an economic standpoint, routes are selected to bypass, by as wide a distance as possible, urbanized centers, but



occasionally it is necessary to pass through the fringe of the suburban surroundings of these built-up centers of population. In such situations, and through expensive agricultural land the acquisition of scenic easements will retain the rural or suburban picture and prevent unsightly development of a strip of land outside the minimum width of fee simple acquisition.

7. Through privately owned lands, it is proposed to acquire 125 acres per mile in fee simple of varying width with a minimum width of 300 feet. This is the usual width required for national parkways and is the equivalent of approximately 1,000 feet in average width. Scenic easements may be acquired also, where needed, up to an additional 25 acres per mile average. The varying width principle is most important in achieving, economically, the lands required for road construction, related development, scenic control and protective buffer area to screen out unsightly developments or unnatural features.
8. Within public lands such as National Wildlife Refuges, State parks and recreation leased areas, including Bureau of Land Management and Bureau of Reclamation Lands, the National Park Service will work cooperatively on the basis of agreements with the administering agency to insure protection of national parkway principles and uses referred to above.

The proposed parkway crosses or passes near three National Wildlife Refuges -- Havasu Lake, Imperial and Cibola and several State game and fish management areas. In addition, it crosses or passes near several existing or proposed State and county park lease areas located in both Arizona and California.

The proposed location of the parkway route as it affects these areas has been developed cooperatively through meetings and field studies with representatives of the responsible agencies.

9. The proposed parkway traverses undeveloped portions of the Chemehuevi Indian Reservation in California and the Colorado River Indian Reservation in Arizona. The location and development of the parkway within the Indian Reservation boundaries will be in accordance with the spirit and intent of agreements reached between the Chemehuevi Indian Tribal Council, the Colorado River Indian Tribal Council, the Bureau of Indian Affairs, and the National Park Service.

As a means of affecting this cooperation it is proposed that:

- a. In locating the proposed parkway, the principle to be followed will be that of least disturbance to the uses

and existing land management plans for the Reservations.

- b. The Indian lands proposed for use for parkway purposes will be the minimum necessary and will be in accordance with maps prepared by the National Park Service and approved by the Tribal Councils and Bureau of Indian Affairs. In the event that such agreements cannot be reached with the Colorado River Indian interests, a short alternate location (outside reservation land) appears feasible.

#### Development Considerations

A combination of Federal-State-County-Private Capital participation in the proposed parkway and scenic road system is recommended to be as follows:

Federal Participation - Design, construction, maintenance and administration of the parkway and parkway spur roads, including surveys and acquisition of the necessary parkway lands.

1. In the wildlife refuges areas (Federal and State), the planning for the construction of the parkway road and development of wildlife interpretive facilities, or other parkway features will

be coordinated closely by the Park Service with the agencies responsible for the administration and management of the various wildlife refuges. In this planning, the principle to be followed will be that of least disturbance to the wildlife management programs and other refuge uses.

The administering agency and the Service will jointly consider the overall parkway master plan as it affects the particular area and will agree on the responsibility for developing and administering any recreation or interpretive feature proposed within the refuge area.

Lands proposed for transfer or easement right-of-way to the Service for the motor road and development of parkway features, will be the minimum necessary and will be in accordance with maps prepared by the Service and approved by the administering agency. All development and administration costs on such lands will be borne by the National Park Service.

The National Park Service in constructing the parkway road and any related facilities, will relocate existing administering agency roads or other public roads, provide necessary grade separations, parallel roads or other construction required so

that these road systems will continue to serve their purposes without undue impairment.

2. On Bureau of Reclamation and Bureau of Land Management lands, planning for the construction of the parkway road and development of recreational or interpretive features will be coordinated closely by the Service with the agencies responsible for administering these lands.

The parkway lands, to be acquired by withdrawal or by overriding withdrawal (Bureau of Reclamation lands), will vary in width and may require widths in excess of the normal average depending upon the resources involved. This acquisition will be in accordance with maps prepared by the Service and approved by the administering agencies. All development and administration costs on such lands will be borne by the National Park Service.

The National Park Service, in constructing the parkway road and related facilities, will relocate existing administering agency or other public roads, provide necessary grade separation structures, parallel roads or other construction required so that these road systems will continue to serve their purposes without undue impairment.

The proposed parkway will utilize the present location of 16 miles of Bureau of Reclamation levee and construction roads to provide close views and access to the river and the water-oriented facilities. The Service agrees to accept the recommendations of the Bureau of Reclamation for their continued use of these roads for river control and bank revetment maintenance work.

3. On Indian Reservation lands, the Service will relocate existing Indian roads or other public roads, provide necessary grade separation, structures, parallel roads, or other construction required so these road systems will continue to serve their purposes.

The proposed scenic recreation loop road off the parkway to Fort Mohave will undoubtedly bring many more visitors to this historical area. If the parkway is authorized, the Service will meet cooperatively with Mojave Tribal Council, if the Council desires, to determine the best means of restoring the historic fort and cemetery, and for providing recreational and other facilities for the visitor.

4. On State lands, the lands proposed for transfer to the Service for parkway purposes in State park, or recreation areas on

leased Federal lands will be the minimum necessary and will be in accordance with maps prepared by the Service and approved by the administering agency.

On other State lands (school lands) the parkway needs will be met by exchange or purchase of such lands. The parkway widths will be established on the same basis as for public domain lands.

5. Delineation of proposed parkway lands is proposed to be generally the same as for previous national parkway projects.

The National Park Service will prepare Land Acquisition and Development Plans and Private Reservation and Public Utilities Plans for each section of the parkway. These plans will show proposed fee simple and scenic easement boundaries, property lines, contours, including proposed grading for the parkway road and all other physical developments. They will also show the public road system including recreation road connections, relocations and obliterations of roads; public and private utility lines and other easement reservations and their relocations, undergrounding, etc.

While serving as the guiding development plans for the parkway, these plans will be most useful in negotiations with private

owners and with Federal and State agencies with respect to boundary determinations and land uses.

6. Design and Construction: The engineering design and construction of the parkway and its spur roads will be by the National Park Service utilizing the engineering services of the Bureau of Public Roads. The design will be in accordance with park road standards approved in April, 1968, by Secretary Udall. Following closely the transfer of title of parkway lands, and depending upon the availability of construction funds from Congress, the National Park Service will schedule construction first in long usable units making connections between existing major highways and recreation features to best serve public needs.
7. Financing: The total cost of the proposed parkway, spur roads and related features is estimated at 150 million. National parkways are financed entirely from Federal funds through annual National Park Service appropriations.
8. Management: The parkway will be managed as a Recreation Area in accordance with the administrative policies of the National Park Service. The broad foundations for these policies



are in the several acts of Congress establishing national parkways, national seashores, national recreation areas, national lakeshores, and similar areas in the Recreational Area Category. The appendix includes a directive from the Secretary of the Interior outlining these management principles for the National Park Service.

A resource management plan will be prepared by the Service guided by the approved Parkway Master Plan, Land Use Plan, administrative policies, agreements with other Federal and State agencies involving the management of the area, and area legislation.

In the management of the parkway, outdoor recreational pursuits shall be recognized as the dominant or primary resource objective. In addition, it will also provide for the conservation and interpretation of the valuable natural and historical features so as to enhance the recreational opportunities in the area.

A wide range of recreational uses, facilitated by varying kinds of development and management techniques, will be encouraged. These include but are not limited to organized group camping, primitive camping, outdoor sports, spectator sports, cultural

programs, horseback riding, nature study and all water oriented activities.

Means of access in lieu of roads will be encouraged (tramways, trails, water access, etc.) where they will provide greater protection of the resources and enhancement of the quality of outdoor recreation experiences.

One-way roads and motor nature trails will be used wherever practical to increase visitor enjoyment.

An information and interpretive program will be provided to inform visitors of the recreational opportunities available and provide them with a better understanding of the natural environment and man-made features. Audiovisual programs, museums, wayside exhibits, self-guiding trails, amphitheaters, campfire circles, visitor centers, and contact stations are among the interpretive facilities that will be provided.

Conservation education will be part of the interpretive program. Cooperation with schools, Federal and State agencies and conservation organizations will be encouraged for the purpose of communicating an environmental consciousness both within and beyond the Lower Colorado River Valley area.

Fencing will be kept to the minimum and will be used only where it is considered necessary for the protection of the motorist or wildlife.

