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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

ZION NATIONAL MONUMENT
AND NATIONAL PARK
UTAH
(Area)

FILE CODE:

SOUTHWEST REGION

MASTER PLAN NARRATIVE

Volumes I & III

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GOVERNMENT PRINTING OFFICE 16—22371-3

VOLUME I

CHAPTER 1

MASTER PLAN

OF

ZION NATIONAL PARK

* * * * * * * * *

Chapter 1, Basic Information

The Land

The Visitor

Prepared by: Delmer M. Armstrong, Chief Ranger Date Sep. 15, 1964
Name and Title

Certify Accuracy: D R Buchanan Date 9/23/64
Superintendent

THE LAND

LOCATION

Zion National Park is located in the heart of the desert and canyon country of southwestern Utah. The Park lies primarily in Washington County but encompasses a small portion of Kane County on the east and Iron County on the north. It covers an area from T38S on the north to T42S on the south, and from R9W on the east to R12W on the west.

ACCESS

Zion National Park is bounded by two major north-south highways, U. S. Highway 91 (Interstate 15) on the west and U. S. Highway 89 on the east. These highways are connected by State Route 15, through the Park. Motorists approaching from the north on U. S. 91 leave the freeway at Anderson Junction, 31 miles from Zion, and those from the south may turn off at Harrisburg Junction, 10 miles north of St. George. These two spur highways meet near LaVerkin for the remaining 22 miles to the South Entrance. Motorists on U. S. 89 turn off on State Route 15 at Mt. Carmel Junction and travel 15 miles to the East Entrance.

A county road leading from Virgin, Utah to Cedar City bisects the Park in the Kolob section in the vicinity of Lee Valley and Cave Valley. Minor roads off of this unpaved road lead to the Lava Point Fire Lookout, Potato Hollow, and some back country trail heads. The county road along the east park boundary permits access to east rim points such as Cable Mountain, Observation Point, and Deer Trap. The east rim truck trail from the East Entrance to Saw Mill Spring is passable only in four-wheel drive vehicles.

Zion is reached from Cedar City, Utah during the regular season by motor bus service provided by the Utah Parks Company. Hertz rental cars are available at Cedar City throughout the year. Bonanza Air Lines provides daily flights from Cedar City, connecting with the major transcontinental air lines at Salt Lake City, Utah and Phoenix, Arizona. During the off season, from Labor Day to about June 1, public transportation from either of the two major highways is difficult to obtain.

SURROUNDINGS

Population Centers: Zion National Park is well removed from any large cities, the closest being Salt Lake City, Utah and Las Vegas, Nevada, which are 320 miles and 175 miles distant, respectively. The smaller towns nearby which furnish adequate community services are listed below:

Springdale, Pop. 299: located adjacent to South Entrance, provides motel accommodations, meals, camp supplies, groceries, gasoline, and limited automobile repairs. School through the 6th grade.

Hurricane, Pop. 1251: located 22 miles southwest, providing in addition to the above, medical service, drug store, movie, and towing service. School through the 12th grade.

St. George, Pop. 5,130: Located 42 miles southwest, providing in addition to the above, hospital, supermarkets, major auto repairs, dentists, and a Junior College.

Cedar City, Pop. 7,543: Located 62 miles north, providing all services plus a four year College.

The population of all of these communities have made a rather slow advance over the past five years.

Characteristics: Zion National Park is a superlative example of the effect of the erosional forces of water, wind, and temperature on the uplift of the Markagunt Plateau resulting in tremendous canyons, towering peaks, arches, and natural bridges. This great phenomenon lies between the alpine forests on the north and east to the Sonoran deserts to the south and west. The climate of the Park strikes a happy medium between the climates associated with these extremes.

Land Use: The lands adjoining the Park are predominantly privately owned, although there are some scattered parcels of BLM lands that are contiguous to the Park. The use of these lands, whether under private or public ownership, is almost exclusively livestock grazing. However, recreational use in the form of hunting and mountain homesites is assuming greater importance each year.

Features of Interest: Southwestern Utah can be truly described as a land of contrasts and is rich in both scenic and historical features of interest. Those areas administered by the National Park Service are as follows:

North Rim of Grand Canyon, Arizona, 125 miles southeast
Bryce Canyon National Park, 90 miles northeast
Cedar Breaks National Monument, 85 miles north, via Cedar
Pipe Spring National Monument, 61 miles south via Kanab
Lake Mead National Recreation Area, 206 miles southwest
Glen Canyon National Recreation Area, 116 miles east
Capitol Reef National Monument, 233 miles northeast
Timpanogos Cave National Monument, 295 miles north

Some of the scenic wonders in addition to those listed above are:

Dixie State Park near St. George
Pine Valley Mountains, north of St. George, on Dixie National Forest
Panguitch Lake, 20 miles southwest of Panguitch
Navajo Lake, 24 miles east of Cedar City
Vermillion Canyon, 3 miles southeast of Parowan
Hieroglyphic Gap, 10 miles west of Parowan
Coral Pink Sand Dunes, 10 miles west of Kanab
Kodachrome Flat, east of Bryce Canyon
Circle Cliffs, 40 miles southeast of Boulder, Utah
Kaiparowits Plateau, north of Bryce Canyon

The points of historical interest are mostly related to the struggle of the Mormon pioneers to subdue a stubborn land. Some of these are:

St. George Temple, St. George, Utah
Brigham Young's Winter Home, St. George, Utah
Mountain Meadows Massacre Site, north of St. George
Hole-in-the Rock, 55 miles south of Escalante
Silver Reef, old mining town near Leeds, Utah
Old Iron Town, 20 miles west of Cedar City
Old Frisco, silver mining town near Milford

Other popular forms of recreational activity include trout fishing in the clear-water mountain streams and lakes to the north of the Park, and each Fall finds a tremendous influx of hunters to take advantage of the fine deer hunting that abounds in the area.

LEGAL FACTORS

Establishment: Mukuntuweap National Monument was created by proclamation of President Taft, July 31, 1909, to preserve what is known today as Zion Canyon. The original proclamation set aside only 15,200 acres which lay on either side of the Canyon.

On March 18, 1918, by proclamation President Wilson added 61,600 acres of land, all in Washington County, and changed the name to Zion National Monument. This addition was for the purpose of including the Great West Canyon and the Parunuweap Canyon in the area.

By the Act of November 19, 1919 (41 Stat. 346) Congress established Zion National Park and included the lands formerly in the monument.

June 13, 1930, Congress approved Public Law No. 351 (71st Congress) which added 17,441.06 acres to the Park.

On January 22, 1937, Zion National Monument was established by proclamation of President Roosevelt. It set aside the colorful Kolob Canyons and parts of the famous Hurricane Fault, notable examples of geologic phenomena to the west and north of Zion National Park. The gross area of the monument was 48,413.61 acres of which 33,920.75 was Federally owned.

An Act to include the area of Zion National Monument within Zion National Park, in the State of Utah, and for other purposes, approved July 11, 1956 (70 Stat. 527).

An Act to revise the boundaries of Zion National Park, approved February 20, 1960 (74 Stat 4) Public Law 86-387 86th Congress S. 713. This revision of the park boundaries added some 1,430.11 acres of public domain and 2,054.99 acres of private land, or a total of 3,485.10 acres. This revision added land in the Kolob around Lava Point, Firepit and Spendlove Knoll areas, Taylor Creek area and in the vicinity of the town of Springdale.

Legal Provisions: One grazing permit No. 14-10-345-2 to A. P. Spilsbury for 85 cattle for 30 days is still in effect. This permit will be renewed annually for his lifetime. It covers the areas of LaVerkin and Willis Creek and is used as a spring and fall driveway use to the Upper Kolob area. No prospecting, hunting or mining is permitted.

An Act of May 28, 1928 (45 Stat. 787 Ch. 818) for the Relief of the Town of Springdale, Utah to convey through such piping facilities as may be necessary for domestic and other uses within the limits of said Town of Springdale, Utah water from certain springs in the Zion National Park, Utah located in Sections 17, 22 and 27, T41S, R10W, SLM.

Public Law 122 - 78th Congress approved July 8, 1943 amending Act of May 28, 1928.

Special Regulation, Code of Federal Regulations Title 36, Chapter 1, Part 6.3(f). No fee shall be charged residents of Washington and Kane Counties, Utah or residents of that part of Coconino County, Arizona lying north and west of the Colorado River, entering Zion National Park in the conduct of their usual occupation or business.

Title 36, Code of Federal Regulations Chapter 1, Part 7.10(a) Limitation of load, weight and size of vehicles on roads and through the tunnels.

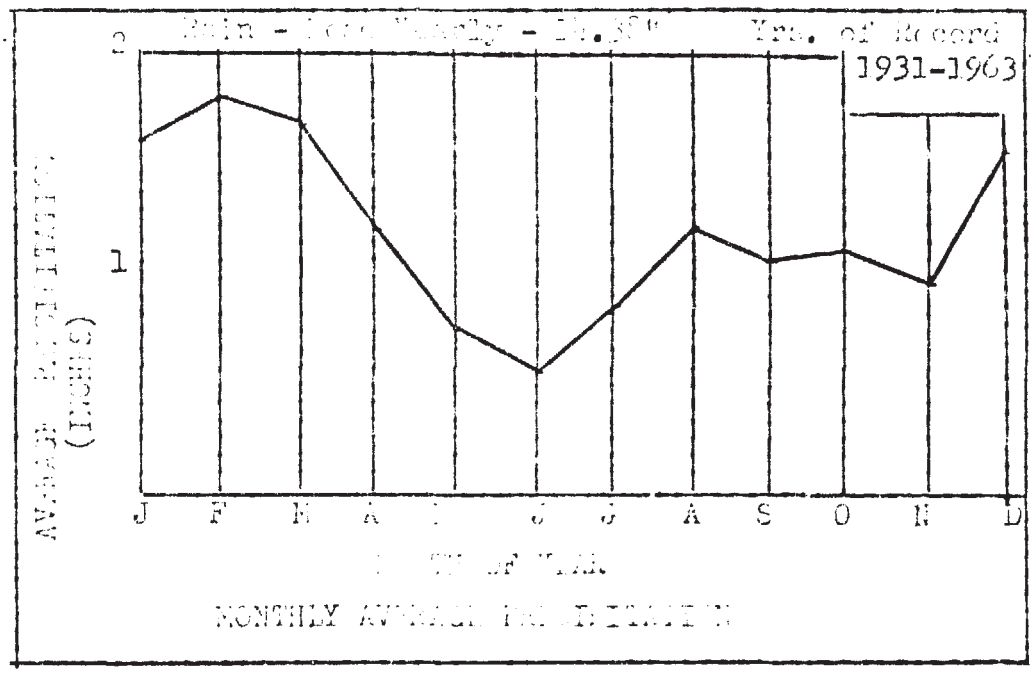
Title 36, Code of Federal Regulations, Chapter 1, Part 6.4(e) Vehicles exceeding certain size limitations must be convoyed over the park roads as stated in 7.10 for which a fee of $5 per single trip will be charged for each vehicle or combination of vehicles.

CLIMATE

Temperature: Temperature extremes are shown in the attached graphs, for the Zion Canyon area. Temperatures at the East Entrance and the Kolob will vary as much as 10 to 20 degrees below the Zion Canyon readings. Maximum temperatures occur mostly in June or July with minimums falling in December or January. The differences between day and night temperatures extremes will vary from 30 to 40 degrees.

All types of construction activities can proceed throughout the year. The average earliest killing frost is October 26 with the average latest killing frost April 15.

Precipitation: Precipitation records are indicated on the attached graph. Snowfall is so slight no graph was prepared. Snowfall will average about 8 inches a year in Zion Canyon. Snow falls mainly in November, December and January. In the higher elevations of the park such as the East Entrance and the Kolob, snow depth will sometimes reach from 24 to 30 inches.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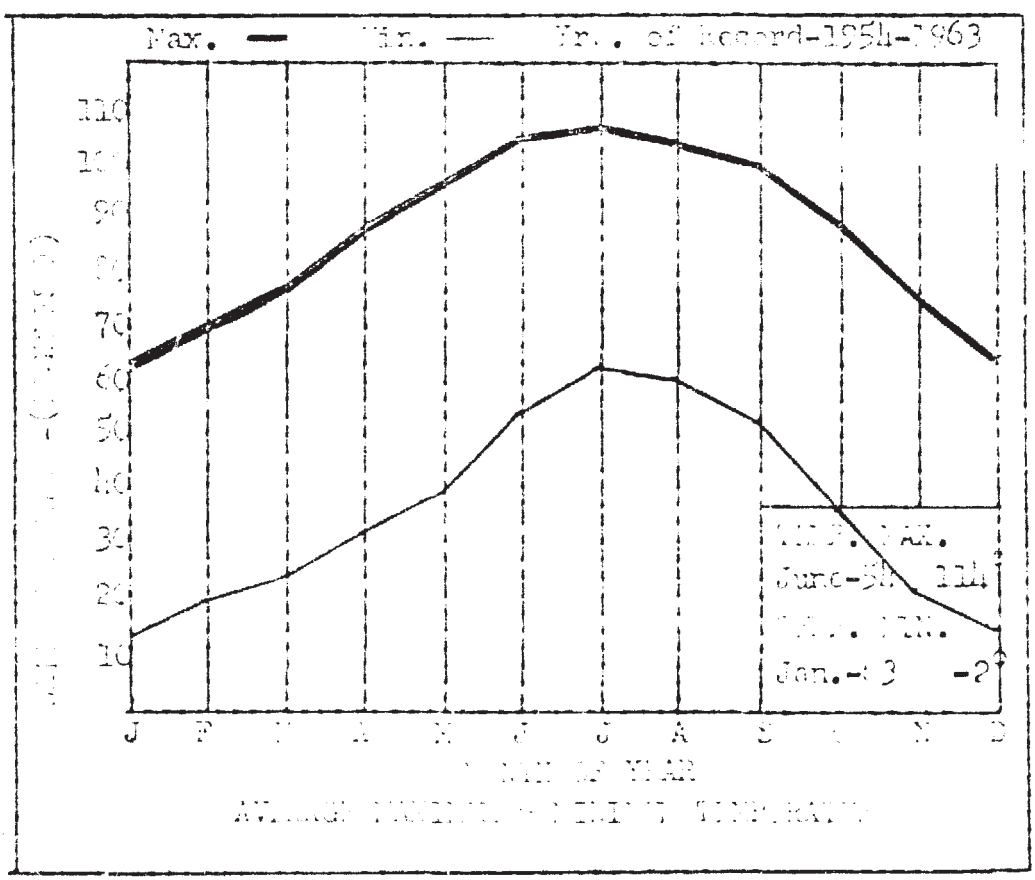
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J F M A M J J A S O N D

Wind: Prevailing wind direction is from the southwest. Spring and Fall months are the windy periods. Wind does not get too severe. Gusts of from 20 to 30 miles an hour have occurred but are rather infrequent.

FIRE HISTORY

Zion National Park is not considered a high fire hazard area. An average of 6 fires occur per year; on the average 6 acres burn per year. About 90% of the fires are caused by lightning. Most fires are on the higher elevations of the park with more occurring on the west side than along the east rim area. The chances of large fires are remote due to the country being broken up by canyons, cliffs and a decided lack of ground cover in many areas. The Lava Point Lookout is manned from June 1 to September 30 with that period considered the main fire season. The most crucial period for fires is August and September.

TERRAIN

The dominant topographic features are plateaus, cliffs, and canyons, strongly contrasted in magnitude, form and color. The topography consists of angular terraces and vertical walls are common -- curved outlines and gentle slopes are rare.

The region is part of the Colorado Plateau. The south and west exposure of the Navaho sandstone presents an escarpment ranging from 1000 feet to 4000 feet high. The most spectacular of these isolated buttes is the West Temple, elevation 7,795 feet, which towers over the nearby Virgin River which at Springdale has an elevation of 3,850 feet. The highest point in the Park is Horse Ranch Mountain, elevation 8,740 feet, in the Kolob section of the Park. Located in the northernmost part of the Park, this butte is one of several forming the breathtaking Kolob Finger Canyons. Equally impressive in this group is a completely isolated and unscaled butte named Timber Top, elevation 8,075 which rises sharply over La-Verkin Creek which leaves the west boundary at an elevation of 4,550 feet.

Major drainage is the Virgin River whose course is southwestward to Lake Mead in Nevada. Important tributaries of the Virgin River within the park boundaries are: East Fork

of Virgin River (Parunuweap), Deep Creek, Kolob Creek, Coalpits Wash, LaVerkin Creek, Timber Creek. The westward drainage is carried by Taylor Creek which enters and is lost in the Great Basin.

SOILS

The soils of the area were formed by the gradual disintegration of the sandstone parent material. These soils are permeable and highly erodable, and when the vegetative cover is removed, soon becomes gullied. They are shallow, rocky and contain very little organic material. Due to the shallowness of the soils, their infiltration capacity is small. Soil quality varies greatly with the varied elevation, climate, slope, and moisture conditions that prevail throughout the Park. Generally speaking, these soils are very difficult to stabilize.

RESOURCES

Vegetation: There is a wide distribution and variety of plant life in Zion National Park. Although plants of the Lower Sonoran, Upper Sonoran, Transition, and Hudsonion life zones are present here, their distribution is by no means a zonal one based on either latitude or corresponding elevation. Ponderosa pine and pinyon pine may be found on the floor of the canyons as well as on the plateaus 3,000 feet higher. No intensive research work on the Park flora has been done since 1937. The vegetative cover types with dominant and associate species are as follows:

Grassland - 6,000 acres. Except for a very limited area of this type on the floor of Zion Canyon, most of the grassland type is found in the Kolob section of the Park. There are approximately 40 species of grasses in the Park, and those species most commonly identified with the grassland type are as follows: Blue threeawn (*Aristida glauca*); Fendler threeawn (*A. fendleriana*); Needle and thread (*Stipa comata*); Indian ricegrass (*Oryzopsis hymenoides*); Prairie junegrass (*Koeleria cristata*); Sixweeks fescue (*Festuca octoflora*); Pacific fescue (*F. pacifica*); Cheatgrass brome (*Bromus tectoum*); Ripgut brome (*Bromus rigidus*); Foxtail barley (*Hordeum jubatum*); and Meadow Barley (*H. nodosum*).

Brushland - 25,000 acres. As with the grassland some form of brushland occurs from the lowest to the highest parts of the park. The prominent species in the semi-desert type is threadleaf snakeweed (Gutierrezia microcephala); blackbrush (Coleogyne ramosissima); arrowweed (Pluchea sericea); Salt bush (Atriplex sp.). At a little higher elevation and associated with the pinyon-juniper the most apparent species are big sagebrush (Artemisia tridentata); Mohave rabbitbrush (Chrysothamnus mohavensis); Utah white oak (Quercus utahensis); shrub live oak (Q. turbinella); and antelope bitterbrush (Purshia tridentata); Found in the higher elevations of the Park and linked closely with the ponderosa pine forest types is a brush cover characterized by point-leaf manzanita (Arctostaphylas pungens); Utah serviceberry (Amelanchier utahensis); Saskatoon serviceberry (A. alnifolia); true mountain mahogany (Cercocarpus montanus); curlleaf mahogany (C. ledifolius); chokecherry (Prunus melanocarpa); false tarragon sagebrush (A. dracunculoides); and green ephedra (Ephedra viridis).

Forest Land - 88,000 acres. This group is characterized by tree cover in some form, whether it be the mixed broad-leaf trees along the stream bottoms, the "pygmy conifer forests" of pinyon and juniper at middle elevations, or the open ponderosa pine forests on the high plateaus. The major species in this group listed in relation to the typical elevation at which they generally occur are listed as follows: Boxelder (Acer negundo); bigtooth maple (A. grandidentatum); velvet ash (Fraxinus velutina); water birch (Betula fontinalis); pacific willow (Salix lasiandra); Pinyon (Pinus edulis); single leaf pinyon (P. monophylla); Rocky mountain juniper (Juniperus scopulorum); Utah Juniper (J. osteosperma); Douglas fir (Pseudostuga taxifolia); Ponderosa pine (Pinus ponderosa); white fir (Abies concolor); quaking aspen (Populus tremuloides); The distribution of these trees vary greatly depending on moisture, slope, and exposure.

Exotics: Prior to the establishment of the park and monument, the arable land was cultivated by the Mormons who introduced several exotic trees to the area. The only trees to become established to any extent is the tree of heaven (Ailanthus sp.) around the South Campground and the tamarisk along the river bottoms.

Insects and Diseases: The broadleaved trees have been susceptible to infestations by defoliating insects such as the tent caterpillar, looper, and the leaf-miner, but the losses from them have been small.

Shade trees: The maintenance of trees and shrubs in campgrounds and the developed areas of the park requires irrigation during the entire growing season. Defoliation from "chlorosis" sometimes results from irrigation, but this condition can be corrected by an annual injection of ferric phosphate.

Water: The North Fork of the Virgin River is the primary stream in the park. Lesser streams, but those having year-round flows are LaVerkin Creek, East Fork of the Virgin River, Deep Creek, Kolob Creek, Birch Creek and North Creek. The most prominent intermittent streams are Pine Creek, Oak Creek, Taylor Creek, and Willis Creek. There are no lakes or impoundments.

Wildlife: The variety and distribution of all forms of wildlife is influenced greatly by the wide elevational range in which they occur. Below is a list of some of the most representative vertebrates that are found in the Park.

Birds:

Coopers Hawk, Accipiter cooperii
Prairie Falcon, Falco mexicanus
Gambel's Quail, Lophortyx gambelii
Great Horned Owl, Bubo virginianus
Poor-will, Phalaenoptilus nuttallii
White-throated Swift, Aeronautes saxatalis
Broad-tailed Hummingbird, Selasphorus platycercus
Cassin's Kingbird, Tyrannus vociferans
Scrub Jay,
Canyon Wren, Catherpes mexicanus
Rock Wren, Salpinctes obsoletus
Solitary Vireo, Vireo solitarius
Audubon's Warbler, Dendroica auduboni
Bullock's Oriole, Icterus bullockii
Black-headed Grosbeak, Pheucticus melanocephalus
Lazuli Bunting, Passerina amoena
House Finch, Carpodacus mexicanus
Rufous-sided Towhee, Pipilo erythrophthalmus

Mammals:

Western Pipistrel, Pipistrellus hesperus
Pallid Bat, Antrozous pallidus
Rock Squirrel, Citellus variegatus grammurus
Cliff Chipmunk, Eutamias dorsalis utahensis
Northern Pocket Gopher, Thomomys talpoides parowanensis
Merriam's Kangaroo Rat, Dipodomys merriami vulcani
Beaver, Castor canadensis
Canyon Mouse, Peromyscus crinitus
Brush Mouse, Peromyscus boylii
Porcupine, Erethizon dorsatum
Gray Fox, Urocyon cinereoargenteus
Ring-tailed Cat, Bassariscus astutus
Western Spotted Skunk, Spilogale gracilis
Striped Skunk, Mephitis mephitis
Bobcat, Lynx rufus
Mountain Lion, Felis concolor
Mule Deer, Odocoileus hemionus
Mountain Sheep, Ovis canadensis (extirpated)

Herptiles:

Collared Lizard, Crotaphytus collaris
Desert Spiny Lizard, Sceloporus magister
Western Fence Lizard, Sceloporous occidentalis
Western Whiptail, Cnemidophorus tigris
Common Whipsnake, Masticophis flagellum
Gopher Snake, Pituophis catenifer
Common King Snake, Lampropeltis getulus
Western Rattlesnake, Crotalus viridis
Southwestern Toad, Bufo microscaphus
Desert Toad, Bufo punctatus
Canyon Tree Frog, Hyla arenicolor

The home range of some of these animals is very small and their ecological requirements well defined. Still others, such as the mule deer make a seasonal migration from the lowest point in the park to the highest in order to meet the need for food, water, and protective cover as the season progresses. Zion's deer herds fall logically into a West Herd which summers west and north of Zion Canyon and migrates to lower elevations away from Zion Canyon; and an East Herd that summers primarily east of Zion Canyon and migrates into the Canyon proper in the winter or to other low elevation areas to the south and east. The primary natural check on deer numbers, the cougar, occurs in subnormal numbers because of heavy trapping outside of the

park in order to protect livestock interests. All these factors contribute to a complex deer management problem. Bighorn sheep were last reported in 1954, so it is assumed that they have been extirpated from the park. A reintroduction of this species is a long-range management goal. The protection and well being of all wildlife species will be enhanced by the eventual acquisition of all private land within the established park boundaries.

Fish: All early attempts to get a natural trout fishery established in the North Fork of the Virgin River in Zion Canyon were thwarted by periodic floods. Currently, catchable size rainbow trout are planted on a "put and take" basis by agreement with the Utah Fish and Game Department. These provide limited angling pleasure during those periods when the river isn't subject to flash floods because of thunderstorm activity. Occasionally a brook trout or a brown trout is taken that apparently works its way into the river from natural populations upstream. Native suckers and dace are found in good numbers and perpetuate themselves naturally. A check list of the fishes that are known to have occurred here are shown below:

Rainbow Trout - Salmo gairdneri
Brown trout - Salmo trutta fario
Brook trout - Salvelinus fontinalis
Blueheaded sucker - Pantosteus delphinius utahensis
Bigmouth sucker - Catostomus latipinnis
Speckled Dace - Rhinichthys osculus osculus
Scaley Spindace - Lepidomeda vittata
Virgin River Spinedace - Lepidomeda mollispinis mossispinis

History and Archeology: History plays a minor role only in the overall story of Zion National Park. Several interesting historic sites exist within the Park and future interpretive signing and/or exhibits should be planned. Of most significance is the cableworks atop Cable Mountain. This fragile structure remains from the turn of the century when lumber was lowered from the high plateau to the canyon floor. Originated in 1900, more than 200,000 board feet had been lowered by 1906. Second in interest is an old sheep trail that runs from Parunuweap Canyon up the east side of Steven's Wash to the plateau. This trail was built about 1915-20 and remains in fairly decent shape. Other historic sites include the oil rig in the head of Coalpits Wash, and two lumber mill sites along the Deertrap-Lemmon Spring area.

Archeology is of more importance within Zion and constitutes a significant role in the Zion Park story. Because of several early-day surveys, especially in the Parunuweap Canyon portion of the park, more than 85 sites are known for Zion. Recent surveys tend to strengthen the archeological importance for the future. Parunuweap Canyon offers the choice sites so far examined, and more than 25 sites have been reported to be of Basket-maker type. An excellent petroglyph site exists along the east entrance approach road; it will soon be signed and will be of interest to park visitors who wish to walk the 100 yards from the roadway to view the incised rock wal . Possibly, of most importance in the future will be site No. 83, a pictograph site in Cave Valley. This excellent assortment of early-day paintings offers as varied and unusual pictographs as can be found throughout the Southwest. Archeology will no doubt play an increasingly important role as study and more protection allows.

Geological: Like so many pages in a book, rock layers of the towering cliffs and slopes in the Zion region tell a fascinating geological story of natural forces operating for more than 150 million years. They reveal that successive occurrences of vast seas, flat lands, raging rivers, tropical lowlands with cycad and tree-fern forests, deserts with great moving sand dunes, tremendous earth upheavals, and erosion which have all played a part in forming the region.

Ancient forms of crocodile-like reptiles and giant, sluggish amphibians once wallowed in marshes and bayous here. Dinosaurs, too, inhabited the region during one of the semi-tropical periods. Though none of their bones have been found here, large three-toed dinosaur tracks are preserved in hard sandstone rock layers, once the shoreline of some ancient lake or strea .

Over the millions of years, in ever-changing cycles, the region continued to rise and then subside; oceans moved in and out several times, and finally more than a vertical mile of sediment had been deposited over the highest of the great sand dunes that you see today as sandstone walls.

About 13 million years ago, when the Zion country was again near sea level, a slow, gradual uplift of the entire region began. Eventually, the land was lifted thousands of feet. In rising, the land mass broke into great blocks.

The lines of cleavage between them are known as faults, the most famous of which is the Hurricane Fault. Near Kanarraville, Utah, this prominent geological feature attains its maximum displacement, estimated to be about 8,000 feet. Some blocks lifted vertically, some tended to "dome", and others tilted at varying angles, resulting in differing forms and heights.

As the terrace rose higher and higher, the increased gradients caused sluggish rivers to speed up and to cut deeper into their channels over the eons. The rise of the Markagunt Plateau to the north and of the Kolob Terrace, on which Zion National Park is located, changed the placid Virgin River and its tributaries into fast moving streams. These rushing waters rapidly ate their way into the terrace's rock layers, constantly deepening their crooked channels.

Billions of tons of rock were ground up and carried away, finally exposing the remains of that great ancient desert, now called Navajo sandstone. The major features of this park, including the deep perpendicular walled Zion Canyon, have resulted from upheaval, the erosive forces of restless streams, and wind, rain, frost, and plant life over the years.

Recreational: A surprising amount of recreational activity occurs in the North Fork of the Virgin River in spite of those periods following summer thunderstorms which subject it to flash flooding and heavy silting. One of the most exciting adventures in Zion is the trip through Zion Narrows during early summer and late fall when the possibilities of flooding are minimal. In addition, much swimming is done along the river in Zion Canyon when the water is clear and the air temperatures are high. There are no other waters conducive to water recreation.

Mountain Climbing: Most of the challenging exposures in Zion National Park remain unclimbed because most climbers are totally unfamiliar with sandstone climbing and because of the very high temperatures that prevail during the summer when most climbers are active. Dehydration, lack of water, and the instability of the sandstone are some of the problems that have to be overcome for successful climbing. Some of Zion's steeper trails (Lady Mountain and Angels Landing)

offer a real challenge for the average hiker and should be retained and maintained in a safe condition.

Special Scenic Features: The most outstanding scenic features in Zion are those that are found along the primary park road system; that is, the scenic drive up Zion Canyon and the Zion-Mt. Carmel road to the East Entrance. Among the best known features along these routes are the Court of the Patriarchs, Majestic Mountain, Angels Landing, Weeping Rock, the Great White Throne, Cable Mountain, the Temple of Sinawava, the Great Arch, West Temple, East Temple, the Watchman, Bridge Mountain, Sentinel Rock, the Altar of Sacrifice, Checkerboard Mesa, and the Narrows. Some of the features that are seen only from back-country trails are Hidden Canyon, the Great West Canyon, Death Point, Hop Valley, and the Parunuweap.

Zion's major roads are kept open all season long but the park experiences distinctly different seasons. Winters are short, with the colored cliffs standing out in startling contrast to the snow-covered terraces and slopes. Spring comes early and is often highlighted by showy displays of desert flora. Summer is characterized by hot days, but nights are relatively cool and periodic thunderstorms bring welcome relief to all living things. Fall brings a dramatic change in color in the broadleaved trees beginning in September with the aspen in the high country, and culminating in November with the cottonwood trees along the Virgin River.

LAND STATUS

The acreage within the existing boundaries of Zion National Park are as follows:

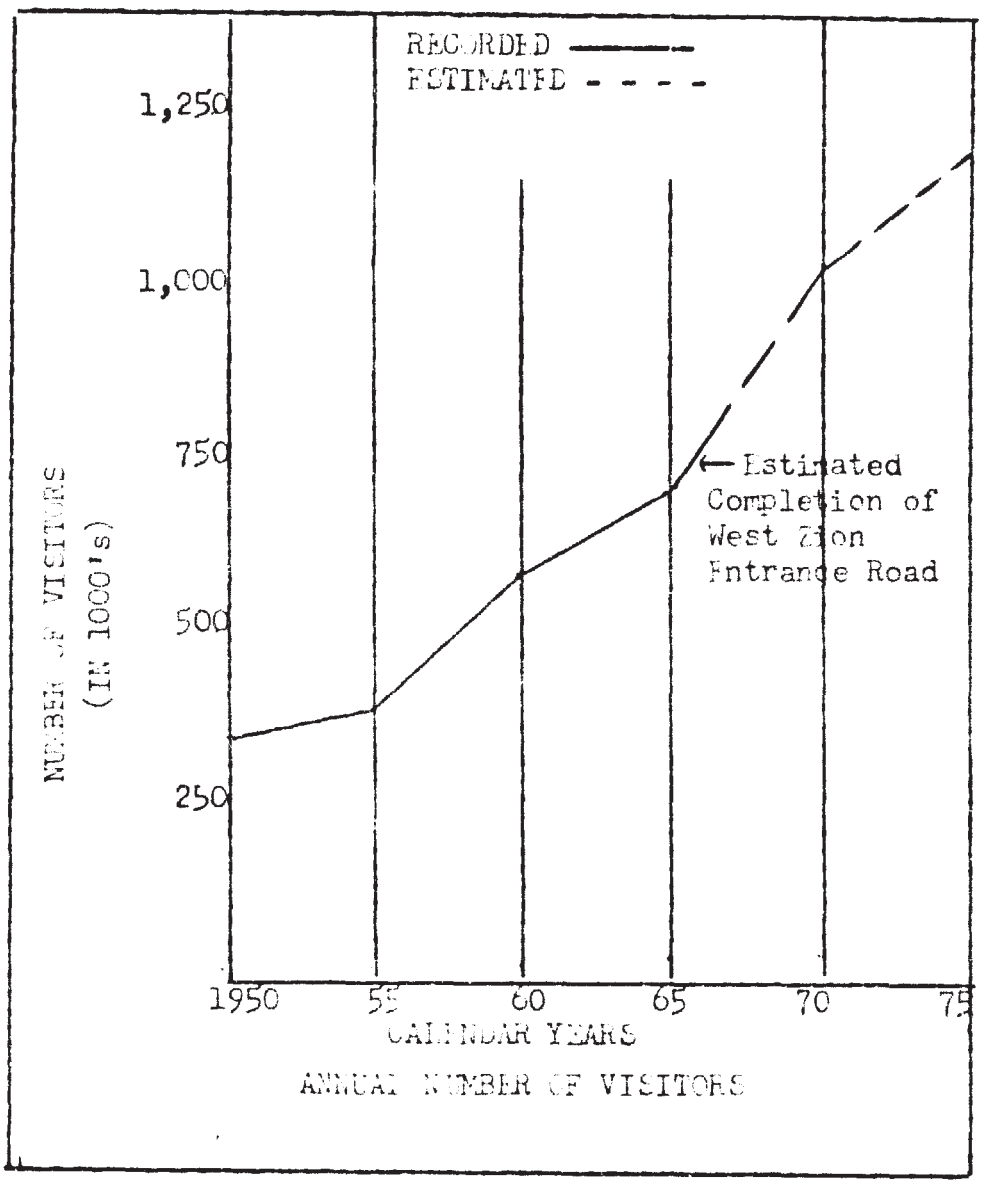
Federal	136,565.68 acres
State	920.00 acres *
Private	9,549.29 acres
Total	147,034.97 acres

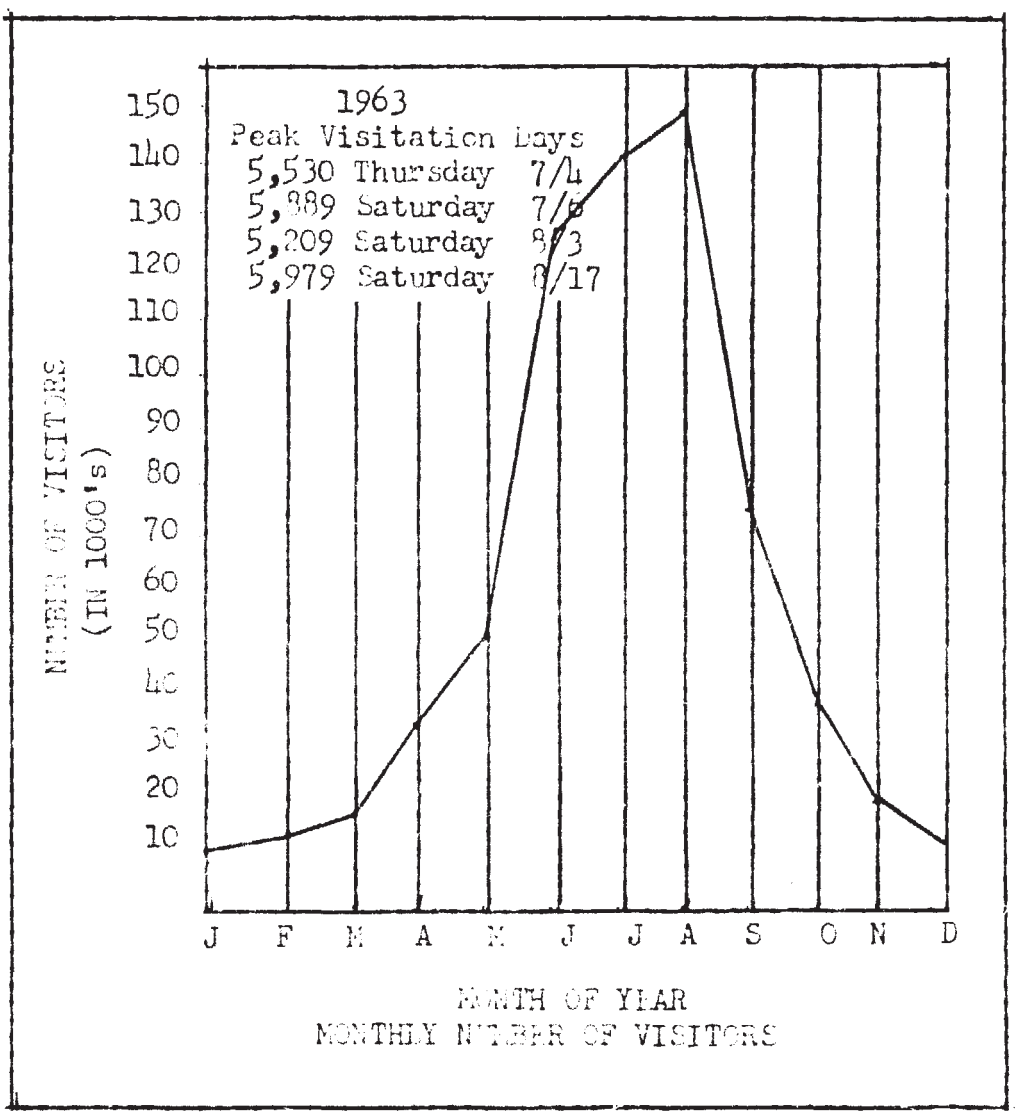
*Exchange pending.

THE VISITOR

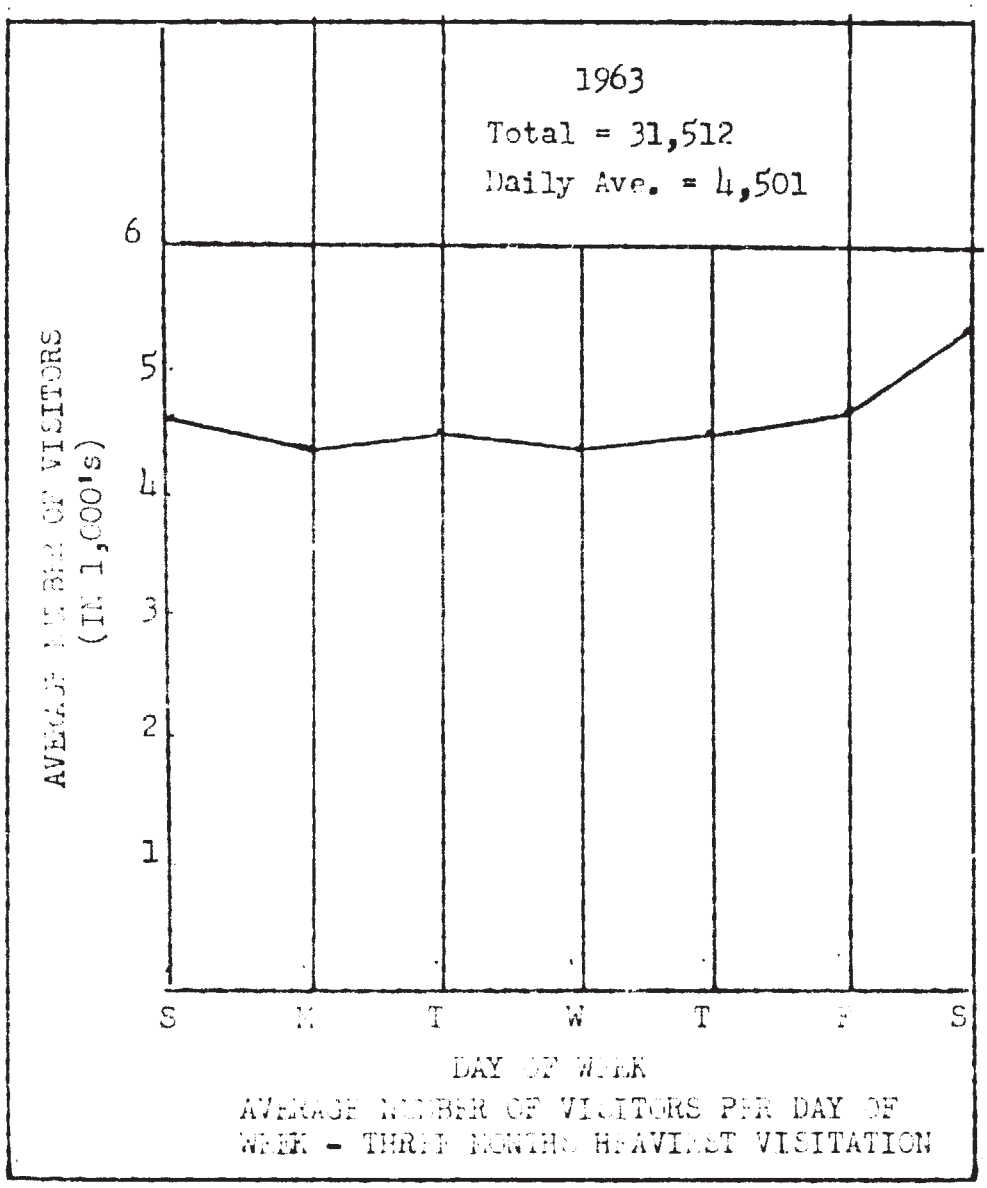
VISITOR CHARACTERISTICS

Number:





Zion
September, 1964



AVERAGE NUMBER OF VISITORS PER DAY OF WEEK - THREE MONTHS HEAVIEST VISITATION

Origin: Records are no longer kept as to origin of park visitors. The last such records in 1952 showed California leading with 32% of the visitors and Utah a close second with 25%. This figure is probably about the same for 1964. Nevada, and the states of Texas, Illinois, New York, Colorado figure at about 2 to 3% each and the other states make up the balance. Visitors from foreign countries are on the increase but the percentage is very low compared to overall park travel, probably less than one-half of one percent.