Hunting on parkway lands will be provided through the development of wildlife management plans and cooperative agreements with State wildlife agencies in accordance with the provisions of "Administrative Policies For Recreation Areas of the National Park System" (revised August, 1968).

In accordance with national parkway policy, tolls will not be charged for the use of the motor road.

Private Capital Participation - As on other national parkways, it is recommended that the construction and operation of lodges, restaurants, snack bars, and other motor service facilities on parkway lands be by private capital under concession contracts with the National Park Service. This includes the construction and operation of concessions by Indian Tribal Councils where the parkway crosses Indian Reservation lands. The capital investment ratio accordingly would be about 95 percent Federal and five percent private enterprise. This recommendation is consistent with the principle being followed in the acquisition and development of other areas in the National Park System.

## SCENIC RECREATION ROAD SYSTEM

State-County Participation - Design, construction, maintenance and administration of the scenic road portion of the recreation road system, including complementary facilities, and the acquisition of necessary land for scenic road protection, is recommended for inclusion into State and county road programs.

The study team recommends that about 260 miles of existing roads be designated and developed cooperatively by Federal, State, and county highway agencies to facilitate circulation within the river valley and provide adequate access between the parkway and many recreation opportunities provided on Federal land under the Land Use Plan, on private lands and on Indian Reservations.

As a general rule, the existing or suggested new roads selected for inclusion in the proposed system shall have the following characteristics:

1. Scenic and recreation features of outstanding State or natural significance. The area traversed shall have sufficient interest so the scenic road would be a destination in, and of itself, for recreation purposes.
2. They should be relatively free of commercial or restrictive developments which would fall within the corridor and the

minimum ruling right-of-way width of 200 feet.

3. Full control of access is desirable, but partial control shall be acceptable. Unrestricted access contributes greatly to a reduction in the pleasure of driving.
4. There should be frequent opportunities adjacent to the road for the development of roadside complementary facilities, including facilities for interpretation of natural and cultural features.
5. The design shall be coordinated with all responsible agencies so as to achieve continuity and reasonable uniformity throughout the network. It shall foster graceful, ground-fitting horizontal, and vertical alignment, striking vistas, and safe travel at leisurely speeds.

The criteria for the delineation of the scenic corridor, the standards for environmental protection and the measures to effectuate it, are covered in detail in the Scenic Roads and Parkways Study released in 1965 by the Department of Commerce for the President's Council on Recreation and Natural Beauty. The scenic corridor provisions of this study would be fully applicable to the Scenic Recreation Road System for the Lower Colorado River Valley.

Development: As in the case of the parkway, a coordinated master plan for land use, acquisition and development of the scenic road corridor will be prepared by the State and county highway agencies in cooperation with the Land Use Office, prior to proceeding with the development. The plan will include such items as provisions for the roadway, complementary facilities, planting, clearing, as well as the delineation of the land for fee simple and easement acquisition.

The design and development of the scenic road system will be accomplished by the State and County Highway Departments, in cooperation with the Land Use Office, Parkway Administrator and land administering agencies.

Operation and Maintenance: Except for certain designated roads, the maintenance and administration of the system would remain the responsibility of the State and local highway agencies.

Police protection of the scenic road system will be a State and local responsibility.

Financing: The costs of the proposed scenic recreation road system is estimated at over \$8 million by the Bureau of Public Roads. It involves 33 miles of new local road location and 221 miles of improved existing local roads.

These costs for new construction, landscape development and corridor protection were based on suggested costs developed for the proposed national program of Scenic Roads and Parkway Study, prepared by the Department of Commerce.

Several possible sources of funds exist for use by the States and public agencies for the development of the proposed scenic road system:

1. Land and Water Conservation Fund Act of 1965, provides for grants to States and through them to political subdivisions and other units of the States, for planning, acquisition, and development of public outdoor recreation areas and facilities. This may vary from roadside picnic stops to multi-purpose recreation complexes or sites for State game and fish refuges.
2. Title III of the Highway Beautification Act. The Act provides for the use of Highway Trust Fund monies for landscape enhancement, roadside development and building recreation areas within the right-of-way. These funds are designated for use as part of highway construction and require matching State funds on a 50/50 or 90/10 basis.
3. Section 319 of Title 23 of the Federal-Aid Highway Act. Funds have been made available from the General Treasury for use

by the States, without matching, to preserve, restore and enhance scenic beauty, both within and outside of the right-of-way, and to acquire additional land to achieve this goal.



TABLE II

The Approximate Mileages of the Parkway and Its Spur Roads  
In Relation to Land Ownership

	<u>Arizona</u>	<u>California</u>	<u>Total</u>
<u>Reclamation Lands -</u> Including Levee Location of 18.9 Miles			
Parkway	39.5	24.0	63.5
Spur	0.0	5.8	5.8
<u>Public Domain Land</u> Bureau of Land Management			
Parkway	60.6	71.0	131.6
Spur	2.2	9.1	11.3
<u>Private Land</u>			
Parkway	11.5	6.5	18.0
Spur	0.0	0.0	0.0
<u>State Land</u>			
Parkway	6.1	5.6	11.7
Spur	0.0	1.7	1.7
<u>Fish and Wildlife Land</u>			
Parkway	1.7	2.7	4.4
Spur	0.0	0.0	0.0
<u>Indian Reservation Land</u>			
Parkway	9.0	7.6	16.6
Spur	0.0	2.7	2.7
TOTAL			
Parkway	128.4	117.4	245.8
Spur	<u>2.2</u>	<u>19.3</u>	<u>21.5</u>
	130.6	136.7	267.3

COORDINATION AND COOPERATION

The elements of coordination and cooperation, with respect to the proposed Lower Colorado River Valley Parkway and Scenic Recreation Road System Plan, consist of past, present and future periods in time.

Past, 1962 through 1967

The problems of access and recreation travel in the river valley were identified during the coordinated preparation of the 1964 Lower Colorado River Land Use Plan.

To find answers to these problems, the Lower Colorado River Land Use Office sought the cooperative assistance of the National Park Service in October of 1965. Through this cooperative effort, the March, 1966 report, "A Foundation Study for a Lower Colorado River Recreation Road System Plan," was jointly prepared. It served as a guide to identify the problems involved, the needs and the opportunities for meeting those needs. It set the scope and scale of work needed to fill the access and recreation travel demands of the Lower Colorado River Valley.

Since its preparation, the "1966 Foundation Study," has been widely circulated and freely discussed with other Federal agencies, State

and local agencies, Indian Tribal Councils, conservation groups, sportsmen's groups, service clubs, local Chambers of Commerce and County Boards of Supervisors. Copies of that study were freely distributed to all who requested it as well as to those who had administrative responsibilities and interests in the area.

Following the Foundation Study, and as a result of it, work was started to determine, in more detail, the most beneficial and appropriate form of providing the needed access and recreation road system for the lower Colorado River area. These subsequent studies revealed the qualifications of the area as a location for a national parkway to serve the major north, south recreation travel needs. In other words, the natural, historic and prehistoric resources were collectively of national significance. An in-house report of these findings was made by the National Park Service in December of 1966. This resulted in the clarification of the pattern of recreation roads which could best answer the access recreation travel and conservation needs of the Lower Colorado River Valley area. This December report recommended to the Director of the National Park Service, that a joint feasibility study be made to determine if a national parkway along the Lower Colorado River Valley would be feasible and desirable.

A study and planning team was established. It consisted of three National Park Service Parkway Planners, a Bureau of Public Roads Parkway

Engineer and a member of the Lower Colorado River Land Use Office Planning Staff. The first joint field study was conducted during one week in February, 1967. It resulted in identifying points of interest of national parkway caliber in the valley. It also resulted in the general identification of a feasible parkway route and the evaluation of portions of local roads desirable for use in a scenic recreation road system for the river valley. Also, the general format and review procedure needed for the work which lay ahead was initially established during this first interagency team study. If other interested agencies, groups and individuals were to be adequately informed, some basic data and preliminary general location maps would have to be prepared. Each team member was assigned tasks appropriate to his profession, organization and geographical location. These tasks included the collection of data and information, the drafting of various sections of this report and the conduct of briefings and meetings to inform interested agencies, groups and individuals of the work being done and the nature of that work.

During 1967, the primary efforts of the study team members were devoted to the intermittent collection of information as time permitted between their other work assignments.

#### Present, 1968

By February, 1968, these study efforts had produced sufficient material

to justify a two week, on the ground, study of a possible parkway location and the study of sections of local roads which might be incorporated as a part of a coordinated system of scenic recreation access roads and loop tour routes.

Immediately after the February field study, the Lower Colorado River Land Use Office began a series of briefing or information exchange meetings designed to inform interested and responsible people at all levels of government and groups and organizations having interests in the area. To date over 12 such meetings have been held and over 400 key people in government, conservation and sportsmen's groups and service organizations have been directly provided with the most current material available on the study. Following each meeting, printed study information was distributed to the participants. This information included a small scale ( $\frac{1}{4}$ " = 1 mile) strip map showing the proposed general location, a briefing statement containing pertinent data and information available about the proposed parkway and recreation road system and a copy of the minutes of that meeting. Wherever desired, personnel of the Lower Colorado River Land Use Office participated in field studies with State and local agency representatives to provide them with first hand field information and to give them a chance to evaluate the

effects of the proposed parkway in areas of their interest or responsibility.

Information has been disseminated to eight Federal agencies, nine State agencies, twelve County agencies, five Indian Tribal Councils, five County Boards of Supervisors, several service clubs, three State wildlife and conservation organizations affiliated with national organizations. In addition, there has been considerable coverage of the various briefing meetings by the press, radio and television news media. A total of about 235 column inches of press coverage in 16 articles in five newspapers was printed between February 16, 1968, and October 30, 1968.

So much coverage of preliminary information can easily be misinterpreted and some was. Considerable effort has been made to clear these areas and to correct any possible misunderstanding on the part of individuals or organization.

During the briefing meeting of February 15, 1968, two sections of parkway locations were found to be in conflict with Bureau of Sport Fisheries and Wildlife and military interests. Alternate locations were studied and selected as a result of conferences with these agencies. During the July 11 briefing with the Bureau of Indian Affairs, and members of the five Indian Reservation Tribal Councils along the lower Colorado River, it was learned that the Colorado River Indian Tribal

Council and the Fort Mojave Indian Tribal Council objected to having the parkway location planned to cross their reservation lands. This has resulted in the selection of another alternate location to bypass the Fort Mojave Indian Reservation. Fortunately none of these three alternate locations have resulted in any loss of parkway caliber or engineering, cultural, recreation or economic feasibility.

Meetings with wildlife sportsmen's groups revealed their fears that the establishment of a national parkway would preclude hunting over a vast area; that the management of wildlife along the parkway would be lost as a State responsibility; and that the parkway right-of-way would be fenced, thus precluding the free movement of the hunter as well as wildlife, including deer and the Desert Big Horn sheep. The timely issuance, in August, 1968, of the revised National Park Service's publication "Administrative Policies for the National Recreation Areas, National Seashores, National Lakeshores, National Parkways, National Scenic Riverways (Recreational Area Category) of the National Park System" has provided the information and statements of management policy believed necessary to allay the fears and concerns of the wildlife and sportsmen's groups regarding wildlife management and hunting activities. The November 16, 1968, meeting of the Arizona Wildlife Federation resulted in an action by that group to reevaluate its earlier

negative action and to conduct an actual study of the wildlife and hunting problems that might occur as a result of the establishment of a national parkway.

Meetings with conservation groups revealed their fear that the proposed parkway would despoil natural and scenic areas and penetrate the proposed Topock Gorge-Needles Mountain Wilderness Area in Arizona. However, when it was explained that the proposed parkway right-of-way would not penetrate the proposed wilderness area but would, instead, serve as a protective belt around it, it is believed that most of these fears were laid to rest.

The National Park Service booklet, "Park Road Standards" of May, 1968, illustrates the design and construction difference between national parkways and standard county, State and Federal roads and highways. Whether or not these differences have been adequately understood is problematical since there are no national parkway examples for ready comparison by the residents of Arizona and California. There are, however, several sections of park roads within nearby national parks and monuments which could exemplify the types of design and construction utilized on national parkways to produce "a pleasing road--which lies lightly on the land."

These cooperative efforts in the form of briefings, meetings, field trips and voluminous correspondence have been most beneficial not



only to the study team but also to the various interests involved. The free exchange of information is a policy which has been followed by the respective offices of the study team members.

Future, 1969 to

With the approval of the recommendations of this report by the Secretary of the Interior and the granting of congressional authorization, future coordination and cooperation will be necessary, not only in the conduct of sustained public relations with parkway neighbors, but also to achieve interagency cooperative efforts. These efforts will involve:

1. Offices of the Bureau of Land Management for the classification and establishment of the parkway right-of-way and the coordination of planning and development of neighboring Lower Colorado River Land Use Plan features.
2. The Bureau of Sport Fisheries and Wildlife for easement rights-of-way across limited portions of two wildlife refuges.
3. The Bureau of Reclamation for use of sections of their withdrawn and acquired lands for parkway purposes.
4. The U. S. Coast Guard of the Department of Transportation for clearance of four parkway bridge structures across the Lower

Colorado River (a navigable river).

5. The Arizona and California State Highway Departments for grade separation easements across highway rights-of-way and for connecting road construction between existing highways and the parkway motor road.

6. Bureau of Indian Affairs and the Chemehuevi Indian Reservation Tribal Council for parkway right-of-way across tribal land and for the negotiation of Indian concession rights of those sections of the parkway which cross reservation lands.

7. Explore with the Colorado River Indian Tribal Council the possible use of about eight miles of parkway location on undeveloped land in the Colorado River Indian reservation downstream from the Palo Verde Diversion Dam.

8. Arizona Game and Fish and California Fish and Game Departments for the execution and joint administration of wildlife management and wildlife operation agreements on parkway lands. This cooperative effort would also include cooperation with Arizona and California Wildlife Federation Groups.

9. Arizona and California Park Departments for coordinated access road developments between the parkway and neighboring State

park and recreation areas.

10. Yuma, Imperial, Riverside, San Bernardino and Mohave County Boards of Supervisors, Park and Recreation Departments and road departments concerning parkway crossings of county roads, parkway spur roads and connecting recreation tour routes to neighboring local park and recreation features.

11. Appropriate chapters of the Sierra Club and other conservation organizations to insure the protection of the areas natural features.

12. Local Chambers of Commerce and various news media for the appropriate dissemination of general public interest information.

13. If the establishment of a citizenry group, such as a Parkway Association should be formulated, it should be encouraged. Such a group could serve as a general information clearing house. The Parkway administration would work closely with such a group to maintain a high level of information exchange and constructive public relations.

14. Federal, State, County and local law enforcement agencies for the cooperative enforcement of laws and the apprehension and prosecution of violators.

15. Federal, State, County and City departments responsible

for building, health, pollution and other laws, codes and regulations dealing with public health, education and welfare.

16. Federal, State, County and local resource planning and development offices in the exchange of pertinent data and information relative to neighboring research, planning and development projects.

17. Arizona and California Agricultural Departments to provide appropriate inspection of interstate movement of plants, fruits and crops to control the spread of plant diseases and insects.

POTENTIAL PARKWAY EXTENSIONSScope of System

A national parkway of the Lower Colorado River area, as proposed, can be considered as a key element to a larger scenic road and parkway system traversing a host of mountains, plateaus, river features and desert sections of the Western United States. In its broadest context the Lower Colorado River Valley Parkway could be a part of a "Western-Continental Parkway" running through southwestern Nevada, southern Utah, northern Arizona, western Colorado and northern New Mexico. Its scope could be further expanded to the wild and rugged Green River sections of northeastern Utah and north into the Rocky Mountain region and the great national parks in the northwest corners of Wyoming and Montana at the International Boundary with Canada. (See fold-out map following page 110.)