Most park travel is recorded during the three summer vacation months of June, July, and August. These months account for 60% of the travel. Adding May and September to the busy summer time we find these 5 months account for 80% of park travel. Travel is lowest during December and January.

In comparing both entrance stations, it is noted the South Entrance records more travel for the year as a whole, however during the busy time of June 15 to Labor Day the trend shifts and more travel and revenue is recorded through the East Entrance Station.

Types: At least 80% of the travel during the busy summer season is by families. Organizational groups account for less than 1% of park travel. Special tour groups of the Utah Parks Company average between 1% and 2% of park travel each year. Use of the area by conventions is very low and of no special significance percentagewise. The average size of special groups would be 35 people. Some groups have as many as 100 and other organized ones as low as 15 to 20. The use of the area by groups starts early in May when senior classes and other school groups tour the park before the start of the regular season. Group use drops off to almost zero after Labor Day.

Frequency and Duration of Visits: Annual entrance permits make up 1% of the total entrance permits sold. The average length of visits for those staying in concessions overnight facilities would be one night, while those staying in the campground would be from 2 to 3 nights during the busy season. During the off season in the early spring and fall, campers using the campground remain for a longer period, probably an average of 6 days each. For those people not remaining overnight, about 4 hours would be the average length of stay.

ACTIVITIES	PARTICIPANTS		
	1958	1963	Max. 24-Hour Period
Conducted Trips:			
Auto Caravans	0	472	136
Walks or hikes	20,653	16242	272
Attending Interpretive Talks:			
Orientation	0	97,353	1,217
Museum	0	665	65
Hotel or Lodge	18,700	18,735	750
Campfire	26,366	41,726	500
Other	354	387	100
Attended Stations:	78,430	160,400	1,900
Self-guiding Devices:	322,037E	451,949E	4,465E
Wilderness Use - Trails:			
West Rim-Shelter Cabin		207	Records on
East Rim-Observation Point		138	back country
Cable Mountain		91	trail use
Deer Trap		21	just getting
Kolob Trails		20	organized.
	No counts made prior to 1962. Approximately 6,000 persons signed trail registers in 1963. Kolob trails-very rough estimate.		
Overnight Use:			
Camping: Reg. Campgrounds	65,845	111,074	1,200
Camping: Organized Groups	3,905	4,976	100
Zion Lodge	N.R.	22,858	350
Zion Inn	N.R.	9,314	100
Water Uses:			
Swimming: - Lodge Pool	N.R.	12,410 (Includes	175 6,685 children)
Fishing: (Out of State licenses sold)	N.R.	190	No record of use by resident fisherman;
	estimated to exceed 500 fisherman days.		

ACTIVITIES	PARTICIPANTS		
	1958	1963	Max. 24-Hour Period
Horseback riding:			
West Rim All Day Trip	N.R.	43	These figures
Regular Half-day Trip	N.R.	1,210	are for the
Hour Rides	N.R.	26	1964 season.
Picnicking:			No records
(No developed areas)	N.R.	N.R.	kept.
Hunting:	No hunting permitted except on private land within the Park boundaries. Probably less than 100 hunters per year.		
Mountain Climbing:	10	12	No marked increase over period.

Lecture I, Chapter
Institution and Religion

A. Clark Stratton
Assistant

GRAND CANYON
NATIONAL PARK

VOLUME I

Chapter 1. Objectives and Policies

[illegible]

[illegible] towers. People who travel through this country never forget it. The natural and scenic qualities of this are distinctive even in this region of extraordinary landscapes.

[illegible] the canyon is accessible and impressive: [illegible]

[illegible] country is different: [illegible] country contains [illegible] canyons. [illegible] expect for visitor experience.

[illegible] are [illegible]: [illegible] brown, and white of the rocks; green of the vegetation, [illegible] the canyons this contrast is particularly spectacular. [illegible] against such a backgrounds at changes in weather, time of day or the season of the year are dramatic.

[illegible] obvious: [illegible] movements [illegible] volcanic; the [illegible] and elements of time. [illegible] periods [illegible] million years.

The Biological Aspect Reveals the Influence of the Land Forms: Plant and animal habitats change abruptly from the rim to the

[illegible] flora; numerous animal species are markedly [illegible]; thus the variety of flora and fauna within the Park is great. The relationship between the land and the life forms living upon it is well displayed.

<u>The Mormons Explored and Settled This Land</u>: History is intimately connected with that of the Mormons. It is primarily of local importance, reflects pioneer ways and can be most effectively told on the spot where it happened....."Ezekiel Johnson first explored Zion Canyon in 1858"....."Isaac Behunin first settled [illegible] the canyon. The ....." [illegible] was [illegible] lowered over the [illegible] ." [illegible] [illegible] .

[illegible] more reason as we
[illegible] into
significant our values.

[illegible]:

[illegible] apart from the [illegible] scene.
[illegible] not easily accessible. The [illegible] visit [illegible]
[illegible] see a contrast to the stress of [illegible], [illegible]
[illegible] time at [illegible]. They come [illegible]
[illegible] weekend, [illegible] of its [illegible] [illegible]
[illegible] unexpected reason.

[illegible] the visit [illegible] comes to enjoy the scenery, [illegible] to
[illegible], [illegible], or to take pictures; the [illegible] and [illegible]
character [illegible] intensifies these experiences for [illegible]
[illegible] [illegible] experiences [illegible]
[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Facilities at Bion Inn [illegible] has been established that there is no longer any need for them in the Park. *

(*Insert per memo 7/30/[illegible] from Asst. Dir., DSC)

[illegible] – [illegible] for expansion at the present south entrance [illegible] and east of the [illegible] River. Existing [illegible] campground will be converted [illegible] day-use [illegible] picnic [illegible]. [illegible] a campground [illegible] near [illegible]. [illegible], a possible future campground [illegible] Springs. Back-country primitive type camping places will be designated in the Fins area and in the [illegible] Valley-[illegible] Creek [illegible] for [illegible] on horseback parties.

Visitor protection assumes major importance in [illegible] because its [illegible] and narrow canyons involve [illegible] hazards to the [illegible]. This demands [illegible] all visitor entry [illegible] country [illegible] expansion and deployment of the [illegible] protection force, [illegible] cooperative arrangements with those providing visitor services [illegible] the [illegible] of the [illegible]. Careful consideration should [illegible] to the protection requirements in anticipation of the greater visitor-use of the [illegible] section when new access is available or existing roads are improved.

[illegible]

[illegible] be pursued.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] that will enable him to derive [illegible] the fullest [illegible] inspirational and educational value. [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] its great national park.

[illegible]

[illegible]

[illegible] items listed below fit into two [illegible] principles discussed above, and call [illegible] specific practices to be followed at this [illegible].

[illegible] The physical developments, information, interpretation, and protection [illegible] and the [illegible] are coordinated [illegible] to achieve a [illegible] distribution [illegible].

[illegible] Later, [illegible] the [illegible] to [illegible] development [illegible]

[illegible]

[illegible] [illegible] with [illegible].

[illegible]

[illegible] for public stock.

[illegible] information [illegible]

[illegible]

[illegible] Through [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

17. [illegible] will function with [illegible] approved Master Plan and under the public [illegible] selection [illegible]

CHAPTER 2

MASTER PLAN

OF

ZION NATIONAL PARK

****

Chapter 2, Area Objectives

Purpose

Management Category

Management Objectives

Prepared by: Russell E. Dickenson, Asst. Supt. Date: 8-7-64

Recommended: Superintendent Date: 8/13/64

Recommended: Regional Director Date: 10/14/64

Approved: SCD Director Date: 12/21/64

THE ROAD TO THE FUTURE

Area Objectives

for

Zion National Park

* * * * *

PURPOSE

Zion National Park is located in the southwestern corner of Utah. Here, great fault blocks rise in lofty terraces to high plateaus above desert country of the lower Colorado River basin lying to the south and west. The headwaters of the Virgin River have sculptured tremendous brilliantly hued canyons into the first terraces, leaving within, towering peaks, flat topped mesas, sheer pinnacles, and arches.

The park, 220 square mile in area, encompasses several spectacular canyons including famed Zion Canyon, and a sampling of the high forested plateaus.

From 1909 to 1919, this area was a National Monument. In 1919, Congress directed that the area become a National Park "dedicated ... for the benefit and enjoyment of the people, under the name of Zion National Park."

The park's main purpose is to provide opportunity for all to enjoy and understand the natural grandeur and interest of this area of colorful canyon and mesa scenery that ranks high among the superlative scenic features of the world.

MANAGEMENT CATEGORY

Natural Park: Protection and interpretation of the natural features are of primary importance. History and archeology are minor values.

OBJECTIVE 1. TO PROVIDE FOR THE HIGHEST QUALITY OF USE AND ENJOYMENT OF THE NATIONAL PARK SYSTEM BY INCREASED MILLIONS OF VISITORS IN YEARS TO COME.

Management Objectives

1. To insure that all services rendered park visitors adhere to standards which will provide a superlative and high-quality park experience. Cooperative training programs and inspections systems involving the concessioner and all operating units of the park are essential to accomplishment of this goal.

2. To encourage visitor use and enjoyment of all park resources by identifying appropriate uses of specific resources and providing information and opportunities for visitors of varying interests, age groups, and physical abilities to engage in meaningful activities. Especially encourage back-country use.

3. To use physical developments, information, interpretation, and protection in Zion Canyon and in the Kolob section in a coordinated way to achieve a better distribution of visitor use.

4. To maintain high standards of visitor services and visitor protection programs and make these available to all visitors at the point of need. This involves additional attention and greatly increased service to backcountry users, as well as to the majority who enjoy park features from the floor of Zion Canyon. The park must develop positive means whereby rangers will be aware of the entry of visitors into the Narrows and other hazardous canyons, and discourage such entry during periods of flash-flood danger.

5. To provide - through coordinated planning with the park concessioner when appropriate - necessary public facilities, properly located, to help visitors better enjoy the park. Increased dispersion of visitor use to avoid extreme congestion at existing developed areas will be sought.

6. Concessioner facilities in upper Zion Canyon should not be expanded in this site. At an appropriate time, they should be discontinued or replaced by accommodations and other service facilities at a more suitable location. The number and type of visitor services and facilities located outside of the park should continue to grow, and these will be encouraged.

7. Continue public use of the facilities at Zion Inn until it has been established that there is no longer any need for them in the park.

8. Make optimum use of visitor facilities by encouraging off-hours and off-season activity and use which will more evenly distribute visitor load. Special education, interpretive and recreation programs will be encouraged.

9. To encourage use of the park for research purposes, whether or not such research is directly connected with Service operations, and to maintain adequate and exemplary scientific study collections, library, and other facilities to provide appropriate support of such programs.

10. To obtain complete data on visitor use of and reaction to facilities and services, for park use and as a contribution to a System-wide guide to anticipating future trends and providing better public service.

11. To base all planning for future use and development of both concessioner and Service facilities upon accurate measurements of present and potential capacity of the park, and ability and willingness of privately financed operators to perform or provide specified services or facilities outside of the park boundary.

12. To insure that the primary pattern of use will enable the visitor to enjoy freely the natural beauty, to appreciate the significance of the natural features, and to make optimum use of the recreational opportunities they afford.

13. Existing wilderness areas shall not be diminished by road extensions or other developments beyond limits essential to making representative portions accessible for use and enjoyment of the public. Such required developments will be kept simple and appropriate.

OBJECTIVE 2. TO CONSERVE AND MANAGE FOR THEIR HIGHEST PURPOSE THE NATURAL, HISTORICAL, AND RECREATIONAL RESOURCES OF THE NATIONAL PARK SYSTEM.

Management Objectives

1. To initiate research projects which will furnish needed ecological and other special information to support resource management programs. Studies shall include recommendations of corrective measures which shall be undertaken, and provide guidelines for establishment of sound resource management programs aimed at restoring the park to conditions that existed when the early explorers arrived.

2. To manage wildlife and habitat in order to maintain a proper balance and restore depleted ranges.

3. To restore and maintain optimum ecological relationships with special emphasis on road and trailside environments in order to provide visitors with enjoyment of the natural scene.

4. To eliminate exotic species of plants and animals and all domestic grazing in order to perpetuate native species and improve range conditions.

5. To retain the primitive characteristics of designated wilderness for traditional forms of wilderness experience.

6. To protect and manage the park resources with an awareness and understanding of conservation practices of agencies and individuals operating in areas adjacent to the park.

7. To identify those aspects of man's use of park resources which destroy or unduly disturb wilderness and establish such patterns of use as are necessary to guarantee conservation of the resource.

8. To identify all areas of wasteful use of park resources and devise economical and practical methods of correcting these practices and initiate restoration programs for all such damaged and scarred areas.

OBJECTIVE 3. TO DEVELOP THE NATIONAL PARK SYSTEM THROUGH INCLUSION OF ADDITIONAL AREAS OF SCENIC, SCIENTIFIC, HISTORICAL AND RECREATIONAL VALUE TO THE NATION.

Management Objectives

1. To acquire all inholdings as rapidly as possible.

2. Recommend legislation, as necessary, to adjust park boundaries with the object of improving management, protection of significant resources or park visitors.

OBJECTIVE 4. TO PARTICIPATE ACTIVELY WITH ORGANIZATIONS OF THIS AND OTHER NATIONS IN CONSERVING, IMPROVING AND RENEWING THE TOTAL ENVIRONMENT.

Management Objectives

1. To foster, among the local people, an appreciation of the value of the park to them and thereby encourage the use and development of lands contiguous to the park in ways harmonious with such an environment.

2. To cooperate with nearby communities and cities, counties, and state, Federal and private organizations in conserving, improving or renewing the resources of this region.

3. To make Zion National Park a radiating influence upon the region with the goal of influencing total environment conservation.

4. To present to visiting international park conservationists and interested officials and students from foreign countries the philosophy of park conservation and management as illustrated by Zion National Park, and develop coordinated orientation programs for these visitors as well as for the casual international visitor.

5. To work toward achieving broad regional understanding and support of National Park Service objectives as exemplified at Zion National Park.

OBJECTIVE 5. TO COMMUNICATE THE CULTURAL, INSPIRATIONAL AND RECREATIONAL SIGNIFICANCE OF THE AMERICAN HERITAGE AS REPRESENTED IN THE NATIONAL PARK SYSTEM.

Management Objectives

1. To strengthen visitor information programs, following studies, to determine what information is desired and which communication tools are best suited to convey the information.

   a. To provide general informational services to park visitors and the public at large concerning the superlatives represented at Zion and other units of the National Park System.

   b. To provide specific information by all suitable media on where and how to see and enjoy Zion, including its natural phenomena, historical values, archeological sites, scenic vistas, wildlife, recreational opportunities and interpretive programs.

2. To achieve the highest quality of interpretive services through adherence to approved standards and guidelines, by recruitment of well qualified interpreters, by systematic and critical appraisal and with programs planned and directed by full time professional interpreters.

3. To better serve the American people by informal personal interpretation, special interpretive programs and facilities, and by improvement of design and quality of other interpretive media for the public beyond the park.

4. To communicate the significance of Zion National Park and the National Park System in the American Heritage and to gain understanding and support for Service policies and the conservation movement.

OBJECTIVE 6. TO INCREASE THE EFFECTIVENESS OF THE NATIONAL PARK SERVICE AS A "PEOPLE SERVING" ORGANIZATION DEDICATED TO PARK CONSERVATION, HISTORICAL PRESERVATION AND OUTDOOR RECREATION.

Management Objectives

1. Develop an attitude of personal responsibility for excellence of service to visitors in all Service and concessioner employees.

2. To develop and maintain a cooperative relationship among all employees; seasonal and permanent, concessioners, contractors and Government.

3. To provide working and living facilities and conditions conducive to employment of well-qualified personnel and their efficient performance of duties.

4. Regard certain community and recreational facilities and activities as essential because of isolation and size of employee community.

5. To apply principles of good management throughout the organization; to provide a closely supervised and coordinated training program, stressing improvement of manpower development and utilization; exercising prudence in the expenditure of funds for operating the park.

6. To coordinate operations at Cedar Breaks and Pipe Spring National Monuments, through the Management Assistant of each area, to assure compliance with Service policies regarding management, protection, interpretation and visitor use and accomplishment of management objectives and plans.

7. When necessary and appropriate to further park objectives seek the advice of and use the services of eminent specialists in scientific, technical and cultural fields.

8. Avoid duplicating the work of other agencies when it is possible to make use of their technical personnel and laboratories by cooperative agreements.

9. To promote, as a part of all programs, safe practices and working conditions for all park, concessioner and contractor employees, and to develop safety in all visitor activities.

The Kolob

ENTERING THE KOLOB FROM [illegible]

miles. Leaving [illegible] north for 7 miles in the narrow [illegible] and along a lava capped [illegible] park boundary [illegible]

[illegible]

[illegible] Pass [illegible]

[illegible] Tonto and Towers of Pisa [illegible] outcrop for a multi-purpose building serving these functions: interpretation information featuring high desert ecology and geology that promotes [illegible] the lookout and target [illegible] [illegible] Quartzite Angel Park [illegible] [illegible] Mesa for 10 cars [illegible] Valley Road at Dead Horse [illegible] [illegible] Tonto Point to Lake Mead Spur Road [illegible] the look-out and interpretive station overlooking LaVerkin drainage. The site to be selected [illegible] LaVerkin Creek from here [illegible] this spur to vicinity of Death Point [illegible]

[illegible]

[illegible] ascends the face of Hurricane Cliffs [illegible] travels west 1 1/2 miles on the road in [illegible] [illegible] overlook [illegible]

[illegible]

[illegible] Parks [illegible] [illegible] Mesa [illegible] [illegible]

CHAPTER 3

MASTER PLAN

OF

ZION NATIONAL PARK

* * * * * * * * * * * * * *

Chapter 3, Management Programs Narrative

The Land

The Visitor

Staff Activities

Prepared by: Delmer M. Armstrong Date 10/12/65
Delmer M. Armstrong, Chief Park Ranger

Recommended: WARREN F. HAMILTON Date OCT 15 1965
Warren F. Hamilton, Superintendent

Recommended: _____ Date _____
Chief, Western Office
Design and Construction

Approved: _____ Date _____
Regional Director

MANAGEMENT PROGRAMS

The Land

Ecological

Zion is an ecological Park--a canyon land of unique biological units. Few natural areas in the National Park System offer the opportunity that Zion does for the layman to so easily visualize the interaction of nature. The Virgin River Valley seems to reach into the plateau land with fingers of greenery bordered by open desert lands which decrease with ascending elevations. Excellent examples of the desert environment may be observed only yards away from cool niches of Douglas and white fir. The restoration and/or maintenance of optimum ecological relationships is basic to the perpetuation of the natural environment that existed before white man entered the area.

Existing

1. Management of native mule deer to keep numbers in harmony with the vegetation upon which it feeds.

2. Combination of fencing and patrol to prevent trespass grazing of livestock from areas adjacent to the Park.

3. Soil and moisture programs to prevent erosion and allow the restoration of native plant cover.

4. Control man's use of Park resources to minimize its effect on ecological relationships.

Needed

1. Research to identify the ecological conditions that existed when white man arrived at Zion. Two current resource study proposals (Zion-N-6 and Zion-N-10) have already been devised and await funding. All other facets of Zion's ecology should be determined as a base for future restoration and management planning.

2. Pursue active management programs to restore and maintain the ecological conditions identified by research. Based on present knowledge the following priorities should be established in carrying out these programs.

Zion Canyon This section must be preserved for the people from the people. This can be accomplished only through more efficient and thorough management, and through the removal of overnight usage within the confines of Zion Canyon above the junction of Highway 15 and the Scenic Drive. We must strive for the eventual time that the scene within the canyon will match, as closely as possible, that scene that greeted the first white man who explored this land of contrast.

Such a scene must have been one of fresh running water and rocky terrain below the natural dam, and one of open glades and meadows that followed the meandering river above. History tells us that, even during the 1920's, the old lake bed contained numerous ponds and meadows where a large number of animals and plants lived that are not found here today. The ponds were drained in 1930 so that the mosquito population could be reduced for the convenience of the Lodge visitors. The results not only reduced the mosquito population but also destroyed unique pond communities that contained numerous plants and animals that were found nowhere else within the National Park. With the elimination of overnight usage in Zion Canyon, this nature scene should be encouraged by minor ditching and closing of the drainages that were constructed in 1930.

Taylor Creek-Finger Canyon Area The access road into the Taylor Creek-Finger Canyon Area should never be extended in any manner that would impair its wilderness character. Only trails should penetrate the back-country from this road. Our public education program should explain the purpose of the road, and we must be firm and resolute in our decision that it should remain for day use only. This is the only way we can protect the natural values of this finger canyon country.

Upper Kolob-Lava Point Area The increasing development of the Upper Kolob area adjacent to the Park for summer homes makes it imperative that our planning will protect the natural values of the area. Development should be minimal and in character with the wilderness nature of the area. Our portion of the county road should be of a minimum standard and blend with its surroundings. Good trail access to backcountry features should be constructed. All private lands should be acquired and restored to their primitive condition. All access for

motorized travel, such as jeep roads, should be obliterated. A limited high country auto campground should be considered in the vicinity of Lava Point when the demand warrants it.

East Rim Area Access is all that should be developed on the East Rim of Zion Canyon. Past developing enterprises on private land adjacent to the Park boundary should be able to provide any need for overnight accommodations or food service. Only low standard roads should be allowed to approach the east rim of the canyon. A good trail system would protect the excellent example of ponderosa pine forest and still provide access to the spectacular overlooks at Observation Point, Cable Mountain, and Deertrap Mountain. Primitive campsites for backpackers would be advisable to control their activity.

Coalpits Wash Area This example of southwestern desert association needs only protection from development to insure its preservation. Provision should be made to insure that no waters from the Dixie project back up into this fascinating desert environment or that the realignment of Highway 15 as a result of the project not be allowed to adversely affect this unique ecological community. All roads to the upper reaches of this wash should be obliterated.

Geological Features

Zion is also a geological Park. Its formations and unique position along the western edge of the Colorado Plateau cannot be equaled.

Existing

1. Little is needed in the way of protection for Zion's geologic features as long as Service policy prohibiting water storage, hydroelectric power developments, and mining are adhered to.

Proposed

1. Program geological investigations in advance of road or trail development to insure protection of unusual tectonic features, or in some cases to show them to best advantage.

Vegetative Cover

The preservation of the native vegetative cover is integral to the overall ecology of the Park. Several active management programs are necessary to perpetuate this resource.

Existing

1. Fire Control - High to extreme burning index prevails during most of the heavy visitor-use period. Tinder-dry grass cover on Canyon floor presents a constant threat of man-caused fires and occasional heavy lightning storms result in fires in the mesa and plateau areas. Fire caches are maintained at Headquarters, Lava Point, and East Entrance. One smokechaser is stationed at Lava Point from June through September.

2. Disease and insect control - A program of surveillance is maintained to detect any build-up in tree diseases or insect pests that would have a detrimental effect on the vegetative cover. The only active control program is the manual treatment of the roadside cottonwoods, willows, and service berry on the floor of Zion Canyon to control the Great Basin Tent caterpillar. Application of the bacterial spray, *Bacillus thuringiensis*, is by means of a mechanical mist blower.
3. A program of patrol and maintenance of existing fences along Park boundary is carried out to prevent livestock trespass.

Needed

1. Comprehensive research program on the plant ecology of Zion. Resource Study Proposals Zion-N-3, Zion-N-4, and Zion-N-10 should be pursued with diligence and when completed, will serve as an excellent basis for future management planning.

2. Reappraisal of forest fire control plan. Possibly the Park should be zoned as to those areas requiring immediate and total suppression, or just containment, or those areas such as inaccessible mesas or trailless wilderness, where no suppression action at all is necessary.

3. Pursue to completion a boundary fencing program with the objective of eventually fencing all areas where there is a possibility of livestock trespass.

4. Terminate all existing grazing permits at the earliest opportunity.

5. The eventual acquisition of all private inholdings in the Park is essential to the restoration of the native vegetative cover on those areas.

6. Establish and pursue active eradication program to eliminate introduced plant pests such as Russian thistle, bull thistle, tamarisk, mullen, etc.

7. Give proper consideration to the restoration of native browse plants in the management of the Rocky Mountain Mule Deer.

Wildlife

The wildlife management program at Zion is concentrated primarily in the management of the Rocky Mountain Mule Deer so that the deer habitat and population can be maintained in the same association that existed when white man first visited the area. Rodent control is practiced in the developed areas where excess populations pose a public health hazard or where they are causing substantial damage to physical installations. The bighorn sheep is the only extirpated species that needs to be given consideration at this time.

Mule deer Management

Existing

Early management work in the Park was designed to alleviate a serious overpopulation that began in the 1930's in the Zion Canyon and East units. In 1936 seven fenced exclosures were constructed on sites of deer concentration to gauge habitat use. A series of browse plant utilization transects were established in 1944 and maintained until 1954. Between 1938 and 1954 about 560 deer were removed from the Zion Canyon and East units by livetrapping or direct reduction. The experience and information gained from these early management attempts point up the wisdom of planned long-term deer management.

In 1964 a Park Ranger (GS-7) position was given the added designation of Wildlife Ranger. This formal allotment of Park manpower to wildlife responsibilities gives more impetus and coordination to the program.

Pellet-group and browse utilization type transects have established, or re-established, and maintained in the East unit. They offer an annual index of deer abundance and browse plant use. The transects are patterned after those used by the Utah Department of Fish and Game, in order that information gathered within the Park will be mutually useful in the management of these deer as a part of the state herd #58. Park personnel, moreover, cooperate with other interested state and federal agencies in taking an annual reading of both unit #58 and #59 transects outside the Park. This information is used by the state to form an annual Deer Hunting Proclamation, setting forth the size and duration of the hunt.

Deer counts in Zion Canyon have been made sporadically over many years by Park personnel. The Scenic Drive along the bottom of Zion Canyon offers an easy access through the middle of this deer unit. Since 1962 evening road counts have been made at least once each month. These counts are all conducted in a prescribed manner, following the same route. They provide a continual estimate, or trend, of deer numbers in the unit. By separating the unit into convenient and somewhat natural sub-units along the counting route, a rough estimate of population movements between these sub-units is obtained from count-to-count.

In order to gain basic information about the Zion Canyon and East units, a two-year research contract was signed with the Utah Cooperative Wildlife Research Unit, at Utah State University, in 1965. The primary objective is to gather migration data about both units, describing seasonal movements in and out of the Park and interpreting their managerial significance. Such information could determine the feasibility of regulating the Park population through a closer manipulation of the hunting season outside the Park. Or, it could justify regulation by a direct reduction program. Another objective of the contract is to gather more basic information about the habitat condition, forage availability, and deer use in the East unit.

Needed

The lack of basic information about these deer units is particularly evident. Until such information can be obtained for all units, only piecemeal attempts toward the management purpose will be possible. The current research contract will start this process. It will certainly enable new perspectives and justification for current program revision.

The heavy, continued human use and impact in Zion Canyon presents special management problems. All units in the Park show degrees of disturbance from human exploitation. Zion Canyon is an important and unique focus of human visitation. It receives the brunt of Park visitor use. Most of it is not contiguous with private lands, unlike the other units. Future management design must consider Zion Canyon in light of roadside biota manipulation and other visitor activities. A harmoniously balanced deer population is not necessarily an easily viewed population, but Park visitors importantly relate deer sightings to the meaning of their visit. Concessions need to be made to both the visitor and the preservation of a harmonious deer population. In Zion Canyon steps toward managing this problem will emerge only after a thorough appraisal can be made of the deer-to-habitat relationships in that unit. The basic deer ecology of Zion Canyon and its special human uses should be the next logical step of management in the Park.

In the western portion of the Park, the West unit, a habitat evaluation, and migration studies, should likewise be undertaken. The private land complex bordering this unit suggests a closely cooperative endeavor with the Utah Fish and Game Department to describe the deer-use situation here and to define the problems. All presently available information about this unit points to a management program that will require an especially intricate blend of good public relations with landowners and sound wildlife management. Summarized the programs required are:

1. An intensive study of the Zion Canyon unit.

    a. To determine the habitat carrying-capacity of this unit, consistent with its continued human-use programs.

b. To determine the population characteristics and intra-canyon movements, and to describe the spacial structure of inter-dependency between this deer population and the human population using the unit.

c. To devise methods of data collection and interpretation that will be usable within the manpower structure of the Park organization.

2. A cooperative study with the Utah Department of Fish and Game of the West unit.

a. To determine the migratory and resident use of this unit.

b. To determine the carrying-capacity, or population level, consistent with the mutual occupation by this herd of both the Park and private lands.

c. To devise methods of data collection and interpretation that will be usable within the manpower structure of the Park organization.

Rodent Control

Existing

The present program is involved in preventing physical damage to Park stru tures and grounds adjacent to them by gophers and ground squirrels. A very selective method of poisoning or trapping has been used in this control. Ground squirrel reduction as a public health measure has also been recommended to control abnormal population build-ups when they occur in intensively developed areas.

Needed

Control efforts should not be expanded, but they should be refined to be more effective. Close control of this activity is required to insure that it has no adverse affect on other species.

Bighorn Sheep

Existing

There is no indication that bighorn sheep now exist in Zion. The last authentic records of their occurrence was

in the late forties, and careful reconnaissance of their former range by qualified observers have not yielded any trace of them.

Needed

It would be most desirable to have the bighorn sheep reintroduced. A resource study proposal has been written up with the objective of assessing all of the factors responsible for their extirpation and if present conditions are satisfactory for reintroduction. This study should be implemented as soon as possible.

Aquatic Life

Little is known about the ecological relationships that exist in Zion's limited water resources. Three species of dace, two species of suckers, and the removed Zion snail are the aquatic animal forms which must be assured protection if they are to be perpetuated.

Existing

Normal protection from pollution, drainage, etc., that would adversely affect water levels.

Needed

Research to properly assess the ecology of our aquatic environments and the management measures that will be required to protect them.

Historical Features

Although the historic and prehistoric themes are minor ones in the overall story of Zion Park, several significant sites and structures do exist within or adjacent to the Park area. Very little of the Park had been surveyed archeologically except for the lower portions of Parunuweap and Zion Canyons. A complete archeological survey of the Park is necessary before the full story of early man in this area can be understood and perpetuated. There are only two sites of historical significance in the area that should be considered for preservation and interpretation. One is the old cable headworks on Cable Mountain, and the other is the old DeMille house at Shunesburg. The latter is located just outside the Park at the mouth of Parunuweap Canyon but there is much local interest in seeing that it is preserved and is in an area that is slated for acquisition if the Park is ever enlarged.

Existing

1. Inventory and cataloging of known archeological sites.

2. Current protection is primarily by the inaccessability of the sites and structures, although occasional patrols are made to check on them.

Needed

1. Comprehensive research program to serve as a basis for future preservation and/or restoration plans for these sites and structures.

2. Retain cable headworks on Cable Mountain as long as possible. Provide trail access from the east side. Cable headworks should eventually be replaced by an exhibit in place that would depict its contribution to early settlement of the Virgin River Valley by the Mormons.

3. Excavation programs for pictograph cave sites number 83 and 84.

4. Acquire all private lands necessary for the protection of these sites and structures.

Water

Water is one of our most precious resources and is protected and developed in its natural state wherever possible. Disturbance o. the water table or the natural flow of water over the terrain can have a profound effect on plant, animals, and the visitor's enjoyment of the area, so every effort is made to manage it wisely.

Existing

1. Soil and moisture program to eliminate accelerated runoff and encourage retention for the best use of plants and animals.

2. Development of good water sources to provide for the needs of the Park visitor in the campgrounds and concession accommodations. These sources are protected from contamination by good installations, sanitation inspections, and periodic maintenance. Main storage is provided by a one-million gallon storage tank in the Birch Creek Area.

Needed

1. Additional storage. Another 1,000,000 gallon storage tank is programmed for the Zion Canyon area and should be sufficient to meet expanding needs for years to come.

2. All water sources required for Park and visitor use should be properly documented in conformity with the laws of the State of Utah governing such use.

Maintenance and Protection of Facilities

Existing

1. Maintenance and clean-up work on roads, trails, parking areas, and campgrounds are programmed on a continual basis with major emphasis on the periods of heavy visitor use. Snow removal is carried on for the duration of each storm with almost daily sanding necessary to control icy road conditions in between storms. Relatively speaking, the winter season is short and storms are infrequent. Striping of roads is usually done by contract with the State of Utah.

2. A preventive maintenance program of building and utilities is carried on during the fall, winter, and spring months when travel is at a minimum. Only emergency repairs or replacement is done during the busy summer months.

3. The program for the maintenance and rehabilitation of signs, markers, and roadside exhibits is carried out during the winter months. A Park sign committee is set up to control the text and placement of signs.

4. Vandalism involves primarily the destruction of signs and the defacement of natural rock surfaces by writing. These are kept to a minimum by good patrol, effective sign maintenance, and the early removal of any writing from sandstone faces.

5. Sanitary clean-up is effected by Park crews. Garbage is disposed of at the Springdale town dump by cooperative agreement. The concessioner hauls and

disposes of his refuse in the same area. The garbage pickup by government crews has been greatly facilitated by the addition of a new garbage packer.

Needed

1. The greatest need in providing proper maintenance and protection of facilities as travel increases and these facilities are expanded is programming the necessary manpower to carry out these functions. It is imperative that these increases be programmed in advance of the opening of new facilities to the public.

MANAGEMENT PROGRAM

Information - Interpretation

Introduction of the Visitor to the Area

The initial contact with most visitors entering Zion National Park is at one of the Entrance Stations on the main road that traverses the Park. This is often the Park visitors only exposure to uniformed personnel, so it is an important one. Here the visitor obtains his entrance permit, is given a Park booklet, and is encouraged to stop at the Visitor Center for additional orientation to help make his trip to the Park more meaningful.

Existing

Two Entrance Stations are required to control entrance to the Zion Canyon portion of the Park. The South Entrance Station is located at Springdale approach to the Park just ½-mile from Park Headquarters. The East Entrance is twelve miles distant in an easterly direction and controls that traffic travelling west from U.S. Highway 89. The fact that this route, Utah State Route 15, is the first east-west highway north of U.S. Highway 66 poses some problems as some motorists are using it only as a through route and object to paying the entrance fee. Residents of Kane, Washington, and Northern Coconino Counties are exempt when using the road for this purpose. The stations are opened 9 hours daily starting April 1. Hours are increased with the East Entrance operated 16 hours daily and the South Entrance 17½ hours daily, from about June 15 to Labor day. As seasonal employees leave, the hours are gradually reduced back to 9 hours daily during fall months and both stations are closed for the season about Thanksgiving. If man power shortage exists, the East Entrance is closed for a day or two, depending on circumstances and the South Entrance then collects fees from both incoming and outgoing traffic.

Park Rangers on duty collect the entrance fee, dispense Park information folder, issue trash bags, and give out other information as time permits. During heavy visitation days the Entrance Station Ranger directs visitors to the Visitor Center for information. Both stations are equipped with radio and can communicate with all mobile

vehicles and to the Lava Point Fire Lookout. The stations are also used as a check point to apprehend traffic violators, to locate visitors for emergency messages, and as a road block when requested from the Utah Highway Patrol. The South Entrance is connected to the Mountain States Telephone System and all incoming calls after regular hours and on holidays and weekends are received at the Station. As traffic increases and the need for a tighter law enforcement policy occurs, it may be desirable to operate the South Entrance 24 hours per day during the busy summer period.

Needed

Both of the existing stations are outmoded and are scheduled for replacement with new facilities that can be expanded to meet increasing needs. The new road into the Finger Canyon country will require an entrance station to be known as the Taylor Creek Entrance. It is not contemplated that entrance stations will be required as the secondary road to the Lava Point area is improved.

Information

Existing

It is important that the initial contact at the Entrance Stations be a cordial one, but there is seldom an opportunity at the entrance during the busy summer season to give detailed information on how and where the visitor can best spend his time. Therefore, we depend primarily on the information desk in the Lobby of the Visitor Center to dispense this information. Those requesting more specific information on activities such as hiking, climbing, and back-country trips are in turn referred to the Ranger Office in the Visitor Center. Although only manned in the afternoon and evening, the campground registration station dispenses much information helpful to the visitor in planning his stay. The patrol rangers are another excellent way to dispense information and are instructed to make many stops at important turnouts and parking areas where people tend to congregate.

Needed

Additional contact points are needed and should be provided for at the entrance to the new Watchman Campground,

The Taylor Creek Entrance, the Temple of Sinawava. Eventually a contact station will be required in the Lava Point area. It is also important that we intensify our training efforts to ensure that concessioner employees will be giving accurate information in their many contacts with the Park visitors.

Interpretive Theme

The magnificent red sandstone cliffs, the desert, the high plateau lands, and the floral environments and animal life offer a scene of contrasts and beauty within Zion National Park. The whole story, with its chapters of geology, history, animals, and plants is already well presented at the Visitor Center in Zion Canyon. Here Zion visitors receive information and inspiration. The visitor is encouraged to go out and to see, to drive the roads, hike the trails, and to sit and absorb the scene before him.

Existing

The program of interpretation is carried out in the providing of exhibits for the Museum, Lobby, and Auditorium and roadside interpretive signs. Self-guiding nature trails and conducted nature walks and talks are all used as means of interpreting the story of the Park.

The Museum exhibits deal with the geologic, biologic, historic, and pre-historic story as it relates to Zion National Park. Their purpose is to aid the visitor comprehend the phenomena exposed to view or recorded in the Park. Orientation exhibits in the Visitor Center Lobby are aimed at the function of helping the visitor find his way around in the Park by locating the various roads and trails and other facilities available.

Audiovisual programs are provided at the Visitor Center Auditorium and in the Museum. The Auditorium program is essentially an orientation slide program to acquaint the visitor with things to do and see while in Zion. The audiovisual message repeater used in the Navajo Scene Diorama presents the story of animal life during the time when the Navajo sandstone was being deposited under desert conditions of the ancient past. The campfire or evening programs are given at three locations and serve the purpose of acquainting the visitor with the Park story in illustrated talks and movies.

Conducted trips are given at two or more locations, depending on the season. During the peak of visitation, the summer months of June, July, and August, the conducted trips are limited to the Narrows Trail and the Emerald Pool Trail, and these serve the purpose of acquainting the visitor with natural phenomena found along these trails such as the flora and fauna and the geologic story presented in the various sedimentary beds exposed to view. The Narrows Trail conducted trip is limited to two formations -- Kayenta and Navajo, while the Emerald Pool Trail adds the Moenave and parts of the Chinle formation, in addition to evidence of the Lake Bed deposits.

Roadside exhibits are planned for several strategic locations where some special feature is exposed. These are located on the East Entrance road where parking areas are now available; others will be installed as soon as the parking areas may be provided. Twelve exhibits have been planned and six of them are now in use.

Needed

Although the Visitor Center is the central orientation place, other smaller centers and information-interpretive stations are necessary to completely tell the story in the best manner -- on the spot. It necessitates, therefore, three additional centers for interpretation and information. Most important, with the present traffic trend, is a small Visitor Center at the end of the Zion Canyon Scenic Drive, the Temple of Sinawava. It should be small and compact. It should contain an information desk and room for sales items, space for four or five wall-type exhibits, and an office behind the information desk. Here should be told the story of the formation of the canyon section of Zion Park and unique ecology of this particular section of the canyon.

A similar Visitor Center should be planned for at Lava Point. With the future camping planned in this area, a small center which interprets the high country ecology should be of utmost importance. A third center should also be planned for at the mouth of Taylor Creek. It should interpret the Finger Canyon ecology and encourage visitors to travel to the Zion Canyon and Lava Point regions of the Park.