The many outstanding national parks and monuments, national forests, Indian reservations, State parks, reservoirs, and recreation areas could be reached and ultimately welded together with a planned scenic road and parkway system. Such a system could include, besides the Lower Colorado River region and the Lake Mead National Recreation

Area, the "Golden Circle" of national features, the four corners area, Dinosaur National Monument, Flaming Gorge National Recreation Area and Grand Teton, Yellowstone, and Glacier National Parks. The Golden Circle concept suggested by Secretary Udall in 1961 is the greatest concentration of scenic wonders to be found in the country. Within that Circle lies such National Park areas as Zion, Bryce Canyon, Mesa Verde, Grand Canyon, and Canyonlands as well as a host of national monuments including Cedar Breaks, Capitol Reef, Arches, Natural Bridges, Navajo, Canyon de Chelly and Sunset Crater. Also included in the region of the Golden Circle is the vast Lake Powell, administered as Glen Canyon National Recreation Area, and the great expanse of Monument Valley in northern Navajo Indian Reservation. Besides these readily identified National treasures, the extended route would also present an unequalled comprehensive display of all life zones found in this country with the possible exception of the tropics. Nowhere else in the United States is there a comparable opportunity to connect such a wide variety and high quality of scenic and recreation resources which could be made readily accessible to travelers through the development of a combined national parkway and scenic road system. Since much of the routing would be on public lands, Federal agencies such as the Bureau of Reclamation, Bureau of Land Management,

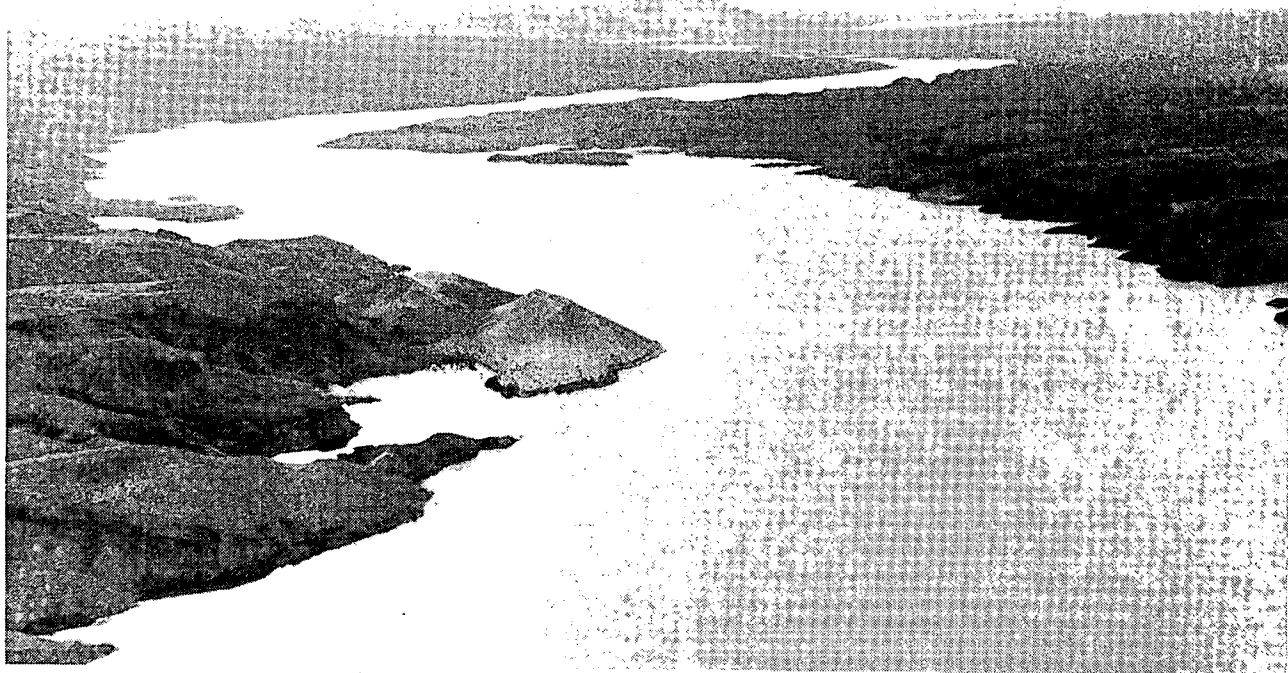
National Park Service, Corps of Engineers, and the U.S. Forest Service would participate along with appropriate State and other Federal agencies.

In addition, officials of Canada and Mexico might be encouraged to undertake similar parkway connections. Adjoining Glacier is Canada's unit of Waterton-Glacier International Peace Park, which is the first in a cluster of other Canadian National Parks of great scenic attraction.

A possible extension to the Trans-Canada Highway would serve various Canadian national parks to the west and east.

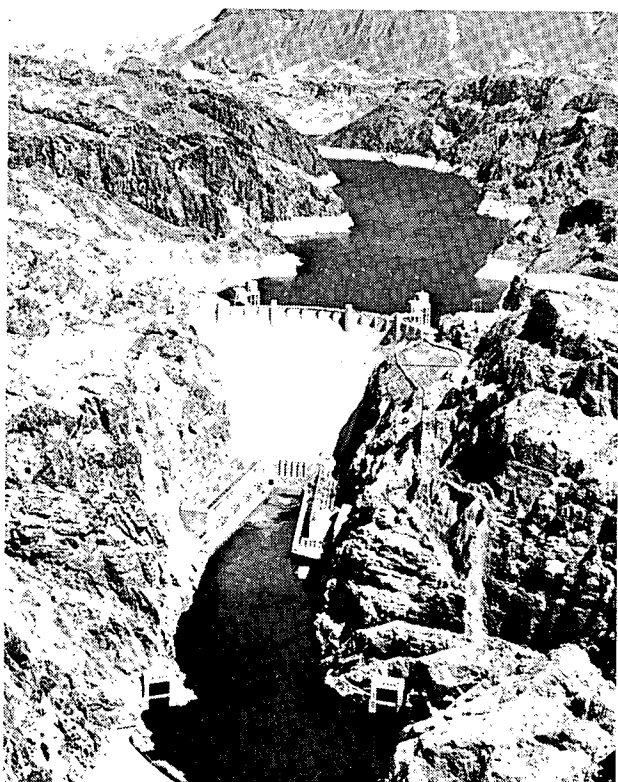
To the south of the Lower Colorado River area is the long peninsula of Baja California and the mainland of Mexico. Both sections of that country, bordering the Gulf of California, have major existing tourist interests. Many of these are served by way of Mexican Federal Highway No. 2, the major entrance point to Mexico from the United States at San Luis, Sonora.

A Work Group on Parallel Parks along the Mexican Border which has recently been formalized by the two countries, has recommended scenic road status for Mexican Highway No. 2. It is possible that a planned series of studies by Mexico might warrant a scenic road system development in Baja California, or in the Mexican State of Sonora, as well as other States to the southeast. In the latter instance, the scenic potential

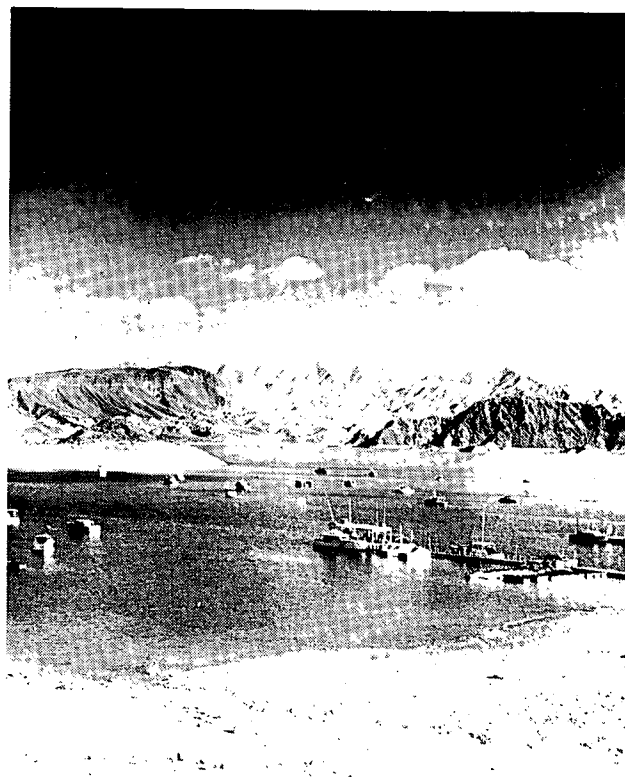


*Lake Mohave*

*Lake Mead National Recreation Area*



*Hoover Dam*



*Boulder Beach*



of the Sierra Madre Occidental and beyond might instill interest for a Mexican national parkway.

One of the recommendations contained in this report provides for further studies of a possible extension of the Lower Colorado River Valley Parkway to the north beyond Davis Dam. Such a study would determine the needs for, the values of, and the benefits that could be expected from the authorization and construction of such an extension. Such studies would be closely coordinated with the national program of scenic roads and parkways under the auspices of the President's Council on Recreation and Natural Beauty.

Potential Lower Colorado River Valley Parkway Connection in Lake Mead National Recreation Area

As shown on the following map, the Lower Colorado River Valley Parkway could continue along existing and new park roads in the Lake Mohave unit of the recreation area. On its way north from Davis Dam the route would follow a high bench elevation to afford long range views of Lake Mohave and the surrounding rugged terrain of colorful deserts, deep canyons and lofty plateaus.