Visitor Protection

Most programs involved in providing visitor protection are ones of long standing and will only need refinement in the future to take advantage of new techniques and equipment in order to meet ever increasing needs.

Law Enforcement

The Park has proprietary jurisdiction with the State of Utah. Due to the absence of a United States Commissioner near the Park, all violations are tried through the local Justice of the Peace Court as violations of state laws. All permanent Park Rangers and the seasonal Park Rangers assigned to patrol duties are appointed Deputy Sheriffs of Washington and Kane Counties. Utah Fish and Game, Utah Highway Patrol, and Washington and Kane County Sheriff's Offices assist in a limited way with state law enforcement. Large concentrations of visitors in the small area of Zion Canyon present special problems of traffic control, camping, and law enforcement activities. The local attitude toward the Park is generally favorable. Local juveniles create some minor disturbances during the summer, mostly traffic violations, disturbing the peace, and drinking. Some vandalism also occurs, primarily to road signs and garbage cans. Non-conforming and non-compatible use occurs occasionally in the Kolob area, generally in the nature of stock trespass. A concerted effort is being made to have a United States Commissioner appointed for use of all Federal Agencies in Southern Utah. The Commissioner would live in one of the southern communities. Resident population in Zion Canyon varies from about 250 people in summer to 60 people during the winter months. The Park Ranger patrol operates from 7 a.m. to 1 a.m. through the three main summer months. If vandalism and other law enforcement activities increase, it may be necessary to extend these hours even to the extent of having a 24-hour patrol.

Structural Fire

A building fire and emergency plan has been written and distributed to all Park employees. About twenty employees make up the fire crew and receive formal training in a variety of subjects over the year. Fire drills are biweekly. Personnel have received formal training 2 hours a month from a representative from the Utah Trade Technical School, Provo, Utah, during the past year. Other personnel are sent to fire schools in nearby areas as time and funds permit.

Fire protection is provided for some 230 buildings inside the Park, as well as protection to private dwellings and business establishments in the small towns of Springdale and Rockville, close to the South Entrance. Overnight accommodations for 500 people in cabins, lodge and old frame structures with some multiple cabin units creating a high fire hazard. During the main operating season Zion Lodge organizes a building fire brigade for protecting company structures. Both Government and concession property have fire hydrants located at various locations. Major units of fire fighting equipment consist of one 1953 International fire truck with a 500 GPM hold-ship pump, a Chevrolet 4 by 4 equipped with a 160-gallon slip-on unit suitable for both grass and small building fires. Zion Lodge has one Chrysler pump used for boosting water pressure in case of a fire in the main lodge.

Inspections for fire hazards are made of Utah Parks Company facilities in early June and Government facilities in early September.

Increased emphasis will be placed on training, especially on subjects such as hose lays, rescue, ladder work, pump operation, and use of specialized equipment. Building fire protection has been provided for at the new developments at Taylor Creek and the East Entrance.

Search and Rescue

Approximately 155 miles of trails are provided in the Park with the entire back country open to wilderness-type hikers or horseback riders. Searches occur occasionally which seldom last for more than one day. Searches for lost children during the summer season are common, especially around campgrounds and concession facilities. Outside of the canyon floor, searches and rescues generally require some climbing in mountainous terrain. Steep walled canyons and isolated mesas classify the area as extremely hazardous with operations requiring advanced search and rescue skills. Ice and snow may be encountered on the trails during the winter and spring, while summer activities are affected by high temperatures and lack of water. Fire permits are required of hikers who plan to remain out overnight on the back country trails. Rescue of visitors injured while hiking or short-cutting occurs occasionally. Injured persons or bodies of deceased must be lowered over cliffs and transported several

miles to floor of canyon. There is a record of three deaths and ten serious injuries from climbing accidents over the past thirty years. Rescue equipment is readily available and well maintained in the Utility area. Collapsible and wheeled stokes litters are available. An amplified speaker with a listening device supplements the search and rescue equipment. Training is given in the use of the above equipment throughout the year.

Emergencies and First Aid

All permanent Park Rangers receive training in first aid. First aid classes are conducted for all interested personnel at least once or twice a year. The Visitor Center is equipped with a first aid room where first aid supplies are available, as well as hot and cold water, ice cubes, and a folding bed.

Most emergencies consist of injuries from traffic accidents, falls, burns, and the usual number of minor injuries such as cuts, bruises, insect bites, etc. To date Zion has been fortunate in having very few serious automobile accidents, as well as other types of more serious injuries. The Ranger patrol vehicle is a station wagon equipped with stretcher, first aid supplies, resuscitator, and blankets. The station wagon is used to transport injured people either to the doctor in Hurricane or the hospital in St. George, Utah. Over a normal summer period about a dozen such trips are made.

Other emergencies consist of flash floods covering roadways with mud and debris requiring quick action for traffic control.

Campground Patrol and Night Patrol

During the summer months from June 15 to Labor Day, a Park Ranger is stationed at the South Campground from 3 to 12 p.m. The primary duty of this station is to assist campers in finding sites, locating groups in the proper places, delivery of emergency messages, settling minor campground complaints, minor first aid cases, make campground counts daily, and to keep peace and quiet in the campground. The regular ranger patrol makes frequent trips through the campgrounds during the day and assists the campground Ranger when he is called to do so. At times when no personnel are stationed in the campground,

the regular patrol drives through at frequent intervals. There is no man stationed at the Grotto Campground, which is open from about Memorial Day to Labor Day. The north section of the South Entrance campground is open all year. The new Watchman Campground may be in operation with 200 sites by the summer of 1966. A man will be stationed here if possible for the period from 3 to 12 p.m. So far the shortage of manpower has precluded our stationing a man in the campground during the morning hours, but it is only a matter of time when provision should be made to provide this added protection and service.

As seasonal personnel enter on duty the night patrol is started with a full shift daily from 4 p.m. to 1 a.m. During the weekends on Saturday and Sunday nights, an extra man is assigned to night patrol. The patrol is maintained from about the first week in June through the Labor Day week, as man-power permits. The late hours are gradually reduced as seasonal personnel terminate. After September 20 the late patrol is discontinued. The patrols are equipped with mobile radios that keep them in constant touch with the South Entrance Station and Ranger Office. The night patrol is mainly for traffic control, campground patrol, security patrol for Government buildings and property, as well as a check on concession facilities, assist motorists in trouble, pick up remittances from entrance stations, make emergency runs to doctor or hospital if necessary, and assist with minor first aid cases. The patrol is the first called for accidents and emergencies.

Traffic Control

There are 18 miles of paved roads in the Park which presented the problem of traffic control for over 705,000 visitors in 1964 in a very congested area. To control traffic, two Ranger vehicles are equipped for patrol work with red lights, sirens, and emergency equipment. One of these vehicles is a station wagon that can be converted into an ambulance. In the spring and fall when traffic is light, road patrols are made by permanent personnel when time permits. At the start of the busy season in June, road patrols operate 18 hours daily until after Labor Day, by seasonal personnel.

Traffic signs are posted throughout the area which are enforced by the Ranger patrol. Serious and malicious violations are prosecuted in a local Justice of the Peace Court. Citations are issued as Deputy Sheriffs of Washington and Kane Counties which cover the majority of the Park. A special regulation prohibiting the use of over 8 feet wide and 10½ feet high and 55 feet long trucks on the Park roads during the summer months because of the narrow winding tunnel necessitating the patrol providing a convoy through the tunnels for trucks that inadvertently enter the Park. This period is June 1 to September 30. Convoys are necessary for large trucks all year around.

Winter conditions demand a constant inspection of the Park roads because of icy conditions and falling rocks on the roadway. Steep grades in the Park with snow or icy conditions dictate the need for the use of chains for everyone using the roads. Signs are displayed at each entrance for the information of motorists when such conditions exist.

Water Safety

High temperatures during summer months make swimming a popular sport in the Virgin River and Pine Creek. The streams are shallow, presenting no serious hazards other than slipping and falling. Flash flooding in the narrow canyons are a hazard and does occur several times each year, and sometimes results in visitors becoming trapped or caught in high water. Five hikers were killed in the Zion Narrows in September of 1961 as the result of such a flood. The concessioner has a swimming pool at Zion Lodge available at a nominal fee for all visitors desiring such services. Life guard protection is provided at the pool. The Park does not encourage the use of the river, nor does it prohibit its use.

Winter Activities

In the Park no special winter activities are available. Some winter use of the trails by visitors takes place. No suitable place can be found for skiing, sledding or ice skating in the Park. The present plans are not projected for such activity.

Wildlife Control

Zion presents no particular problems in this regard. Normal vigilance is maintained in regard to those animals, such as foxes, skunks, squirrels, etc., which are suspected of transmitting communicable diseases. Suspect animals are turned over to the Utah State Public Health Service for determination, particularly where a human exposure may be involved. Although a confirmed case of rabies was found in the Park in 1964, the disease has had a very low occurrence in Utah in the past and no real problems are anticipated in the future. Rattlesnakes occur infrequently but seldom in the heavy visitor use areas, so present no cause for concern.

Backcountry Patrol

Backcountry patrols are carried out as man-power permits. Due to the fact [illegible] the longer trails are used by less than 1% of the visitors, most patrol activities are carried out on the more heavily used trails closer to Zion Canyon. Livestock trespass is a major concern along the Park boundary and in certain areas adjacent to inholdings, and must be checked periodically. This is done by horseback or jeep, depending on the location. It is important that these inholdings be acquired at the earliest opportunity as they block access to many interesting backcountry features. This will also enable the Park to develop a good backcountry trail system at which time it will be necessary to implement an intensive schedule of backcountry patrols.

Civil Defense

Park personnel work closely with local Civil Defense agencies. The two tunnels have been designated as shelters in case of air attack or danger from fallout. Supplies for 900 people are stored in the basement of the Park Warehouse and are available for immediate use. Protection personnel attend meetings in nearby communities on Civil Defense activities. Eight Park employees have received training in radiological monitoring. First aid classes are conducted once or twice a year.

Accommodations and Services

Existing

All overnight accommodations, meals curios, etc., are provided by the Utah Parks Company under contract. The present contract expires in 1969.

Zion Lodge: Cabin accommodations consisting of 38 deluxe, 78 modern standard, and 28 share-shower standard are capable of providing for approximately 390 people. Dining room with seating capacity for 150 people, curio store, soda fountain, and recreation room. Swimming pool open to all Park visitors for a nominal fee. Barber service is available two days a week. Facilities are open from the second Saturday in June to Labor Day. Located three miles up Zion Canyon.

Zion Inn: Fourteen family cabins and 35 share-shower standard cabins are capable of providing accommodations for approximately 115 people. Cafeteria, curios, and limited grocery items for campers. Open from May 15 to October 1. Located in the South Campground area.

Standard Oil Service Station: This facility is a subcontract under the Utah Parks Company. Open from May 15 to October 1 and provides gas, oil, tires, and auto accessories. Located adjacent to the South Campground.

Needed

Many of these accommodations and services are duplicated or supplemented in the nearby community of Springdale which is immediately adjacent to the South Entrance. Trailer hookups, laundermat facilities, and showers are the major services that are provided in town that are not available in the Park. Properly developed, it is envisioned that Springdale could provide all of the overnight accommodations, with the exception of camping, that might be required in the future. At any rate, any future development of facilities in the Park should be restricted to the South Entrance area, and the structures at Zion Lodge should be removed when they can no longer serve any useful purpose, with that area being converted to day-use only.

Bus and Rail

Existing

Bus service is provided by the Utah Parks Company from Cedar City, Utah. Bus service coincides with the operating season of Zion Lodge, usually from about June 12 to September 2. The bulk of the transportation service that is being provided consists of all-expense tours for five days, or less, taking in Zion, Bryce Canyon, and the North Rim of Grand Canyon National Park and Cedar Breaks National Monument. Day cours are available direct to Zion from Cedar City and return.

There is no bus service to the Park of any kind from Labor Day to mid June, except from the Cameron Tours operated out of Panguitch, Utah, on Highway 89. At the present time the demand for bus service from nearby communities along Highways 91 and 89 has not been great. U-Drive car rental service is available at Cedar City and is used primarily by persons arriving by commercial airline. Only a limited number of inquiries are received from people desiring to visit Zion without a car.

Needed

A complete re-evaluation of today's transportation needs should be conducted before the preferential contract with the Utah Parks Company is renegotiated in 1969. In light of the change in the modes of transportation of our present Park visitors it appears that better and more equitable transportation may be provided by liberalizing the existing regulations regarding commercial transportation. The objective of such a study would be to devise a system that would best meet the needs of the modern day visitor on an all-year basis and still yield a fair profit to those providing the service. The inconvenience to the Park visitor should be a prime consideration.

Recreation Management

Wilderness Use

Existing

It is estimated that less than 1/10 of 1% of the present day visitors to Zion visit the fabulous areas that are out of sight of the main roads and developed areas. One major deterrent to the proper use of these backcountry

areas is that private inholdings block access to many of the trails leading to them. For that reason, large areas of wilderness in Zion are visited only by Park personnel in making infrequent patrols to check on stock trespass or in suppressing fires. Scheduled horseback trips by the concessioner seldom penetrate the wilderness.

Needed

The biggest need, of course, is the early acquisition of all inholdings so that non-conforming uses can be eliminated and access to the wilderness assured. Once this is accomplished the present trail system should be expanded to provide good access to the major points of interest in the backcountry. Areas of pure wilderness such as the 20,000 acres surrounding the Great West Canyon and the Narrows of the Virgin should be left devoid of all trails. Primitive camping areas should be designated along the backcountry trails to control this activity and water sources should be developed along the trails where feasible. Other activities related to this use should be limited mainly to brushing, marking, and making minor repairs on trails, providing information and maintaining control of visitors for their own protection, development of rescue plans, and in some areas continuing soil and moisture control work to erase the damage caused by heavy overgrazing before the area came under Federal control. The road presently being constructed from Taylor Creek will provide access to wilderness areas in the LaVerkin Breaks of the Kolob district.

Hazardous terrain and extremes of weather conditions make the providing of information and the control of visitor activities an important aspect of wilderness use. Control of visitor activities can be maintained by requesting that all persons entering wilderness areas register at the Chief Ranger's office. Fire permits should be issued to help control the indiscriminate use of fire, and provide information on the movement of persons into these areas. Registers should also be placed on some trails leading into wilderness areas. This information is invaluable in case rescues become necessary. Half of the wilderness use in Zion is by persons hiking through the Narrows. Information on current weather conditions and the dangers of flash floods often deter visitors from making the hike during unsafe periods. Warning signs placed at the entrances to the Narrows will help. Registers to be placed at accessible locations on the headwaters of the Narrows will furnish information to rescue parties on the number of persons who might be trapped during flood times.

Water Use Activities

Although there are no planned water use activities for Zion, thought must be given to the affect that the proposed Dixie Project will have on Zion. A major phase of the Dixie Project is a storage reservoir to be constructed in the vicinity of the town of Virgin which would back water up to the Park boundary in the vicinity of Coalpits Wash. Due to its immediate proximity to Zion, it has been recommended that the recreational planning and subsequent administration of the water recreation on the reservoir be under Zion's jurisdiction. Construction is to commence in early 1967 with the first water storage contemplated for the fall of 1969. Before that time much thought should be given not only to the recreational use of the reservoir itself, but to the affect that this project will have on the existing use in Zion proper.

Mountain Climbing

Due to the nature of the Navajo sandstone, mountain climbing is not a popular sport in Zion. High temperatures during the heavy use season are also a detriment to climbing activities. A few inquiries are received each year requesting climbing information but actual climbs are limited to less than one a year. A number of parties have made the climb of the Great White Throne over the past 30 years. Climbs have been made of the East and West Temple. Frontal climbs facing the Canyon Road have been discouraged. All persons wishing to climb are checked out as to past experience, equipment, and physical abilities before permission is granted. Park personnel receive training in climbing techniques several times a year. Rescue equipment is available consisting of nylon ropes, slings, pitons, karabiners, cable, lights, etc.

Camping

Existing

The Grotto and the South Campground have a capacity of 208 sites, the demand for which was exceeded on most nights of the summer operating season. Overflow camping was accommodated in a large open area immediately north of the South Campground. The demand for camp facilities has been increasing at the rate of 15-20% each year and must be met by the expansion of facilities in the South Entrance area, and by additional reduction in the permitted length of stay. Since approximately two-thirds of Zion's summer campers stay only one night, the latter management tool has only limited effectiveness.

Needed

The construction of the new Watchman Campground will add 250 much needed sites. Fifty-four sites will be lost with the conversion of the Grotto to picnicking only, but this loss can eventually be compensated for by adding approximately 70 sites to the present overflow area in the South Campground. No further campground development should be planned in Zion Canyon. A campground is proposed for the vicinity of Lava Point and should be developed in conjunction with increased use in the adjacent area. No auto campgrounds should be planned in conjunction with the new Taylor Creek development. Backcountry campsites should be developed as this use increases.

Picnicking

Existing

Picnicking in Zion at the present time is confined to the sites in the South and Grotto Campgrounds. The use of viewpoints along the roads for picnicking is discouraged because of the lack of sanitary facilities and the conflict in use with those using the turnouts for sight-seeing. Since the campgrounds are often filled with campers during the busy season, this presents a difficult problem as there is no place for the ranger patrol to divert such use.

Needed

It is planned and programmed that when the Watchman Campground is completed, the existing Grotto Campground will be converted to a walk-in picnic area. This will be strictly a day-use area and should be large enough to handle all picnicking in Zion Canyon. The present group camping area in the Grotto will be redesigned for group picnicking. This will be ideal for taking care of large groups such as family reunions, class picnics, etc., who are just in for the day. The South and Watchman Campgrounds can be used for additional picnicking when they are not full.

Organization

Office of Superintendent
Direct all operations to accomplish the Park Mission

Secretary (Stenography)
Confidential aide to Supt.; receives and screens telephone and personal callers; arranges conferences, checks correspondence; maintains liaison with staff members, other agencies and public; maintains land, water, and P.C.P. records.

Management Assistant, (proposed)
Provides Staff service in the fields of concession management, land acquisition, press releases, and public relations.

ADMINISTRATIVE DIVISION
Performs administrative services in accordance with established procedure and in the interest of the efficient operation of the entire Park organization.

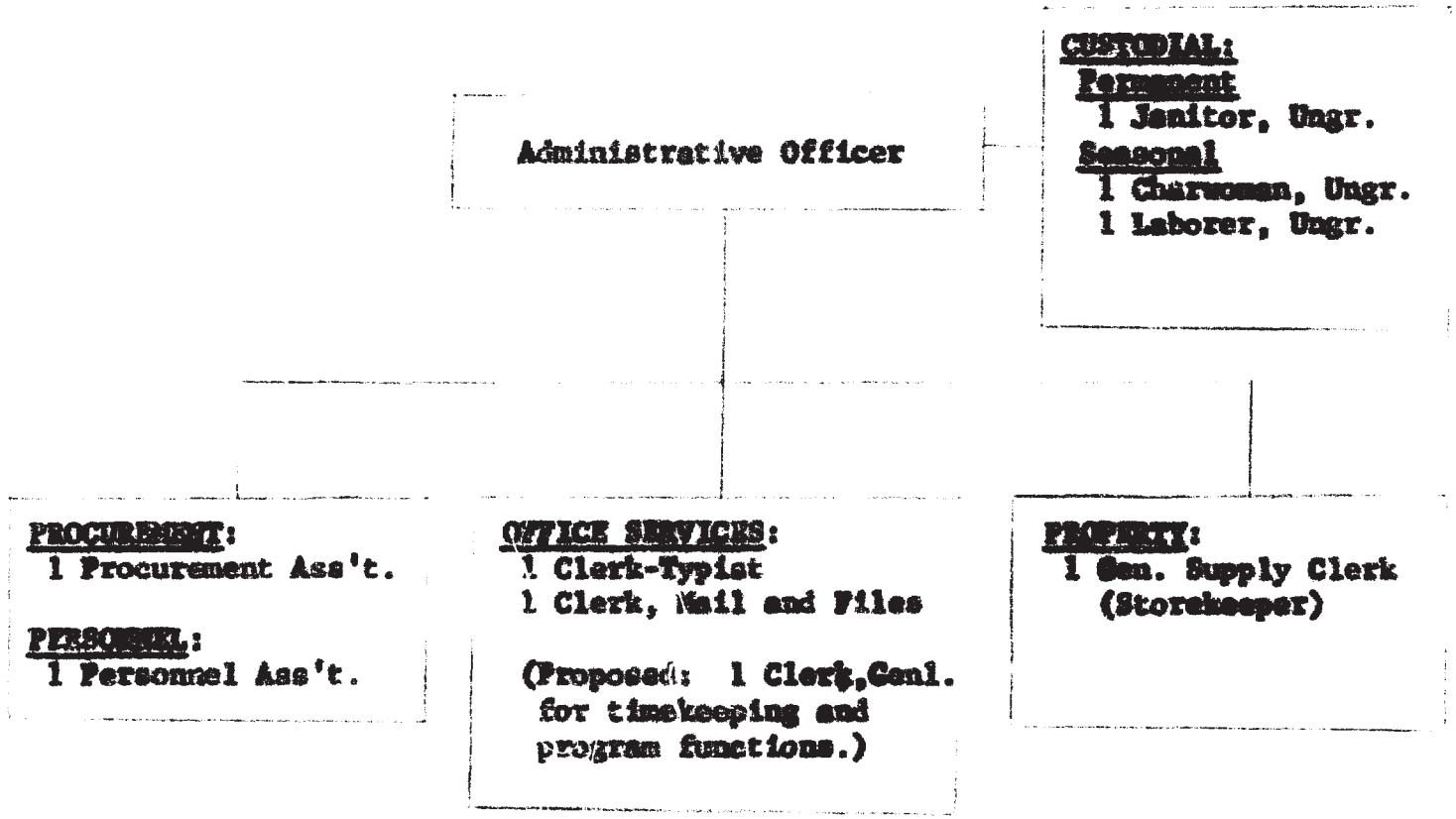
RESOURCE MANAGEMENT AND VISITOR PROTECTION DIVISION
Protects Park resources and facilities and the welfare of the Park visitors.

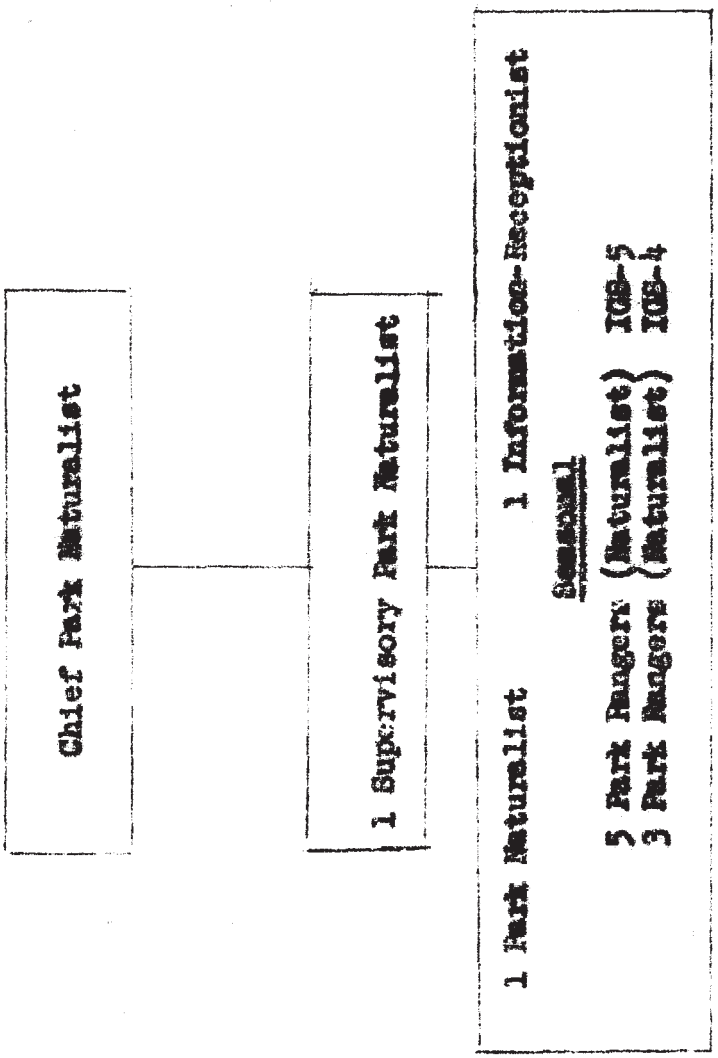
INTERPRETATION AND VISITOR SERVICES DIVISION
Acquires, assembles, and presents knowledge about the Park for guidance in protecting Park resources and enriching visitor knowledge.

OPERATION AND MAINTENANCE OF PHYSICAL FACILITIES DIVISION
Operates and maintains the physical plant in a manner contributing to the efficient functioning of Park staff, to the welfare of visitors, and to preservation of Park resources.

Management Assistant
Pipe Spring. Directs all Operations in the Monument.

Management Assistant
Cedar Breaks. Directs all Operations in the Monument.


Administrative Officer
CUSTODIAL:
Permanent
1 Janitor, Ungr.
Seasonal
1 Charwoman, Ungr.
1 Laborer, Ungr.
PROCUREMENT:
1 Procurement Ass't.
PERSONNEL:
1 Personnel Ass't.
OFFICE SERVICES:
1 Clerk-Typist
1 Clerk, Mail and Files
(Proposed: 1 Clerk,Genl. for timekeeping and program functions.)
PROPERTY:
1 Gen. Supply Clerk (Storekeeper)


Chief Park Naturalist
1 Supervisory Park Naturalist
1 Park Naturalist
1 Information-Receptionist
Seasonal
5 Park Rangers (Naturalist) IGS-5
3 Park Rangers (Naturalist) IGS-4

Chief Park Ranger

1 Ass't. Ch. Park Ranger

EAST DISTRICT

1 Supervisory Park Ranger

2 Park Rangers

Seasonal

6 Park Rangers (General) IGS-5
4 Park Rangers (General) IGS-4

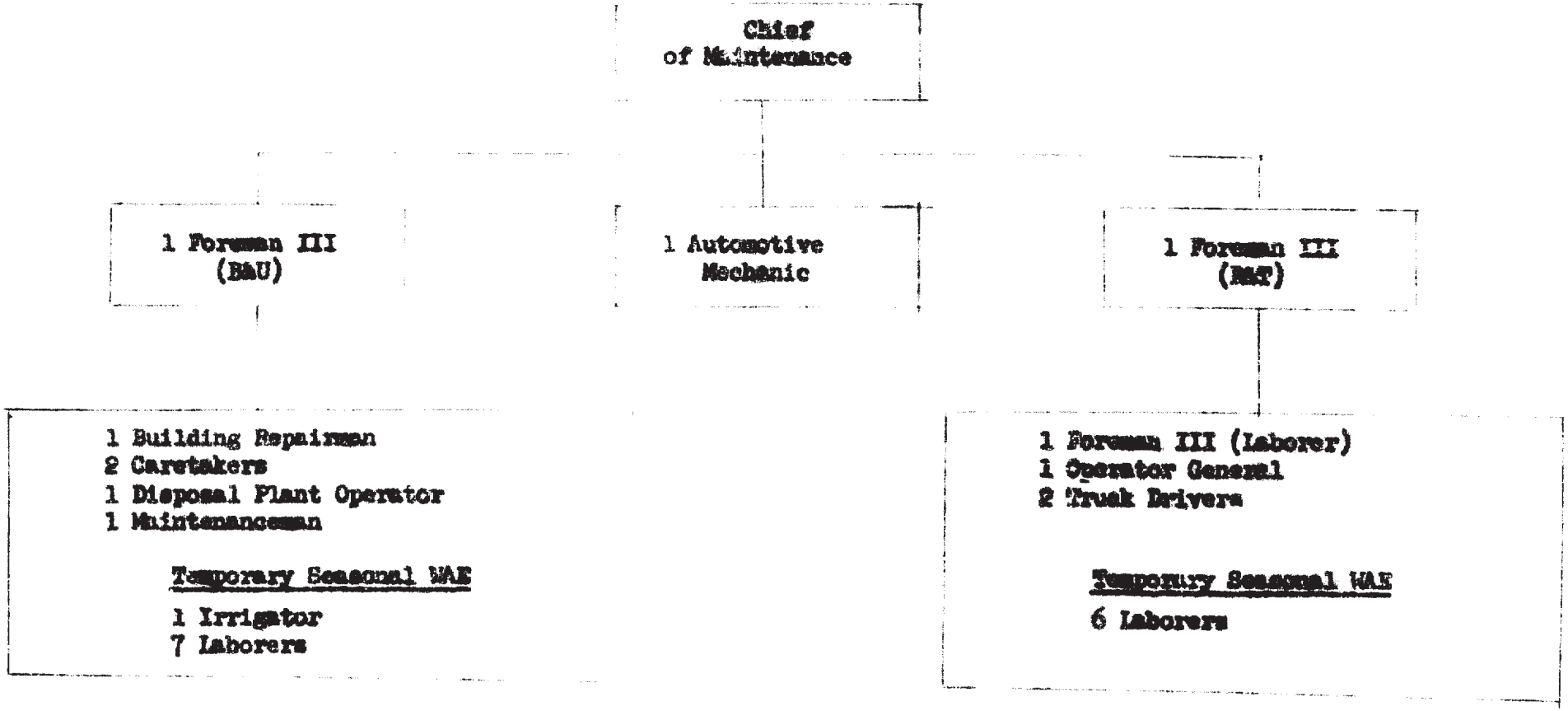
WEST DISTRICT

1 Supervisory Park Ranger

Seasonal

1 Fire Control Aid

OPERATION OF PHYSICAL FACILITIES
ZION NATIONAL PARK



STAFF ACTIVITIES

ORGANIZATION

Office of the Superintendent

Function: Directs all operations in the Park to accomplish the Park Mission in the best way possible.

Assigned Tasks: Plans, directs, supervises, coordinates, and evaluates all activities performed by the Park Staff as follows:

Training
Personnel Management
Fiscal Management
Property Management
Operation and Maintenance of Facilities
Protection of resources
Public Services
Concessioner's Operations
Minor construction work
Programing

To the degree defined in, and in accordance with procedures described in the Administrative Manual, the Superintendent participates in long range management and development planning, with preparation of Master Plan Narrative, and in the programing and supervision of construction projects. He provides membership in, or liaison with, boards, commissions, or other governmental agencies, of which the following are most important:

Five County Organization
UTAHRS, Incorporated
Utah Fish and Game Commission
Utah State Land Board
Bureau of Land Management, Salt Lake City
Utah Department of Highways, Salt Lake City
United States Attorney's Office, Salt Lake City
Chambers of Commerce, Cedar City, St. George, Kanab
Utah Tourist and Publicity Council, Salt Lake City
Utah Interagency Committee for Recreation, Salt Lake City
Utah State Parks Commission, Salt Lake City

Utah Recreation and Parks Association, Salt Lake City
Dixie National Forest, Cedar City
Soil Conservation Service, Cedar City and St. George
Other local or regional commissions and citizens groups

Provides similar administrative direction over the affairs of two coordinated areas: Cedar Breaks National Monument and Pipe Spring National Monument.

Organization and Operation: The Park Superintendent is the officer responsible for all activities within the Park. Park Headquarters is in the Visitor Center located near the south entrance to the Park, and this is the base of operation for the Superintendent and his staff.

Staff Required:

Permanent	Total Existing	Total Long Range
Superintendent	1	1
Management Assistant		1
Secretary (Stenography)	1	1
	2	3
Seasonal	None	None

Facilities Required:	Existing	Additional Proposed
Park Headquarters:		
Office rooms in Visitor Center	3	0
Conference Room in Visitor Center	1	0
Residence #1	1	1
Apartment, 1 bedroom, (permanent)	0	1 unit

Administration Division

Function: To perform the common administrative services, in accordance with established policies, procedures, and standards for and in the interest of the efficient operation of the entire Park organization.

Assigned Tasks:

Train personnel of the division in administrative service procedures and skills.

Perform procedures relating to recruitment, classification, and separation of personnel, and maintain personnel records.

Effect the proper utilization and controls of funds allocated to the Park.

Effect the procurement, storage, and issue of supplies and materials for the Park.

Effect the acquisition and disposal, and maintain records of accountability for all equipment and property.

Provide information and advice to the Superintendent and other Divisions on fiscal and personnel matters.

Assume financial accountability for all funds appropriated to the Park.

Consolidate and prepare the Park's budget estimates for submission.

Maintain mails and files.

Effect time and payroll procedures.

Organization and Operation:

The Administrative Officer, reporting to the Park Superintendent, directs and coordinates the work of the Division. Staff is headquartered in the Park Visitor Center. A General Supply Clerk (Storekeeper) is stationed at an office in the Warehouse, Park Headquarters Utility Area.

Seasonal fluctuations in work load occur at terminations of calendar and fiscal years when fiscal, inventory and numerous other reports are required, also in spring handling employment applications and other procedures associated with addition of large numbers of seasonal employees to staff.

Advises the Superintendent and both advises and counsels the Management Assistants at Cedar Breaks and at Pipe Spring and other members of Park staff on fiscal, purchasing, personnel, programming and other matters pertaining to administrative operations.

Staff Required:

Permanent	Total Existing	Total Long Range
Administrative Officer	1	1
Personnel Management Assistant	1	1
Procurement Assistant	1	1
General Supply Clerk (Storekeeper)	1	1
Mail and File Clerk	1	1
Clerk-Typist	1	1
Clerk-General (Typist)		1
Total Permanent	6	7
Seasonal		
Charwoman .3 MY	1	1
Laborer .3 MY	1	1
Total Seasonal	2	2

Facilities Required

Park Headquarters	Existing	Additional Proposed
Offices in Visitor Center	4	0
File Room in Visitor Center	1	0
Storage Room	1	0
Warehouse with office, Utility Area	1	0
Residences #3, 6, 38, 41, 42, and 46	6	1
Apartment, 1 bedroom (permanent)	0	2 units

Division of Resource Management and Visitor Protection

Function: To protect Park resources and facilities, and welfare of Park visitors.

Assigned Tasks:

Supervise and regulate public use of the Park and Park facilities, including traffic control, camping and picnicking; and otherwise influence the safe and proper use of the Park.

Plan and carry out measures for the prevention and the control of damage to Park forests, lands, and other natural resources by fire, insects, disease, erosion, or other causes.

Operate two entrance stations for the purpose of collecting fees and providing information.

Perform rescue or render other services in the interests of the welfare of Park visitors.

Plan and execute measures to maintain the biotic associations of the Park in a natural state.

Secure conformance to Park regulations and take initial action in case of violations.

Train division personnel in ranger division procedures and skills.

Train other personnel in fire control and other emergency skills.

Advise the Superintendent, the Management Assistants for Cedar Breaks and Pipe Spring, and other Park personnel on matters pertaining to protection of Park resources and regulation of Park use.

Organization and Operation:

The Chief Ranger, reporting to the Superintendent, directs and coordinates the activities of the ranger staff. The Park is divided into two ranger districts. The East District comprises 48,000 acres and covers Zion Canyon proper and most of the visitor use activities. The West District, a "back-country district", is approximately 100,000 acres in size and contains much of the true wilderness of the Park and a major share of the inholdings. The latter causes many situations affecting public relations, grazing trespass, hunter trespass, and other incidents requiring tact and experience.

Various seasonal activities necessitate periodic changes in work assignments and the heavy visitation during the summer months requires the addition of seasonal rangers to the staff. This is necessary to provide increased patrol, to expand entrance operations, to regulate campground use, and to insure adequate Park and visitor protection.

The normal fire season occurs between June and September requiring additional manpower and increased patrol during this period.

Except for seasonal employees, the employee training programs, timing of annual leave, research programs, and other activities, which are flexible as to timing, are adjusted to the seasonal work load demands.

Staff Required:

Permanent		Location	Total Existing	Total Long Range
Chief Park Ranger		Park Hdq.	1	1
Asst. Ch. Park Ranger		Park Hdq.	1	1
District Ranger (East)		Park Hdq.	1	1
District Ranger (West)		Taylor Creek	1	1
Park Ranger		Park Hdq.	2	2
Park Ranger		East Ent.	0	1
Park Ranger		Lava Point & Taylor Creek	0	1
Clerk-Typist		Park Hdq.	0	1
Total Permanent			6	9
Seasonal				
Park Rangers	3 MY	Park Hdq.	7	12
Park Rangers	1 MY	East Ent.	3	3
Park Rangers	1 MY	Taylor Creek	0	3
Fire Control Aide	.6 MY	Lava Point	1	2
Total Seasonal			11	20

Facilities Required:

Headquarters	Existing	Additional Proposed
Office rooms in Visitor Center	3	0
First Aid Room in Visitor Center	1	0

Facilities Required (cont.)

Headquarters	Existing	Additional Proposed
Garage stalls for vehicle storage	2	4
Residences #2, 14, 34, 36, 47, 13	6	0
Residences #26 & 32 Seasonal	2 (Oblit)	0
Apartment, 1 bedroom, (permanent)	0	1 unit
Apartments, Seasonal	0	6 units
Dormitory (16 units)	6 units	0
Fire Cache and Workshop	1	0
South Entrance		
Entrance Kiosk	1 (oblit)	1
South Campground		
Campground Ranger Station	1	0
Watchman Campground		
Campground Ranger Station	0	1
East Entrance		
Residence	1 (remod)	0
Apartment, seasonal	0	3 units
Fire Cache & Storage, Rgr.Equip.	0	1
Entrance Kiosk	1 (oblit)	1
Lava Point Lookout		
Residence	0	1
Fire Lookout, with quarters; vehicle & other storage	3 (oblit)	1
Taylor Creek		
Duplex Residence	0	1
Apartment, Seasonal	0	4 units
*Utility Building	0	1
Entrance Kiosk	0	1
District Ranger Station	0	1

* Primarily a maintenance facility, with fire cache and storage for ranger equipment included.

Interpretation and Visitor Services Division

Function: To determine, assemble, and present the facts about the Park and its resources so as to guide the protecting of the Park's resources, and to enrich visitor experience.

Assigned Tasks:

Plans and operates the Park's interpretive program including curatorial services of the Park museum, study collection workshop, self-guiding trails, audiovisual programs, conducted trips, wayside and roadside exhibits, exhibits in place, information service by all members of the Park Staff and the giving of talks on the natural phenomena of the Park.

Trains personnel in the procedures and skills utilized in the division, such as lectures, guided tours, and general public contact.

Informs other Park personnel on the resources of the Park.

Plans, supervises, coordinates, and performs research in the fields of geology, biology, history, and archeology, pertaining to Zion National Park.

Prepares and publishes technical and popular publications related to the phenomena of the area.

Directs and supervises the activities of non-government cooperating agencies established in the Park.

Gathers, catalogs, and preserves natural science, historical and archeological materials of the Park.

Maintains Park Library of books, pamphlets, color slides, movie films, and photographs.

Maintains close relationship with scientific educational and historical organizations concerned with Park knowledge and interpretation.

Advises the Superintendent and other divisions on matters pertaining to interpretation and relating to the preservation of natural resources or materials.

Organization and Operation

The Chief Park Naturalist, reporting to the Superintendent, directs and coordinates the activities of the interpretive staff based at Park Headquarters, and advises the Management Assistants at the coordinated areas of Pipe Spring and Cedar Breaks National Monuments. Proposed developments in the Kaibab section of the Park will require interpretive services in this area during the summer months.

Seasonal variation in work load is pronounced because of the great increase in visitation during the months June to October. This requires an increase in the interpretive staff and necessitates flexibility in work assignments during the year, in order to accomplish the programmed activities and provide maximum service to visitors.

Staff Required:

Permanent	Total Existing	Total Long Range
Chief Park Naturalist	1	1
Naturalists	2	2
Information-Receptionist	1	1
Clerk-Stenographer	0	1
Total Permanent	4	5
Seasonal		
Naturalists 4 MY (Park Hdqtrs.)	8	12
Naturalists .6 MY (Taylor Creek)	0	2
Total Seasonal	7	14

Facilities Required:

Headquarters	Existing	Additional Proposed
Office rooms in Visitor Center	2	0
Library room in Visitor Center	1	0
Workshop-Storage Rm. in "	1	0
Exhibit room in Visitor Center	1	0

Facilities Required (cont.)

Headquarters	Existing	Additional Proposed
Information-Receptionist Lobby in Visitor Center	1	0
Auditorium in Visitor Center	1	0
Amphitheater, South Campground	1	0
Amphitheater, Watchman "	0	1
Campfire Circle, Grotto "	1	0
Residences #35, 27, & 43	3	1
Apartments, 1 bedroom (Perm.)	0	2 units
Duplex (seasonal)	1 (Ohlit)	0
Apartments, Seasonal	0	8 units
Dormitory (16 units)	4 units	0
Taylor Creek		
Apartments, seasonal	0	2 units

Division of Operation and Maintenance of Physical Facilities

Function: To operate and maintain all physical facilities in a manner contributing to the efficient functioning of the Park Staff, to the welfare and enjoyment of the visitors, and to the preservation of Park resources.

Assigned Tasks:

Maintains roads, buildings, grounds, equipment and utility systems (except radio, telephone, and power systems maintained by public utility companies).

Supervises maintenance contracts on roads, buildings, utilities, equipment, and grounds.

Performs or supervises minor construction projects.

Prepares Project Construction Program proposals, operating programs, and maintenance estimates.

Reviews construction specifications and drawings.

Organization and Operation: The Chief of Park Maintenance, reporting to the Superintendent, directs and coordinates the work of the maintenance division. The maintenance staff operates from the Park Headquarters utility area. The Chief of Park Maintenance gives technical and engineering advice and assistance to Cedar Breaks and Pipe Spring National Monuments, and upon re, quest, to Bryce Canyon National Park.

Since the Park is operated all year, the Park requires a permanent staff, supplemented by a small seasonal staff to assist in the maintenance of all physical facilities.

Telephone and power service and maintenance of all distribution systems, except at the East Entrance development, are provided by a public utility company. Radio service is by lease of equipment and its maintenance is performed by the lessee.

Staff Required:

Permanent	Total Existing	Total Long Range
Chief of Park Maintenance	1	1
Foreman	3	3
Equipment Operators	3	4
Maintenanceman	1	1
Building Repairman	1	1
Sewage Plant Operator	0	1
Caretakers	2	3
Mechanic	1	1
Janitor	1	1
Clerk-Typist	0	1
Total Permanent	13	17
Seasonal:		
Wage Board Employees (WAE) .5 MY each	14	20

Facilities Required:

Park Headquarters	Existing	Additional Proposed
Repair Shop (Automotive)	1	0
Carpenter Shop	1	0

Facilities Required: (cont.)

Park Headquarters	Existing	Additional Proposed
Equipment Storage	10 Stalls	8 Stalls
Offices in Utility Area	2	0
Office in Visitor Center	1	0
Residences #15, 37, 38, 39, 40, & 12	6	3
Dormitory (16 units)	6 units	0

Recapitulation

Summary of National Park Service Staff

Superintendent's Office	Total Existing	Total Long Range
Permanent	2	3
Seasonal	0	0
Administrative Division		
Permanent	6	7
Seasonal	2	2
Resource Management and Visitor Protection Division		
Permanent	6	9
Seasonal	11	20
Interpretation and Visitor Services Division		
Permanent	4	5
Seasonal	8	14
Operation and Maintenance Division		
Permanent	13	17
Seasonal	10	20
Total Permanent	31	41
Total Seasonal	31	56
Grand Total	62	97

TRAINING

The planning and accomplishment of an effective training program require the sustained interest and coordinated efforts of management, supervisors, and employees. The objectives of training are to increase both the quantity and quality of the work performed by the individual employees. Training should, so far as time and funds permit, develop each employee to his fullest potential in the performance of his present duties and in preparing him for greater responsibilities. Training must be considered from the standpoint of the benefits to Zion National Park, the National Park Service, and the individual employees.

Existing

1. Training needs are determined by discussions between the employee and the supervisor in conjunction with the following personnel programs: placement followup, performance ratings, "Plan for the Man", and career development and placement plans. Observations by supervisors, employees, and the Training Advisory Committee throughout the year have proven helpful in planning training. However, the Training Advisory Committee has been concerned almost entirely with training courses which are of general interest.

2. The existing training program utilizes the following sources in accomplishing training within the Park: Zion National Park employees (for both on-the-job and formal training); representatives of other Federal Government agencies such as the F.B.I. and U.S. Forest Service; representatives of state and local governments such as Utah State Department of Fish and Game, Washington County officials, Utah State Road Commission, and Utah Trade Technical Institute; representatives of private concerns such as the Asphalt Institute and Army Service Schools (for correspondence courses).

3. Training outside the Park is accomplished by attendance at courses conducted by the Department of the Interior, National Park Service Washington Office, National Park Service Regional Office, National Park Service Training Centers, General Services Administration, U.S. Civil Service Commission, U.S. Forest Service, F.B.I., and Utah Trade Technical Institute.

4. Safety training has consisted of weekly meetings for maintenance and protection personnel, monthly meetings for all employees, meetings for concession employees, and meetings with contractors' representatives. These sessions have utilized lectures, discussions, and films. We believe that this training has aided us in achieving a good safety record.

5. Annual orientation training is provided for the Utah Parks Company employees to inform them of the mission of the National Park Service in serving the visitors.

Proposed

1. The Training Advisory Committee should make recommendations to the Superintendent concerning the training needs of individual employees and the means of providing this training, including recommendations for attendance at training courses outside the Park. Supervisors should make an increased effort to determine the training needs of employees and the available sources of the needed training and make their recommendations to the Training Committee accordingly. Employees should increase their interest in self-development.

2. Cross-training within divisions and where possible, between divisions, should be expanded. This would provide trained personnel to perform necessary work during the absence of employees on leave or during periods when positions are vacant. It would also improve the preparation of employees for future assignments.

3. A supervisory training course should be conducted every two or three years. All supervisors should be given training in budget, fiscal, personnel, purchasing and property matters at least, to the extent that they will be required to perform duties which are in, or closely related to these fields.

4. Possibilities to sponsor, jointly with other National Park Service areas and other Federal Government agencies, G.S.A. courses within the Park or in nearby facilities should be explored. Such courses should be held if there is enough interest to make this practical.

5. The increased use of correspondence courses should be encouraged by management and supervisors and employees should enroll in courses which will be beneficial to them in their present and future positions.

6. More effort should be made to determine sources of training in the trades and crafts. Such training could be held jointly with other parks and might be conducted by specialists from the Regional Office, larger parks, or private businesses.

7. Opportunities for attendance at training sessions both within and outside the Park should be provided for all employees who indicate an interest in development. Determination of who should attend training courses outside the Park should be made in a manner to assure that as many employees as possible are given the advantage of this training.

8. More attention should be given to the adequacy of training for seasonal concessioner employees, both in carrying out their assigned functions and their knowledge of Park Service principles. Periodic training sessions as the summer progresses will be necessary to achieve this objective.

STAFF FACILITIES

Staff Housing and Community Facilities

Government housing at the present time is adequate for permanent personnel, and is located in three separate areas. The oldest of these is located up the Canyon from the Visitor Center and consists of three old, but substantial, sandstone dwellings plus the old administrative office building which has been converted to duplex apartments. The latter is presently used for seasonal housing and should be considered for immediate removal as soon as replacement housing is available. The other three houses, which includes the Superintendent's residence, are scheduled for removal when they have outlived their usefulness. This also holds true for all of the residences in the Oak Creek Canyon area directly west of the Visitor Center. The five three-bedroom houses and two of the two-bedroom houses are currently occupied by permanent personnel. The five one-bedroom cottages and one two-bedroom house have been provided with furnishings and converted to seasonal housing, making it possible to eliminate the use of

house trailers for the first time. In addition, there is a dormitory capable of housing 16 men. All of these facilities should be phased out over a long period of time and replaced by new units in the Watchman Area. This area is located across the river from the South Campground and presently contains twelve three-bedroom houses with plenty of room for expansion. The community of Springdale is immediately adjacent to the south entrance to the Park. Eight permanent employees currently live in nearby towns. Future plans call for permanent housing at East Entrance and the new development at Taylor Creek. Needed housing requirements have been itemized in connection with divisional personnel needs.

Existing

No specific provision is made for community activity within the Park. The use of the men's dormitory for community gatherings is suited to some activities, but is limited because of size and infringes occasionally on the privacy of the individuals quartered there. In addition, the high cost of heating the building makes it prohibitive to keep it open in the winter. The Visitor Center Auditorium has been used at times, but it is not entirely satisfactory because of conflict with public use and a limitation of the type of activities that can be held there. The church building in Springdale offers only limited possibilities because of size and church restrictions. No facilities are available for either adult or children's outdoor recreational activities within the Park. An outdoor tennis and basketball court exists at the grade school in Springdale.

Needed

The men's dormitory should be remodeled to provide for additional space and the heating system should be replaced or modified so that the building could be readily heated for special occasions during the winter months. A play-ground should be planned and constructed in the Watchman residential area. Minimum facilities should consist of a slide, swings, basketball court, and tennis court, and will help greatly to reduce the hazard of youngsters playing on the streets.

Administrative Facilities

Both the existing and needed administrative facilities are itemized by divisions with the personnel requirements but can be summarized as follows:

Visitor Center: This is the site of the primary point of visitor orientation, interpretive services, and exhibits; includes all work and storage space for all divisions, houses all office and general services facilities. Is currently adequate and capable of space rearrangements for future changes in need.

Entrance Stations: The current entrance stations are located at the South and East Entrances to the Park. Both are outmoded and are programmed for replacement to meet present and expanding needs. A new entrance station is planned for the road into the Kolob Finger Canyons at Taylor Creek.

Campground Ranger Stations: Registration for camping in the South Campground is currently being carried on in a small reconstructed building which is adequate for existing conditions, but will have to be replaced eventually. A new campground entrance station is planned for the new 270-site Watchman Campground and should meet the needs of that area for years to come.

Wayside Interpretive Stations: There are none currently in existence, but will be needed at the Temple of Sinawava, Taylor Creek, and the Lava Point area in the future.

Staff Facilities

Concessioner

There are two prime concessioners operating in the Park at this time. The Utah Parks Company, a subsidiary of the Union Pacific Railroad, has the preferential contract for providing all visitor services within the Park, with the exception of saddlehorse trips. These are provided for by direct contract with Jack Church of Kanab, Utah. The Standard Oil Company operates a gasoline station as a sub-concession under the Utah Parks Company contract.

The Utah Parks Company, which also provides similar services at the North Rim of Grand Canyon, Bryce Canyon, and Cedar Breaks, maintains administrative offices, a commissary, and repair shops in Cedar City, sixty miles distant. In Zion they provide transportation service, from two principal locations; overnight sleeping accomodations; meals; souvenirs; and limited camper supplies. Zion Lodge, located in the heart of Zion Canyon, operates from June through Labor Day. Zion Inn, located near the South Campground, opens in early May and closes at the end of September. Approximately 160 employees, all seasonal, are required to operate these two facilities during the rush season. All permanent employees of the Utah Parks Company reside in Cedar City. Seasonal dormitories, for both single and married employees, are located at Zion Lodge and Zion Inn. Standard Oil Company has a single service station situated between Zion Inn and the South Campground, and operates for approximately the same period as Zion Inn. Both the prime contract and the sub-contract terminate on December 31, 1969.

The saddlehorse contract, which was negotiated as a separate contract with Jack Church in May 16, 1965, also terminates on December 31, 1969. Mr. Church provides similar services under separate contracts at the North Rim of Grand Canyon and Bryce Canyon, and provides overall supervision of his operation from a central headquarters at Kanab, Utah. He generally employs a head-wrangler and two to three assistants at Zion. With up to 25 head of saddle stock, they are able to provide hour rides, 2-hour rides, ½-day rides, and all-day rides from a corral located opposite Zion Lodge. Overnight pack-trips are available by special arrangements. Corrals and a barn for holding the horses overnight are located near the water storage tank in the Birch Creek area. Housing for the wranglers is presently provided by house trailer, but a permanent bunkhouse is planned for the future.

No government-owned buildings or other facilities are included in any of the concessioner's operations. Land use for their operations has been properly delineated in the contracts. The necessary utilities are also provided by the concessioners with the exception that the Service constructs and maintains the walks and the parking areas within the concessioner's assigned areas.

MASTER PLAN

FOR THE PRESERVATION AND USE

OF

ZION NATIONAL PARK

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Chapter 3, Park Organization Brief

A. The Park Organization, General
B. Office of the Superintendent
C. Administrative Services Division
D. Resource Management and Visitor Protection Division
E. Interpretation and Visitor Services Division
F. Operations and Maintenance of Physical Facilities Division
X. Summary
AA. Utah Parks Company

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Prepared by: Park Staff Date Jan., 1964

****

Recommended: Frank R. Oberhansley Date MAY 12 1964
Superintendent

****

Concurred: Chas. E. Krueger, Ch. Landscape Arch. Date March 20, 1964
Chief, Western Office, Design and Construction

****

Approved: George W. Wilson Date 5/20/64
Acting Regional Director, Southwest Region

VOLUME 1

Chapter 3, Park Organization Brief

A. Park Organization, General.

Zion National Park functions within the framework of this approved Master Plan and under stated delegations of authority, as defined in the paragraph on specialized assistance, in the National Park Service Administrative Manual, Organization Volume, Part 7.

In carrying out the responsibilities within the limits of authority so defined, the Park Staff is organized, and its functions are described on the following page:

Office of Superintendent
Direct all operations to accomplish the Park Mission

Management Assistant, (proposed)

Provides Staff service in the fields of concession management, land acquisition, press releases and public relations.

ADMINISTRATIVE DIVISION

Perform administrative services in accordance with established procedure and in the interest of the efficient operation of the entire Park organization.

RESOURCE MANAGEMENT AND VISITOR PROTECTION DIVISION

Protect Park resources and facilities and the welfare of the Park visitors.

INTERPRETATION AND VISITOR SERVICES DIVISION

Acquire, assemble, and present knowledge about the Park for guidance in protecting Park resources and enriching visitor knowledge.

OPERATION AND MAINTENANCE OF PHYSICAL FACILITIES DIVISION

Operate and maintain the physical plant in a manner contributing to the efficient functioning of Park staff, to the welfare of visitors, and to preservation of Park resources.

Management Assistant

Pipe Spring. Directs all Operations in the Monument.

Management Assistant

Cedar Breaks. Directs all operations in the Monument.

B. Office of the Superintendent

Function: Direct all operations in the Park to accomplish the Park Mission in the best way possible.

Assigned Tasks: Plan, direct, supervise, coordinate, and evaluate all activities performed by the Park Staff as follows:

Training
Personnel Management
Fiscal Management
Property Management
Operation and Maintenance of Facilities
Protection of resources
Public Services
Minor construction work

To the degree defined in, and in accordance with procedures described in the Administrative Manual, the Superintendent Participates in long range management and development planning, with preparation of Master Plan Narrative, and in the programming and supervision of construction projects. He provides membership in, or liaison with, boards, commissions, or other governmental agencies, of which the following are most important:

Five County Organization
UEAMNS, Incorporated
Utah Fish and Game Commission
Utah State Land Board
Bureau of Land Management, Salt Lake City
Utah Department of Highways, Salt Lake City
United States Attorney's Office, Salt Lake City
Chambers of Commerce, Cedar City, St. George, Kanab
Utah Tourist and Publicity Council, Salt Lake City
Utah Interagency Committee for Recreation, Salt Lake City
Utah State Parks Commission, Salt Lake City
Utah Recreation and Parks Association, Salt Lake City
Dixie National Forest, Cedar City
Soil Conservation Service, Cedar City and St. George
Other local or regional commissions and citizens groups

Provide similar administrative direction over the affairs of two coordinated areas: Cedar Breaks National Monument and Pipe Spring National Monument.

Organization and Operation: The Park Superintendent is the officer responsible for all activities within the Park. Park Headquarters is in the Visitor Center located near the south entrance to the Park, and this is the base of operation for the Superintendent and his staff.

Staff Required:

Permanent	Total Existing	Total Long Range
Superintendent	1	1
Assistant Superintendent	1	1
Management Assistant		1
Secretary (Stenography)	1	1
	3	4
Seasonal	None	None

Facilities Required:	Existing	Additional Proposed
Park Headquarters		
Office rooms in Visitor Center	3	0
Conference Room in Visitor Center	1	0
Residences #1 and #2	2	1
Apartment, 1 bedroom, (permanent)	0	1 unit

C. Administration Division

Function: To perform the common administrative services, in accordance with established policies, procedures, and standards for and in the interest of the efficient operation of the entire Park organization.

Assigned Tasks:

Train personnel of the division in administrative service procedures and skills.

Perform procedures relating to recruitment, classification, and separation of personnel, and maintain personnel records.

Effect the proper utilization and maintain records and controls of funds allocated to the Park.

Assigned Tasks (cont.)

Effect the procurement, storage, and issue of supplies and materials for the Park.

Effect the acquisition and disposal, and maintain records of accountability for all equipment and property.

Provide information and advice to the Superintendent and other Divisions on fiscal and personnel matters.

Assume financial accountability for all funds appropriated to the Park.

Consolidate and prepare the Park's budget estimates for submission.

Maintain mails and files.

Effect time and payroll procedures.

Organization and Operation:

The Administrative Officer, reporting to the Park Superintendent, directs and coordinates the work of the Division. Staff is headquartered in the Park Visitor Center. A General Supply Clerk (Storekeeper) is stationed at an office in the Warehouse, Park Headquarters Utility Area.

Seasonal fluctuations in work load occur at terminations of calendar and fiscal years when fiscal, inventory and numerous other reports are required, also in spring handling employment applications and other procedures associated with addition of large numbers of seasonal employees to staff.

Staff Required:

Permanent	Total Existing	Total Long Range
Administrative Officer	1	1
Supervisory Accountant	1	1
Personnel Management Assistant	1	1
Accounting Technician	1	1
Procurement Assistant	1	1
General Supply Clerk (Storekeeper)	1	1
Fiscal Accounting Clerk	1	1
Time, Leave and Payroll Clerk	1	1
Mail and File Clerk	1	1
Clerk-Typist	1	1
Total Permanent	10	10
Seasonal		
Charwoman [illegible] MY	1	1
Laborer [illegible] MY	1	1
Total Seasonal	2	2

Facilities Required

Park Headquarters	Existing	Additional Proposed
Offices in Visitor Center	5	0
File Room in Visitor Center	1	0
Storage Room	1	0
Warehouse with office, Utility Area	1	0
Residences #7, 21, 24, and 25	4 ([illegible]it.)	4
Residences #3, 6, 10, 11, 38, and 41	6	0
Apartment, 1 bedroom (permanent)	0	2 units

D. Division of Resource Management and Visitor Protection

Function: To protect Park resources and facilities, and welfare of Park visitors.

Assigned Tasks:

Supervise and regulate public use of the Park and Park facilities, including traffic control, camping and picnicking; and otherwise influence the safe and proper use of the Park.

Assigned Tasks (cont.)

Plan and carry out measures for the prevention and the control of damage to Park forests, lands, and other natural resources by fire, insects, disease, erosion, or other causes.

Operate two entrance stations for the purpose of collecting fees and providing information.

Perform rescue or render other services in the interests of the welfare of Park visitors.

Plan and execute measures to maintain the biotic associations of the Park in a natural state.

Secure conformance to Park regulations and take initial action in case of violations.

Train division personnel in ranger division procedures and skills.

Train other personnel in fire control and other emergency skills.

Advise the Superintendent, the Management Assistants for Cedar Breaks and Pipe Spring, and other Park personnel on matters pertaining to protection of Park resources and regulation of Park use.

Organization and Operation:

The Chief Ranger, reporting to the Superintendent, directs and coordinates the activities of the ranger staff. The Park is divided into two ranger districts. The East District comprises 48,000 acres and covers Zion Canyon proper and most of the visitor use activities. The West District, a "back-country district", is approximately 100,00 acres in size and contains much of the true wilderness of the Park and a major share of the inholdings. The latter causes many problems in public relations, grazing trespass, hunter trespass, and other situations requiring tact and experience.

Various seasonal activities necessitate periodic changes in work assignments and the heavy visitation during the summer months requires the addition of seasonal rangers to the staff. This is necessary to provide increased patrol, to expand entrance operations, to regulate campground use, and to insure adequate Park and visitor protection.

The normal fire season occurs between June and September requiring additional manpower and increased patrol during this period.

Organization and Operation (cont.)

Except for seasonal employees, the employee training programs, timing of annual leave, research programs, and other activities, which are flexible as to timing, are adjusted to the seasonal work load demands.

Staff Required:

Permanent	Location	Total Existing	Total Long Range
Chief Park Ranger	Park Hdq.	1	1
Asst. Ch. Park Ranger	Park Hdq.	1	1
District Ranger (East)	Park Hdq.	1	1
District Ranger (West)	Taylor Creek	1	1
Park Ranger	Park Hdq.	3	2
Park Ranger	East Ent.	0	1
Park Ranger	Lava Point & Taylor Creek	0	1
Clerk-Typist	Park Hdq.	0	1
Total Permanent		7	9

Seasonal

Park Rangers	4 MY	Park Hdq.	4	12
Park Rangers	1 MY	East Ent.	3	3
Park Rangers	1 MY	Taylor Creek	0	3
Fire Control Aids	.6 MY	Lava Point	4	2
Total Seasonal			11	20

Facilities Required:

Headquarters	Existing	Additional Proposed
Office rooms in Visitor Center	3	0
First Aid Room in Visitor Center	1	0
Garage stalls for vehicle storage	2	4
Residences #2, 14, 34, 36, [illegible]	5	0
Residences #26 and 32	2 (Oblit)	0
Apartment, 1 bedroom, (permanent)	0	1 unit
Apartments, Seasonal	0	6 units
Dormitory (16 units)	6 units	0
Fire Cache and Workshop	1	0

Facilities Required (cont.)

South Entrance	Existing	Additional Proposed
Entrance Kiosk	1 (oblit)	1
South Campground		
Campground Ranger Station	1	0
Hatchman Campground		
Campground Ranger Station	0	1
East Entrance		
Residence	1 (remodel)	0
Apartment, seasonal	0	3 units
Fire Cache & Storage, Rgr. Equip.	0	1
Entrance Kiosk	1 (oblit)	1
Lava Lake Resident		
Residence	0	1
Fire Lookout, with quarters: vehicle and other storage	3 (oblit)	1
Lapler Creek		
Duplex Residence	0	1
Apartment, Seasonal	0	4 units
*Utility Building	0	1
Entrance Kiosk	0	1
District Ranger Station	0	1

* Primarily a maintenance facility, with fire cache and storage for ranger equipment included.

E. Interpretation and Visitor Services Division

Function: To determine, assemble, and present the facts about the Park and its resources so as to guide the protecting of the Park's resources, and to enrich visitor experience.

Assigned Tasks:

Plan and operate the Park's interpretive program including curatorial services of the Park museum, study collection workshop, self-guiding trails, audiovisual programs, conducted trips, wayside and roadside exhibits, exhibits in place, information service by all members of the Park Staff and the giving of talks on the natural phenomena of the Park.

Train personnel in the procedures and skills utilized in the division.

Inform other Park personnel on the resources of the Park.

Plan, supervise, coordinate and perform research in the fields of geology, biology, history and archeology, pertaining to Zion National Park.

Prepare and publish technical and popular publications related to the phenomena of the area.

Direct and supervise the activities of non-government cooperating agencies established in the Park.

Gather, catalog and preserve natural science, historical and archeological materials of the Park.

Maintain Park Library of books, pamphlets, color slides, movie films and photographs.

Maintain close relationship with scientific educational and historical organizations concerned with Park knowledge and interpretation.

Advise the Superintendent and other divisions . matters pertaining to interpretation and relating to the preservation of natural resources or materials.

Organization and Operation

The Chief Park Naturalist, reporting to the Superintendent, directs and coordinates the activities of the interpretive staff based at Park Headquarters, and at the coordinated areas of Pipe Spring and Cedar Breaks National Monuments. Proposed developments in the Kolob section of the Park will require interpretive services in this area during the summer months.

Seasonal variation in work load is pronounced because of the great increase in visitation during the months June to October. This requires an increase in the interpretive staff and necessitates flexibility in work assignments during the year, in order to accomplish the programmed activities and provide maximum service to visitors.

Staff Required:

Permanent	Total Existing	Total Long Range
Chief Park Naturalist	1	1
Naturalists	2	2
Information-Receptionist	1	1
Clerk-Stenographer	0	1
Total Permanent	4	5
Seasonal		
Naturalists .4 MY (Park Hdqtrs.)	7	12
Naturalists .6 MY (Taylor Creek)	0	2
Total Seasonal	7	14

Facilities Required:

Headquarters	Existing	Additional Proposed
Office rooms in Visitor Center	2	0
Library room in Visitor Center	1	0
Workshop-Storage room in Visitor Center	1	0
Exhibit room in Visitor Center	1	0
Information-Reception Lobby in V. C.	1	0
Auditorium in Visitor Center	1	0
Amphitheater, South Campground	1	0
Amphitheater, Watchman Campground	0	1
Campfire Circle, Grotto Campground	1	0

Headquarters (cont.)	Existing	Additional Proposed
Residences No. 35, 27	2	1
Apartments, 1 bedroom (permanent)	0	2 units
Duplex (seasonal)	1 (Oblit)	0
Apartments, Seasonal	0	8 units
Dormitory (16 units)	4 units	0
Taylor Creek		
Apartments, seasonal	0	2 units

F. Division of Operation and Maintenance of Physical Facilities

Function: To operate and maintain all physical facilities in a manner contributing to the efficient functioning of the Park staff, to the welfare and enjoyment of the visitors, and to the preservation of Park resources.

Assigned Tasks:

Maintain roads, buildings, grounds, equipment and utility systems (except radio, telephone, and power systems maintained by public utility companies).

Supervise maintenance contracts on roads, buildings, utilities, equipment and grounds.

Perform or supervise minor construction projects.

Prepare Project Construction Program proposals, operating programs and maintenance estimates.

Review construction specifications and drawings.

Organization and Operation: The Park Engineer, reporting to the Superintendent, directs and coordinates the work of the maintenance division. The maintenance staff operates from the Park Headquarters utility area. The Park Engineer gives technical and engineering advice and assistance to Cedar Breaks and Pipe Spring National Monuments, and upon request to Bryce Canyon National Park.

Since the Park is operated all year, the Park requires a permanent staff, supplemented by a small seasonal staff to assist in the maintenance of all physical facilities.

Organization and Operation (cont.)

Telephone and power service and maintenance of all distribution systems, except at the East Entrance development, are provided by a public utility Company. Radio service is by lease of equipment and its maintenance is performed by the lessee.

Staff Required:

Permanent	Total Existing	Total Long Range
Park Engineer	1	1
Foreman	3	3
Equipment Operators	3	4
Maintenanceman	1	1
Building Repairman	1	1
Sewage Plant Operator	0	1
Caretakers	2	3
Mechanic	1	1
Janitor	1	1
Clerk-Typist	0	1
Total Permanent	13	17

Seasonal:

Laborers (WLM)	.5 MY each	10	20

Facilities Required:

Park Headquarters	Existing	Additional Proposed
Repair Shop (Automotive)	1	0
Carpenter Shop	1	0
Equipment Storage	10 Stalls	6 Stalls
Offices in Utility Area	2	0
Office in Visitor Center	1	0
Residences 6, 15, 37, 38	4	3
Dormitory (16 units)	6 units	0

X. Recapitulation

Summary of National Park Service Staff

	Total Existing	Total Long Range
Superintendent's Office		
Permanent	3	4
Seasonal	0	0
Administrative Division		
Permanent	10	10
Seasonal	2	2
Resource Management and Visitor Protection Division		
Permanent	7	9
Seasonal	11	20
Interpretation and Visitor Services Division		
Permanent	4	5
Seasonal	7	14
Operation and Maintenance Division		
Permanent	13	17
Seasonal	10	20
Total Permanent	37	45
Total Seasonal	30	56
Grand Total	67	101

AA. Utah Parks Company

Utah Parks Company provides overnight accommodations, meal service and related services and facilities for visitors under concession contract, which expires December 31, 1969. Saddle Horse Service and a gasoline station are operated by sub-concessioners.

The concessioner operates at two locations: Zion Lodge, June through August, and Zion Inn, May through September. Necessary facilities and utilities for concessioner operations are provided by the concessioner, except that the Service constructs and maintains the walks and parking areas within the concessioner's assigned areas.

The Utah Parks Company maintains a year-round headquarters in Cedar City, 60 miles north of the Park. All of the company's permanent personnel reside in Cedar City. Seasonal employee dormitories are located at Zion Lodge and Zion Inn; a centralized utility-storage-horse barn area is located at Birch Creek.

CHAPTER 4

Forestry

Soil and Moisture Conservation

See Bulletin, Sec. E

CHAPTER 5

MASTER PLAN

FOR THE PRESERVATION AND USE

OF

ZION NATIONAL PARK, UTAH

Chapter 5 Design Analysis

Drawing No. MP-10-32[illegible] [illegible] Vicinity

Prepared by: Jon R. Larson [illegible]
Landscape Architect

Drawing Approved: [illegible]
[illegible]

General Considerations: Steep walls of colorful Navajo sandstone enclose the South Entrance Vicinity and with the Virgin River, Pine Creek and Oak Creek create natural boundaries for the major developed area in Zion Canyon. A Park road continues up Zion Canyon seven miles to a terminal parking area at Temple of Sinawava and the main road goes ten miles up Pine Creek and Clear Creek to the east entrance.

The relatively level Canyon floor is divided into two parts by the Virgin River. The river banks and irrigation ditches nearby are wooded with cottonwood, box elder, ash and willow. The absence of foliage in the winter months creates screening problems which should be given consideration in expansion of an area which is becoming more popular for late fall and winter use. The areas east and north of the visitor center are to be preserved "as is" for natural development and foreground for the view up the Canyon from the visitor center plaza.

The dryer portions of the Canyon and the surrounding talus slopes are covered with pinon pine, juniper and oak brush, interspersed with small open meadows of desert grasses, cacti, sage brush, service berry and other desert plants.

The Park boundary in this area was extended by Public Law 86-377, S-713, February 20, 1960 and added those private lands required for expansion of Park facilities. Subsequently, those private lands have now been optioned, the options approved, and they are presently in the process of transferring title to the U. S. Government. These acquisitions have enabled the Service to complete plans for expansion of much needed facilities for visitor use and Park administration. The need for additional campground is paramount to all other expansion requirements. The long range plan for closing Grotto Campground farther up Zion Canyon and converting it to a day-use picnic area has been held up because of the need for the camping space. It is now possible to provide additional camping space here and reinstate plans to change the use of the Grotto and consolidate all camping in the South Entrance area.

Circulation: The major circulation artery is the road from the South Entrance to the East Entrance of the Park. In this area it is located on the west side of the Virgin River. The road crosses the river just above the confluence of Pine Creek and continues to the East Entrance. This 13 mile road is a connection through the Park for Utah State Highway 15, which connects U.S. Highway 91 (15 miles west of the Park)

with U.S. 89 (15 miles east of the Park). This road is open and passable all year. All Park developments have their access from this road.

There are several important junctions in this area. The first one inside the Entrance Station provides access to the South Entrance Campground and Zion Inn facilities. A little farther on is a junction for service access to the Oak Creek and Watchman facilities. Across the Oak Creek Bridge is the junction for the Visitor Center Parking Area. There are two service driveway junctions beyond this and then just across the Virgin River Bridge is the Zion Canyon Road Junction. This is a major junction for most all visitors who desire to make the 12 mile round trip through scenic Zion Canyon.

The existing circulation system works well; there is good separation between visitor traffic and service traffic. At the campground-Inn area there is separation between the campground and the Inn traffic. Within the campground, signing is necessary to keep the traffic moving in the maze of one-way roads. It is proposed to widen an existing one-way road to handle two-way traffic to the 70 sites expansion area along the river below the campfire circle and Inn. With the addition of this camping, the other loop road closest to the main road will be closed and the area planted as a buffer between the camping area and the road. The circulation to the Visitor Center is workable, but not the most desireable. The majority of visitors still arrive via the South Entrance and they have difficulty in making the left turn and going back into the parking area. The road alignment and adjacent topography have created the problem. It would be difficult to change the road alignment, but much could be accomplished by changing the topography adjacent to the road. Grading and clearing could open views of the Visitor Center from the road for a thousand feet in either direction. This would be worth several large roadside signs for directing visitor traffic to the Center.

Service circulation is nearly ideal. One road junction provides access to all Service facilities. The road is direct to the maintenance and shop area, parking is available for employees. The Oak Creek residential area is a spur off this road, and the upper cabin area is a spur off the residence road. These are both deadend roads without through traffic. There is no conflict of vehicles and walkers in the residence area as a walk on the north side of the road keeps walkers off the road. This walk continues from the dormitory along Oak Creek to the headquarters service/staff entrance. Vehicle

access to the headquarters service/staff entrance is a spur off the service road near the main road. This crosses Oak Creek and terminates in a 20-car staff parking area, at the lower headquarters level. This is adequate for the normal staff functions, but during the period of maximum operations, and high seasonal employment, this is inadequate. Parking for 10 or 12 additional vehicles is proposed for overflow use adjacent to the paved area. The access to the Watchman residence area is a road from the headquarters service road and passes under the Oak Creek bridge of the main road. This road crosses the river on a single lane steel beam wood deck temporary bridge. The residence road is a loop with sites on both sides. The clearance under the Oak Creek bridge is only 10 feet and this restricts the size and type of vehicles that have access to this area. Vehicles too high to pass under the bridge can reach the area through the campground and the campground expansion area. It is not possible to increase the 10 foot clearance because of water and sewer lines and irrigation ditches at the site which could not be relocated enough to permit increasing the clearance. The temporary bridge to the area has to be replaced with a permanent structure. It would be desirable to have a walk on the outside of the residence road, like the Oak Creek area, to keep pedestrians and especially the children out of the roadway as the area expands and the volume of traffic increases.

The access to the proposed Watchman Campground requires a new junction with the main road. The point of this junction, about 600 feet inside the Park boundary, is ahead of the present Park entrance checking station. This requires a relocation of the entrance checking station to provide control of the facilities to be developed. The new station will be about 400 feet inside the boundary and 200 feet ahead of the junction. Studies were made of several other circulation routes to the expansion area. Any junction between the present checking station and campground-Inn junction would bisect the lower portion of the present campground, and render too much of the area unusable for camping. The amount of development planned for the expansion area is too great a volume of varied types of traffic to use the existing campground-Inn junction. A road through the campground would require reworking of the circulation to permit construction of an access road through the area. It was decided that a separate access and an independent circulation would be more desirable for operations, as well as easiest to develop with the least disturbance to the existing facilities.

The circulation within the expansion area is well divided between campground access and service facilities. The main road is aligned to serve the campground and make as much camping area as possible available without having long or unusually large camp loops. Any loop can be the terminus of the main road. This way the use of the area can be controlled and the camping can be progressively opened and regressively closed as visitation increases or decreases. From the upper-most loop a service drive will provide authorized access to the sewage treatment plant.

All service facilities will be located upstream of the main campground road. The proposed road about divides the area between the river and the edge of the talus slope. This will serve the maintenance areas, apartment and residence expansion, and provide a connection to the loop road of the existing residence area. The junction with the residence loop is on the lower side of the loop. This will follow generally the line of the sewer and have a better profile than a connection at the outer end of the loop, where an existing service road follows and crosses the irrigation ditch. The existing road is unimproved, narrow, and has a steep section which makes it difficult to improve to a standard for general use.

The additional roads proposed for the expansion in the area maintain a good separation between visitor circulation to public use facilities and service circulation to operational facilities. Traffic will not be concentrated at any access point so as to create congestion and a hazard during any peak season or time.

Visitor Use Facilities: There are both concessioner and Service operated facilities in the area. The concessioner operates the Zion Inn. This consists of the cafeteria, shop and store at the main building. There are thirty cabins for overnight guest accommodations. Eighteen of the cabins are double units so there are fifty beds or one hundred pillows for use in the area. Also located in the cabin area are a laundry, comfort station and a boy's and girl's dorm for employees. Closer to the campground is the concession operated service station. For the present, it is proposed to retain Zion Inn without adding any new facilities. Development of additional overnight accommodations outside the Park may in due time obsolete the Zion Inn facilities. At that time the area occupied by their facilities could be replaced with facilities as required, possibly a camp center, showers, laundry, store, shops and cafeteria will be most needed. In time when any

redevelopment is made it would be desirable to relocate the service station to a site less conflicting with the campground entrance.

The Service operated visitor use facilities are the 150 site South Entrance campground and adjacent 300 seat campfire circle, and the recently completed Visitor Center. The Visitor Center is in conjunction with the Park administrative offices. The visitor portion of the building is a large glass enclosed information lobby, adjacent exhibit hall, and audiovisual auditorium. Around the lobby is a covered view terrace. The view west up Oak Creek Canyon to the Towers of the Virgin and Alter of Sacrifice are fine. The view north up Zion Canyon is fair, and the view east to Bridge Mountain is good. On the 100-car parking area side of the building are public rest rooms and a public entrance for the Park administrative offices.

The South Entrance campground is a 150-site camping area between the main road and the Virgin river. There is a designated area for group camping which, in addition to the undeveloped area upstream, is used for overflow camping. The campground is served by four comfort stationsand there is also a comfort station at the group camp area. Camping is regulated through a campground ranger station at the entrance to the area, where a register is maintained, campsite occupancy chart, campsite location and circulation plan, and other information and camping rules are posted. This station is operated by a ranger during the heavy visitation season, but also operates well on a self-service basis in the off season. Camping is very popular at Zion and during June, July and August exceeded the areas capacity daily. The overflow area was in continuous use and temporary sanitary and camping facilities had to be provided.

It is proposed to expand permanent camping facilities in the overflow area. This expansion will provide 70 new campsites and requires two comfort stations. When this expansion is completed there are 20 sites adjacent to the main road which will be closed. The future camping capacity of the area will be 200 campsites plus the group area served by seven comfort stations. This development is a loss of 10 campsites in the overall plan for Zion Canyon for it is proposed to close the Grotto Campground farther up Zion Canyon, which has 60 sites and convert it to picnic use only. This action requires expansion for additional camping facilities in other adjacent areas to provide the necessary camping spaces for visitors. The area east of the Virgin River and south of the present camping area which was added to the Park in 1960 has been acquired for

expansion. This area has been under cultivation for a number of years and is irrigated by a network of ditches. Portions of the area are in orchard and the majority of the land was livestock pasture. The open pasture area will have to be planted with trees for camp shade and the orchard areas interplanted with shade trees, as the orchard trees will not long survive in a developed area. The network of lateral irrigation ditches will have to be redone to supply the new planting with water, but the major ditches will remain where they are with improvements for distribution to the lateral ditches.

The proposed campground will be separate from the existing campground. It will have a separate entrance road and campground ranger station for control. The arrangement will be camp loops of multiple individual sites. There are seven loops proposed with a total of 280 individual campsites. There are nine comfort stations proposed throughout the area. In the area will be developed a campfire circle for evening interpretive programs. This will have a seating capacity for 350 expandable to 500 and an adjacent parking area for 70 cars for those who may drive from their campsites or from other nearby accommodations for the evening program.

Camping expansion requires utilities extensions and the need for sewage disposal facilities becomes critical. The boundary extension proposal was justified partially on the need for a site for a sewage treatment plant that can handle the disposal for the South Entrance area development. The existing septic tanks and leach fields are overtaxed and create health hazards when they overflow. The site for the treatment plant requires a lift station for sewage, but allows for campground development in the greater portion of the area, and especially the area along the river.

The ultimate development provides for day use picnic facilities in the Oak Creek area when the existing Park residential and maintenance facilities have been replaced by new facilities in other areas. This changeover will take some time. Five of the residences are comparatively new and can be expected to be adequate for thirty more years. Looking into the future, the possibility of a recreation development at the proposed Virgin Reservoir south of the Park will affect visitor use patterns. When authorization for the Virgin Reservoir of the proposed Dixie Project becomes a reality, changes and revisions in the visitor use facilities of the Park may be desirable.

Management Facilities: Existing management facilities are dispersed throughout the area. The smallest development is the old Headquarters site adjacent to the main road, near the Virgin River bridge. This is comprised of three older but finer residences and detached garages done in native stone, and the frame administrative office building, which has been converted to temporary duplex quarters. It is proposed to obliterate the old office building as soon as other adequate housing is available. The three older houses are well sited, reasonably screened from the road and will not be obliterated until they are deemed inadequate, which may be fifteen or twenty years.

The largest complex of management facilities are located in Oak Creek Canyon. The new Zion Visitor Center contains Park administrative offices, work rooms, and storage for each administrative division. At the upper end of Oak Creek is the Park maintenance area. This is comprised of the fire station, warehouse, equipment shop, equipment storage and building and utility shops. This is an adequate maintenance operation center, but will someday be replaced by a new, more efficient central maintenance building at the site reserved for maintenance in the Watchman area. The Oak Creek residential area is in two very close units. The upper area is a cabin area of four cabins and two central garages. The lower area has five comparatively new residences, three older but substantial residences, two detached multiple garages, one cottage and the dormitory. In the long range plan of redeveloping Oak Creek for visitor day use facilities, the maintenance and cabin areas and the cottage in the residential area will be the first to be replaced. The cabins and cottage could be removed as soon as more new housing is provided in the Watchman residence area. The three older houses will be adequate for fifteen to twenty years and the five newest houses for at least thirty years. The buildings in the maintenance area are substantial enough for a long time, but gains in efficiency, handling material, warehousing and operations could be made by centralizing in a new building in the new area. As development is relocated to the Watchman area, the fire station will have to be moved to be more central for protection. When facilities are relocated and replaced and the area opened for visitor day use, it may be that the structures which are native stone with heavy timber roof framing can be used as shelters rather than demolished.