The location would cross the river above Cottonwood Valley into Nevada and then rise gradually to a high bench west of Opal Mountain and continue north through the Eldorado Mountains towards Boulder City. The

location would afford easy access to the developed areas on both sides of the lake. It could connect with the North Shore Drive to the east of Boulder City, Nevada. Here it would meet U. S. Highway 93-466 leading to the Hoover Dam complex to the east and Death Valley to the west.

From Boulder City the route would follow the existing park road around Boulder Basin to Overton where it would cross the Virgin River and continue northeasterly into the magnificent canyon country of southern Utah and northern Arizona.

XII

APPENDIX

APPENDIX A

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**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
Office of the Secretary  
Washington, D.C. 20240**

July 10, 1964

*Memorandum*

To: Director, National Park Service  
From: Secretary of the Interior  
Subject: Management of the National Park System

As the golden anniversary of the National Park Service draws near, and we approach the final years of the MISSION 66 program, it is appropriate to take stock of the events of the past and to plan for the future. The accomplishments of the past are not only a source of pride—they are also a source of guidance for the future.

The accelerating rate of change in our society today poses a major challenge to the National Park Service and its evolving responsibilities for the management of the National Park System. The response to such changes calls for clarity of purpose, increasing knowledge, speedier action and adaptability to changing needs and demands upon our diverse resources.

In recognition of this need, a year ago I approved a comprehensive study of the long-range objectives, organization and management of the National Park Service. Moreover, I was pleased to have had the opportunity to participate in the CONFERENCE OF CHALLENGES at Yosemite National Park, at which this study was discussed by the personnel of the Service.

In looking back at the legislative enactments that have shaped the National Park System, it is clear that the Congress has included within the growing System three different categories of areas—natural, historical, and recreational.

Natural areas are the oldest category, reaching back to the establishment of Yellowstone National Park almost a century ago. A little later historical areas began to be authorized, culminating in the broad charter for historical preservation set forth in the Historic Sites Act of 1935. In

recent decades, with exploding population and diminishing open space, the urgent need for national recreation areas is receiving new emphasis and attention.

The long-range study has brought into sharp focus the fact that a single, broad management concept encompassing these three categories of areas within the System is inadequate either for their proper preservation or for realization of their full potential for public use as embodied in the expressions of Congressional policy. Each of these categories requires a separate management concept and a separate set of management principles coordinated to form one organic management plan for the entire System.

Following the Act of August 25, 1916, establishing the National Park Service, the then Secretary of the Interior Franklin K. Lane, in a letter of May 13, 1918, to the first Director of the National Park Service, Stephen T. Mather, outlined the management principles which were to guide the Service in its management of the areas then included within the System. That letter, sometimes called the Magna Carta of the National Parks, is quoted, in part, as follows:

For the information of the public an outline of the administrative policy to which the new Service will adhere may now be announced. This policy is based on three broad principles: First, that the national parks must be maintained in absolutely unimpaired form for the use of future generations as well as those of our own time; second, that they are set apart for the use, observation, health, and pleasure of the people; and third, that the national interest must dictate all decisions affecting public or private enterprise in the parks.

The principles enunciated in this letter have been fully supported over the years by my predecessors. They are still applicable for us today, and I reaffirm them.

Consistent with specific Congressional enactments, the following principles are approved for your guidance in the management of the three categories of areas now included within the System. Utilizing the results of the new broad program of resource studies, you should proceed promptly to develop such detailed guidelines as may be needed for the operation of each of these categories of areas.

## NATURAL AREAS

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*Resource Management:* The management and use of natural areas shall be guided by the 1918 directive of Secretary Lane. Additionally, management shall be directed toward maintaining, and where necessary re-establishing indigenous plant and animal life, in keeping with the March 4, 1963, recommendations of the Advisory Board on Wildlife Management.

In those areas having significant historical resources, management shall be patterned after that of the historical areas category to the extent compatible with the primary purpose for which the area was established.

*Resource Use:* Provide for all appropriate use and enjoyment by the

people, that can be accommodated without impairment of the natural values. Park management shall recognize and respect wilderness as a whole environment of living things whose use and enjoyment depend on their continuing interrelationship free of man's spoliation.

*Physical Developments:* They shall be limited to those that are necessary and appropriate, and provided only under carefully controlled safeguards against unregulated and indiscriminate use, so that the least damage to park values will be caused. Location, design, and material, to the highest practicable degree, shall be consistent with the preservation and conservation of the grandeur of the natural environment.

### **HISTORICAL AREAS**

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*Resource Management:* Management shall be directed toward maintaining and where necessary restoring the historical integrity of structures, sites and objects significant to the commemoration or illustration of the historical story.

*Resource Use:* Visitor uses shall be those which seek fulfillment in authentic presentations of historic structures, objects and sites, and memorialization of historic individuals or events. Visitor use of significant natural resources should be encouraged when such use can be accommodated without detriment to historical values.

*Physical Developments:* Physical developments shall be those necessary for achieving the management and use objectives.

### **RECREATIONAL AREAS**

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*Resource Management:* Outdoor recreation shall be recognized as the dominant or primary resource management objective. Natural resources within the area may be utilized and managed for additional purposes where such additional uses are compatible with fulfilling the recreation mission of the area. Scenic, historical, scientific, scarce, or disappearing resources within recreational areas shall be managed compatible with the primary recreation mission of the area.

*Resource Use:* Primary emphasis shall be placed on active participation in outdoor recreation in a pleasing environment.

*Physical Developments:* Physical developments shall promote the realization of the management and use objectives. The scope and type of developments, as well as their design, materials, and construction, should enhance and promote the use and enjoyment of the recreational resources of the area.

### **LONG-RANGE OBJECTIVES**

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While the establishment of management principles to guide the operation of the three categories of areas within the System is vital, I believe it is of equal consequence that we now identify the long-range objectives of

the National Park Service. The objectives developed by the Service have been recommended to me by my Advisory Board on National Parks, Historic Sites, Buildings and Monuments. I am approving these objectives, as follows:

1. To provide the highest quality of use and enjoyment of the National Park System by increased millions of visitors in years to come.
2. To conserve and manage for their highest purpose the Natural, Historical and Recreational resources of the National Park System.
3. To develop the National Park System through inclusion of additional areas of scenic, scientific, historical and recreational value to the Nation.
4. To participate actively with organizations of this and other Nations in conserving, improving and renewing the total environment.
5. To communicate the cultural, inspirational, and recreational significance of the American Heritage as represented in the National Park System.
6. To increase the effectiveness of the National Park Service as a "people serving" organization dedicated to park conservation, historical preservation, and outdoor recreation.

You should develop such goals and procedures as may be necessary to implement these objectives.

In the development of these goals and procedures, I think it is important to emphasize that effective management of the National Park System will not be achieved by programs that look only within the parks without respect to the pressures, the influences, and the needs beyond park boundaries. The report of my Advisory Board on Wildlife Management emphasizes this observation.

The concern of the National Park Service is the wilderness, the wildlife, the history, the recreational opportunities, etc., within the areas of the System and the appropriate uses of these resources. The responsibilities of the Service, however, cannot be achieved solely within the boundaries of the areas it administers.

The Service has an equal obligation to stand as a vital, vigorous, effective force in the cause of preserving the total environment of our Nation. The concept of the total environment includes not only the land, but also the water and the air, the past as well as the present, the useful as well as the beautiful, the wonders of man as well as the wonders of nature, the urban environment as well as the natural landscape. I am pleased that among its contributions, the Service is identifying National Historic and Natural History Landmarks throughout the country and is cooperating in the Historic American Buildings Survey.

It is obvious that the staggering demand for outdoor recreation projected for this country will eventually inundate public park areas unless public and private agencies and individuals join in common effort. National park administrators must seek methods to achieve close cooperation with all land-managing agencies, considering broad regional needs, if lands for public outdoor recreation sufficient to the future needs of the Nation are to be provided.

The national parklands have a major role in providing superlative opportunities for outdoor recreation, but they have other "people serving" values. They can provide an experience in conservation education for the young people of the country; they can enrich our literary and artistic consciousness; they can help create social values; contribute to our civic consciousness; remind us of our debt to the land of our fathers.

Preserving the scenic and scientific grandeur of our Nation, presenting its history, providing healthful outdoor recreation for the enjoyment of our people, working with others to provide the best possible relationships of human beings to their total environment; this is the theme which binds together the management principles and objectives of the National Park Service—this, for the National Park Service, is the ROAD TO THE FUTURE.

STEWART L. UDALL, *Secretary of the Interior*

GEORGE B. HARTZOG, JR.,  
*Director, National Park Service*



## APPENDIX B

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# PARK ROAD STANDARDS

## A REPORT TO THE DIRECTOR OF THE NATIONAL PARK SERVICE

### THE PURPOSE OF PARK ROADS

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Among all public preserves, those of the National Park System are distinguished by the quality of their natural, historical, and recreational resources—dedicated and set aside unimpaired for the benefit and enjoyment of the people.

These national parklands—mountains, deserts, seashores, lakes, forests—increasingly have become places of escape from the monotony and frustrations of urban life. And the astounding mobility of vacation travellers has brought the most remote wilderness areas within reach of millions.

Major destination points for this seasonal migration are the well-known National Parks, which are now asked to serve a volume of visitors that seemed inconceivable as recently as 10 years ago.

In 1956, there were 61 million park visits; in 1966, 103 million; in 1977, the total will be more than 300 million.

This flood of park users represents either a profound threat to park values—or an extraordinary opportunity to make those values a more meaningful part of this nation's cultural inheritance.

The single abiding purpose of National Parks is to bring man and his environment into closer harmony. It is thus the *quality* of the park experience—and not the statistics of travel—which must be the primary concern.

Full enjoyment of a National Park visit is remarkably dependent on its being a leisurely experience, whether by automobile or on foot. The distinc-

tive character of the park road plays a major role in setting this essential unhurried pace.

The design and location of park roads must be in accordance with the philosophy that *how* a person views the park can be as significant as *what* he sees, thereby insuring that National Parks remain places to which people go for a special kind of experience, rather than merely places to view famous scenic wonders.

Since 1915, when the early motorists in Yellowstone were no longer required to chain their cars to logs and turn over their keys to the park superintendent, visitor activities in the parks have been geared to the automobile. Although, by an accident of history, the National Park concept reached its development stage at about the same time as did the automobile, there is no everlasting and indissoluble relationship between the two.

But in some ways, the National Parks stand at the same crossroads as do the American cities—some of which seem on the verge of choking on their automobiles. Just as noise, congestion, and pollution threaten the quality of urban life, they have begun to erode the quality of the park experience.

Many park roads are now congested, particularly around points of great interest; others have a predictably brief grace time.

There is no reason to expect that the construction of a new park road, by itself, will always relieve this congestion.

The effective size and capacity of the parks is diminished or expanded by the means of access. Paul Brooks put it this way:

If you are in a canoe traveling at three miles an hour, the lake on which you are paddling is ten times as long and ten times as broad as it is to the man in a speedboat going thirty—every road that replaces a footpath, every out-board motor that replaces a canoe paddle, shrinks the area of the park.

In many locations it is impossible to construct roads—of whatever standard—without damaging, enduring scars and obstructing the natural movement of wildlife. While many park administrators and conservationists in the past have been unalterably opposed to replacing roads with tramways, funiculars, and other such developments, in many cases these would have done far less permanent damage to the park environment.

The Service is presently conducting extensive research into the capabilities, cost, and possible effects on the terrain and equilibrium of nature, of many different methods of transporting people, including tramways, monorails, rail conveyor systems, buses, helicopters, and hydrofoils. Research on this technology—and the development of pilot programs—should be given high priority.

These forms of transportation are adaptable to park use, and many can be built without damaging resources or even tree cutting. They can also provide experiences for visitors otherwise unobtainable. The intrusiveness of roads—their cuts and fills, traffic noise and the consequent ecological barrier—can often be avoided completely.

When the Service is faced with a choice between creating a severe road scar in order to bring visitors close to a destination point, or requiring visitors to walk a considerable distance—or considering an alternate transportation system—the decision should be against the road scar.

It is quite possible that, at this point in the history of National Parks, new roads should be considered the last resort in seeking solutions to park access.

In the older parks, the road systems have been established, and solutions to circulation problems must start with this situation. Desirable solutions do exist: speed limits can be reduced; two-way roads may convert into a total or partial one-way system; existing administrative or service roads may provide for leisurely one-way nature roads or other uses; automobiles may be limited to certain portions of a park, and bus, mini-train, or other transportation furnished.

The search for new solutions is imperative, and must not be crippled by those well worn shibboleths dealing with human behavior: "people won't walk," "they won't leave their cars," "they won't accept restrictions." The good humor of those who stood in the long, long lines at EXPO 67, and the acceptance of an advance reservation system for guided tours of the Mesa Verde cliff dwellings in 1967, effectively contradict such assertions.

Inevitably, if the park experience is to maintain its distinctive quality, the number of people and their methods of access and circulation will necessarily have to be more closely controlled.

Park roads cannot accommodate all types of vehicles. While the travel industry continues to develop new kinds of mobile camping vehicles, the Service must not be obligated to construct roads, or to manage traffic in order that modern transportation technology can be accommodated. The development of parking areas for trailers at park entrances and the exclusion of these vehicles from those park roads not capable of handling them are appropriate solutions.

Existing park roads should be analyzed to determine the size and type of vehicles that can be accommodated. Vehicles exceeding these standards must be excluded, rather than reconstructing the roads to ever higher standards.

In this era of enormously increasing vacation traffic, it must be assumed that those who visit the National Parks do so for the purpose of enjoying a unique experience, and are therefore willing to accept necessary restrictions, including those regulating numbers of people and their means of travel. Such regulations, as necessary, may deepen the awareness of visitors that they are truly in places of special importance.

Today the facts are these: unless an open-end road-construction program were to be carried out, the National Parks cannot indefinitely accommodate every person who wants to drive an automobile without restriction through a National Park.

This does not constitute a value judgment that those who seek a hurried trip through a park are less desirable visitors and should be excluded. Obviously, many who first visited a National Park in haste have returned to enjoy leisurely visits.

The Service needs to communicate widely that parks are for leisurely travel and that park roads are purposely designed for low speeds. This information should appear on oil company road maps and in automobile association literature, as well as NPS signs and publications.

People need also to appreciate that the purposes of park roads are completely different from those of the Federal and State systems. Park roads are not continuations of the State and Federal network. They should neither be designed—nor designated—to serve as connecting links. Motorists should not be routed through park roads to reach ultimate destinations.

Within parks, no road or other circulation system should be designed simply as a connecting device to link points of interest. Every segment of every park road should relate to the environment through which it passes in a meaningful way, and should, to the extent possible, constitute an enjoyable and informative experience in itself.

For this reason long tangents which encourage faster speeds—and fleeting views of kinetic “scenery”—should always be avoided. The horizontal and vertical alinement should respect the terrain, so that the road is laid lightly onto the land. In deciding upon road locations, maximum advantage should be taken of interpretive and scenic values.

And, the design and location of the road should constantly encourage people to leave their automobiles to more thoroughly experience the park, by providing pullouts, parking, scenic overlooks, and trail connections.

Every opportunity should be taken also to encourage the safe use of waterways for access to park features. Few resources lend themselves so well to human use, and sustained penetration of natural areas, without serious impairment of natural values. Careful consideration must be given to regulation of motorboats, for sound pollution is as destructive to the values of natural waterways as are water pollution and waterfront buildings.

The purposes of roads differ in the natural, historical, and recreational areas of the National Park System, and design standards must recognize these differences. However, the damaging effects of road construction are generally as disruptive to the historical scene as they are to the natural setting—and the effects of roads on integral values of natural features in recreational areas must be fully considered.

In summary, a road should not be considered until a most thorough and thoughtful determination has been made of the most meaningful way in which people can experience the park.

#### **APPROVAL OF DESIGN AND CONSTRUCTION**

To insure that all National Park roads, or other circulation systems, are in harmony with fundamental park purposes, the following considerations

must precede approval of design and construction:

1. A professional ecological determination must be made that the resulting effects on park values—including such aspects as wildlife habitat and mobility, drainage, stream flow, and the climatic effects of paved areas—will be minimal.
2. A professional determination must be made that the means of transportation, and its location, will provide maximum opportunity for visitor enjoyment and appreciation of park resources. The encouragement of such activities as viewing wildlife, photography, and hiking and nature walks, will be influential in determining actual locations and standards.

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A park road is not one that merely conforms to standards of technical road-building excellence. Preserving the integrity of the landscape, respecting ecological processes, insuring a fully rewarding visitor experience—these are the elements which dictate the means of visitor access and the development of design standards.