The remainder of the management facilities are located across the Virgin River in the Watchman Area. Much of this area, until 1960,

was excluded from the Park, and since its inclusion was only acquired for expansion in 1963. Development in the area began in 1961 when utilities and roads were constructed and subsequently five residences with three more added in 1962. There are sites for fourteen more residences and a multiple apartment building in the area. Below this area at the site of the present sewage disposal field, there are ten additional residence sites for future expansion. This residential area is barrlered by a drainage wash from a side canyon. Just below this wash and partially screened in the small side canyon are sites for the Park and concessioner maintenance areas. Across from this site, along the river, is an area designated for apartment development. It would be desirable to develop these apartments first and utilize the site in the upper area for additional residences and have the apartments together rather than separated at each end of a rather long residential development. The housing requirements are always subject to revision and as additional management facilities are provided at other park areas, Taylor Creek, East Entrance and Lava Point, the facilities in the South Entrance Area may develop more slowly. The remainder of the area is devoted to visitor use facilities, except that small area east of the orchard and well back against the talus slope that will be utilized for a sewage treatment plant to replace the numerous septic tanks in the area.

Utilities: A more detailed discussion will be handled in a supplement to the design analysis accompanying a utility Master Plan. A general discussion of adequate and inadequate systems is included here.

Water: The collection from springs, storage in reservoirs and distribution system has been reworked considerably in recent years and the supply is adequate for some time to come. The quality of the water is good and there is no foreseeable shortage for culinary use or fire protection even when the total expansion is completed. Water lines will have to be extended on the east side of the river for the expansion area.

Sewer: The collection system operates adequately but the disposal by septic tank and leach field is inadequate. The effluent from the main septic tank has been surfacing in the leach field across from the campground for several years. Other facilities have individual systems, at least three in this area, each of which required maintenance. It is proposed to construct a sewage treatment plant and collect all sewage into one system

for treatment. Basically the collection system will work as follows: A new line on the west side of the road will collect the Old Headquarters sewage and intercept the Visitor Center system. A new line on the east side of the road will collect this sewage and intercept the Oak Creek system on the south side of Oak Creek. The Inn and campground system now join the Oak Creek line and cross the Virgin River in a siphon to the septic tank at the upper end of the Watchman residential expansion area. The Watchman residential collection system now intercepts this line just before the septic tank. A new line is proposed to intercept this septic tank and extend through the residential expansion area, maintenance and apartment area and campground area to a sewage lift station in the island of the campfire circle parking area. Comfort stations east and south of the lift station will be collected and routed to the lift station. The southern most comfort station in the existing South Entrance Campground has a separate septic tank. This can be intercepted when the new road and bridge are constructed and brought across the river and tied in also. From the lift station a force line will move the sewage to the treatment plant located above the orchard near the talus slope. The advantages of the site chosen is that it is well removed, screened by the orchard and trees along the irrigation ditch, the area could not be used for other development, the area along the river can be used for much needed camping expansion and the treatment plant can be a gravity flow design, and the capacity can be doubled in the enclosure by paralleling the initial plant system. The treatment plant proposed is a high rate trickling filter design of 100 M gpd capacity consisting of a primary clarifier, high rate trickling filter, secondary clarifier, digester and sludge beds. The effluent will be chlorinated and discharged into the Virgin River from a line parallel to the force main discharging between the campfire circle and camp loop "D".

Power: The park is served by commercial power from the California-Pacific Utility Company. There is a sub-station inside the park just west of the South Entrance station at the base of the talus slope. There is a line on the west side, partially up on the talus, that extends up the canyon providing service to the park and concessionaire. There are several poles just north of the Visitor Center that are skylined in the view. It is proposed to relocate these few poles lower down so they have a background and are not skylined rather than relocate the entire line across

the river at tremendous expense to the service. There is a line east from the sub-station that serves the South Entrance campground and crosses the river to provide service to the Watchman area. Service for the Watchman campground, maintenance area, residential expansion and sewage treatment plant will be provided by the utility company from this line. Relocation and construction of required lines in the expansion area will be at the companies expense.

Telephone: The area is served by the Mountain States Telephone Company. Their line enters the park through the proposed campground area and is on the east side of the river and continues up to about Pine Creek and crosses to the west side as it continues up the canyon to serve the park and concessionaire. The concessionaire at Zion Lodge has requested additional service which the existing lines cannot accommodate and the company is contemplating increasing the lines by going underground with a cable. This would be desirable. There will be some relocation of lines and poles through the campground and expansion area and it is anticipated these will be made by the company at not cost to the service.

MASTER PLAN

FOR THE PRESERVATION AND USE

OF

ZION NATIONAL PARK, UTAH

Chapter 5, Design Analysis, South Entrance Area

Drawing No. NP-ZIO-2114-E, South Entrance

Prepared by: Jon R. Larson Date: January, 1963
Landscape Architect

Drawing Approved: R. Clark Stratton Date May 28, 1963
Chief Div. Arch.

January, 1963

General Considerations. This is the South Entrance to Zion National Park. The area is in lower Zion Canyon, one mile north of the town of Springdale, Utah. The area encompasses the Canyon floor east and west of the North Fork of the Virgin River, from the South Entrance Station to Oak Creek on the north. The area is divided by the North Fork of the Virgin River. On the west side of the river, adjacent to the main Park road, are visitor facilities. East of the river is the Watchman residential area for Park employees. The west side of the river is fairly well wooded with cottonwood, ash and willows which are supported by irrigation.

Circulation. On the west side of the North Fork of the Virgin River is the major Park circulatory road. This is a through road from Springdale to Mount Carmel, Utah, connecting portions of Utah Route #15. One quarter mile inside the South Entrance station is a channelized intersection for the Service road to Zion Inn and the South Campground Area. From this entrance, Zion Inn traffic is separated from campground traffic. Zion Inn has available parking space for 30 cars. There is a loop road to serve the Zion Inn cabins with parking spaces for patrons. The service station is adjacent to the campground entrance road. The campground circulation is a pattern of one-way roads serving campsites with a main two-way collection and distribution road generally in the middle. The proposed expansion of the campground to the north along the river will best be served by widening one of the one-way exit roads to accommodate two-way traffic, thereby dividing the camping area into three areas: southern, central, and northern. This will facilitate control and permit staging the use of the campground for slack seasons into one or two of the three areas. This will also provide easier access to the group camp area. The campground expansion area follows the same pattern of one-way camp roads, but will utilize camp loops and spurs for parking, rather than the cross-overs of the older camping area.

Access to the loop road of the Watchman residential area is from the Oak Creek service road and does not conflict with any of the visitor circulation routes.

Visitor Use Facilities. South Entrance Station is a control point at which fees are collected, information leaflets are distributed, and the Park road guide issued on how to use the Park. South Entrance Campground is the major camping area in Zion Canyon. There are 150 campsites now developed and it is proposed to add 60 more. The South camping area has 90 sites served by two comfort stations. The Central camping area has 60 sites served by two comfort stations.

and the proposed Northern area will have 60 sites and be served by two proposed comfort stations. Adjacent to the Central area, next to the river, is a group camping area with a comfort station. Between the existing camping area and the proposed expansion area is a 300 capacity amphitheater for evening interpretive campfire programs. Zion Inn is a concession operation. Lodging is available in cabins. There are 30 cabins, some of which are duplex units, for a total of 48 units with a pillow count of 120. There is a dining area in the main building seating 100 guests with cafeteria meal service. A service station exists adjacent to the Inn for visitor automobile service.

Management Facilities. The Watchman residential area is located on the east side of the river. This area is being developed to replace facilities now located in Oak Creek Canyon, and those adjacent to the main road near the Virgin River Bridge. There are now eight new residences in the area and sites for 14 proposed residences, making a total of 22. At the north end of the area is the proposed seasonal apartment area.

Utilities. A detailed discussion will be made in conjunction with area utility drawings to be prepared in the future. It will suffice for now to say that water and sewer service are adequate and will not be adversely affected by the proposed expansion. There is a sewage disposal problem for the Park generally, that will require corrected measures. Power and telephone service are provided by local utility companies.

Master Plan Development Outline

Zion National Park, Utah

DEVELOPED AREAS - SOUTH ENTRANCE REGION

(1) Name and Location.--The South Entrance Region is adjacent to the south entrance of the Park and extends on both sides of the main road leading to Zion Canyon, terminating at the Virgin River Bridge.

(2) Drawing Number of Corresponding Plan.--NP-ZI0-2114-C.

(3) Principal Features of Interest.--The steep canyon walls which enclose the area provide natural boundaries for the development. The Virgin River Bridge on the north and Park boundary on the south (1½ miles apart) complete the enclosure of the area as a unit.

The Canyon floor is relatively level. Along the streams and irrigation ditches is a heavy cover of cottonwood and ash. The upper portions of the canyon are sparsely wooded with pinyon pine, juniper and oak brush, which are interspersed with small, open meadows of desert grasses, cacti and sagebrush.

(4) The Development Problem.--Because of the limited area available for development in Zion Canyon, any proposed facilities, either for public or National Park Service use, need to be carefully located to maintain the primitive character necessary for the enjoyment of the Park. Thus the development proposed has been concentrated near the South Entrance with the exception of the visitor center and administration building, which are at the mouth of Oak Creek Canyon. Although the Oak Creek residential and utility areas are eventually to be abandoned, the necessity for use of these facilities for twenty or thirty years warrants their consideration in the overall circulation in the Regional Plan.

Alternate visitor center sites near the Virgin River Bridge and adjacent to the Zion Inn development were considered in favor of the Oak Creek site. Limited space, difficult topography and the inopportune setting of the Oak Creek site offer unusual interpretive potential not found in the alternate sites.

The ultimate plan provides for complete separation of National Park Service and public-use facilities. From the standpoint of circulation and physical improvements, this separation is accomplished by the Virgin River and its accompanying screen of trees.

( ) Principal Facilities

(a) Circulation.--The principal feature controlling the circulation is the South Entrance road extending from the South Boundary to the Virgin River Bridge. This road is proposed for reconstruction. The major changes include the following:

Realignment to bring the road nearer Zion Inn and the service station, plus providing an access road to this development at a lower grade for trailer use.

Construction of a new Oak Creek Bridge, approximately 600 feet east of the present bridge, plus a 100-car parking area to serve the proposed visitor center.

An additional minor realignment is proposed to ease the sharp curve approaching the existing Virgin River Bridge from the south. Two public intersections on this road are proposed: one providing access to the concession development, campground and amphitheater and the other leading to the visitor center. Two other minor intersections provide for service traffic only. One provides access to the Oak Creek residential and utility area, visitor center service court and under the proposed Oak Creek Bridge to the utility and residential development on the east side of the river. Convenience for service traffic flowing from the present Oak Creek development to the proposed facilities on the east side of the river prompted the proposal of this service road under the new Oak Creek Bridge. The underpass also cancels the need for another service exit road which would be located on difficult topography in a cut section of the proposed main road. The second service road leads to the proposed residential and utility area from the South Entrance

(b) Visitor Use.--Existing visitor use facilities include Zion Inn, cafeteria, gift shop and 50 cabins, service station, 110-site campground and an amphitheater.

Proposed facilities include expansion of campground by about 30 sites, addition of about 75 parking spaces for amphitheater and Zion Inn, and a trailer village of 40 sites to be operated by the concessioner. Although the trailer village is shown as a proposal it would seem wise to reconsider whether or not this development is necessary. Information from park personnel indicates that a small, modern trailer court will be constructed this winter in Springdale and that other private concerns may be contemplating similar construction.

Because of National Park Service policy not to develop facilities which can be provided outside the Park by private enterprise, it seems unwise to build this a trailer village or near a similar outside development. Lack of space suitable for this development and of the park in an additional disadvantage.

The existing museum near the Virgin River Bridge is to be replaced by a visitor center at the mouth of Oak Creek, plus an accompanying 100-car parking area.

(c) Service.--Existing service facilities include the following.

Residential and utility area containing 19 residences, 2 men's dormitories, and utility buildings.

The yard on the east side of the Virgin River containing an obsolete residence, some dilapidated storage sheds and a seasonal employees' trailer area.

Three residences and 2 small office buildings near the Virgin River Bridge.

Extension of the south Park boundary on the east side of the Virgin River will provide space for a new residential and utility area. Additional seasonal and permanent housing are needed to supplement the existing facilities. In addition, no expansion of housing is contemplated in the Oak Creek area and space should be available in the new area for replacement of both residential and utility buildings as the existing structures become obsolete.

A sizing circle and crushing plant are proposed for the area on the east side of the river now occupied by the storage yard, trailers and residences.

(2) Utilities

Water.--The Culinary Water System is generally satisfactory. Future needs will be handled by additional service and storage for the new residential and utility areas. The present irrigation system will need minor revisions around the visitor center site to utilize more effectively the available supply.

Sewer.--The existing disposal system across the river from Oak Creek will be abandoned in favor of a site east of the proposed residential and utility area. This site is approximately 50 feet above the present system and will require a pumping system.

Power.--The present substation and power line along the lower slope on the west side of the Canyon are exposed and directly in view from the main Park road. A proposal now under negotiation with the California Pacific Power Company provides for relocating the substation and power line on the east side of the Canyon, behind a screen of trees bordering the Virgin River. Service to the Oak Creek visitor center and residences will be on a common line with the existing telephone service which is located directly adjacent to Oak Creek. The main line, as proposed, will re-cross the Virgin River and the Park road about [illegible] feet south of the Virgin River Bridge and tie-in to the existing line behind the three residences and Park office.

Zion National Park, Utah
Name of Park

Prepared by Ronald N. Mortimore, Landscape Architect Date 11-19-58
Name and Title

REVIEWED

WESTERN OFFICE, DIVISION OF DESIGN AND CONSTRUCTION

Architect s/ Milton Swatek, Acting Date 11-20-58

Engineer s/ P. E. Smith Date 11-19-58

Landscape Architect s/ Robert G. Hall Date 11-20-58

Safety s/ Wm. H. Richardson Date 11-19-58

REGIONAL OFFICE

Recreation Resources Planning s/ [illegible] Date [illegible]

Interpretation [illegible] Date [illegible]

Operations [illegible] Date [illegible]

RECOMMENDED

[illegible] Date [illegible]
Superintendent

s/ P. E. Smith, Acting Date 11-20-58
Chief, Western Office, Division of Design and Construction

[illegible] Date [illegible]
Regional Director

Date
Chief Landscape Architect

APPROVED

Date
Director

MASTER PLAN

FOR THE PRESERVATION AND USE

OF

ZION NATIONAL PARK, UTAH

Chapter 7, Design Analysis

Drawing No. NP-ZIO-3340-A, East Entrance with Utilities

Prepared by: Jon L. Lar on
Landscape Architect

Date: February, 1963

Supervisory Approval: _____

Date: _____

February, 1963
Rev. February, 1964

General Considerations. The area is in the higher desert region near the Park's easternmost boundary. Here the East Entrance Road follows Clear Creek Canyon to the tunnel and down Pine Creek Canyon to Zion Canyon. There is a need for increased facilities, of a permanent type, to permit operation of this Entrance Station on a year-round basis.

Year-round operation was discontinued some years ago because the utility system and residence were not adequately insulated for winter operation. The need to haul water, because there is no supply in the area, has been a deterrent to needed year-round operations. The drilling and provision of a well in the [illegible] 1962 will eliminate the water supply problem when the water system is constructed. The need to generate electric power has been a deterrent to needed year-round operations. The prospect of a commercial source of power for the area in the near future will eliminate this problem.

Permanent operation of this station by a Resident Permanent Ranger will provide direct and proper supervision of entrance fee collection and other entrance station activities. Permanent operation will allow much greater Public Park protection and visitor contact throughout the year than can be provided [illegible] from Park Headquarters in Zion Canyon. The problems associated with hunting adjacent to the Park, livestock [illegible] and trespass, road [illegible] and visitor use of the East Fork area can most effectively be handled from the East Entrance.

The Park records show that [illegible] June, July and August, vehicle fees collected at the East Entrance [illegible] the South Entrance. If this trend continues the operation of the East Entrance Station will have to be expanded on a daily and seasonal basis. The best operation would be to have facilities for [illegible] the [illegible] that have been [illegible] from Park Headquarters [illegible]. Communications would be costly and difficult to coordinate [illegible] station operation. The State of Utah has been [illegible] improvement of the highway from Mt. Carmel Junction to the East Entrance. The highway has been improved, reconstructed and upgraded to a 55-mile per hour or better road. Travel is sure to continue to increase with the highway improvements and the completion of Glen Canyon Dam. Creation of Lake Powell and the Glen Canyon National Recreation Area facilities will be an impetus to increased travel in the region. The East Entrance of Zion National Park must be developed to operate efficiently with the increased travel to serve the Park visitor [illegible] Park visitors.

February, 1965
Rev. February, 1966

Circulation. The approach [illegible] road is Utah Highway 15. It extends through the Park from the north, through the South Entrance and connects U. S. Highway 91 on the west of the Park with U. S. 89 on the east of the Park. The road is important economically, as the southernmost paved connection between these two U. S. highways in the rugged canyon country of southern Utah and northern Arizona. There is non-Park traffic to be contended with until another road is constructed to connect the two U. S. highways and bypass the Park. This area is the beginning point of the East Rim truck trail which is an administrative road. It is a long-range proposal to improve this for visitor access to some of the scenic East Rim viewpoints to disperse the increasing visitor use of the limited area of Zion Canyon. The initial 500 feet of the truck road is very steep; grades are in excess of 12 percent. To serve the area's small development and improve the grades at the start of the East Rim Road, a change in the alignment of the road is necessary. The grade of the East Rim Road can be reduced to less than 6 percent, and access to the area's development will be around 5 percent. Interior circulation for the developed area will be a 20-foot by 12-foot wide spur road driveway to a paved 30-foot by 40-foot service court for the residence and garage storage building with [illegible]-car parking court for the apartment building.

Visitor Use Facilities. The East Entrance Station for collection of vehicle fees and distribution of Park information pamphlets is existing. This is the initial contact with all visitors arriving from the east to visit Zion National Park. A comfort station is proposed to serve visitors entering or leaving the Park at this point. To accommodate visitors who stop for the comfort station or for information from the ranger on duty at the Entrance Station, widened parallel parking for [illegible] cars is proposed on each side of the road at the Entrance Station. Until visitor use facilities are developed in the East Rim area, the East Rim truck trail will be restricted. When the road is improved and opened to visitor use, an information contact station should be developed at a site near the beginning of the road but away from the entrance station so as not to congest the Entrance Station operation.

Management Facilities. In addition to the Entrance Station and the above, there are one [illegible] existing in the area. The [illegible] residence [illegible] The area [illegible] [illegible] [illegible]

[illegible] February, [illegible]
Rev. February, [illegible]

for housing other personnel to operate the Entrance Station. The apartment will be four units and constructed for year-round use if necessary. A garage and storage building is needed for equipment and supplies. The two existing structures are stone masonry exteriors and a harmonizing type of block exterior will be used on the new structures. These minimum facilities will permit management to provide adequate protection to the high east country through year-round control and surveillance.

Utilities.

Water. The existing system is a small concrete storage tank and shallow line to the residence. The water is hauled from Zion Canyon to the storage tank by truck. This system will be abandoned.

As a part of the proposed system a well was drilled in the summer of 1962, about 200 feet northerly of the Entrance Station, and 300 feet easterly of the residence. This well is 926.5 feet deep, with a water level of 365.82 feet, with an estimated yield of 10 to 20 gpm. This well will be utilized as the source for a new water system to serve the area. The new system will be constructed for year-round operation. From the well, water will be pumped to a 40,000 gallon steel reservoir about 900 feet north of the area and 100 plus feet higher. This will provide adequate storage and pressures for domestic use, as well as fire protection for the development.

Sewer. The existing residence and trailer is served by a small septic tank. This will be abandoned and a collection and disposal system constructed for the whole area. The residence, apartment and comfort station sewage will be collected and treated in a 4,250 gallon septic tank. The septic tank and leaching field will be constructed across the entrance road from the development and the well. The new system will be constructed for year-round operation.

Power. The existing residence and Entrance Station are served by a small generator in a building 100 feet northwest of the residence. This system is not adequate for the expansion of the area. Commercial power will be available in the near future. The Garkane Electric Cooperative Association proposes to extend service to development along the Mt. Carmel Highway. Very little additional line will be required to include our development. The power will be overhead. The construction on the north side of the Park road in this area. This will not interfere with the Park view. It will not be visible anywhere in the short distance to reach the development and [illegible]

at least 300 feet from the road. Except for the present operation and the need to pump water, commercial power will be available for development. It will require generated power in the interim to pump water to enable the Park to discontinue hauling water to the area from Zion Canyon.

The service to the apartment, garage storage building and residence will be overhead. The service for the well, comfort station and entrance station will be underground. These lines can be direct burial in the water line trenches which is a direct routing to each facility.

Communications. There is an existing field telephone line to the area from Headquarters. This is erratic and very unpredictable. Radio is a more dependable type of communication. The improvements made in recent years in the Park radio system have made obsolete the field telephone. When commercial power is available for the East Entrance radio equipment, it will have a dependable radio communication with the Park fixed and mobile units.

MASTER PLAN

FOR THE PRESERVATION AND USE

OF

ZION NATIONAL PARK, UTAH

Chapter 5, Design Analysis, Oak Creek Area

Drawing No. NP-ZIO-2115-C, Oak Creek

Prepared by: Jon R. Larson, Landscape Architect Date: January, 1963

Drawing Approved: Conrad L. Wirth, Director Date: May 12, 1958

January, 1963

General Considerations. The area is in lower Zion Canyon, one and a half miles north of Springdale, Utah, the Park post office. Oak Creek is the drainage of a large natural amphitheater in the west escarpment of Zion Canyon. Oak Creek connects with the North Fork of the Virgin River, which is the principal stream in Zion Canyon. The steep walls of colorful sandstone which enclose the Oak Creek amphitheater, are known as the "Towers of the Virgin". Two very prominent towers are the "Altar of Sacrifice" and the "West Temple". This area is not available for public use as it is presently the major Service housing and maintenance area for the Park. It is a long range objective to make Oak Creek Canyon available for public day uses when Service facilities are developed elsewhere.

Circulation. On the west side of the North Fork of the Virgin River is the major Park circulatory road in the area. This is a through road from Springdale, Utah to Mount Carmel, Utah, connecting portions of Utah Route #15, which is a State road connecting U. S. #91 (Interstate #15) and U. S. #89. Three-quarters of a mile inside the South Entrance Station is a channelized intersection for the entrance to the Visitor Center parking area just west of this road. This parking area will accommodate 100 automobiles with added space for busses and towed trailers. One-half mile inside the South Entrance Station is the Oak Creek Road junction. The Oak Creek Road is for Service access to Headquarters, Oak Creek Residential Area, Oak Creek Maintenance Area, and the new Watchman Residential Area. From the Oak Creek Road there is a spur road to the back side of the Visitor Center terminating in the Administrative parking area which has a capacity space for 20 vehicles. From the Headquarters spur road an access route extends to the Watchman Residential Area. This road follows Oak Creek to the Virgin River and crosses an old one-way bridge to the Watchman Area. It passes under the main Park road at the Oak Creek Bridge and this arrangement works very well in separating Service traffic from visitor traffic. The Oak Creek Road from the Headquarters spur junction continues to the Residential and Maintenance Areas. For access to the Residential Area north of Oak Creek, there is a paved dip crossing of Oak Creek. The road continues a short distance beyond the Maintenance Area for access to the Oak Creek Springs and water reservoir part of the area water system.

Visitor Use Facilities. Above Oak Creek and the North Fork of the Virgin River in the natural amphitheater of the "Towers of the Virgin" and the Zion Canyon is the Zion Visitor Center. The main focal point

of the Visitor Center is the glass-walled lobby and surrounding terrace with its spectacular views north and east in Zion Canyon, and west in Oak Creek Canyon. In addition to the spectacular lobby, there is an audio-visual room and an exhibit room devoted to enhancing the visitor's appreciation of the Park. There are comfort station facilities here for the visitor. Adjacent to the visitor facilities are the Park Administrative offices. The combined Visitor Center and Park Headquarters constitutes a large and imposing structure.

Management Facilities. Within the Oak Creek Area there are administrative, residential and maintenance facilities. The Park Headquarters Administrative offices are combined with the Visitor Center discussed above. In this one location are included all the staff offices for Park administration. This facility is new and permanent and is integrated with the long range plan that will eliminate the other management facilities in Oak Creek and make the area available for day use visitor facilities.

Oak Creek Residential Area. This area on the north side of Oak Creek contains 11 various residences and the ranger dormitory, plus 5 garage-storage outbuildings. Of these residences, 5 (Nos. 6, 11, 14, 15, 17) are of recent construction and have an estimated useful life for 25 to 30 years. These are three-bedroom residences with attached garages built in 1950. The ranger dormitory is in good condition and can fill a seasonal housing requirement for many years to come. Three small cabin residences (Nos. 24, 25, 26) can be eliminated along with the adjacent outbuildings as soon as replacement housing is available. The three small residence units (Nos. 8, 9, 10) within the main housing complex fill a need for housing of limited size. These units will be needed for some time to come as replacement housing of this type is not presently programmed.

Oak Creek Maintenance Area. This function will be relocated to a new and larger site as soon as land acquisition of the South Entrance boundary expansion area is completed. None of the present structures are entirely adequate for the function they are performing. In addition, there are numerous maintenance outbuildings in other Park areas that will be centralized at a new site.

Utilities. A detailed discussion will be made in conjunction with area utility drawings to be prepared at a later date. It will suffice for now to say that water and sewage systems in the area are presently adequate. There is a sewage disposal problem for the Park generally which will require corrective measures. Power and telephone service are provided by local utility companies.

MASTER PLAN

FOR THE PRESERVATION AND USE

OF

ZION NATIONAL PARK, UTAH

Chapter 5, Design Analysis

Drawing No. MP-ZI-3335-A, Taylor Creek Entrance

Prepared by: Jon E. Larson Date: December [illegible]
Landscape Architect

Drawing Approved: A. Clark Stratton Date: August [illegible]
Acting Director

[illegible]
Rev. June [illegible]

General Considerations: Taylor Creek is in the northwest portion of Zion National Park known as the "Kolob Section". The site is bounded by U. S. Highway 91 (Interstate Highway U. S. 15) on the west and the Hurricane Cliffs on the east. Public Law 86-387, 86th Congress, approved February 20, 1960, established the Park boundary as the easterly right-of-way line of U. S. Highway 91 (Interstate Highway U. S. 15), in Section 29, T38S, R12W. This Act provides that the State of Utah construct an interchange which will provide vehicular access to Zion National Park. This interchange is located near the south line of said Section 29. (A copy of the Act is attached as Exhibit 1.) There is an area approximately 600 feet wide, east to west, from the highway to the base of the Hurricane Cliffs and 3,000 feet, north to south, from Taylor Creek to the interchange. This area is available for Service development to manage, protect, and operate this portion of the Park. There will, of course, be a new entrance from the interchange on U. S. 91. There is mostly grass and brush cover, except for a limited number of Utah Juniper near Taylor Creek. The slopes of Hurricane Cliffs are wooded with Pinon and Juniper which provide a background for the development as it will appear to the multitude of travelers on U. S. 91. There are no existing NPS facilities or improvements. There is an existing portion of the abandoned two-lane U. S. 91 road with the culverts for Taylor Creek to cover. Adjacent to this is an older narrow concrete bridge over Taylor Creek. There is a Mountain States Telephone Company 12-wire toll line traversing the area north to south, approximately 250 feet east and parallel to the Interstate right-of-way.

There is one parcel of private land within the park boundary and adjacent to the interstate highway. This parcel is owned by Mr. [illegible] J. Graff and consists of 27 acres, more or less. A portion of the old unused roadway of Highway 91 traverses this parcel. On this private holding are an abandoned [illegible], fences and unused stock watering reservoirs. The diversion in Taylor Creek to supply the stock reservoirs has been washed away. The stream channel has cut deeper than the [illegible] ditch to render the diversion and ditch inoperative. This parcel will not be affected with the immediate service development but the acquisition is of great importance to prevent encroachment of uses.

The lands outside the Park boundary are also in private ownership and presently used for agriculture or held undeveloped. Mr. E. J. Graff owns those lands north of the boundary in Section 20, as well as those west of the Interstate right-of-way in Section 29, and the west half of Section 32 to the south.

Mr. William A. Barlocker owns the east half of Section 32 on the south boundary. In Mr. Barlocker's parcel are the abandoned workings of the Epsolon Mine which have scarred the face of the Hurricane Cliffs escarpment. Undoubtedly, access to these two properties in Section 32 will have to be provided from the Zion National Park Interchange by a frontage road as there is no other access provided from the Interstate Highway. The lands to the west are served by the Interchange connection to the old Highway 91, and those north of the boundary by a connection at the New Harmony interchange with old Highway 91. It will not be necessary to maintain a connection with old Highway 91 to the north of Taylor Creek, except for Park administrative and protection purposes to this small area after the inholding is acquired.

The parcel of land within the Park boundary in the west half of Section 29 adjacent to the interchange, that was acquired from the Utah Highway Department, contains a 20 foot wide stock driveway parallel to the Interstate right-of-way line. This provide a stock driveway connection for lands south of the park boundary and the right of way of unused Highway 91 to the lands north of the Park boundary. When acquisition of the Graff parcel of land within the park is completed and the service would desire the state of Utah Highway Department to quit claim the unused Highway 91 right of way the stock driveway could be extended parallel to the Interstate right-of-way to provide a continuous stock driveway connecting property on the north and south of the Park.

This new development is proposed as a part of the approved objectives and policies (Volume I, Chapter 1 of the Master Plan Narrative) for extended visitor access to portions of Zion National Park. The area beyond this entrance is spectacular enough to complete with Zion Canyon, and will distribute the visitor use so that the Park may provide the full measure of public benefit and enjoyment. Taylor Creek is the entrance for the road to Three Lakes, Red Rock, and the Timber Creek Overlook terminus. This opens much of the greater Kolob area for the visitor. There are scenic [illegible]

of Tucupit and Paria Points, Horse Ranch Mountain, The Four Fingers, Timber Creek, Nagunt Mesa, Shunta Butte, and Timber Top Mountain. There are connections with trails into the Middle Fork Canyon, and the La Verkin Creek drainage where the Kolob Arch and Death Point are located.

Circulation: The approach to the area is from the Zion National Park interchange on U. S. Highway 91 (Interstate U. S. 15). At the interchange east exit begins Park Route 7. This Park road up Taylor Creek to Three Forks, Lee Pass, and the terminus at Timber Creek is six miles. This road construction project is now in progress. The initial project is for grading and drainage of about three miles. The second stage will be for grading and drainage to the terminus. The third or completion stage will be for base and surfacing of the entire project. It is now anticipated that all road work will be completed for Visitor Use during 1966.

In addition to this Park major road, a secondary road will be required to serve Park administrative requirements. This will provide access to an employee residential area, and Park district maintenance shop and yard. It will be necessary to provide an access to two parcels of private land outside the Park boundary to the south.

The entire development is visible in all or part to the multitude of travelers on U. S. 91. This requires that the roads be fitted to the terrain as closely as possible to minimize the scars. During the three years that the major road will be under construction, the contractor will be hauling road materials from a borrow area 1-1/2 miles north of the north Park boundary. To facilitate this haul old Highway 91 will be used as a haul road for construction. From just south of the Taylor Creek crossing, a haul road will have to be constructed to connect with the Taylor Creek Entrance road. This portion will be established on an alignment that will be incorporated into the Service road system when the construction is completed. Circulation has been planned to permit the Service to proceed with its construction program of employee housing, maintenance facilities, utilities, etc., and not conflict with the contractor's hauling on the access road. There will be no haul road to obliterate if it is located on an alignment that will serve Service facilities in the future. There will be no conflict in traffic or space that would delay other Service developments in the area.

All roads will be all-season roads open all year. Some snow removals and sanding will be required during the winter months. This is not anticipated to be a major problem in the entrance area or on the Taylor Creek road.

Visitor Use Facilities: An information station with public rest rooms is proposed at the entrance. This will be a modest facility combined with the district ranger Administrative Office. The need is for general park and road information which cannot be successfully dispensed at the entrance kiosk when the fee is collected. Other facilities will be located at specific places along the road and will consist of simple exhibits, signs and markers for information and interpretation of the area. An interpretive shelter is proposed at the road terminus for the Timber Creek Overlook. This will be a contact and interpretive information station operated on seasonal basis. Day use picnic facilities are proposed for the Three Forks Area.

No campground or concession facilities are proposed.

Management Facilities: This area [illegible] miles from Park Headquarters via State Highways. There are [illegible] connecting Park roads and no proposals to construct any connecting Park roads because of the fragile nature of the terrain, and because there is no area to develop visitor or Park facilities in narrow LaVerkin Creek Canyon. Administration of this area will be supervised from Park Headquarters in Zion Canyon. A district ranger will be administratively in charge of the area. Minimum administrative space will be combined with the entrance information station. A small maintenance yard and storage shop building will serve for minimum maintenance operations for the area.

Housing will be required for the area staff. These employees will afford the area additional protection as well as being more readily available for emergencies. The minimum requirement for the area are considered to be:

2 Employee Residences, 3-bedrooms each
1 Employee Duplex Residence, 2-bedrooms each
1 Employee Apartment, Four-Unit

The residential area was selected to provide the employees the most privacy from the Interstate Highway as well as from the Taylor Creek Road. It is the most suitable terrain for residential construction; good slope for drainage, not requiring large cuts or fills; it takes advantage of the scattered junipers for screening; the group is easily served

with utilities; the seasonal housing is separated from the permanent housing; both are convenient to the entrance; the development will appear attractive from the Interstate Highway and Taylor Creek Road. The maintenance shop and yard area site were selected to afford maximum seclusion from the Interstate Highway and Taylor Creek Road without restricting the possibility for future expansion. It relates closely to the housing area and will be served by the same utility system. The development areas are planned to permit future expansion as operational requirements increase the need for housing, administrative or maintenance space.

Utilities.

Power: Electric service will be provided by California-Pacific Utilities Company from existing transmission lines parallel to the Interstate Highway just east of the right-of-way. This line has been reconstructed to a 69 KV line with 12KV lines under the main transmission. The sub-station is at the New Harmony interchange two miles north of the area. The transmission will all be overhead at no expense to the service. The Company has a very attractive rate for electric, water and space heating service, which may operation of air conditioning units on the same meter at the lower rate during the summer. The maintenance area will be served at the commercial schedule. The electric service line will span the Interstate south of Taylor Creek and be carried east to the vicinity of the maintenance shop. Service to residence and apartments will be from the rear. Location of the line near the bottom of Hurricane Cliffs will give it a background and conceal it as much as possible by not exposing it in the area of service to the entrance information, District Ranger Station.

Telephone: Several types of telephone service are available in the area from Mountain States Telephone Company:

1. Toll service, 2-party toll service when available on existing toll line. This service utilizes the hand crank to call an operator to place a call.

2. Rural service, 8-party line service. To provide the service the rural exchange boundaries would have to be extended to include the area with approval of the State Utility Commission. The telephone company would then be required to provide rural service to [illegible] within the boundary extension and there is a question

if their equipment would suffice if additional development occurs as a result of the Service development.

3. Private service, individual or 2-party service extension from the Cedar City, Utah, exchange. This is the most reliable type of service providing the utmost privacy for official business. This is the most expensive also. There is no construction cost to the Service as there is an existing line on which the Telephone Company can underbuild this service to the area. There is a monthly line charge from the south city limits of Cedar City to the District Ranger headquarters, plus the monthly telephone service charge for telephones and extensions. This line charge is output [illegible] on air line distance.

Water: The water source will most probably be a well; an alternate source is Taylor Creek near the Three Forks area. There are several good irrigation wells north and south of the area west of the Interstate. A ground water survey is underway to establish the most desirable and economical source. From either source, water would be stored in a [illegible]-gallon underground reservoir near the point where the Taylor Creek road crosses the [illegible] trail at an elevation of approximately [illegible],275 feet, which is 115 feet higher than the development area and will meet all requirements of fire protection [illegible] for the area.

Sewer: As the development is planned all sewage can be collected from the maintenance and residential area and disposed of by a septic tank and leach field. The disposal area is south of the development area east of the access (haul) road. A small separate septic tank and leach field will serve the Entrance Information District Ranger Station. This would be more economical than building sewer line to connect it to the residential disposal system.

Garbage: It is proposed to dispose of garbage in a sanitary fill which can be located in the area north of Taylor Creek when this property is acquired. There are several old earth dams to be obliterated here, and it would be possible to bury the garbage and regard much of this area in the same operation. Alternate garbage disposal would require a haul of some 15 miles to Cedar City Municipal dump and involve a dumping charge.

Miscellaneous

Flood Protection: Taylor Creek has, on some occasions, overflowed its banks. There is a low bank between the base of the Hurricane Cliffs and the old highway which should diked and reinforced with wire basket riprap to contain flood waters and protect the maintenance and residential area from high water overflow drainage.

Fencing: The Interstate righ-of-way is fenced. The north and south Park boundaries have been fenced from the Interstate to Hurricane Cliffs on Park property. Several gates were required for private property access in both sections. The line on the south and east of the Gruff parcel have been fenced. This fencing will be removed and a portion relocated on the boundary line on the north of the parcel when it is acquired.

MASTER PLAN

FOR THE PRESERVATION AND USE

OF

ZION NATIONAL PARK, UTAH

Chapter 5, Design Analysis

Drawing No. MP-[illegible]-3125-A, Taylor Creek Entrance

Prepared by: Jon P. Larson, Landscape Architect Date: December 1982

Drawing Approved: [illegible] Date: [illegible]

December [illegible]
Rev. August [illegible]

General Considerations: Taylor Creek is in the northwest portion of Zion National Park known as the "Kolob Section". The site is bounded by U. S. Highway 91 (Interstate Highway U. S. 15) on the west and the Hurricane Cliffs on the east. Public Law 86-387, 86th Congress, approved February 20, 1960, established the Park boundary as the easterly right-of-way line of U. S. Highway 91 (Interstate Highway U. S. 15), in Section 29, T38S, R12W. This Act provides that the State of Utah construct an interchange which will provide vehicular access to Zion National Park. This interchange is located near the south line of said Section 29. (A copy of the Act is attached as Exhibit 1.) There is an area approximately 600 feet wide, east to west, from the highway to the base of the Hurricane Cliffs and 3,000 feet, north to south, from Taylor Creek to the interchange. This area is available for Service development to manage, protect, and operate this portion of the Park. There will, of course, be a new entrance from the interchange on U. S. 91. There is mostly grass and brush cover, except for a limited number of Utah Juniper near Taylor Creek. The slopes of Hurricane Cliffs are wooded with Pinon and Juniper which provide a background for the development as it will appear to the multitude of travelers on U. S. 91. There are no existing NPS facilities or improvements. There is an existing portion of the abandoned two-lane U. S. 91 road with the culverts for Taylor Creek removed. Adjacent to this is an older narrow concrete bridge over Taylor Creek. There is a Mountain States Telephone Company 12-wire toll line traversing the area north to south, approximately 250 feet east and parallel to the Interstate right-of-way.

Two separate parcels of private land are within the boundary in this area. Both parcels are in the same ownership (i.e. J. J. Graff). Neither parcel is immediately concerned with development but their acquisition is of great importance to prevent adverse use or development. One parcel north of Taylor Creek contains 77 acres, more or less, and is that portion of the SW1/4 of the NE 1/4 of Section 29 east of the highway right-of-way. The second parcel is that portion of the W1/2 of Section 29 east of the highway right-of-way, which contains 12 acres, more or less. There is a 100-foot state right-of-way across this parcel for access. The lands outside the Park boundary are also in private ownership and presently used for agriculture or held undeveloped. Mr. J. J. Graff owns those lands north of the boundary in Section 29, as well as those east of the Interstate right-of-way in Section 32, and the west half of Section 33 to the south.

Mr. William A. Barlocker owns the east half of Section 32 on the south boundary. In Mr. Barlocker's parcel are the abandoned workings of the Epsolom Mine which have scarred the face of the Hurricane Cliffs escarpment. Undoubtedly, access to these two properties in Section 32 will have to be provided from the Zion National Park Interchange by a frontage road as there is no other access provided from the Interstate Highway. The lands to the west are served by the interchange connection to the old Highway 91, and those north of the boundary by a connection at the New Harmony interchange with old Highway 91. It will not be necessary to maintain a connection with old Highway 91 to the north of Taylor Creek, except for Park administrative and protection purposes to this small area after the in-holding is acquired.

This new development is proposed as a part of the approved objectives and policies (Volume I, Chapter 1 of the Master Plan Narrative) for extended visitor access to portions of Zion National Park. The area beyond this entrance is spectacular enough to compete with Zion Canyon, and will distribute the visitor use so that the Park may provide its full measure of public benefit and enjoyment. Taylor Creek is the entrance for the road to Three Forks, Lee Pass, and the Timber Creek Overlook terminus. This opens much of the greater Kolob area for the visitor. There are scenic vistas of Tucupit and Maria Points, Horse Ranch Mountain, The Four Fingers, Timber Creek, Nagunt Mesa, Shuntavi Butte, and Timber Top Mountain. There are connections with trails into the Middle Fork Canyon, and the La Verkin Creek drainage where the Kolob Arch and Death Point are located.