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### DESIGN STANDARDS

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Five types of park roads exist: major, minor, special-purpose, interpretive (motor nature), administrative, and parkways.

Park roads, of these varying types, are built over terrain and under climatic conditions which approach the infinite in variety: On high mountain ridges in rugged terrain—along seashores and lakeshores—from the permafrost of Alaska to the deserts of the Southwest and the Everglades of Florida—over lava fields and through rain forests. Each road problem must be influenced by the specific local conditions of climate and topography, as well as ecological and interpretive factors.

This requires maximum flexibility in working out design features, which does not permit the establishment of arbitrary standards. Instead, the following guidelines are provided, within which necessary flexibility can be reached.

#### **Design**

An esthetically pleasing road is one which lies lightly upon the land utilizing natural support wherever possible. Moreover, heavy cuts and fills must be avoided. In effect, the road is molded to the terrain through which and upon which it is passing. Monotony is avoided, and maximum advantage taken of park values, by eliminating long tangents, by changes in elevation, by developing viewpoints and overlooks, as well as providing close-range views of local scenes. The road should, in fact, strive to maintain a continuing sense of intimacy with the countryside through which it is passing.

In forested terrain, clearing limits should be carefully controlled and selected cutting should be used to produce variation and indentation in the tree line. Retaining walls can reduce the height and extent of cut-and-fill slopes. In heavy mountainous terrain and under certain other conditions,

serious consideration should be given to the use of trestles or bridges, tunnels and half-viaduct sections to reduce scarring and permit movement of wildlife.

### **Ditches and Slopes**

The immediate roadside setting must exemplify the highest design quality in terms of blending ditches and shoulders and related tree and other vegetative cover. The objective should be a natural and attractive setting. To minimize maintenance problems, cut-and-fill slopes should be rounded, warped at the ends for transition, and properly seeded, fertilized, and mulched for early recovery and to control erosion.

### **Roadway Structures**

The design of all structures—bridges, tunnel portals, grade-separation structures, and retaining walls—should be aesthetically pleasing as well as functional and easily maintained.

### **Engineering**

Working within the guidelines established by scientific, interpretive, and aesthetic considerations, the engineer is responsible for providing expert engineering advice in road planning, and for constructing a road which is safe, has adequate foundation and drainage, and will require a minimum of maintenance. Engineering also includes thorough soils analysis by borings and other necessary geological determinations to assure roadbed stability.

### **Vertical Alinement**

On parkways, major and minor park roads, and administrative two-way roads, grades of 7 percent are normally a desirable maximum, but grades of 8, 9, or even 10 percent should be considered for relatively short distances to avoid excessive cuts and fills or to reach desirable points of interest. On one-way roads where vertical sight distance is not a problem, these requirements can be further relaxed and a more undulating grade-line used to reduce cuts and fills to a minimum and to provide for leisurely driving.

### **Design Speed**

The maximum degree of curvature permitted on a road is generally expressed in terms of "design speed" which represents the maximum speed at which a curve can be safely driven. Thus a road with a 25-mile-per-hour design speed has no curves which cannot be safely negotiated at 25 miles per hour.

Except in special cases approved by the Director, major and minor roads in natural and historical areas should have a design speed not to exceed 25 miles per hour, parkways and major roads in recreation areas, 45 miles per hour, and special-purpose or interpretive roads, 15 miles per hour.

Rigidity in laying out horizontal alinement to a uniform design speed should be avoided, by reducing the design speed to fit the terrain, with the proviso that drastic reductions in design speed should be properly signed for the safety of the driver.

### **Roadway Widths**

Roadway width constitutes the width of the final completed roadway extending from edge of shoulder to edge of shoulder. A road having 22 feet of pavement and 3-foot shoulders would have a roadway width of 28 feet.

Selection of the proper roadway width is made on the basis of numerous factors including existing and anticipated traffic volumes, safety, type of terrain, engineering requirements, design speed—and the purpose for which the road is being built. Pavement widths that are too narrow can defeat their own function.

The extreme outer edge of the pavement, the weakest point, carries the wheel load and tends to break down and create a raveled edge which requires constant patching and maintenance.

The width of shoulders is equally important. Shoulders which are too narrow do not provide good support for the edge of the pavement nor adequate space for pull-off in case of emergency.

Except as may be approved by the Director, roadway widths in natural areas shall be as follows:

1. Major two-way park roads should have a pavement not to exceed 22 feet plus shoulders not to exceed 3 feet.
2. Minor two-way park roads should have a pavement width not to exceed 20 feet with shoulders not to exceed 3 feet.
3. Major, minor, and special-purpose one-way park roads should have a pavement width not to exceed 12 feet with shoulders not to exceed 2 feet.
4. Interpretive (motor nature) roads should have an overall width not in excess of 14 feet.
5. Administrative roads should be of the minimum width necessary to serve the purpose of the road. In no event may they exceed the guidelines for minor park roads.
6. Where guardrails or guideposts are required for reasons of safety two additional feet of shoulder will be permitted.

The foregoing standards will not permit certain oversize vehicles to use such roads safely, and such vehicles should be prohibited by regulation.

### **Recreation Areas**

As a rule, two-way parkways and two-way major roads in recreation areas serve functions broader than roads in natural areas, such as driving for pleasure and providing access for recreational vehicles and boats. Accordingly, where necessary to accommodate such use, roadway widths for two-way roads in recreation areas may be 24 feet of pavement and shoulders not to exceed 4 feet. Roadway widths in excess of the

foregoing should be approved by the Director. In those recreation areas where the road is part of a through highway, no higher standard should be approved within the area than exists for the roadway outside the area.

Other type roads (minor two-way roads, interpretive and administrative roads) in recreation areas should be of widths specified for similar roads in natural areas.

### **Parking**

Parking areas, either within the system or at terminal points, are an integral part of the circulation system. The placement of parking areas where they intrude, by sight or sound, on significant features, must be avoided. Moreover, the size of parking areas should be limited to the greatest extent possible for effective operation. Where large parking areas are necessary they should be broken up with plantings and screenings, if possible.

### **Signs**

Roadside signing, whether regulatory, informational, or interpretive, is an integral part of the visitor experience, as well as road design. Care should be exercised to insure that the quality and design of all signing enhances the visitor experience.

### **Road Surfaces and Materials**

Wherever appropriate, the color of materials used in road construction will be chosen to harmonize with the general character of the landscape. Chips used for periodic sealing and repair should be selected from appropriate rock material sources. The above is equally applicable to parking areas.

### **Trail Surfaces and Materials**

A particular effort shall be made to avoid the construction of black top trails in sensitive areas such as Indian ruins and natural features, and the above guidelines for road materials will apply to trails. Elevated boardwalks, such as the Anhinga Trail, are often effective solutions, and methods of stabilizing soils should be investigated.

### **Borrow Pits**

Only when economic factors make it greatly impractical will borrow pits be created in the parks, or present pits further utilized, unless located in washes or other places where natural factors will eradicate the scar.

### **One-Way Roads**

In general, the philosophy should be followed that the primary park purposes of preservation, enjoyment, and interpretation are collectively served better by one-way roads than by two-way roads (major and minor park roads and parkways). Accordingly, one-way roads should be con-