<u>Circulation:</u> The approach to the area is from the Zion National Park interchange on U. S. Highway 91 (Interstate U. S. 15). At the interchange underpass east exit begins Park Route 7. This Park road up Taylor Creek to Three Forks, Lee Pass, and the terminus at Timber Creek is six miles. This road will be constructed during 1963 and 1964, and surfaced in 1964 and 1965. In addition to this Park major road, a secondary road will be required to serve Park administrative requirements. This will provide access to an employee residential area, and Park district maintenance shop and yard. It will undoubtedly be necessary to provide an access to two parcels of private land outside the Park boundary to the south. There will be an entrance kiosk with parking for approximately 15 cars.

The entire development is visible in all or part to the multitude of travelers on U. S. 91. This requires that the roads be fitted to the terrain as closely as possible to minimize the scars. During the three years that the major road will be under construction, the contractor will be hauling road materials from a borrow area 1-1/2 miles north of the north Park boundary. To facilitate this haul old Highway 91 will be used as a haul road for construction. From just south of the Taylor Creek crossing, a haul road will have to be constructed to connect with the Taylor Creek Entrance road. This portion will be established on an alignment that will be incorporated into the Service road system when the construction is completed. Circulation has been planned to permit the Service to proceed with its construction program of employee housing, maintenance facilities, utilities, etc., and not conflict with the contractor's hauling on the access road. There will be no haul road to obliterate if it is located on an alignment that will serve Service facilities in the future. There will be no conflict in traffic or space that would delay other Service developments in the area.

All roads will be all-season roads open all year. None snow removal and sanding will be required during the winter months. This is not anticipated to be a major problem in the entrance area or on the Taylor Creek road.

Visitor Use Facilities: The first visitor contact will be at the Park Entrance Station kiosk. Here automobile and trailer fees are collected and information leaflets furnished. Immediately inside the entrance station, on the right-hand side, is a visitor parking area for approximately 10 cars. Other visitor facilities are included along the road. There will be numerous pull-offs with interpretive signs, markers and exhibits for the scenic points, picnic sites at the Three Forks Area, and an interpretive contact shelter at the road terminus at Timber Creek Overlook.

No campground or concession facilities are proposed.

Management Facilities: This area is 42 miles from Park Headquarters via State highways. There are no connecting Park roads and no proposals to construct any connecting Park roads because of the fragile nature of the terrain, and because there is no area to develop visitor or Park facilities in narrow Taylor Creek Canyon. Administration of

this area will be directed from Park Headquarters in Zion Canyon. Representatives of the Divisions of Protection, Interpretation, and Maintenance will be in charge of these administrative functions. Maintenance operations will have space at a maintenance shop and yard located so as to be as well screened as possible from public view north of the employee residential area. Housing for the employees is required in the area because it is removed from any community. Employees in residence afford the area additional protection as well as being more readily available for emergencies. The initial housing development is a duplex residence of two-bedroom units and an apartment for seasonal employees of four units. This is inadequate and limits the selection of responsible personnel to staff the area. The residential area is planned for expansion to an operational minimum of:

3 3-bedroom residences
1 4-unit seasonal apartments

As the visitor use pattern of the Park changes through efforts to disperse the visitor into these other scenic areas, more housing and administrative space will undoubtedly be required. The development areas proposed permit additional expansion.

The residential area was selected to provide the occupants the most privacy from the Interstate Highway as well as from the Taylor Creek Road. It is the most suitable terrain for residential construction; good slope for drainage, not requiring large cuts or fills; it takes advantage of the scattered junipers for screening; the group is easily served with utilities; the seasonal housing is separated from the permanent housing; both are convenient to the entrance; the development will appear attractive from the Interstate Highway and Taylor Creek Road. The maintenance shop and yard area site were selected to afford maximum seclusion from the Interstate Highway and Taylor Creek Road without restricting the possibility for future expansion. It relates closely to the housing area and will be served by the same utility system.

Utilities.

Power: Electric service will be provided by California-Pacific Utilities Company from existing transmission lines parallel to the Interstate Highway just west of the right-of-way. This line is presently a 34.5 kv line which the

company proposes to change to a 69 KV line underbuilding with a 12 KV during 1983. The sub-station is at the New Harmony interchange two miles north of the area. The construction will all be overhead at no expense to the Service. The company has a very attractive rate for electric, water and space heating service, including operation of air conditioning units on the same meter at the lower rate during the summer (copies of the rate sheets are attached as Exhibits 2, 3 and 4). The residential rate will apply to each residence. The residential rate will apply to seasonal apartments if individually metered. If they are master metered the commercial rate will apply. The maintenance shop will be served on the commercial schedule. The area electric service line will span the Interstate south of Taylor Creek and be carried east to the vicinity of the maintenance shop. Service to residences and apartments will be from the rear. Location of the line near the bottom of Hurricane Cliffs will give it a background and conceal it as much as possible by not skylining it in the area.

Telephone: Several types of telephone service are available in the area from Mountain States Telephone Company:

1. Toll service, 12-party toll service when available on existing toll line. This service utilizes the hand crank to call an operator to place a call.

2. Rural service, 4-party line service. To provide this service the rural exchange boundaries would have to be extended to include the area which requires approval of the State Utility Commission. The Telephone Company would then be required to provide rural service to others within the boundary extension and there is a question if their equipment would suffice if additional development occurs as a result of the Service development.

3. Private service, individual or 2-party service extension from the Cedar City, Utah, exchange. This is the most reliable type of service providing the utmost privacy for official business. This is the most expensive also. There is no construction cost to the Service as there is an existing line on which the Telephone Company can underbuild this service to the area. There is a monthly line charge from the south city limits of Cedar City to the District Ranger Headquarters, plus the monthly telephone service charge for telephones and extensions. This line charge is computed on air mile distance.

Water: The water source will most probably be a well; an alternate source is Taylor Creek near the Three Forks area. There are several good irrigation wells north and south of the area west of the Interstate. A ground water survey should be made to establish the most desirable and economical source. From either source, water would be stored in a 200,000-gallon underground reservoir near the point where the Taylor Creek Road crosses the horse trail at an elevation of approximately 5,275 feet, which is 175 feet higher than the development area.

Sewage: As the development is planned all sewage can be collected from the maintenance and residential area and disposed of by a septic tank and leach field. The disposal area should be between the Interstate and the Service road to the area.

Garbage: It is proposed to dispose of garbage in a sanitary fill which can be located in the area north of Taylor Creek when this property is acquired. There are several old earth dams to be obliterated here, and it would be possible to bury the garbage and regrade much of this area in the same operation. Off-site garbage disposal would require a haul of some 11 miles to Cedar City Municipal Dump and involve a dumping charge.

Miscellaneous

Flood Protection: Taylor Creek has, on some occasions, overflowed its banks. There is a low bank between the base of the Hurricane Cliffs and the old highway which should be diked and reinforced with wire basket riprap to contain flood waters and protect the maintenance and residential area.

Fencing: The Interstate right-of-way is fenced. The north and south park boundaries will be fenced from the Interstate to Hurricane Cliffs. Several gates will be required for private property access in both sections.

SCHEDULE 21-D
COMMERCIAL SERVICE

APPLICABILITY

This schedule is applicable to commercial consumers within reach of the existing lines of the Company who use the Company's alternating current single phase electric service supplied at approximately 120 and 240 volts for commercial lighting, heating, refrigeration and single phase motors of three horsepower each or smaller through a single meter. Three phase service will be furnished for total connected load of ten horsepower or less under this schedule where such facilities are adjacent to the premises to be served.

TERRITORY

Within the territory served in Iron and Washington Counties, Utah.

RATE

First	60 Kilowatt Hours per month	9.5¢ per Kilowatt Hour
Next	140 Kilowatt Hours per month	6.0¢ per Kilowatt Hour
Next	3800 Kilowatt Hours per month	4.0¢ per Kilowatt Hour
Next	5000 Kilowatt Hours per month	3.0¢ per Kilowatt Hour
All additional	Kilowatt Hours per month	2.5¢ per Kilowatt Hour

MINIMUM CHARGE

$1.25 per kilowatt of connected load per month but not less than $1.80 per month for lighting service nor $1.00 per month per horsepower of connected load for three phase service.

TERMS OF PAYMENT

The above rates are net and apply to all bills paid within fifteen days from date of billing. Gross bills will be obtained by adding five per cent to the bill as computed under the above rates and will apply to such bills as remain unpaid fifteen days after date of billing.

MASTER PLAN

FOR THE PRESERVATION AND USE

OF

ZION NATIONAL PARK, UTAH

Chapter 5, Design Analysis

Drawing No. NP-ZIO-2110-A, Grotto Picnic Area With Utilities

Prepared by: Jon F. Larson Date December, 1963
Landscape Architect

Drawing Approved: _____ Date _____

December, 1963
Rev. February, 1964

General Considerations. The Grotto is about half way up Zion Canyon Road, three miles from the Bridge Junction to the south and three miles from the road terminus at the Temple of Sinawava. The Grotto is a wooded glen under the towering escarpments of Red Arch Mountain and the Great White Throne. The area has been utilized for camping for many years. Across the road is a trail hub where a suspension footbridge crosses the Virgin River and trails lead to the West Rim and Angel's Landing upstream and to Emerald Pool and the bridge crossing at the Zion Lodge downstream. This is a popular day-use area and the overnight camping facilities are crowding the expansion of adequate day-use facilities. There is no real need for camping in the area as proposed expansion in the Watchman Area at the South Entrance will provide adequate camping facilities. There is an immediate critical need for day-use picnic facilities in the Park. The increase of outside overnight accommodations has increased the demand for day-use type facilities in the Park. This is an initial step in the long range objective of eliminating all overnight facilities in Zion Canyon.

Circulation. Access to the area is directly from the Zion Canyon Road. The existing campground circulation is a compound loop with parking spurs for each campsite. Access to the group area across Grotto Creek is directly from the main road and is a hazardous junction by reason of its location on the curve, sight distance because of heavy foliage and the steep grade and fishhook alignment of the spur. The parking for trail users is adjacent to the main road and hazardous because it is necessary to back into traffic lanes to leave the area. All the existing vehicle circulation will be changed. For the picnic area a 50-car parking area is proposed with access at both ends to the main road. For trail use a 40-car parking area of the same type is proposed across the road from the picnic area. Entrances to the parking areas are staggered to avoid direct cross traffic on the main road. Parking for the group area will accommodate 10 cars and the entrance has been relocated to overcome the hazards of the existing entrance. The middle path will be relocated to develop trail parking and foot paths will provide access to the suspension bridge from the parking. Circulation in the picnic area will be foot paths on much of the old road alignment. Through the middle of the picnic area the path will be wide enough to accommodate a service vehicle for maintenance operations in connection with cleaning comfort stations and collecting trash from containers without having to carry all of it to the parking area.

Utilities Facilities. The 10 campsites are to give way to a day-use picnic area. Adequate serving of utilities are included in the plan for the Watchman Area at the South Entrance to the Park. The picnic [illegible] 50 picnic tables and [illegible] picnic area across Grotto Creek. There are three comfort stations in the area two of which were

reconditioned in 1972 and they will provide some the facilities for the day-use area. This will be an ideal day-use area to control. The hikes can be taken from the area. The shorter hikes are to Emerald Pool and Angel's Landing and the longer hike is up the West Rim Trail. From Emerald Pool hikers can go on to the Zion Lodge Area and return along the bridle path or the trail from the Lodge to the picnic area. The campfire circle for evening interpretive talks will be retained for occasional use. Schedulling will be limited to a few evenings a week or upon request of groups using the area within Park personnel limitations. It would always be available for spontaneous self-use of any evening picnickers who desire to come to sit around the campfire and exchange stories or sing songs. Looking into the future, if the riding horse concession is ever separated from the Utah Parks Concession, this would be a good location to consider for a corral for saddle horse rentals. The bridle path from the Lodge to here could be obliterated. Further north of Grotto Creek could be available for a limited number of hotels. Parking facilities will be much better here than at the Lodge area.

Maintenance Facilities. [illegible] the [illegible] for [illegible] Area [illegible] the [illegible] Park [illegible] the [illegible] area, the [illegible] be utilized. A [illegible] available during the [illegible] to [illegible] to the [illegible] area. In the [illegible] the [illegible] be utilized for storage quarters if a saddle horse corral is developed in the area. It is not presently foreseeable that it would be advisable to obliterate the cabin.

Utilities. The utility [illegible] be included in a part of [illegible] Grotto Utility Drawing No. MP-ZIO-[illegible]. [illegible]

[illegible] The [illegible] Grotto Creek [illegible] Park [illegible] Zion [illegible] Park [illegible] Park [illegible] exceed the daily [illegible] A hypochlorinator [illegible] the [illegible] [illegible]

the area. In conjunction with the reconstruction, a drain for the reservoir will be included. This will permit draining the reservoir as well as aid in cleaning and flushing out sand which settles in the reservoir.

Sewer. The area has its own collection system and septic tank disposal and leach field. The leach field is west of the area and north of the Zion Canyon Road. The collection system is shallow and deteriorating from age. Root stoppages are very common. It is proposed to reconstruct the collection system, bury it deeper using epoxy-lined asbestos cement pipe with root-tight joints to reduce stoppages and the increasing maintenance costs.

Power. The area has a Service-maintained underground system which is extended to the area from a commercial power source at Zion Lodge about a mile away. This is a 3-conductor 2300-volt line to the transformer vault in the rear of the stone cabin. The service is for the cabin and three comfort stations. No pumps or heavy loads are involved. It is proposed to reconstruct this system. The new type of direct burial cable insulation is so much superior to the type used when this system was installed over twenty years ago that maintenance could be greatly reduced as well as insure a more [illegible] able supply of power.

Miscellaneous. The tree growth in the area is very dense. It seems that most trees do not head out naturally. They are tall with spare tops and should be thinned out and topped to produce more vigorous and healthy trees. The Box Elder trees could all be removed to promote the growth of the natural larger cottonwood. Where carpets of [illegible], the grasses and ground cover will have an opportunity to [illegible] with themselves. Tree thinning will produce the growth of grasses and ground cover by permitting more sunlight.

VOLUME III

Master Plan Development Outline

Zion National Park, Utah

I. GENERAL INFORMATION

a. Park Origin

Mukuntuweap National Monument was created by proclamation of President Taft July 31, 1909, to preserve what is known today as Zion Canyon. The original proclamation set aside only 15,[illegible] acres which lay on either side of the Canyon.

On March 18, 191[illegible], by proclamation President Wilson added [illegible],600 acres of land, all in Washington County, and changed the name to Zion National Monument. This addition was for the purpose of including the Great West Canyon and the Parunuweap Canyon in the area.

By the Act of November 19, 1919 (41 Stat. 3[illegible]) Congress established Zion National Park and included the lands formerly in the monument.

June 1[illegible], 1[illegible], Congress approved Public Law [illegible] (Congress), which added [illegible],000 acres to the Park.

On January [illegible], [illegible], [illegible] the area [illegible] the colorful Kolob Canyons in part of the famous [illegible], notable examples of geologic processes in the west and [illegible] National Park. The area of the monument is [illegible] acres of which 3[illegible],[illegible].7[illegible] is Federally owned. This area supplements Zion National Park, and, as it lies contiguous to the park, should be incorporated within the park boundaries.

Total Areas (acres)

	Federal	[illegible]
Zion National Park	[illegible]	[illegible]
Zion National Monument	[illegible]	[illegible]
	12[illegible]	[illegible]

b. Facility Data

Zion National Park and Monument with an area of [illegible] acres is located in the heart of the spectacular desert and canyon country of the Southwest. It is [illegible] miles south of Salt Lake City; [illegible] miles from Cedar City and [illegible] northeast of St. George, [illegible] on [illegible] National Park [illegible] [illegible] [illegible]

(3) Relation to Other Parks

North Rim of Grand Canyon, Arizona, 125 miles southeast
Bryce Canyon National Park, 90 miles northeast.
Cedar Breaks National Monument, 59 miles north, via Cedar City.
Pipe Spring National Monument, 61 miles south, via Kanab.
Lake Mead National Recreation Area, 206 miles southwest.
Capitol Reef National Monument, 233 miles northeast, via Richfield.
Timpanogos Cave National Monument, 295 miles north.

Zion National Park is related to the above areas of the National Park System not only because of general locality but by very definite scientific and historical ties. From the rocks in the depths of the Grand Canyon to the recent lavas of Cedar Breaks National Monument there is recorded a comprehensive geological history of the earth. The formations extend upward from the oldest rock in the bottom to the Kaibab limestone which is found on the rim of the Grand Canyon. The rocks of Zion take up the story where Grand Canyon leaves off and carry it on to the beginning of the Cretaceous period. The Cretaceous up to the present is represented by the rocks in Bryce Canyon and Cedar Breaks. Nowhere else is the recent history of the settlement of the whole region better portrayed than at Pipe Spring National Monument. Thus it is seen that the relation existing between these parts of the National Park System is not only one of proximity, but one of related parts of the same regional story of earth history.

(4) Accessibility

Highways

Motorists traveling U. S. Highway No. 91, from the north may turn off at Anters Junction, 35 miles south of Cedar City, and those from the south may turn off at Harrisburg Bench Junction, 10 miles north of St. George and reach Zion over State Route No. 15. Motorists on U. S. Highway No. 89 may turn off on State Route No. 17 at Mount Carmel Junction, entering Zion by the East Entrance.

Railroads and Busses

Zion is reached from Cedar City, Utah, a terminal of the Union Pacific Railroad, by motor bus service provided by the Utah Parks Company. Busses of several trans-continental bus lines operate from Salt Lake City and Los Angeles through Cedar City and St. George. Connections are also made with the Santa Fe Trails System at Mt. Carmel Junction.

Airlines

[illegible] fast, deluxe airplane service from all points in the United States to Salt Lake City is available [illegible] and Western Airlines. Service is also available on Western Airlines from Los Angeles with stops at Las Vegas, Nevada, Cedar City, and Salt Lake City, Utah.

Transportation with the Parks

The Utah Parks Company under contract with the Department of the Interior (Contract No. I-[illegible]C(NP-[illegible]2) has the preferential right to all transportation within the park. The company furnishes service from Cedar City and arranges [illegible] to nearby and transport [illegible] points. All [illegible] taxis transfer the Company buses in arriving at the Park. [illegible] from the [illegible] free park [illegible] Cargo to the Temple of Sinawava.

(3) Climatic Conditions

Climate

[illegible]

[illegible]

[illegible]	[illegible]
[illegible]	
[illegible]	Y
[illegible]	
[illegible]	

[illegible]

[illegible] Season: All types of [illegible]

Weather Data

Average total snowfall [illegible]
Average annual days with [illegible] of rain or more [illegible]
Months with wet days - March and August with [illegible]
Average maximum temperatures [illegible]
Average minimum temperatures [illegible]
Coldest month - [illegible] Average [illegible] Average Maximum
Coldest [illegible] January [illegible] December [illegible] Average Maximum
Average number of sunny days per year
Average number of [illegible] days per year
[illegible]

WEATHER DATA TABLE

Month	Average Temp	Average Snowfall	Average Max Temp	Average Min Temp	[illegible]
January	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
February	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
March	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
April	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
May	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
June	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
July	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
August	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
September	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
October	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
November	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
December	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Annual	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(c) [illegible] Features

[illegible] features are plat[illegible] cliffs [illegible] and [illegible] slopes [illegible]

The region is part of the Colorado Plateau, the south and west exposure of the Navajo Sandstone, an escarpment of from 1,[illegible] to 4,[illegible] feet high, is the most spectacular. Of the isolated buttes West Temple, elevation [illegible] feet, towers over the nearby Virgin River which at Springdale has an elevation of [illegible] feet. These are the highest and lowest elevations in Zion National Park. Zion National Monument's highest [illegible] Horse Ranch Mountain [illegible] feet [illegible] sea level. [illegible] isolated [illegible] La Verkin Creek [illegible]

Major drainage is the Virgin River whose course is southwestward to Lake Mead in Nevada. Important tributaries of the Virgin within park and monument boundaries are: Pa[illegible] (East Fork of the Virgin River), Deep Creek, K[illegible] [illegible] Wash, [illegible] Creek and [illegible] Creek.

[illegible]

V[illegible]

[illegible] presented [illegible] Zion National Park is open throughout the year and [illegible] winter [illegible]

TRAVEL STATISTICS FROM 192[illegible] to 1953, INCLUSIVE

Year	Cars	Passengers	Stage	Total	Remarks
[illegible]	[illegible]	3,433	[illegible]	3,[illegible]	First Report
1941	[illegible]	2,752	[illegible]	2,[illegible]	
[illegible]	1,1[illegible]	3,822	28[illegible]	4,1[illegible]	
1943	1,[illegible]	5,955	453	6,4[illegible]	Utah Parks Co[illegible] operation [illegible]
1944	2,[illegible]	7,812	580	8,4[illegible]	
1945	[illegible]	15,641	1,1[illegible]	16,81[illegible]	Road finished, Lodge open
1946	[illegible]	20,263	1,701	21,964	
1947	[illegible]	21,2[illegible]	3,[illegible]	24,[illegible]	Mt. Carmel T[illegible] started
[illegible]	[illegible]	25,0[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	26,232	[illegible]	33,3[illegible]	
[illegible]	[illegible]	21,241	[illegible]	[illegible]	T[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	P[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Depression
[illegible]	21,3[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	29,6[illegible]	[illegible],392	2,882	9,2[illegible]	
193[illegible]	[illegible],842	120,512	3,881	124,393	
[illegible]	[illegible]	132,[illegible]	[illegible],695	137,[illegible]	
[illegible]	[illegible],213	[illegible],393	[illegible],[illegible]92	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	P[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	2[illegible]	[illegible]	[illegible]	Report post war year
[illegible]		2[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	2[illegible]	[illegible]	29[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	3[illegible]	
[illegible]		[illegible]	[illegible]	[illegible]	
[illegible]		[illegible]	[illegible]	[illegible]	
[illegible]		[illegible]	[illegible]	[illegible]	
[illegible]		[illegible]	[illegible]	3[illegible]	

Travel by Month

Month	[illegible]	[illegible]	19[illegible]1	19[illegible]2
October	[illegible]	10,738	10,011	10,[illegible]2
November	[illegible]	[illegible]	[illegible],903	[illegible],702
December	1,691	5,224	[illegible],491	4,394
January	1,[illegible]2	[illegible],872	[illegible]	3,279
February	[illegible]	[illegible]	[illegible]	[illegible]
March	[illegible]	[illegible]	[illegible]	[illegible]
April	[illegible]	[illegible]	[illegible]	21,[illegible]
May	[illegible]	[illegible]	31,999	24,[illegible]
June	[illegible]	37,[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] Trends in Use

[illegible]

[illegible]

[illegible]

Public Law 102 [illegible] Congress approved [illegible], 1963

Administrative Order [illegible] 1963

Regulations (36 [illegible])

Admission, Guide, Elevator and Automobile Fees

(2) No fee shall be charged residents of Cocorah County, Arizona north of the Colorado River, Washington or Kane Counties entering Zion National Park [illegible] in conduct of their lawful occupations or business.

Regulations [illegible]

[illegible] roads and through tunnels

e **Master Plan Status**

[illegible]

Problems for Planning

[illegible]

Prepared by Paul R. Franke Date 9-7-53

REVIEWED

Regional Office	Washington Office
Architect	
Landscape Architect	
Engineer	
Forestry	
History	
Natural History	
Concessions Management	
Lands	
Safety Recreation Planning	

[illegible]

(Signed) Paul R. Franke Date September 7, 1953
Superintendent

Date
General Superintendent or Coordinating Supt.

Date
Asst. Regional Director (Design & Construction)

Date
Regional Director

Approved (SGD.) W. G. CARNES Date MAY 11 1954
Chief, Division of Construction

APPROVED

Approved (SGD.) THOMAS J. ALLEN Date MAY 18 1954
Director

[illegible] PARK
UTAH
[illegible], DEVELOPMENT [illegible]
19[illegible]1

P[illegible] CHARACTERISTICS OF THE AREA

[illegible] Values

[illegible] values of Zion National Park are [illegible]. Dutton, in describing his first view of Zion stated,

> "In an instant there flashed before us a scene never to be forgotten. In coming time it will, I believe, take rank with a very small number of spectacles each of which will, in its own way, be regarded as the most exquisite of its kind which the world discloses. The scene before us was the Temples and Towers of the Virgin."

Colorful cliffs [illegible] several [illegible] shrubs, [illegible] of birds [illegible] outdoor [illegible] ultimate of [illegible] powerful [illegible] their [illegible]. The earliest settlers in naming this area "Zion" again expressed this reverence.

The massive temples, towers, cliffs, arches, and canyons, [illegible] in shape and [illegible] in color, [illegible], all are the result of a variety and combination of geologic processes. [illegible] slopes, [illegible] and ledges, [illegible] streams [illegible] this type of topography, and the [illegible] variety of plants and animals which find suitable habitat and [illegible] environment [illegible] to produce [illegible]. [illegible] processes [illegible] ce [illegible].

Geology

The origin and development of Zion Canyon and other similar canyons on the southwestern margin of the Markagunt Plateau, with special reference to the Hurricane Fault and its controlling effect on the erosion pattern and the resulting topography is, without doubt, the primary basic interpretive [illegible] of the [illegible]. Here are spectacularly illustrated the significance of extensive earth movements and the importance of the slow but irresistible forces of erosion. But these manifestations are only the [illegible] setting. There is much more which does not meet the eye. [illegible] forces [illegible] operate [illegible] in rocks of different [illegible] of hardness and different composition and structural characteristics. Colors, Prominent and noticeable in the great cliff faces and dominant rock temples, result from chemical actions which take place only in rocks of certain composition. Again, the composition of rocks is of fundamental importance in their physical and chemical breakdown, in determining the types of soil formed and the resulting plant [illegible] composition. Thus, an [illegible] [illegible].

Biology

Second to the geological features, [illegible] geological [illegible] biological [illegible] [illegible] climatic, slope, [illegible], and [illegible] habitats [illegible] effectively [illegible] [illegible].

[illegible]

[illegible]

yield pottery (mostly fragmentary), bone and stone tools, corn-cobs, remnants of cotton cloth and yucca cordage, and human skeletal remains. These sites are "Puebloan" or "Anasazi" in general type and affiliation, but are not typical Puebloan. The type of culture (way of life) represented by the various artifacts are generally similar with local distinctions, to Anasazi material of the San Juan River drainage.

At an uncertain date, presumably upon or after the disappearance of the prehistoric Anasazi-type ([illegible]-Pueblo) people, the historically-known Paiute Indians [illegible] Utah. They were first seen in the region by the first white men to come through [illegible], the Dominguez-Escalante party in the Fall of A. D. 1776. Modern Indians, however, [illegible] invoked Zion Canyon as a place of mystery and [illegible].

Although the Paiutes did not occupy Zion Canyon, there is considerable evidence that their presence in the region materially affected the discovery, exploration, and settlement of the region. [illegible] too [illegible], the Paiutes [illegible]

[illegible]

[illegible]

Because of [illegible] general importance [illegible] movement of [illegible] pioneers, the history of [illegible] significant [illegible]. [illegible]

[illegible] Zion National Park [illegible]

[illegible]-Inspirational

Although previously seldom considered in the analysis leading to interpretive developments, it appears that more consideration might well be given to the aesthetic-inspirational values of an area. Much of the writing and descriptive material produced by Dutton and [illegible]; the photographs by [illegible] and [illegible]; the sketches and paintings of [illegible], [illegible], [illegible], [illegible], and [illegible] all illustrate the desire to capture the feeling and spirit of Zion Canyon in words, on film, or on canvas. In developing the interpretive program, [illegible] interpretive [illegible] their [illegible], exemplified [illegible] in the camera-carrying [illegible] of today, [illegible] spirit and feeling of Zion in its many moods. In considering the aesthetic-inspirational values, it should be remembered that three different viewpoints have been expressed; the "broad view" of Dutton, the "narrow or closed-in [illegible]" of [illegible], and the "peaceful and quiet view" [illegible].

[illegible]

Ever since [illegible], [illegible], Powell, and Dutton first visited the Zion area in connection with their studies of [illegible], special attention [illegible] research and interpretation. [illegible]

[illegible], [illegible], *[illegible] Geology and Scenery of [illegible] Zion [illegible]*. [illegible]

[illegible]ology

[illegible]ological fields have been less thoroughly investigated than those of geology. However, considerable work has been done along taxonomic lines, and fairly complete lists of animals and [illegible] complete lists of plants found in the Park are available. Ecological problems offer considerable opportunity for research. [illegible] only one major publication on this subject has [illegible] appeared.

[illegible] following publications typify the ecological work [illegible]:

[illegible], Arthur [illegible], Biotic Relationships of Zion Canyon, Utah, with Special Reference to Succession. Ecological Monographs, Vol. III No. 2, April 1933, Duke University Press, Durham, N. C.

[illegible], [illegible], [illegible]
[illegible], [illegible]

[illegible], [illegible], [illegible]
[illegible]

[illegible], Russell [illegible], The Birds of Zion, Bryce and Kaiparowits. Zion-Bryce Natural History Association, 1947.

[illegible], [illegible], [illegible]
[illegible], 1947.

[illegible], [illegible], [illegible]
Salt Lake [illegible], [illegible].

[illegible]ology

Archeological [illegible] in the Zion-Bryce [illegible] have been [illegible] in [illegible] by a C. [illegible] project sponsored by the [illegible] of [illegible]. Of the [illegible] sites [illegible] [illegible] have been found [illegible]; [illegible] [illegible]. [illegible] [illegible] [illegible]

recording [illegible] sites (in part duplicating those surveyed in 19[illegible]), in and close to Zion National Park. Notes on these sites and archeological materials collected from them are stored at the park. No systematic study of the results of these surveys has yet been made, although much good material is on record.

Major published references on the archeology of the Zion region include:

[illegible], Neil M., Archeological Observations North of the Rio Colorado. Bureau of American Ethnology Bulletin #82, Government Printing Office, 1926.

Judy Jack R., and Stirland, Robert D., An Archeological Reconnaissance in Washington County, Utah. Anthropological Papers No. 9, University of Utah, Salt Lake City, 1957.

[illegible], [illegible], [illegible] Anthropologist, [illegible].

[illegible], [illegible], [illegible], [illegible]. Copy on file at Zion National Park.

HISTORY

[illegible] information is available, but [illegible] of the history of Zion [illegible], has been [illegible]. The history of Zion [illegible] Park, is so intimately [illegible] history of [illegible], in general, [illegible] political [illegible] strictly local; even [illegible] following list of [illegible] publications:

Alexander, [illegible], Father Escalante's Journal, [illegible]. Utah Historical Quarterly [illegible], 1942. Utah State Historical Society, [illegible], Utah.

[illegible], Maurice [illegible]. [illegible] Anthropologist, [illegible], [illegible].

Fremont, J. C., Report of Exploring Expedition to the Rocky Mountains in the year 1842, and to Oregon and North California in the years 1843-44. Printed by order of the Senate of the United States. Gales and Seaton, Printers.

Carvalho, S.N., Incidents of Travel and Adventure in the Far West with Colonel Fremont's last Expedition. 1857

[illegible], Francis, The Mountain Meadows Massacre, [illegible]. Stanford University Press. Stanford, California, 1950

Powell, J. W., Exploration of the Colorado River of the West and Tributaries Explored in 1869, 1870, 1871 and 1872. Government Printing Office, 1875.

[illegible], [illegible], [illegible]

[illegible], Herbert [illegible], "Scientific Exploration [illegible]". American Journal of Science. Vol. [illegible], October 1[illegible].

[illegible], [illegible] Stone, Under Dixie Sun. [illegible] Washington County, [illegible]. Published by the Washington County Chapter of the Daughters of the Utah Pioneers. Printed by [illegible] Press. Parowan, Utah.

The Utah State Historical Society, State Capitol Building, Salt Lake City, has a [illegible] of many volumes of particular interest to the student of southwestern Utah history, in addition to the general references previously cited. Many important journals and diaries of early-day settlers in Washington County have been printed. Volume XI, [illegible], and [illegible], [illegible] are [illegible] articles of [illegible] of [illegible] and other [illegible] and [illegible].

[illegible]

[illegible]

Although regional geological and geographical interpretation has been fairly well covered, there is still need for a detailed interpretation of many special subjects. In the field of historical geology, practically nothing has been done thus far. The lower Triassic strata contain marine limestone (Timpoweap and Virgin members of the Moenkopi) which has an interesting invertebrate fauna. The Shinarump and Chinle formations contain much fossil [illegible] remains of Triassic reptiles, amphibians, fish and fern and cycad leaf impressions. Fossil tracks of reptiles and amphibians occur in the Moenkopi, and Dinosaur tracks are found in the upper Chinle or lower Rayenta. A recent discovery of [illegible] dinosaur tracks on the left fork of North Fork Creek in Zion National Park might very well be developed as an [illegible] exhibit. The Carmel and Entrada (Jurassic strata) also [illegible] invertebrate fauna. [illegible]

[illegible]

[illegible] of "jointing" in the Navajo sandstone and its [illegible] erosional pattern.

- [illegible] of the stratigraphic section in [illegible]

- [illegible] fossil [illegible] features [illegible] Park.

- [illegible] Fossil [illegible].

- A [illegible] of the invertebrate [illegible] Triassic and Jurassic of the Zion Park [illegible].

[illegible] of Triassic [illegible] in the [illegible] of [illegible] of the [illegible]

- A [illegible] of the Amphibian and Reptile tracks and trackways in the Moenkopi of the Zion Park Region.

2. Significance of the presence of Dinosaur tracks in the Zion Park Region.

Block II

[illegible] very little detailed work has been accomplished. Taxonomic work should be continued, well-defined collected, and all known lists checked and brought up to date. [illegible] studies of localized or resident forms offer a [illegible] field of investigation; however, the most interesting and [illegible] problems are ecological in nature. There is, perhaps, no other area of similar extent that has so profoundly influenced the adaptation of animal and plant forms to the topography, as has been the case in the Zion Park Region. A preliminary list of research projects follows:

- [illegible]

- [illegible] walls.

4. The [illegible] of the Hanging Gardens and the development [illegible] community.

- [illegible]

- [illegible]

- [illegible]

- [illegible]

Archeology-Ethnology

Only preliminary studies have been started in connection with the early human inhabitants of the region. The archeological investigations should reveal the significance and origin of peripheral cultures and their association with the Zion regional topography. Archeological needs include (1) collation and checking of notes, other data and collected materials from site-survey work already done; (2) study and analysis of material in survey collections, and preparation of technical papers and a general report thereon; (3) completion of archeological survey, to cover all sites within the park and monument area, and technical studies based thereon; (4) cooperation, to whatever extent might prove feasible and desirable, with the University of Utah program of archeological investigations in reservoir project areas and elsewhere in the general vicinity.

Little known, and less appreciated, is the story of the southern Paiute in this region. [illegible] about in the [illegible] history. [illegible] William R. Palmer of Cedar City, Utah, has a large amount of manuscript material assembled, as well as a most interesting collection of modern Paiute arts and crafts and every effort should be made to get these studies into print or otherwise made available for study by other students of the southern Paiute.

History

The [illegible] structures within or adjoining various national parks and monuments. Such settlements and structures include Little Zion, Shunesburg, Mountain Dell, [illegible] Spring, [illegible]. It is hoped that this [illegible] project [illegible] be realized soon, as [illegible].

[illegible]

Number and Type of Visitors

In considering the details of interpretive planning, it should be strongly emphasized that the most important [illegible] is the number, habits, and interests of park visitors, and the general trends of visitor use. In [illegible] groups of park visitors effectively, it is essential that there be adequate space and facilities for handling them [illegible], safely and efficiently; proper planning requires an accurate knowledge of the number of units (persons or automobiles) per hour and per day that must be served. Furthermore, before permanent construction is authorized, potential increase in travel and adequate opportunity for future expansion of the facility must be given full consideration.

Modern highways and modern automobiles bring an entirely different "average visitor" to the national parks today than we were called upon to serve interpretively 20 or more [illegible] ago. Many visitors [illegible] "[illegible]", [illegible] are very [illegible] and physically active. Many families [illegible] short trips. [illegible], not [illegible], [illegible] [illegible] [illegible].

Whereas in the past a large percentage of park visitors patronized the free campgrounds, the more extensive use of the trails into the back country, we must now make park facilities available to homes of the less hardy. [illegible] more emphasis on better [illegible], [illegible] interest [illegible] features [illegible] seen and [illegible] [illegible] on the [illegible] from their automobiles. Interpretive planning, in [illegible], should [illegible] analysis of [illegible] exhibits, [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible]:

[illegible] 1930 to 1[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] 1920 to 19[illegible]

Travel Year	Cars	Passengers	State	Local
192[illegible]	1,[illegible]30	[illegible],955	[illegible]	[illegible],408
1924	2,[illegible]0	7,812	[illegible]	[illegible],000
1925	[illegible],[illegible]2	1[illegible],[illegible]41	[illegible],[illegible]	1[illegible],617
1926	[illegible],[illegible]0	[illegible],263	1,7[illegible]1	[illegible],9[illegible]
1927	[illegible],[illegible]3	21,25[illegible]	[illegible],[illegible]2	[illegible],30[illegible]
1928	7,[illegible]2	2[illegible],07[illegible]	[illegible],[illegible]	3[illegible],016
[illegible]	[illegible],[illegible]	[illegible],232	[illegible],[illegible]	[illegible],[illegible]
[illegible]29	16,633	51,241	[illegible],[illegible]	55,297
[illegible]31	18,215	56,748	[illegible],[illegible]	59,180
1932	16,[illegible]0	[illegible],56[illegible]	1,[illegible]	[illegible],650
1933	1[illegible],9[illegible]0	[illegible]7,548	[illegible],[illegible]15	[illegible],[illegible]
[illegible]	21,[illegible]	[illegible],31[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	[illegible],[illegible]	[illegible],38[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	27,[illegible]2	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	1,[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	[illegible],[illegible]	[illegible],36[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	[illegible],[illegible]	1[illegible],3[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	[illegible],[illegible]	7[illegible],143	1,[illegible]	7[illegible],177
[illegible]	1,[illegible]	[illegible],621	[illegible]	[illegible],[illegible]
[illegible]	13,[illegible]	[illegible],[illegible]	[illegible]	[illegible],[illegible]
[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible]	[illegible],[illegible]
[illegible]	[illegible],[illegible]	[illegible],9[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	[illegible]	313,[illegible]	[illegible],[illegible]	[illegible],[illegible]
[illegible]	[illegible] (*)	. . . . .		[illegible],[illegible]

[illegible]

[illegible]

([illegible])

[illegible]	1951 (Estimate)	1950	1949	1948	1947	1946	1941
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible],366	[illegible]	[illegible],606
[illegible]	[illegible]	[illegible]	[illegible],528	[illegible]	[illegible]	[illegible]	[illegible],909
[illegible]	[illegible]	[illegible]	5,819	[illegible]	[illegible]	[illegible]	1,691
[illegible]	[illegible]	[illegible]	2,153	[illegible]	[illegible]	[illegible]72	1,[illegible]
[illegible]	[illegible]	[illegible]	2,[illegible]	[illegible]	[illegible]	[illegible]	1,[illegible]
March	[illegible]	[illegible]	6,256	—	[illegible]	[illegible]	3,868
April	[illegible]	[illegible]	16,147	11,77[illegible]	[illegible]	[illegible]	6,832
May	[illegible]	29,306	32,014	[illegible]	[illegible]72	[illegible]	15,356
June	136,[illegible]	69,322	60,846	52,372	[illegible]	[illegible]	33,254
July	129,[illegible]	64,[illegible]	[illegible],093	[illegible]	[illegible]	[illegible]	12,851
[illegible]	121,79[illegible]	[illegible]	[illegible],234	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

[illegible]

[illegible], of course, [illegible] interpre- [illegible] naturalist [illegible] only information [illegible] (June [illegible]. [illegible] at other [illegible]

During the 1950 travel year, the following number of visitor contacts through the Park's interpretive facilities was made: October 13,[illegible], November [illegible], December [illegible],761, January 1,916, February [illegible], March 5,[illegible], April 12,[illegible], May [illegible]3,195, June 6[illegible],204, July 71,[illegible], August [illegible],97[illegible], and September 34,181. Thus a total of 30[illegible] interpretive contacts were made in the Park which recorded a total of 320,994 persons entering through the checking stations, giving [illegible] of [illegible].14 interpretive contacts.

THE INTERPRETIVE PROGRAM

Personnel Requirements

Personnel needs and requirements at Zion are difficult to explain, due to the fact that the Park is the coordinating headquarters for two major parks and five important National Monuments. This situation is further complicated by the fact that two of these monuments are from 200 to 250 miles distant from the coordinating headquarters, yet the naturalist staff of Zion National Park is required to provide supervisory interpretive [illegible] all [illegible] these areas. [illegible] parks, [illegible] are open to visitors throughout the entire year, [illegible] a staff of only two men, in winter; hence, only one, [illegible].

The GS-11 Park Naturalist serves as Administrative Park Naturalist in addition to carrying out numerous routine interpretive duties, and is stationed in Zion National Park throughout the entire year. The GS-7 Park Naturalist is stationed at Zion National Park during approximately six winter months and [illegible] Bryce Canyon National Park for the other six months. While at Bryce Canyon National Park, he assumes the full-time duties of Acting Park Naturalist for that area. From November through April of each year, the Zion Museum (which is the only interpretive-museum-information service available) is kept open eight hours per day and seven days per week (56 hours per week) by these two permanent Park Naturalists. This visitor contact work leaves them very little time for administrative and supervisory work, interpretive planning and other long range activities.

There are seven seasonal ranger naturalist positions set up for Zion and Bryce Canyon National Parks. These men are usually assigned — four to Zion and three to Bryce Canyon — for approximately three months, or a total of 21 man-months. An analysis of monthly travel figures of these areas points to the need for a full schedule of interpretive activity from May 15 to September 15, a total of 28 man-months of needed ranger-naturalist activity yearly.

Not until the existing naturalist staff is considerably expanded will it be possible to provide more than token interpretive supervisory and planning assistance to the five important national monuments (Cedar Breaks, Capitol Reef, Pipe Spring, Timpanogos Cave and Zion National Monument). None of these areas has any interpretive staff, except a seasonal ranger-naturalist assigned to Cedar Breaks during the summer months of heaviest travel.

Initial Visitor Reception Facilities

The Zion Museum serves as the interpretive-information center of the park. Although strategically located along the main park through highway close to the junction of the Zion Lodge spur road, the museum building and parking area, one is equate to handle all park travel, are now far too small for the large summer visitor load, and on peak days constitute a serious bottle neck and traffic hazard. Because of overcrowding in the small museum, many visitors who might otherwise make less-only use of this interpretive center, pass up the opportunity to gain an understanding of the geology, biology and history of the Park.

Typical Park Tour Route

The Zion-Mt. Carmel Highway (State Route 15) which passes across the Park in an east-west direction carries the full traffic load of park visitors and offers many spectacular and breathtaking views to the automobile traveler. However, the bulk of the visitor leaves this through highway near the museum, taking the mile drive up beautiful Zion Canyon to the end of Zion Canyon terminus parking area. This is the major tour route of the Park and brings visitors to the public campground, Lodge,

[illegible] and [illegible] and [illegible] and interpretive displays.

Conducted Trips

The only regularly conducted field trip at present (1951) is the Zion Narrows Trail Hike. This hike is conducted twice daily (9:00 a.m. and 3:00 p.m.) during the main travel season from approximately May 30 to September [illegible]. The trail is all hard surfaced, in an [illegible] place, and is only approximately one mile in length, making a round trip a little over [illegible] miles. The groups gather at the Narrows Trailside Exhibit, near the Temple of Sinawava Ranger Area, for a brief orientation talk, and then proceed, under the guidance of a Ranger Naturalist, to follow the right bank of the Virgin River to the beginning of the real Zion Canyon Narrows. The round trip is usually made in from two to two and a half hours.

The narrow canyon, the Virgin river, the springs, the hanging gardens, the stadium and the Hiker Memorial plaque, and the animals and plants along the trail, [illegible] interpretive material. [illegible] allow [illegible] interpretive stops along the trail [illegible] side of the [illegible] from the [illegible] hikes. [illegible] to arrive in time for the afternoon hikes. From an interpretive, recreational and esthetic use point, this is, without doubt, one of the finest conducted trail hikes in the National Parks. Its success and popularity is largely dependent on the facilities (exhibits of the trail) and the personality, enthusiasm and experience of the naturalist guide.

Conducted Trips (Proposed)

Now and [illegible] are proposed that it be [illegible] to conduct [illegible] hikes. These are, [illegible], several [illegible] trails [illegible] utilized, [illegible] the [illegible] are not [illegible] the Narrows trail hike popular and less satisfactory. Proposals are [illegible] in the [illegible] program to hard surface these trails. They are now [illegible] for formal [illegible] hiking. A [illegible] follows:

1. The [illegible] Trail — .5 miles one way, [illegible] and spectacular views of Pine Creek Canyon [illegible], the Zion-Mount Carmel highway and tunnel, and the towering west wall of Zion Canyon, including [illegible] Temple and the towers of the Virgin. Its location makes this trail better suited for a self-guiding operation than for conducted trips.

2. The Emerald Pools Trail — 1.5 miles one way, [illegible] geology and ecology.

3. The [illegible] Trail — 1. [illegible] trail, especially for [illegible] various species of ferns.

4. Angels Landing Trail — 2.5 miles one way—a [illegible] hike—with spectacular views [illegible] geology and ecology in [illegible] Canyon.

5. [illegible]

The present schedule of interpretive lectures consists of one talk each evening, seven days per week, [illegible] lecture. One lecture [illegible] at 7:30 p.m. beginning [illegible] 15 p.m. [illegible] Company. Immediately following the [illegible] lecture, the [illegible] Lodge presents a [illegible] movie [illegible] sound. [illegible] is still continued [illegible] the [illegible] is illustrated [illegible] the [illegible] film-[illegible] assistant [illegible] is to furnish by a projector operator from a [illegible] the lecture. The film is [illegible] 30 minutes. There are [illegible]

when a hall with a seating capacity of [illegible] persons would be completely filled.

The other evening lecture is presented out of doors at an improvised site in the Grotto Campground. The entire installation is temporary in nature, due to the plan to abandon the Grotto Campground as an overnight Camp and move all camping to the South Campground. The temporary benches now installed at the Grotto Campground lecture site seat only about 100 persons. This is often not enough. The projection equipment and installation are not satisfactory in many respects, and the location of the site on the main trail through the campground is unfortunate. The lecture starts at [illegible] p.m. and usually lasts about one hour. It is illustrated with natural color slides. The program is informal and usually has a question period both before and after the regularly scheduled lecture. Due to shortage of personnel, the lecturer must operate the projection equipment along with his presentation of the evening talk.

Future Program

[illegible] we [illegible] that [illegible] concerning [illegible] the [illegible] program, [illegible] was developed [illegible] lecture [illegible] the [illegible] campground [illegible] the [illegible] development, [illegible] the [illegible] site has never been utilized and is now in very poor condition. If and when the South Campground is fully developed, and additional interpretive personnel are available, it is proposed that an evening program be presented at this site also.

[illegible] the [illegible] give consideration to [illegible] as location and general setting [illegible] and [illegible] be [illegible], and when interpretive personnel is available, it is proposed that an evening [illegible] also be presented at this location. This [illegible] in [illegible] interest [illegible] and [illegible] prospects.

Visual Aids

[illegible] visual aids in our overall [illegible] program [illegible] are [illegible]; [illegible],

while inadequate facilities are now available for this phase of the work. Most of the visual aids, projection equipment and supplies (cameras, color film, mounting glass, carrying cases and filing cabinets) have been furnished through funds provided by the Zion-Bryce Natural History Association. Adequate budget allowances for developing this essential interpretive service have been requested.

Museum Facilities (existing)

Zion Museum

The Zion Museum is situated in the old headquarters building at the junction of the Zion-Mount Carmel Highway. It consists of a single room, forty-five feet long by fifteen feet wide in actual exhibit space. A small combination naturalist office and library takes up one portion of the room. The exhibit materials include one section of the room devoted to pioneer relics, two [illegible] early history of Zion, a [illegible] logy of Zion, [illegible] Zion region, [illegible], [illegible] Zion, [illegible] in Parunuweap Canyon, and [illegible] the archeology of the region. [illegible] geological [illegible], [illegible]laneous geological, archeological and historical objects of interest to the visitor. The Zion-Bryce Natural History Association has furnished a large display case in which are exhibited the various publications, maps, and bulletins that are available to the interested visitor. There have been times [illegible] day [illegible] benefit from its [illegible] facilities.

[illegible] ([illegible])

Zion [illegible]

[illegible] museum-administration building [illegible] Zion [illegible] Prosp[illegible] [illegible]

prospectus should now [illegible], [illegible] sidering the [illegible] current planning should [illegible] the development of a more up-to-date and comprehensive program. In view of the fact that this proposed structure is to be a combined museum and administration building, it is evident that the [illegible] unit cannot be properly planned as if it were separate and distinct.

It should be emphasized that the public use portion is but one of the major requirements of the [illegible]. [illegible] and curatorial space is of equal importance. All interpretive exhibits and other devices and [illegible] on adequate research, and accurately identified for study by serious students. Naturalists' offices; adequate workroom, laboratory, and darkroom facilities; and safe storage for valuable equipment such as cameras, projectors, and other costly tools and instruments should be provided (see Bennett's "Check List For Museum Planning" manuscript in Region Three Office).

Orientation Stations

[illegible]

Orientation Devices

Cast bronze orientation discs with arrow pointers have been installed at the termini of [illegible] Mountain, Weeping Rock, [illegible]. [illegible]

[illegible] termini of the [illegible] point. It is also proposed [illegible], [illegible], [illegible], [illegible] Check [illegible].

[illegible]

[illegible]

[illegible] the [illegible] of Minnewava automobile and bus parking area. The working drawing for this structure is Drawing No. NP-ZIO-2010, approved by Acting Director Demaray on 7/28/39. This building was completed and temporary exhibits installed in the early Spring of 1940.

The primary purpose of this exhibit is to provide information and orientation relative to the unique features to be observed along the mile-long Narrows Trail and to encourage visitors to take this [illegible] easy hike over an all-weather hard-surfaced trail. A secondary purpose of this exhibit and the surrounding stone seats is to provide a comfortable gathering place for persons who desire to participate in the Naturalist conducted hikes over the Narrows Trail. A short orientation talk is always given at this site before parties are taken on the conducted hike. A third purpose of this exhibit is to provide general orientation and information on the entire park area and its interpretive services, for [illegible] any people who reach this site without any previous [illegible] personnel, [illegible] the short stay at the entrance [illegible]. A [illegible] Exhibit Plan to [illegible] [illegible] [illegible] [illegible] [illegible].

[illegible] Exhibits

Little thought has been given thus far to any Exhibits in Place. The entire section of the Hanging Gardens along the Narrows Trail might be considered an Exhibit in Place. The large number of recently discovered Dinosaur tracks in the deep canyon of the North Fork of Naroo Fork Creek, which can at present be reached only by a [illegible]-trail, may some day be given consideration [illegible] exhibit.

[illegible] Fire Areas (Outdoor Lecture Sites)

[illegible] large fire areas, one being [illegible] and [illegible], have been established in the National Park and have been [illegible] as the [illegible] "Lectures".

Stabilized Areas

[illegible]

e excavated, partly restored and stabilized. Since these sites are so nearly inaccessible, being reached only by saddlehorse or hiking trails, they do not appear to be subject to vandalism and no further proposals for interpretive use or stabilization are being considered.

Historic Houses

There are no historic houses within the present boundaries of Zion National Park. There is, however, a very interesting old house known as the DeMille House, which stands on the site of old Shunesburg in Parunuweap Canyon. This site is just outside the present park boundary, and is privately owned. Serious consideration has been given at times to the advisability of trying to extend the boundaries of the park to include this site, and to designate this old house as a Historic House. The portion of the building left standing is quite impressive, both size and as to the very fine masonry of the construction. Up to the present time, this place [illegible] difficult of access and fairly free from vandalism, but jeep and similar vehicles now make it possible for many more persons to reach the site and [illegible] to deface and [illegible] it is desirable.

Self-Guiding Nature Trails

Several attempts have been made to provide for self-guiding nature trails, but in nearly every instance, vandalism has to a large degree destroyed the effectiveness of the labeling system, and efforts to maintain it have been abandoned. It is proposed [illegible] developing a type of self-guiding nature trail more satisfactorily in other service areas, that will be vandal-proof, inexpensive, and of interest to the hiker. [illegible] have been [illegible] for [illegible] following [illegible] trail [illegible] be [illegible] in [illegible] under [illegible] conditions: -- (1) The Hurricane Trail, (2) Sleeping Rock Trail, (3) [illegible] Trail, (4) The Great [illegible] Trail, and (5) The Kolob Canyon Trail.

Miscellaneous Interpretive Aids

[illegible] station, [illegible],

[illegible] by the National Park Service and the Secretary of the Interior, and (19[illegible]) incorporated under Utah State law, is operated by the permanent naturalist staff and subsidizes to a major degree many informational and interpretive services provided in Zion and Bryce Canyon National Parks and the coordinated national monuments. Present funds for Interpretation are barely adequate to cover salaries of permanent and seasonal personnel and to pay necessary transportation expenses.

Practically all modern photographic, projection and [illegible] educational equipment now in use has been secured through funds provided by the Zion-Bryce Natural History Association, and the association has invested heavily in (1) furniture and fixtures, (2) library books and scientific periodicals, and (3) exhibit cases and exhibits, not otherwise obtainable.

MIDDLE WILD AND CONSERVATION

[illegible] major national parks and monuments, a wide range of difficult fields confronts [illegible] interpretation and [illegible] time there are [illegible] in which [illegible] the Park. [illegible] the most [illegible] of the mule deer herd, and lastly, were established in the [illegible] population of mule deer in Zion Canyon and on its rims. [illegible] problems require careful study by trained and experienced [illegible] to interpret the [illegible] and current solutions.

Intro Conversation

The [illegible] "[illegible]" is [illegible]

"In [illegible] to 20 inches [illegible] temperatures from [illegible] to 115 degrees. The winters are [illegible] mild; the summers long and hot. The [illegible] varies from year to year, month to month, in even [illegible] precipitation [illegible] spring and [illegible]

for violets, orchids, penstemon, sego lily, and in shady nooks the columbine and monkey flower. During the excessive heat of summer, day-blooming plants are largely replaced by such night-blooming species as evening primrose, four o'clock, spiderwort, and the glorious sacred datura—a veritable moonlight garden. During the late summer and fall the roads pass through fields of asters, sunflowers, bee flower, Indian paint brush, and [illegible] flower; and the cool of [illegible] are made brilliant by [illegible] cardinal flower. There is little evidence of [illegible] distribution of plants but [illegible] or [illegible] equal [illegible]. The range in kinds of soil, exposure to the sun, and the amount of ground water is so great that indigenous plants of the Lower Sonoran, Upper Sonoran, Transition, and even Canadian zones together with most migrating plants, find favorable habitats. On the floor of the canyons are groves of boxelder, willow, cottonwood, and ash. Above them on the talus slopes, and here and there in cracks on the towering walls grow juniper, pinon, live oak, and manzanita—stunted trees and shrubs characteristic of the Upper Sonoran Zone. On the [illegible] Terrace [illegible] at altitudes of [illegible] feet, yellow pine, [illegible], [illegible] fir, [illegible] Canadian [illegible] these [illegible] [illegible] feet below; [illegible], [illegible] forms are [illegible] normally prefer much higher [illegible]. [illegible] pinon pine and junipers characteristic of the Upper Sonoran Zone grow on sunny slopes at 7,000 feet, and 2,000 feet below them, in a shady valley, are yellow pines and [illegible] of the Transition Zone....The distribution of animal life in Zion National Park is indeed varied, for [illegible] [illegible] slopes [illegible] Sonoran, Transition and Canadian [illegible] [illegible] [illegible] [illegible].

[illegible] birds [illegible] [illegible], [illegible], [illegible], phoebe, [illegible], kinglet, kingfisher, burrowing owl, [illegible], [illegible] quail, Treganza's heron, [illegible], hummingbirds, [illegible], kingbird, and many flycatchers. The [illegible] [illegible], [illegible],

[illegible], ring-tail, [illegible], [illegible] ground squirrel, rock squirrel, skunk, [illegible], [illegible], kangaroo rat, pocket gopher, and rabbits. Perhaps the forms least expected to be found in the park are the reptiles and amphibians.

Among the more familiar ones are the following lizards:—chuckwalla, leopard lizard, collared lizard, western whiptail, desert scaly lizard, [illegible], and Gilbert's skink. Other forms are the snakes:—great basin rattlesnake, gopher snake, king snake, [illegible] snake, [illegible] snake, [illegible]-banded ground snake, [illegible] night snake, and the rare patch-nosed snake. Amphibians recorded from the park are as follows:—tiger salamander, leopard frog, desert tree-toad, [illegible]-foot toad, rocky mountain toad, and [illegible] toad. Invertebrate forms are likewise varied and abundant, but perhaps the most noted invertebrate is the Zion snail (Petrophysa zionis) which lives only on the wet walls of nearly sheer cliffs along the Narrows of the Virgin River."

[illegible] environment. [illegible] canyon [illegible] their effects [illegible] are applied unevenly in different parts. The sinuosities of the canyon, the varying exposures and slopes of the cliffs and talus, and the [illegible] distribution. [illegible] role [illegible] the [illegible] of (a) light, (b) heat, and (c) [illegible] the production of [illegible] run-off [illegible], [illegible] water, and [illegible] (etc.) [illegible].

[illegible] continually to work, [illegible] rocks from the face of the cliffs, thus modifying the physiographic features, has [illegible] particular importance to the [illegible] on the steep slopes [illegible] difficulty [illegible].

The Habitats

The effect of the interaction of the physical setting of the canyon and the climate is to break the region up into a great many different habitats for plants and animals to occupy. This produces a pronouncedly complex system within a very limited area. And yet, the effect usually consists of sharp contracts with but little intergradation between the various units. This sharp separation of the distinct habitats helps to simplify the analysis of communities by producing sharp boundary lines to the range of some organisms, but on the other hand, increases the complexity in such cases of the mobile organisms which may range temporarily into adjacent habitats of different type because of contiguity.

The Biotic Communities

As would be expected from the great diversity of the habitat conditions in Zion Canyon, there is also great diversity in the biotic communities occupying the habitats. [illegible] interesting [illegible] communities. [illegible] occupying the floor [illegible] slopes, cliffs which for the most part are bare except [illegible] where trees and bushes grow from cracks [illegible] rock. ....If these communities be analyzed, it is found that these groups contain plants of very diverse character, such that they might be considered equivalent in latitudinal distribution to stages ranging from the coniferous forests of lower [illegible] to the desert shrub growth of the plateaus of Mexico ([illegible] latitude), or in altitudinal distribution to those occurring on slopes of a high mountain from the lower coniferous [illegible] to [illegible] feet ([illegible] to four thousand feet in altitude). [illegible] the arrangement [illegible] varied types in such a limited area—a canyon [illegible] in length [illegible] diverse types [illegible] between the altitudes of [illegible] and [illegible] feet. The boundary lines between the communities are usually sharp and distinct. They are largely determined by angles of slope or exposure or [illegible] the limits [illegible] spread [illegible] streams.

[illegible]

[illegible]

[illegible] establish [illegible], [illegible] graphic [illegible]: [illegible] probably [illegible] development [illegible] upon the [illegible] historical sequences of the [illegible] community [illegible] upon the historical background; [illegible] its immediate interest in connection with [illegible] interpretation of community relationships. [illegible] succession, [illegible] result of [illegible] conditions [illegible]

[illegible]

[illegible] Native species. [illegible] three major forms [illegible] under this [illegible] are as follows:— [illegible], elk, [illegible] horn sheep.

[illegible]

[illegible] only species [illegible] animal [illegible] follows:— [illegible]

[illegible] other browse [illegible] differ [illegible] browse line [illegible]

[illegible]

The Virgin River, its [illegible] forks and numerous tributary streams, provide the only free flowing water resource of the area. There are no sizeable lakes or ponds. The Virgin River has always supported aquatic forms native to this area. A few non-game fish exist in the stream, but because the stream is so subject to torrential flooding, it does not provide suitable habitat for game fish. Very few fish (either game or non-game) are able to survive the floods which carry enormous amounts of silt and debris from the heavily overgrazed and overbrowsed [illegible] of the tributary streams which [illegible] suitable for purification.

A considerable number of amphibians, and a few reptiles and birds, are quite dependent on the stream or the springs for a suitable habitat and food supply. Various water rights are held by the National Park Service. Water from the Virgin River is used in a limited manner for irrigation. Several of the larger springs have been developed by the Virgin [illegible] water needs [illegible] the [illegible].

Prepared by: [illegible] Date: [illegible]
Park Naturalist

Edited by: Nathan C. Dodge Date: 5/24/57
Nathan C. Dodge
Regional Naturalist

Zion NM and NP
Region Three, Utah
Development Outline
Summary 8-4-52
Prepared 4-52

FORESTRY SECTION, 13 pages

1. Summary of Fire History to Date. (page 1)
Total of 93 fires in Park, Monument and Protection Zone in last 24 years, about 25% man caused but majority are caused by lightning. About 684 acres have burned, or 28 acres average per year. Normal fire season June 1 - Sept. 20.

2. Forest and Range Protection
a. Fire Control (page 1-2)
Prevention (page 1-2)
Most of man caused fires not due to public but to NPS operations. Additional seasonal rangers are required if fire prevention program is to be successful. The fire prevention program is brought into the orientation meetings conducted by the Service for concession employees and has been very effective.
The only fire hazard reduction recommended is in campgrounds around fireplaces and around dump grounds and utility area.
Pre-suppression (page 2-3)
Annual training courses in fire control are conducted.
A 50 man fire tool cache at headquarters, 20 man at Lava Point during fire season.
No detection structures but one is proposed for Lava Point in monument but land will first have to be purchased. Also need rebuilt telephone line, water system and ranger station at Lava Point.
Suppression (page 3)
Duties of protection organization in fire suppression described.
Written fire control agreements shall be maintained with U. S. Forest Service, Dixie National Forest and Utah State Cooperative Fire Fighter Organization.
Specific Recommendations are listed on page 4.
b. Reforestation - none (page 5)
c. Tree Disease Control (page 5)
No serious tree diseases.
d. Tree Insect Pest Control
Control measures will always be needed in Zion Canyon from mouth of Narrows to boundary near Springdale. Control will not be applied elsewhere except to prevent general epidemics.
e. Browsing and Grazing Control (page 7)
Mule deer tend to concentrate in Canyon. State of Utah cooperates in reducing herds of deer. Considerable grazing in areas on life-tenure privileges.

3. Vegative Cover

a. Description (page 8-10)

b. Aggregate Area (page 10)

Federal and non-federal land totals 143,294.68 acres in Park and Monument. Breakdown or page 10.

c. Special Conditions see pages 10-12.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] maintained by [illegible]:

[illegible], [illegible] Trail
[illegible] 7, West Rim Trail
[illegible] 19, Zion Monument Trail
[illegible], Kolob Trail
R[illegible], Northeast Fire Trail

There are no firebreaks and none are contemplated.

There are no lookout structures, but one is required and recommended for Lava Point in the monument. The site is now being used during the fire season by a fire control aide and ranger. This will [illegible] fire detection in both the park and monument. The Lava Point [illegible] road, construction [illegible] purchase [illegible]. [illegible] station [illegible] boundary of the monument.

The grounded telephone line from park headquarters via [illegible] to Lava Point is the only communication service for reporting fires detected from Lava Point. The line [illegible] recommended [illegible] monument. [illegible]

[illegible]

The main fire tool cache is maintained at park headquarters. [illegible] 20-man toolbox is maintained [illegible].

[illegible]

[illegible]:

1. [illegible] fire [illegible] face [illegible], energetic, [illegible] local [illegible] during [illegible].

[illegible]

be planned in advance [illegible] maintaining control [illegible] the [illegible].

[illegible] will be made if necessary to supplement the local fire forces.

[illegible] shall be kept informed of situations where auxiliary assistance in any form is required or is likely to be required.

[illegible]. To maintain the chain of command, advance training and selection of key supervisory personnel must be [illegible] a uniform plan must be [illegible] to permit orderly execution of suppression operations.

[illegible] control personnel will be [illegible] . . [illegible] service, [illegible] organization. These agreements shall define the extent and zone of operation for each agency, duration of agreement, fix responsibilities for initiating action, extent of assistance in manpower, tools and equipment, rates of pay and methods of reimbursement for services rendered. These agreements should not bind the cooperator to render assistance and services [illegible].

[illegible] forest [illegible]. All [illegible] resulting from the use of fire control equipment shall [illegible] costs of repair, maintenance and replacement. [illegible] the equipment [illegible] any [illegible] shall be [illegible] the [illegible] shall have [illegible] of [illegible].

[illegible]

[illegible] under the [illegible].

[illegible] of [illegible] and [illegible] equipment.

[illegible] for [illegible].

[illegible].

[illegible] tion
None.

[illegible] General

General

Serious tree [illegible] have not been manifest in the park or monument. The broadleaved trees requiring irrigation develop a condition termed chlorosis. Trees afflicted with this exhibit yellow or pale leaves which drop off prematurely. [illegible] defoliation results in reduced growth, twig loss and [illegible]. [illegible]. Chlorosis [illegible] by [illegible] [illegible] of the affliction [illegible]. [illegible] Canyon.

[illegible]

[illegible] of the development [illegible] by the [illegible], control of all tree diseases seriously affecting vegetation in Zion Canyon will always be sought. Control of diseases in other areas will only be applied to prevent contamination of the central area in Zion Canyon.

General

[illegible] by the [illegible] of Forest Pathology, USDA, [illegible], and the Forestry Division, Zion Three Office.

[illegible]

General

[illegible] control measures will always be [illegible] Zion Canyon from the [illegible] of [illegible] and [illegible] [illegible]. Control will not be applied to [illegible] except [illegible] vent [illegible] and [illegible] from developing or to prevent contamination of [illegible] in Zion Canyon. Annual spraying with insecticide for control of defoliators in Zion Canyon has been necessary for the past [illegible] years. Although spraying has been successful in reducing the current attacks [illegible] defoliators, re-infestation occurs from [illegible] below the park. Therefore, [illegible] will be an annual spraying [illegible]. The Division of [illegible] Insect [illegible], [illegible], [illegible], [illegible] with the [illegible] [illegible] [illegible] control measures in the park and monument.

[illegible]

[illegible] Douglas-fir in Douglas County [illegible] to be attacked by [illegible] species of defoliators. This is probably due to the small [illegible] amount of vegetation enclosed by the high canyon walls [illegible] in the lower end to the wide open country. [illegible] have been subject to attack by [illegible] defoliators. Those insects from which [illegible] have been occurring are discussed below:

[illegible] (Malacosoma [illegible]) attacks [illegible] the [illegible] .

[illegible] (Lithophane [illegible]) [illegible] .

Leaf [illegible] (Phyllocnistis tremuloidiella) attacks the foliage [illegible] .

[illegible] (Choristoneura [illegible]) [illegible] pandora . [illegible] .

[illegible]

[illegible]

([illegible]) Browsing and Grazing Control

Overbrowsing by Wildlife

[illegible] in Zion Canyon between [illegible] boundary [illegible] of the park [illegible] blight. Overbrowsing has occurred [illegible] and [illegible] Hollow. This overbrowsing [illegible] grazing by domestic livestock on lands adjoining [illegible] accelerated program of predator control in the general vicinity of the park which permitted [illegible] in the deer population.

[illegible], [illegible] Hollow [illegible] Zion Canyon in cooperation [illegible] Wildlife [illegible]. The Utah State Game [illegible] in [illegible] authorizing [illegible]. [illegible] in the park [illegible], [illegible] and [illegible]. [illegible] careful [illegible].

Grazing by [illegible]

None.

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

Effect of Grazing Use on Wildlife

There is little doubt that the past heavy grazing use has resulted in overbrowsing by the herd which winters in the area. The reduction in numbers of deer through control programs within the park and hunting adjacent to the park environment should relieve the grazing pressure on the browse species. The water for wildlife in these areas is found in springs, tanks built by the rancher, and the snowfall during the winter months.

(3) Preservative Cover

(a) Description

[illegible] a zonal and based on [illegible] or [illegible]. Ponderosa pine and [illegible] may be found on the floor of canyons as well as on the plateaus 3,000 feet higher. Much of the vegetation, particularly [illegible] and juniper-woodland types, [illegible]. The [illegible] bulletin [illegible] Latin [illegible]

[illegible] - [illegible] of [illegible] in [illegible], which is located on the floor of Zion Canyon, occupying land that was under [illegible] in the [illegible] and in lower Zion Canyon. The [illegible] land types [illegible]

[illegible] Pinyon [illegible]; [illegible] (Juniper [illegible]); [illegible] (Juniper [illegible]); [illegible] Juniper [illegible]; [illegible] Pacific Yucca [illegible]; [illegible] (Pinyon [illegible]); [illegible] (Pinyon [illegible]); [illegible] or [illegible]; and [illegible] [illegible].

[illegible] - [illegible]

The dominant species [illegible] sagebrush (Artemisia [illegible]), Mohave rabbitbrush (Chrysothamnus mohavensis), and Parry rabbitbrush (C. parryi). Associated species are Utah white oak (Quercus utahensis), Gambel oak (Q. gambelii), shrub live oak (Q. turbinella) and wavyleaf oak (Q. undulata), and antelope bitterbrush (Purshia tridentata).

Mountain Chaparral - [illegible] acres. This type is found in the higher elevations of the monument adjacent to the pinyon woodland and ponderosa pine forest types. The dominant species are [illegible], Gambel oak, shrub live oak, pointleaf manzanita (Arctostaphylos pungens), Utah serviceberry (Amelanchier utahensis), Saskatoon serviceberry (A. alnifolia), true mountain mahogany (Cercocarpus montanus) and curlleaf mountainmahogany (C. ledifolius). Associated species are big sagebrush, Arizona mountainmahogany (C. arizonicus), chokecherry (Prunus melanocarpa), [illegible] (A. [illegible]) and green ephedra (Ephedra viridis).

Semi-desert chaparral - [illegible] acres. This type is found in the lower elevations under [illegible],000 feet and is dominated by threadleaf snakeweed (Gutierrezia microcephala), broom snakeweed (G. sarothrae), blackbrush (Coleogyne ramosissima), [illegible].

Woodland - [illegible], [illegible] type in the monument. [illegible] woodland types: pinyon woodland, the most extensive, [illegible] woodland in isolated [illegible] higher elevations, and the mixed broadleaved woodland, found along the stream bottoms and in moist soils.

[illegible]

[illegible] The dominant [illegible] are Fremont cottonwood (Populus fremontii), boxelder (Acer negundo), [illegible] alder (A. [illegible]), bigtooth maple (A. grandidentatum), velvet ash (Fraxinus velutina), water birch (Betula fontinalis), [illegible].

Forest type - [illegible] acres. There are several forest types, [illegible], ponderosa pine-[illegible] ponderosa pine-white fir-Douglas-fir. The ponderosa pine type is the most extensive. The forest types are largely [illegible], due in part to location, thin soil on rocks and [illegible]. The dominant species are ponderosa pine (P. ponderosa), Douglas-fir (Pseudotsuga taxifolia), and white fir (Abies concolor). Pointleaf manzanita, [illegible] and the shrub live, wavy leaf, Gambel, and [illegible] white oaks are [illegible] under-story shrubs. The ponderosa pine-Douglas-fir white fir and ponderosa pine-Douglas-fir types are found at the higher elevations in isolated pockets usually on the north [illegible] exposures. These types are not extensive.

Barren - There are [illegible] acres of barren land in the park and monument.

Exotics - Prior to the establishment of the park and monument, the arable land was cultivated by the Mormons. At the present time, there are approximately 15,000 acres of private land in the park and monument. The early settlers and present day private landowners have introduced several so-called "exotic" trees and shrubs into the park and monument. Two of these worthy of mention are the Lombardy poplar (Populus [illegible]) and [illegible] (Ailanthus [illegible]).

Acreage table

Cover type	Acres			
	Park		Monument	
	Fed.	Non-Fed.	Fed.	Non-Fed.
Grassland	[illegible]	[illegible]	[illegible],000	[illegible]
Sagebrush	[illegible]	-	[illegible]	[illegible]
Chaparral	[illegible]	-	[illegible]	[illegible]
Woodland	[illegible]	[illegible]	[illegible]	[illegible]
Forest	[illegible]	[illegible]	[illegible]	[illegible]
Barren	[illegible]	166.0[illegible]	[illegible]	[illegible]
Totals	[illegible]	[illegible]	[illegible]	[illegible]

(c) Special Conditions

Fire hazard

[illegible] shown in the following table:

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Grassland	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]

[illegible] requiring protection from fire [illegible],977
[illegible] forest [illegible]

[illegible]

[illegible], 1[illegible]

Prepared by _____ Date _____

REVIEWED

Regional Office	Washington Office
Architect	
Landscape Architect	
Engineer	
Forestry	
History	
Natural History	
Concessions Management	
Lands	
Safety	
Recreation Planning	

RECOMMENDED

_____ Date _____
Superintendent

_____ Date _____
General Superintendent

_____ Date _____
Asst. Regional Director (Design & Construction)

_____ Date _____
Regional Director

_____ Date _____
Chief of Design and Construction

APPROVED

_____ Date _____
Director

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Form No. 10-740
(Revised April 1949)
57110

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

PROGRAM SUMMARY
SOIL AND MOISTURE CONSERVATION

Three	Zion National Park	Utah
Region	Name of Park or Monument	State

94,881 Acres
Total Area of Park or Mon.

P-42-191-1
Project Area Symbol

Federal Area	94,241
Non-Federal Area	640

EXTENT OF PROBLEM AREAS

Erosion Types	Area Involved Acres
Slight	
Moderate	16,600
Serious	17,900
Critical	3,500
Total	38,000

S A M C WORK NEEDED

Type of Work	Amount of Work No.	Miles	Acres	Estimated Cost
A. Planning and Performance Group				
1. Conservation Surveys			94,881	$
2. Land Classification				
3. Land Use Plans				
4. Performance Inventory			20,000	1,000
B. Soil Treatment Group				
1. Cover Crops				
2. Crop Improvement				
3. Crop Residues				
4. Deep Plowing				
5. Fertilizer				
6. Liming				
7 Meadow Strips				
8. Rotations			94,881	
9. Rough Tillage				
10. Seeding and Planting			3,000	21,000
11. Strip Cropping				
12. Tree Planting	50,000		50	3,500
C. Control and Suppression Group				
1. Brush and Weed Control				
2. Fencing				
3. Pest Control				

Type of Work	Amount of Work				Estimated Cost
	No.	Miles	Cu.yds.	Acres	
Water Control Group					
1. Canals and Ditches					
2. Checks	2000			2000	25,000
3. Conduits					
4. Countouring				1,000	1,000
5. Dams-Detention	1,000		10,000	1,200	2,000
6. Dams-Diversion	1,000		20,000	2,000	4,000
7. Dams-Retention					
8. Dikes			5,000	200	1,000
9. Drops					
10. Field Laterals					
11. Jetties	600			300	12,000
12. Leveling					
13. Outlets					
14. Revetments			3,000	200	10,500
15. Springs					
16. Terraces					
17. Wells					
GRAND TOTAL					$ 80,000

Summary of Activities and Practices

	Miles	Acres
Drainage		
Gully Control		6,000
Land Conversion		
Streambank Protection	6	500
Water Spreading		2,000

Prepared by	Title	Date
J. H. Conn	Engineer	1-4-52
Paul L. Balch	Soil Conservationist	4-25-52
Chester A. Thomas	Assistant Superintendent	4-28-52

57110

Architect

[illegible]

Ratliff 6/14/52

story

Natural History M.H.Dodge 6/11/52

Concessions Management

Powell 6-11-5

11

Asst. 10-25-52

11-24-52

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] Symbol
[illegible]

[illegible]

[illegible]

[illegible] shown [illegible].

[illegible] rocks, [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] 3 of [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Form No. 10-740
(Revised April 1949)
57x10

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

PROGRAM SUMMARY
SOIL AND MOISTURE CONSERVATION

Three	Zion National Monument	Utah
Region	Name of Park or Monument	State

48,414 Acres
Total Area of Park or Mon.

P-48-190-1
Project Area Symbol

Federal Area	33,921
Non-Federal Area	14,493

EXTENT OF PROBLEM AREAS

Erosion Types	Area Involved Acres
Slight	
Moderate	
Serious	14,000
Critical	23,600
Total	37,600

S & M C WORK NEEDED

Type of Work	Amount of Work No.	Miles	Acres	Estimated Cost
Planning and Performance Group				
1. Conservation Surveys			48,414	$
2. Land Classification				
3. Land Use Plans				
4. Performance Inventory			30,000	1,500
Soil Treatment Group				
1. Cover Crops				
2. Crop Improvement				
3. Crop Residues				
4. Deep Plowing				
5. Fertilizer				
6. Liming				
7. Meadow Strips				
8. Rotations			48,414	
9. Rough Tillage				
10. Seeding and Planting			5,000	35,000
11. Strip Cropping				
12. Tree Planting	100,000		100	1,100
Control and Suppression Group				
1. Brush and weed Control				
2. Fencing		5	2,000	4,000
3. Pest Control				

Type of Work	Amount of Work				Estimated Cost
	No.	Miles	Cu.yds.	Acres	
. Water Control Group					
1. Canals and Ditches					
2. Checks	1,500			1,500	22,500
3. Conduits					
4. Countouring				3,000	3,000
5. Dams-Detention	1,000		10,000	1,200	2,000
6. Dams-Diversion	1,500		25,000	3,000	5,000
7. Dams-Retention					
8. Dikes			5,000	200	1,000
9. Drops					
10. Field Laterals					
11. Jetties	100			100	2,000
12. Leveling					
13. Outlets					
14. Revetments			300	20	1,000
15. Springs					
16. Terraces					
17. Wells					
RAND TOTAL					$ 84,000

Summary of Activities and Practices

	Miles	Acres
Drainage		
Gully Control		7,000
Land Conversion		2,000
Streambank Protection	2	150
Water Spreading		3,000

J. A. Conn	Engineer	1-4-52
Paul L. Balch	Soil Conservationist	4-25-52
Chester A. Thomas	Assistant Superintendent	4-28-52

Prepared by | Title | Date

57110

	Regional Office	Washington Office
Architect		
Landscape Architect		
Engineer		
Forestry	Ratliff 6/11/52	
History		
Natural History	Neil Dodge 6/11/52	
Concessions Management		
Funds		
Safety		
Recreation		
Planning		

Date

Superintendent

Chief, Northern Division

Regional Director

(SGD.) PAUL M.

Date

(SGD) THOS. C. VINT

For the Director

Master Plan Development Outline

Zion National Park and Monument, Utah

I. Operation (Continued)

C. CONCESSIONS

1. Concession Objectives

a) Concessions Desired

South Entrance Area. The cafeteria type of eating facility now operating in this area is most desirable and an enlargement of the street re should be considered to keep pace with this area's development and the public demand for moderate meal prices. The establishment of a general store to provide a greater variety of camper supplies appears desirable. More housing or sleeping accommodations are needed. At present there are 30 cabins, some of which are two-room units, and the installation in each of a bath or shower and toilet would be most desirable. A[illegible] [illegible] need for [illegible] the area. The term "[illegible] Center", which has been applied to the development, is misleading and confuses the public. Since the higher-priced accommodations and meals are [illegible] Zion Lodge, it has been suggested that a more appropriate name, such as "Zion Inn", be used to identify the concessioner's cafeteria and cabins in the South Entrance Area. There is a great need for [illegible] to adequately house the concessioner's employees.

Zion Lodge Area. There was loss of every facility [illegible] event from mid-June to late September. The facilities for meals, dining, [illegible], parking, etc., should be improved. [illegible] are increasing use of the area but [illegible] from Zion Lodge is [illegible] to serve the public. There is need of enlarging the standard cabins and improving the employee [illegible].

[illegible]

[illegible] should be [illegible] and [illegible] increase the present overnight capacity in the Zion Lodge area.

West Entrance (Taylor Creek) Area. Attention should be focused on [illegible] outside of Zion Canyon in order to reduce the impact on the Canyon Area. Taylor Creek, at the entrance to Zion National Monument, is one such area and should be considered for development in the master planning of the Park and Monument.

[illegible] in [illegible] Park

[illegible]

Springdale, Utah. Population, [illegible] census, [illegible]. This is a small community located approximately one mile from the South Entrance area and 6½ miles from the Zion Lodge area. Overnight accommodations and meal service establishments have been constructed in increasing numbers during the past [illegible] years.

[illegible]

[illegible] to overnight [illegible] a substantial number of through travelers.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] Area, [illegible] City, Utah

[illegible]

[illegible]

Duration

[illegible] years, January [illegible], 1[illegible] through December [illegible], 1[illegible].

Services Authorized

Lodging, meals, camps, cabins, service stations, laundries, barber shops, Turkish and other baths, swimming pools, amusements and sports, newspapers and periodicals, souvenirs, postcards, paintings, photographs, photographic supplies, refreshments, tobacco and smokers' supplies, [illegible] station wagons for passengers, [illegible], [illegible] and [illegible], [illegible] transportation [illegible], [illegible] livery business, blacksmith shops, [illegible], [illegible] and corrals, general merchandise stores for groceries, meats, food supplies, dry goods, clothing, shoes, hardware, notions, toilet articles, and rental of [illegible].

Concessions

[illegible]

[illegible]

Agreement

[illegible] approved August [illegible], 1[illegible], and extension [illegible], 1[illegible], by agreement dated August 11, 1[illegible], and [illegible] December [illegible], 1[illegible].

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

(d) [illegible] Concession Areas

(e) Name of Concessioner

Utah Parks Company, Cedar City, Utah

(f) Date, and Duration of Concession Permit or Letter of Authorization

[illegible] .

(g) Description of Site

The Concessioner is authorized to use and improve, outside of the maintenance of an area of approximately 21 acres surrounding the Lodge and adjacent cabin area; approximately 5 acres occupied by his utility area and approximately 16 acres at the south entrance surrounding the cafeteria, cabins and service station.

Paul R. Franke, Superintendent 12-20-52
A. W. Koehler, Regional Chief of Concessions 3-27-53
Management

Paul R. Franke 6-4-53

s/ W. R. Tillotson 6-15-54

s/ [illegible] 12-1-54

s/ Thomas F. Allen 10-14-57

Master Plan Development Outline

Zion National Park, Utah

BUILDINGS

(1) General

(a) Headquarters

((1)) Climate

Temperature

Maximum [illegible] F
Minimum [illegible] F
Average [illegible]
[illegible] F.

Mean Temperature

	Jan.	Feb.	Mar.	Apr.	May	June
Maximum	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Minimum	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Maximum	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Minimum	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]
[illegible] in winter.
Maximum [illegible] velocity: [illegible]
Subject to strong gusty winds. Climate [illegible]
[illegible]
[illegible]
Mean [illegible]
[illegible]
[illegible]
Mean [illegible]
Vaporation [illegible]

((2)) Site Data

[illegible]
[illegible]
[illegible] slopes [illegible]
[illegible]
[illegible]
[illegible]
[illegible]

([illegible]) [illegible]

[illegible]

([illegible]) [illegible]

[illegible]

([illegible]) [illegible]

[illegible]

Concrete Batch Plant: Number [illegible]
[illegible] available at [illegible]
Materials Storage Space: Vacant property
[illegible] protection establishment [illegible]
Nearest railroad at Cedar City: Utah [illegible] line:
Union Pacific Railroad
Construction Season: Ma[illegible] November

((7)) Building Materials

Building stone
Source: Local - quarries
Distance from headquarters [illegible]
Kind: [illegible]
Flagstone
Source: [illegible]
Distance from headquarters [illegible]
Kind: Sandstone; [illegible]
Coarse aggregate
Source: Park - Virgin River
Distance from headquarters: [illegible]
Fairly clean gravel; Cedar City [illegible] quarry, [illegible] miles.
Screen analysis not available.
[illegible]
Source: [illegible] Rock
Distance from headquarters: [illegible]
Impurities; analysis not available
Lime
[illegible] State National [illegible]
[illegible] National Monument
[illegible]
Kind: [illegible]; all sizes and [illegible]
Availability: [illegible] Cedar City [illegible]
[illegible]

Availability of:

Plaster and lath: [illegible] Gypsum Co.

Plaster and rock materials: Not available

Concrete curing facilities: Salt Lake City

Light weight plaster or concrete aggregate: No data

Reinforcing steel: Hurricane, Utah

Structural steel: Cedar City, Utah

There are no other local building materials of special interest

Zion National Park

		Oak Creek Rec. and Utility	Hdqtrs. Res. Area	
1	Residence #1 - 4-bedroom	x	x	x
2	Residence #2 - 4-bedroom	x	x	x
3	Residence #3 - 3-bedroom	x	x	x
4				
5	Ranger Dorm #5 - 9 rooms, 2 baths	x	x	x
6	Residence #6 - 3-bedroom	x	x	x
7	Residence #7 - 2-bedroom	x	x	x
8	Residence #8 - 2-bedroom	x	x	x
9	Residence #9 - 2-bedroom	x	x	x
10	Residence #10 - 2-bedroom	x	x	x
11	Residence #11 - 3-bedroom	x	x	x
12				
13	Office Building - 6 rooms & hall	x	x	x
14	Residence #14 - 3-bedroom	x	x	x
15	Residence #15 - 3-bedroom	x	x	x
16				
17				
18				
19				
20				
21	Residence #21 - 1-bedroom	x	x	x
22				
23				
24	Residence #24 - 1-bedroom	x	x	x
25	Residence #25 - 1-bedroom	x	x	x
26	Residence #26 - 1-bedroom	x	x	x
27	Residence #27 - 3-bedroom	x	x	x
28				
29				
30				

MASTER PLAN DEVELOPMENT OUTLINE

BUILDING TRADE

Zion National Park

B-32

		South Entrance	Headquarters	CCC Campsite	Grotto	East Entrance
38	Residence #31 - 2-bedroom					x
39	Residence #32 - 2-bedroom				x	
40	Residence #33 - 3-bedroom			x		
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51	Museum - 1 room		x			
52	Checking Station - 1 room	x	x			
53	Museum Storage - 1 room		x			
54	Museum Storage - 1 room		x			
55						
56						
57	Checking Station - 1 room		x			x
58						
59	Visitor Center		x			

[illegible]

[illegible]

Zion National Park

		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Oak Creek Residential and Utility	Headquarters Residential Area	Utility Area East of Virgin River
	Visitor Center		x	x	x				
76	Warehouse - 3 rooms	x		x		x	x		
77	Machine Shop - 3 rooms	x	x	x		x	x		
78	Fire House - 2 rooms	x		x		x	x		
79	Equipment Storage - 11 stalls	x		x		x	x		
80	Equipment Storage Bldg. - [illegible] stalls	x		x		x	x		
83	Equipment Storage Bldg. - 4 stalls	x		x		x	x		
88	Horse Barn - 4 rooms	x				x			
89	Power House - 1 room	x		x		x		x	
90	Equipment Storage Bldg. - 12 stalls	x				x			x

Zion National Park

					CCC Site	Headquarters Residential Area	Oak Creek Residential and Utility
91	Overflow Warehouse - 2 rooms	x	x	x	x		
92							
93							
94							
95							
96							
97							
98							
99							
100							
101							
102	Three-Stall Garage	x	x	x		x	
103							
104							
105							
106							
107	Garage - 2-car	x	x	x		x	
108							
109	Garage - 3-car	x	x	x			x
110	Garage - 3-car	x	x	x			x
111	Garage - 3-car	x	x	x			x
112	Garage - 3-car	x	x	x			x
113							
114							
115							
116							
117							
118							
119							
120							
121							

B-53-1
B-1-6

							Temple of Sinawava	Grotto Campground	South Entrance Campground	Headquarters Residential Area	East Entrance	West R	Watchman Residential and Utility Area
121													
122													
123													
124													
125													
126	Comfort Station - 2 rooms	x		x		x	x						
127	Trailside Exhibit Bldg. - 1 room	x		x		x	x						
128	Comfort Station - 2 rooms	x		x		x		x					
129	Comfort Station - 2 rooms	x		x		x		x					
130	Comfort Station - 2 rooms	x		x		x		x					
131	Comfort Station - 2 [illegible]	x		x		x			x				
132	Comfort Station - 2 rooms	x		x		x				x			
133	Comfort Station - 2 rooms		x	x		x			x				
134	Comfort Station - 2 rooms		x	x				x			x		
135	Shelter Cabin - 2 rooms	x		x		x						x	
136													
137	Comfort Station - 2 rooms	x		x		x			x				
138	Comfort Station - 2 rooms	x		x		x			x				
139	Power House	x		x	x						x		
	Community Building - 2400 sq.ft.		x	x	x	x							x
	Residence - 3-bedroom		x	x	x								x
	Residence - 3-bedroom		x	x	x								x
	Residence - 3-bedroom		x	x	x								x
	Residence - 3-bedroom		x	x	x								x
	Residence - 2-bedroom		x	x	x								x
	Residence - 2-bedroom		x	x	x								x
	Residence - 2-bedroom		x	x	x								x
	[illegible]e - 2-bedroom		x	x	x								x
	[illegible] - 2-bedroom		x	x	x								x
	Apartment House - 1[illegible] Units - 2 [illegible].		x	x	x								x

a.

a.
a [illegible]

a. To be replaced on th[illegible]

Zion National Park

							Watchman Res. & Util. Area	East Side of Park	Taylor Creek - Three Forks	Timber Creek - La Verkin Creek	Lava Point Fire Pit Knoll	
Economy Units for Seasonal Employees - 10 Units	x	x		x			x					
Gas and Oil Building, 240 sq.ft.	x	x			x		x					B-44
Warehouse - 4800 sq.ft.	x				x		x					B-45
Machine Shop - 4800 sq.ft.	x				x		x					B-52
Carpenter Shop - 2400 sq.ft.	x	x			x		x					
Equipment Storage Bldg. - 7200 sq.ft.	x	x			x		x					
Quarters for Seasonal Employees [illegible] - 3 Units	x	x		x								
Entrance Station - 100 sq.ft.	x	x	x			x			x			
Administrative Offices - 1250 sq.ft.	x	x	x						x			
Interpretive Facil. - 1000 sq.ft.	x	x				x			x			a.
Residence - 3-bedroom	x	x		x					x			
Duplex, Employees - 2-bedroom	x	x		x					x			
Duplex, Employees - 2-bedroom	x	x		x					x			
Quarters for Seasonal Employees Apartment-Type - 6 Units	x	x		x					x			
Equip. Storage & Shop - 2500 sq.ft.	x	x			x				x			
Gas and Oil House - 240 sq.ft.	x	x			x				x			
Visitor Center - 3000 sq.ft.	x	x				x				x		
Duplex - 2-bedroom	x	x		x						x		
Fire Lookout - 250 sq.ft.	x	x	x								x	
Duplex - 2 Unit	x	x		x							x	

a. Three Forks, Leepass, Finger Canyon.

		Zion Lodge Area	Zion Camp Center			
500	Bake Shop - 1 room	x	x		x	x
501	Refuse Bldg. - Chemical Cart House 3 rooms	x	x		x	x
502	Linen Cabin - Chemical Cart House 2 rooms	x	x		x	x
503	Linen Cabin - 2 rooms	x	x		x	x
504	Storage Building - 1 room	x	x		x	x
505	Ladies' Dormitory - 24 rooms	x	x	x		x
506	Men's Dormitory - 21 rooms	x	x	x		x
507	Married Couples' Dormitory - 12 rms	x	x	x		x
508						
509						
510						
511						
512						
513						
514						
515						
516						
517						
518						
519						
520						
521						
522						
523						
524						
525	Standard Cabin - 2 rooms	x	x		x	x
526	Men's Dormitory - 3 rooms	x	x	x		x
527	Men's Dormitory - 3 rooms	x	x	x		x

Zion National Park

	Garage	Power House - 1 room	Cabin	Blacksmith Shop - 1 room	Horse Barn - 4 rooms
Zion Lodge Area			x		
Zion Camp Center	x	x		x	x
	x	x		x	x
			x		
	x	x	x	x	x
	x	x	x	x	x

[illegible]

Zion National Park

Zion Lodge Area

[illegible]	Zion Lodge - 17 rooms	x	x	x	x
[illegible]	Standard Cabin - 2 rooms	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
511	" " " "	x	x	x	x
512	" " " "	x	x	x	x
513	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	"	x	x	x	x
[illegible]	" " " "	x	x	x	x
517	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	Comfort Station - 4 rooms	x	x	x	x
521	Standard Cabin - [illegible] rooms	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
527	Reconverted Std. Cabin - 2 rms.	x	x	x	x
[illegible]	" " " " "	x	x	x	x
[illegible]	" " " " "	x	x	x	x

Zion National Park

Zion Lodge Area

Reconverted Sta. Cabin - 2 rms.

660	Reconverted Std. Cabin - 2 rms.	x	x	x	x
[illegible]	" " " " "	x	x	x	x
662	" " " " "	x	x	x	x
[illegible]	" " " " "	x	x	x	x
[illegible]	" " " " "	x	x	x	x
[illegible]	" " " " "	x	x	x	x
[illegible]	" " " " "	x	x	x	x
667	" " " " "	x	x	x	x
[illegible]	Deluxe Cottage - 4 rooms	x	x	x	x
669	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
671	Duplex Cottage - 4 rooms	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
675	" " " "	x	x	x	x
[illegible]	Deluxe Cottage - 4 rooms	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	Duplex Cottage - 2 rooms	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
[illegible]	" " " "	x	x	x	x
682	" " " "	x	x	x	x
[illegible]	Bathhouse & Swimming Pool - 4 rms	x	x	x	x

Name of Area: Zion National Park, Utah

Prepared by: _____ Date _____
Name and Title

REVIEWED

WESTERN OFFICE, DESIGN AND CONSTRUCTION

Architect: /s/ Lyle E. Bennett Date 6-26-57

Engineer: /s/ Homer L. Crowley, Acting Date 6-26-57

Landscape Architect: /s/ Paul C. Thomas, Acting Date 6-26-57

Safety: /s/ Wm. H. Richardson Date [illegible]

REGIONAL OFFICE
Cooperating Activities: _____ Date _____

Interpretation: _____ Date _____

Concurred: _____ Date _____

RECOMMENDED

_____ Date _____
Regional Director

/s/ [illegible], Acting Date [illegible]
Chief, Western Office, Div. of Design & Construction

_____ Date _____
Area Director

_____ Date [illegible]
Director

APPROVED

_____ Date [illegible]
Assistant Director

ROUGH DRAFT

JRL:ajg

April 15, 1952

MASTER PLAN DEVELOPMENT OUTLINE

Zion National Park, Utah

UTILITIES

Water System

Town of Springdale

In accordance with Act of Congress, 45 Stat. 784, approved May 28, 1928, the town obtains water from springs in a side canyon, off of Oak Creek Canyon. The system consists of a collecting basin and a two-inch line to the town reservoir located outside the park.

National Park Service

The Service operates and maintains water systems at Oak Creek, Birch Creek, Grotto, Temple of Sinawava, and East Entrance.

Oak Creek System

(a) Source - Three springs, collected underground and piped into a concrete collecting box. Supplies 25,000 gallons daily.

(b) Supply Main - 5,330 feet of two-inch C.I. pipe, 3,450 feet three-inch C.I. pipe, and 200 feet one-inch C.I. pipe.

(c) Storage - 50,000-gallon concrete tank, connected to 200,000-gallon Birch Creek tank.

(d) Treatment - None.

(e) Distribution Mains.

See Birch Creek System.

Birch Creek System

(a) Source - Two springs, walled in, about 20 feet up the face of the cliff, at upper end of Birch Creek Canyon.

A small spring on south side of Canyon is collected in underground box and piped to a concrete box on main line.

(b) Supply Main - A gravity supply main consists of 1,800 feet of galvanized steel pipe from springs to desilting box. 2,300 feet four-inch black steel pipe, coated, from desilting box to junction box where flow from small spring mentioned above enters system; and 11,000 feet six-inch black steel pipe, coated, to junction with six-inch C.I. pipe in Oak Creek System. The available supply is 75 gpm.

(c) Storage - 200,000-gallon concrete tank connected to 50,000-gallon Oak Creek tank.

(d) Treatment - None.

(e) Distribution Mains - Distribution from the reservoirs through the Oak Creek residential area and to the rear of the Cafeteria is by six-inch cast iron main. A four-inch C.I. line extends to the Camp Ground, with two-inch line through the Camp Ground, with faucets. Service to the Cafeteria and Cabins is four-inch C.I. A two-inch galvanized line serves the old CCC Camp. The utility area is served by a six-inch C.I. line from the reservoirs, with a four-inch C.I. loop around the area. The headquarters area is served by a two-inch galvanized steel pipe which connects to the six-inch supply main under the Virgin River Bridge. (The two-inch line from Pine Creek Spring has been abandoned.)

Sewerage Systems

South Entrance - Oak Creek - Cafeteria Area

(a) Ownership - Government.

(c) A six-inch sewer line from the Utility-Residential Area in Oak Creek runs past the Cafeteria Development and the South Entrance camp ground. Branch lines collect the sewage from these two developments. The main line increases to eight-inch and crosses the Virgin River to the east side of the valley. The sewage flows into an 8,000-gallon concrete septic tank.

(d) Disposal Systems - Effluent from the septic tank is disposed of by means of 684 feet of half round 50-inch corrugated metal trenches.

Headquarters

(c) Sewage from the three residences is collected by a six-inch sewer conveyed across the highway and disposed of in a cesspool.

Sewage from the public comfort station is conveyed to a cesspool back of the museum.

Grotto Camp Ground

Sewage from the two comfort stations and from the caretaker's cabin is collected by six-inch sewers and conveyed to a septic tank and tile field below the camp ground.

Temple of Sinawava

Sewage from the comfort station flows to a septic tank and tile field between the building and the road.

Concessioner's Sewerage - Zion Lodge

All sewage from the Lodge operation is collected by four-inch and six-inch laterals and emptied into an eight-inch main which carries the sewage to the disposal plant located on the west side of the Virgin River just above the mouth of Birch Creek.

The sewage is digested in a concrete septic tank, with the effluent entering a dosing tank. Sewage pumps, controlled by float switches in the dosing tank, pump the effluent to either of two spray systems.

Garbage and Refuse Disposal

All garbage and refuse is disposed in a combination burn-bury pit located on the east side of the Virgin River, across from the south entrance camp ground.

Power System

Electric power is obtained from the 33,000-volt 3-phase line of the Utah Power and Light Company. A transformer station at the Park Entrance reduces this voltage to 2,300 for use at the Oak Creek Area, Cafeteria and campground and at Headquarters Area. To serve the Lodge, the 33,000-volt line extends to the Utah Parks Company Utility Area where it is reduced to 2,300 volts for distribution through the Lodge Development.

Communications

Telephone service in the park is furnished by the Mountain States Telephone and Telegraph Company. Phones are located in the Administration Building, Superintendent's residence, and Lodge.

The park system consists of a 20-drop switchboard with phones in offices, residences, ranger stations, cafeteria and lodge.

Concessioner has a two-wire copper circuit connecting all the Utah Parks Company's operations in Cedar City, Zion, Bryce, Cedar Breaks, Kanab, and North Rim of Grand Canyon. The Administration Building has a phone on this circuit.

Radio

The park has a 50-watt Jefferson-Travis transceiver operating on 5,150 kc for communication with its coordinated areas and with the Regional Office and other areas.

It is proposed to install an FM system for intrapark communication.

Fuel System

Fuel is a combination of coal, oil, LP gas, and electricity.

Mission 66

UTAH PARKS COMPANY

LODGE—HOTEL AND TRANSPORTATION SERVICE

BRYCE-ZION-GRAND CANYON NATIONAL PARKS

CEDAR BREAKS NATIONAL MONUMENT

[illegible] MANAGER

[illegible] TO MANAGER
CITY TRANSPORTATION

[illegible] HOTEL
AND HOTEL SERVICES

[illegible] CHIEF CLERK
[illegible] RESERVATIONS

GEO. A. [illegible]
SUPERVISOR OF MAINTENANCE

CEDAR CITY, UTAH

April 17, 1957

[illegible]

Region Three

[illegible] FACILITIES [illegible]

Zion National Park, Utah

Zion Lodge and [illegible]
(Developed Area [illegible] Location in [illegible]

[illegible]	[illegible]	Existing Facility	Conc.	[illegible]	Remarks
	(2)	(3)	(4)	(5)	
Trail [illegible]	[illegible]				
Eating [illegible]	[illegible]				
Dining [illegible]		1	x		
Coffee [illegible]					
Cafeteria [illegible]			x		
Refreshment [illegible]			x		
Stores [illegible]	[illegible]		x		
[illegible]					
[illegible]					
Photographic [illegible]					
Souvenir [illegible]					
Gasoline [illegible]		1	x		
Total [illegible]					

* [illegible]

058
XA98

COPY IN Cedar Breaks

Zion National Park
Springdale, Utah

April 19, 1957

Memorandum

To: The Director

From: Superintendent, Zion

Subject: Report on Public Accommodations, Zion and Cedar Breaks.

In compliance with Memorandum FO 19-57, the requested report consisting of Schedules A through D are attached in original and one copy together with copies of the Concessioner's covering letter of explanation.

The schedules and covering letter agree with the Mission 66 plans for both Zion and Cedar Breaks.

Copies have been mailed to Region Three and WODC offices.

(SGD) PAUL R. FRANKE

Paul R. Franke
Superintendent

Attachments

cc Region Three, w. attachments
cc WODC, w. attachments

MISSION 66

FOR

ZION NATIONAL PARK

NATIONAL PARK SERVICE
UNITED STATES
DEPARTMENT OF THE INTERIOR

WHAT IS MISSION 66?

MISSION 66 is a forward-looking program for the National Park System intended to so develop and staff these priceless possessions of the American people as to permit their wisest possible use; maximum enjoyment for those who use them; and maximum protection of the scenic, scientific, wilderness, and historic resources that give them distinction.

Construction is an important element of the program. Modern roads, well planned trails, utilities, camp and picnic grounds, and many kinds of structures needed for public use or administration, to meet the requirements of an expected 80 million visitors in 1966, are necessary; but they are simply one means by which "enjoyment-without-impairment" is to be provided.

Under this program, outmoded and inadequate facilities will be replaced with physical improvements adequate for expected demands but so designed and located as to reduce the impact of public use on valuable and destructible features. It will provide both facilities and personnel for visitor services of the quality and quantity that the public is entitled to expect in its National Park System. It is intended to assure the fullest possible degree of protection, both to visitors and resources.

MISSION 66 is a long-range program; it will require at least 10 years to accomplish on a sound and realistic dollar basis. That means completion in 1966 -- the 50th anniversary year of the establishment of the National Park Service. The program has received enthusiastic endorsement by the President of the United States and his Cabinet, and well received by the Congress and the Nation at large.

The MISSION 66 program, as it pertains to LION NATIONAL PARK, is briefed in the accompanying report to provide information on what is planned and when it will be accomplished.

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

MISSION 66
for
ZION NATIONAL PARK

Introduction

What is Zion?

There is probably no other region in the world that contains so remarkable, varied and extensive exhibits demonstrating the mobility of the Earth's crust as one finds at Zion. Here are classic examples where faulting, vulcanism, uplift, depression and dip as a control in forming and shaping the earth's surface are evident. With later sculpturing by nature's tools of erosion we have a pattern which gives Zion prominence among regions of phenomenal landscapes. Plants and animals of Zion demonstrate many life zones illustrating the influence of geologic processes.

Zion National Park was established first as a National Monument from a rough, deep canyoned wilderness. On the fringes of this wild country there were settlements by early pioneers seeking to wrest a living from small irrigated ranches. Cautions not to disturb these early settlers, led to administrative difficulties and left little or no land available for public use. As a result four different legislative acts were required through the years to bring into being an area of 220 square miles encompassing the scenic phenomena and providing space for the many thousands of visitors who come annually from all over the world.

Amid the great uplifted block which is Zion, great faults exhibit their most spectacular features. The agents of erosion, water, wind and temperatures have with the aid of time gouged tremendous canyons into the terraces, leaving within towering peaks, flat topped mesas, sheer pinnacles, arches and natural bridges. Within the steep, narrow, meandering canyons are streams, which in time of storm become raging torrents continuing to carry away the debris of the erosional agents. Here the desert meets the mountains and amid the sheer-walled canyons are found a flora and fauna spanning four climatic zones. Cinder cones and lava flows exhibit crustal movements many ages after the uplift occurred.

There is evidence of aboriginal occupation. The Basket Makers and Pueblos lived along the periphery depending upon the templed vastness for their game, berries, fruits and implements of stone. Historical personages passed along the area starting in 1776 as Fray Escalante came this way from Santa Fe in search of a route to Monterey.

The spectacular setting is all in color which makes the area a pleasure to behold and a photographer's paradise. The tremendous scale and color is the feature that overwhelms the visitor as he stand within the colored walls in cathedral-like stillness, broken only by rushing water or the song of birds. A visit to Zion is a profound emotional and esthetic experience.

The Significant Values of Zion

No conversion process is required to translate the power of these resources into human enjoyment save the exercise of the imagination and energy, and the play of the mind and the emotions of the visitor himself. The benefits of the park flow directly from the natural scene. What is the nature of those benefits? People visit Zion in part because they seek a curative contrast to the stress and intensity of daily living, relief from cumulative fatigue, and tension. They come as well because they feel a compelling attraction for the beauty, excitement, and mystery of its varied attractions. Zion satisfies both needs in unexpected measure. So different is the environment that the visitor, who for a while lives a life entirely apart from anything in his normal pattern of experience, finds new muscles are exercised, new interests generated, new ideas acquired, and the most wholesome emotions savored.

The visitor comes to enjoy the beautiful scenery, perhaps to fish, to camp, to motor, to hike, and to take pictures. The superlative and pristine character of Zion intensifies these experiences far beyond the visitor's expectations. Moreover, he is often even more impressed in ways not anticipated. The visitor comes not to learn, but nevertheless finds the stories of the canyons, mountains, wildlife, and of the human history of the region, most fascinating. He acquires knowledge in ways that stimulate him to further explorations of nature and of man's place in the picture. The end product is very often an intense personal pride -- the pride of ownership, pride in the beauty of the land, and pride of citizenship in a country that counts the beauty of an unimpaired landscape among its valued resources.

Refreshment of the physical man, mental stimulation, esthetic enjoyment, and regeneration of spirit are the benefits that Zion provides.

The Means to the End

If the park is to yield a proper measure of human values, three things are required; an adequate road and trail system to give access to the important and significant features of the park. Facilities, adequate in quality and quantity, to cater to visitor comfort, welfare, and subsistence; and effective presentation and interpretation of the varied inherent resources of Zion.

The present road system provides access, samples representative scenes, and brings the traveler reasonably close to major points of interest only to Zion and Pine Creek Canyons. An extension of the road system into the Kolob Section will be constructed to enable the visitor to enjoy the superb features in that area. Extensive modernization of the existing roads is required, as well as some relocations to improve views and interpretive opportunities, or to eliminate intrusions upon fragile and scenic areas.

From the roads, more intimate access by trail to important features is required. This calls for well constructed trails and paths, located and designed to afford protection of fragile formations and to take full advantage of scenic and interpretive opportunity. New trails into the back country are necessary in the Kolob Section and must necessarily be connected to existing trails.

Zion is not fully experienced in a single day. It is so vast, varied, and remote that the normal visitor must remain within the boundaries from overnight to a week or more. Neighboring communities can at this time take care of the visitor's needs throughout a large part of the year, but during the height of the travel season the accommodations outside the park must for some years to come be supplemented by facilities within. The needs are for adequate lodges, campgrounds and picnic grounds, as well as meal service, supplies, medical and other services comparable to those required in a small city.

Effective presentation of the park scene, and an interpretation of its meanings are the third requisite of beneficial park use. Properly located roads, trails, and scenic overlooks are themselves very important in revealing the significant park scenes. In addition to general travel

information and orientation, the visitor requires a basic nucleus of interpretive information to give meaning to park features. The interpretive program must first emphasize the distinctive qualities of the area; its deep narrow canyons, volcanism, huge monoliths, towers and peaks, the displacements and other geologic features, plus the plants and animals of Zion; as an ecologic community. It should make this basic story easily available to essentially every visitor. The interpretive objective is to give the visitor the general information that will enable him to use the park wisely, and the basic understanding that will enable him to derive to the fullest degree enjoyment from its educational and inspirational values.

Facilities and the personnel necessary for the administration, maintenance and care of facilities, the protection of natural features, and housing for personnel are complementary requirements.

Safeguarding Zion

The preservation of the park's resources, a requirement of the law, is moreover a practical necessity for the perpetuation of the opportunity for beneficial park use. The preservation of the wilderness areas and of the wilderness quality of the park as a whole, the maintenance of wildlife at an ecologically sound level, and defense of fragile and irreplaceable features against damage or destruction, are required. To these ends, development, use and management must be governed by certain limitations and controls. In general, these are as follows:

The existing wilderness areas of the park shall not be diminished by the extension of roads or other developments beyond limits essential to making a representative part of the area accessible for use and enjoyment by the public. Such developments as are required for wilderness use shall be simple, and appropriate to wilderness environment.

A realistic and practical program of wildlife research and managment shall be pursued.

Private land holdings within the exterior boundaries, that impair the basic values and use of the park, or interfere with the preservation of the scenic and natural values will be acquired by the Federal government.

Adverse uses of the park lands which impair their value as natural areas such as grazing and other non-conforming use will be eliminated.

All facilities for the accommodation of visitors and related services shall be limited to designated areas, attractive but of lesser park value, reserving the important scenic and scientific areas for recreational, educational and inspirational enjoyment.

The Problem

What is the conservation and the use problem of Zion today?

First, there has been a phenomenal increase in visitation to this park. Travel has more than doubled every ten years since the park was established in 1919. Here is the travel picture in brief:

1926	21,964
1936	124,393
1946	207,651
1956	421,163
1966	Over 800,000 visitors predicted.

Secondly, this increase in travel, accounted for in large part by the increased use of the automobile, has been accompanied by an equally significant change in the travel and use habits of visitors. This, in turn, requires a different operating plan and different types of facilities than those first developed in this park. For example, the train and bus "package" tour, which characterized early day travel, required large hotels and dining rooms situated close to the main points of interest. Today, the more mobile and more independent motorist requires motels, campgrounds, cafeterias or coffee shops, and picnic areas, but these do not need to be within walking distance of the park's major attractions. Their need for larger parking areas and improved road standards is obvious.

Third, since travel is eight times what it was 25 years ago, expansion and modernization of facilities have lagged far behind. This is reflected in serious inadequacies in roads and parking areas, overnight accommodations, eating facilities, campgrounds, public use buildings, as well as in water and sewer and other utility systems, shops, warehouses, employee quarters, administrative facilities, and all other developments necessary to administer, maintain, and protect the area. Most inadequate to serve its visitors is the small one-room museum, the center of the interpretive program.

Fourth, annual operating funds and staffing similarly have fallen far behind actual needs. Since 1940, travel has tripled, but the park staff has been increased by only about 15 percent. This deficiency is reflected in inadequate protection of the forests and natural features, inadequate maintenance of facilities, and serious shortcomings in service to visitors.

Fifth, and most basic, the gradual expansion and intensive development of accommodations centers adjacent to the main scenic attractions, a logical location in the days of the package tour, have become serious bottlenecks in this day of auto tourism. Not only do these developments today threaten the scenic quality of their environment, but they are a serious handicap to the visitor in his full and intelligent use and enjoyment of the most important attractions of the park. These developments are not capable of additional expansion, and furthermore, they are not strategically located in consideration of the volume of today's use, and the mobility of the modern motorist.

In brief, the problem of Zion is compounded of expanding travel, outmoded facilities, delayed development, inadequate operating funds, and development by accretion along lines incapable of further expansion in present locations.

The Program

MISSION 66 seeks to provide adequate facilities, and to redirect the development, management, and use of the park along lines adapted to the volume and the kind of use anticipated in the future. There is no doubt that travel to this park will continue to expand at a significant rate. Nor is there any doubt of the capacity of Zion by properly planned developments to absorb, without damage, the use of increasing hundreds of thousands of visitors. How can this be done?

Road Improvement and Extension

The road system is a very important key to the effective use of the park. The existing road into Zion Canyon and the Zion-Mt. Carmel road give access to only a small portion of the park, yet they carry all the traffic. Zion Canyon is receiving a volume of park visitors which is developing a condition of over-crowding and damaging to the landscape. The problem is complicated by the south to east entrance through road which must, in addition to the park visitor, carry commercial traffic.

To alleviate the congestion in Zion Canyon a road will be constructed to give access to the western portion of the Park, known as the Kolob Section of Zion. This road will expose significant features and scenes without requiring all visitors to concentrate on and in Zion Canyon.

The present system needs to be brought up to more modern standards. All main roads where conditions permit will have their paved surfaces improved, shoulders widened, and additional viewpoint parking areas provided, so the visitor may enjoy the scene in safety. Some minor relocation will be required where the road presently intrudes unnecessarily upon scenic or fragile areas, or where it may be desirable to improve the view, the interpretive possibilities, and correct traffic hazards. The large tunnel on the Mt. Carmel road will be painted a light color for safer travel conditions.

But, the mere improvement of road standards will not in itself relieve traffic congestion. Traffic today is obstructed, less by the outdated road standard, than by cars which slow down and stop to view a scene, take a picture or study an interpretive marker. Just as important as the roadway itself are parking areas and turnouts where the visitor can safely stop for his enjoyment without impeding the normal flow of traffic.

Roadside Interpretation

A park road is more than a route connecting one point with another. Properly designed, and properly served, it should provide a continuous, developing experience in viewing, enjoying, and understanding a beautiful and exciting new country. A complete system of roadside interpretive devices, ranging from museums, to roadside exhibits, information signs and markers, and simple view-finders, is planned. The entire journey through the park should thus become a continuous series of new pleasures. Most people will linger longer, as they do today, in the scenic locations, but in the future much more of the rest of the park along the route of travel will have interest and appeal, too. The result - greater distribution of use, a larger proportion of the visitors dispersed along the road system - picnicking, learning, observing, and photographing - and a smaller proportion of the visitors at any given time concentrated in the few scenic locations now available. This development alone will greatly increase the capacity of the park to serve its growing numbers of visitors.

A New Plan for Development is Indicated

A cottage cannot be transformed into a skyscraper merely by adding story upon story. Zion cannot be equipped to serve doubled and redoubled numbers of visitors merely by expanding existing facilities in their present locations. The limit already has been exceeded, and to continue this process through the next stage of development will damage or even destroy the scenic and inspirational quality of the very things that people come to the park to see and to enjoy.

Nor is such a process necessary or desirable from the standpoint of effective use of the park. The visitor today is a very mobile person. His explorations are not confined to the immediate environs of his camp or lodging site, but encompass the entire accessible portion of the park. A spectacular scene is not requisite to a good night's sleep, an enjoyable meal, or the purchase of gas, a curio, or a bag of groceries. But, today Zion Canyon, for example, serves many purposes - providing all the services required in a small city. Primarily, it is an area to see, to enjoy, to understand, and to take recreational and esthetic pleasure from. In addition, it is a lodge, inn, and cabin site, two campgrounds, overcrowded parking areas, a place to get meals and buy gas, curios, and groceries. Cars are repaired, power generated, horses stabled, fire and maintenance equipment stored, and employees housed and fed, all within the foreground of Zion's most inspiring and precious scenes.

The answer to this situation is obvious. The MISSION 66 plan proposes the development of new accommodations and service centers outside the park. Improvement of existing roads, additional parking areas, added roads and trails, will disperse use more evenly and over a greater area. It proposes the construction of new housing for employees and new maintenance yards and shops farther down the canyon, removed from the foreground of the splendid views of the canyon. The primary scenic and scientific areas will be reserved for recreational, interpretive, and esthetic enjoyment. Less vital areas, yet convenient to the major attractions and in park-like surroundings, will be developed to take care of the physical comforts and necessities of the visitor, and of the requirements for administrative, maintenance, and service facilities. The sites for these developments available within the park are capable of adjustment and expansion to meet any anticipated future needs, thus avoiding the bottleneck situation now prevailing.

This pattern of development is perhaps the most important single step in the entire program from the standpoint of the conservation and protection, and the perpetuation of the opportunity to enjoy the truly significant features of the park.

The New Developed Areas

In view of the increasing development of overnight facilities accommodations and services in the nearby town of Springdale no expansion of these facilities is contemplated in Zion Canyon. On the contrary, it is the long range view and plan that concessioner facilities here will be reduced gradually, retaining only the minimum facilities as will be necessary to provide needs which cannot be secured outside the park.

The area of Zion Canyon from the South Entrance to the Virgin River Crossing is expected to carry the heaviest public use load. Within the park and at the beginning of the interpretive portion of the area road, a new visitor center will be provided. This will house administrative, fiscal, and protection division offices, but of most importance to the visitor, it will contain exhibits designed to give the visitor the background information so necessary for his understanding, use and appreciation of the area. Space will be provided for talks to visitor groups and for the display and storage of historic and prehistoric objects recovered and donated to the park. There will be offices for the interpretive personnel, work rooms, and a library room.

The existing Service facilities such as warehouses, maintenance shops, storage yards and employee housing will be maintained in their present locations until such time as time and use will make their value very low. Serviceable buildings will not be razed but no new buildings will be constructed in the scenic parts of the canyon. All additional buildings and facilities and replacements, as old buildings become unserviceable, will be constructed in the lower canyon at the site known as the Watchman Residential and Utility Area. New residences for employee housing, maintenance shops, buildings, and utility yards will be developed at this site.

The developments necessary to enable visitors to enjoy the superb features of the Kolob Section of the park will be constructed in the Taylor Creek-LaVerkin Creek Area. The new road will connect with Highway 91 at Taylor Creek. At this site the land is of lesser scenic value and will permit construction of entrance station, modest maintenance shops, and housing for the protective and operating personnel necessary.

At Three Creeks, a public comfort station and wayside interpretive facilities will be provided.

At the end of the road in LaVerkin Canyon, a campground lecture circle, visitor center and quarters for a ranger and maintenanceman will be provided.

At Death Point, a trail and parking area and simple interpretive facilities will be provided to make this outstanding view more enjoyable and understandable to the public.

At Lava Point, certain protective structures such as a fire lookout and ranger station will be constructed.

At none of the above mentioned developments are overnight accommodations contemplated except for the campgrounds proposed at LaVerkin Creek. Visitor use of the Kolob Section will be confined to day use with accommodations available in nearby towns along Highway 91.

Campgrounds

The campground in Zion Canyon will be expanded to its planned capacity of 175 campsites. To care for the increased campers in the park, the 150 site campground in LaVerkin Creek will be developed. As the Grotto Campground is located in the heart of Zion Canyon, overnight camping will be discontinued and the site will be converted to a day use picnic area, when the South and LaVerkin Creek campgrounds are developed to a point where they will accommodate the public coming to spend their nights out-of-doors.

Visitor Services

As travel continues to increase, and to include a larger proportion of people inexperienced in out-of-door life and National Park purposes, informational and interpretive service assumes a growing importance. Such service helps the visitor to use the park wisely, and enhances his enjoyment and the understanding of its features. Moreover, the preservation of the features of the park is an added dividend, for an appreciative and understanding body of visitors is the best defense against unknowing, inadvertent, or willful damage to park features and resources.

The facilities necessary for this purpose - roadside and trailside exhibits and markers, wayside museums, visitor centers, campfire circles, and assembly rooms - are identified elsewhere in this report. It is sufficient to say that MISSION 66 proposes an interpretive program which encompasses the entire

park, and integrates the presentation of the park scene with the visitor's individual movement through the area. The information and interpretive program will be so presented that the visitor can and will want to avail himself of it independently as he travels from place to place. It will encompass the entire park so that as each new problem of where to go and what to see and do arises, and as each new phenomenon is viewed, the answer to the visitor's questions will be there for his self-guidance. Expansion of facilities and services is called for, but along lines geared to the travel and use patterns of the modern visitor.

Behind the Scenes

There are a great many things in a park the size of Zion that never come to the attention of visitors, but without which the park could not long operate. The visitor turns the tap and water flows from a campground hydrant, or gushes from a drinking fountain. This is such an everyday occurrence that he never realizes the extensive system of utilities required to support him and his thousands of companions in the park. Water systems, power plants, transmission lines, sewage and garbage disposal, telephone systems and irrigating ditches to provide shade for campers, must all be installed and maintained. Carpenter shops, plumbing shops, machine repair shops, paintshops, storage buildings, garages for equipment - all are part of the necessary behind the scenes facilities, as is adequate housing for government employees. For every twenty persons in the park at a given time in the summer, one is a worker, serving either the concessioner or the government.

Without going into further detail, the status of these behind the scenes facilities is no better than that of campgrounds, lodges, roads, and other facilities that come to public notice. A considerable part of the MISSION 66 development program will consist of expansion and improvement to bring these facilities up to a standard that will adequately complement the expanded visitor use facilities.

Annual Operations

The complete program must also take into account the stepped up requirements for maintenance, protection, and service to visitors. Today, Zion requires an appropriation each year of approximately $200,000 for these operations. The greatest expansion will be required for visitor services - maintenance and operation of utilities, roads, buildings, and campgrounds; safeguarding human life and property; and guide, information and interpretive services. There is no point in building new

and modern facilities unless a realistic program for their maintenance and operation is embarked upon at the same time, and unless the program also provides those protective, regulatory, and informational services which the visitors have a right to expect and which are necessary for their comfort, convenience, and pleasure.

One aspect of the operating program deserves special mention. Most of the improvements proposed under MISSION 66 are for the use or are necessitated by the presence of man in the area. But, Zion has over 156 square miles of forested lands, and a large population of native birds and animals. If this park had no visitors whatsoever, the protection and management of this sizeable resource would still be necessary. Increased visitation increases this responsibility, for many forest fires are man-caused, man's developments and activities effect certain changes in the environmental relationships, and some of the chief problems involved in maintaining a balanced wildlife population arise from wildlife's relationship to man. Active management is called for - corrective management necessitated by man's influence rather than management of the natural elements of the environment. Such management, if it is to be effective and consistent with National Park purposes, must be based on accurate knowledge obtained through observation and research. And, once a course of action is indicated, the means must be available to carry it out. The MISSION 66 program for annual operations includes personnel and funds necessary for a continuing program of research, and for defense against forest fires, forest disease and insect infestation, soil erosion, unbalanced wildlife populations and the like.

SUMMARY

To be sure this program will require the expenditure of considerable money, much of it in simply catching up on the things which have for so long needed improving. The following tabulation is not a firm and final statement but will indicate the size and scope of improvements included in the program over the next ten years:

Roads and Trails Improvements	$ 3,568,300
Buildings, Visitor Centers, Employee Housing, Maintenance Buildings, Toilets	1,716,600
Utilities: water, power, sewage systems	679,300
Miscellaneous: campgrounds, picnic areas, landscaping, et cetera.	416,700
Total