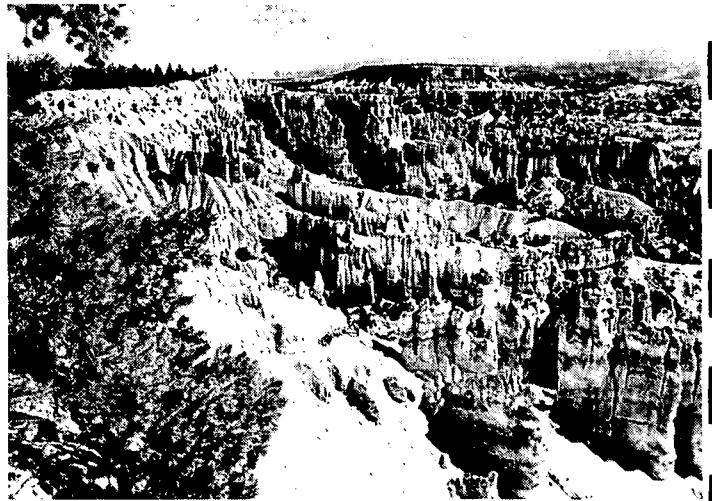


*Grand Canyon*

*"Golden Circle"  
of National Parks*



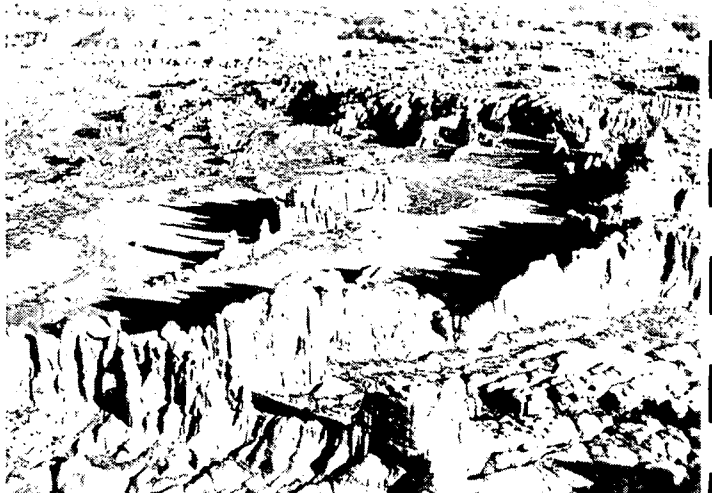
*Zion*



*Bryce Canyon*



*Mesa Verde*



*Canyonlands*

structed in preference to two-way roads wherever practicable, when in keeping with the purpose of the road and these guidelines.

**Interpretive (Motor Nature) Roads**

An often overlooked opportunity to disperse the traffic load and to increase visitor enjoyment is to convert existing roadbeds—such as abandoned roads and railroads, fire roads, and administrative roads—into interpretive roads or motor nature trails. Their use for this purpose is encouraged. These low-speed, often one-way roads, with ample parking, viewing, and trail opportunities, encourage visitors to explore the scenery and features at a leisurely pace.

**Alternate Methods of Transportation**

The Service must avail itself of an up-to-date, continuing analysis of all potentially useful modes of transportation. Feasible alternatives to road transportation should receive experimentation in parks or recreation areas in which serious circulation problems now exist or in which access has not yet been provided.

APPENDIX C

PLANNING TEAM

National Park Service, Department of the Interior

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Bureau of Reclamation  
California Department of Parks and Recreation  
Riverside County Parks Department

XIII

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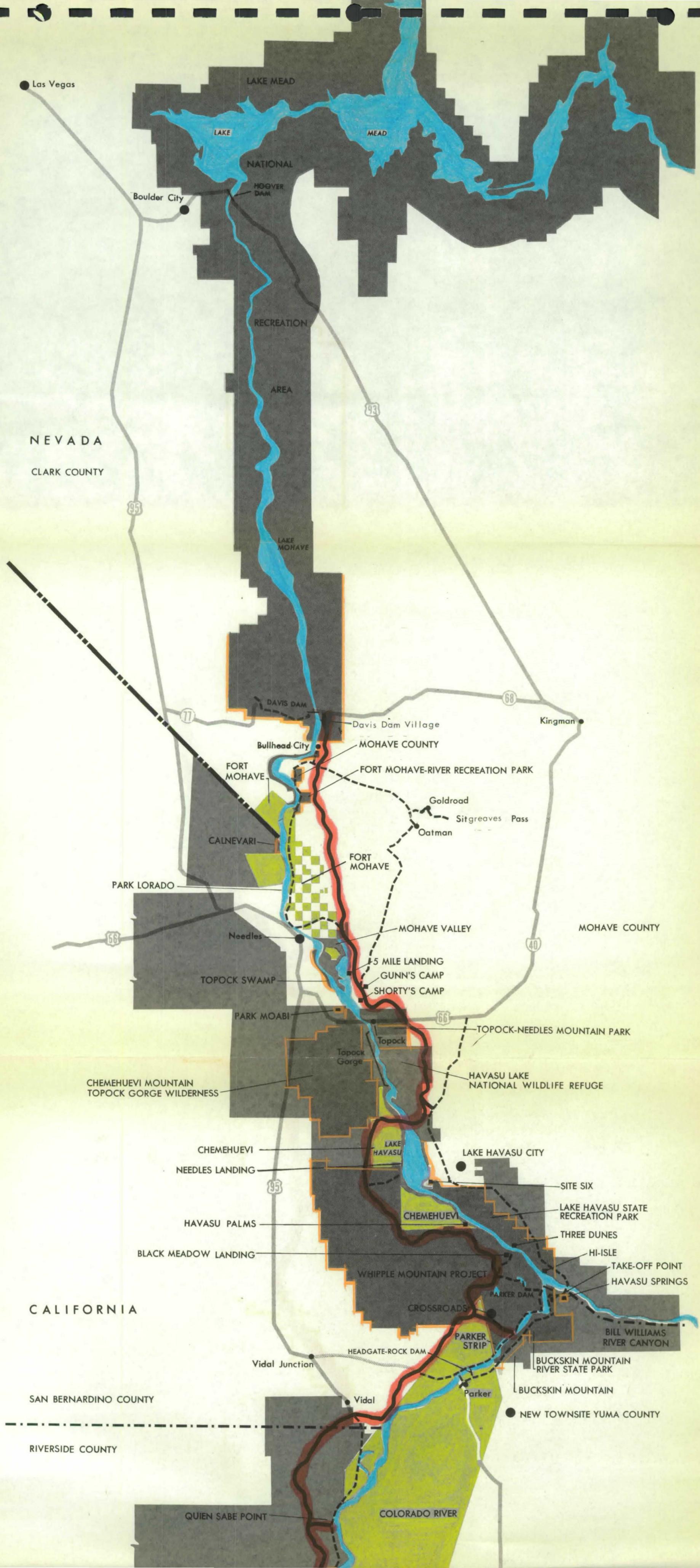
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## APPENDIX FOOTNOTES

<sup>1</sup> Secretarial Order 2915, dated December 11, 1968, assigned the Lower Colorado River Land Use Office and its functions to the Bureau of Land Management as a continuing administration responsibility for the implementation of the Lower Colorado River Land Use Plan. Throughout this report reference is made to the Lower Colorado River Land Use Office. It should be recognized that, although the name of that office has now been changed, its initial responsibilities are not only continued but somewhat expanded under Bureau of Land Management administration. It is believed that this transfer to Bureau of Land Management will serve as an added coefficient in regard to coordination and cooperation. See Section X.





Las Vegas

Boulder City

LAKE MEAD

NATIONAL

HOOPER DAM

RECREATION

AREA

NEVADA

CLARK COUNTY

95

93

LAKE MOHAVE

DAVIS DAM

Davis Dam Village

Kingman

Bullhead City

MOHAVE COUNTY

FORT MOHAVE

FORT MOHAVE-RIVER RECREATION PARK

Goldroad

Sitgreaves Pass

CALNEVARI

FORT MOHAVE

PARK LORADO

MOHAVE VALLEY

MOHAVE COUNTY

Needles

5 MILE LANDING

GUNN'S CAMP

SHORTY'S CAMP

TOPOCK SWAMP

66

40

PARK MOABI

TOPOCK-NEEDLES MOUNTAIN PARK

CHEMEHUEVI MOUNTAIN  
TOPOCK GORGE WILDERNESS

HAVASU LAKE  
NATIONAL WILDLIFE REFUGE

CHEMEHUEVI

LAKE HAVASU

LAKE HAVASU CITY

NEEDLES LANDING

SITE SIX

LAKE HAVASU STATE  
RECREATION PARK

HAVASU PALMS

THREE DUNES

BLACK MEADOW LANDING

HI-ISLE

TAKE-OFF POINT

HAVASU SPRINGS

CALIFORNIA

WHIPPLE MOUNTAIN PROJECT

CROSSROADS

PARKER DAM

BILL WILLIAMS  
RIVER CANYON

SAN BERNARDINO COUNTY

Vidal Junction

BUCKSKIN MOUNTAIN  
RIVER STATE PARK

RIVERSIDE COUNTY

Vidal

PARKER STRIP

BUCKSKIN MOUNTAIN

NEW TOWNSITE YUMA COUNTY

QUIEN SABE POINT

COLORADO RIVER





ARIZONA  
 YUMA COUNTY  
 KOFA  
 GAME  
 RANGE

- INDIAN RESERVATION
- WILDLIFE REFUGE  
Federal and State
- RECREATION AREA  
State, County, and City

LOWER COLORADO RIVER VALLEY PARKWAY  
 SCENIC RECREATION ROAD SYSTEM

### PROPOSED LOCATION

North  0 20mi.  
 Scale



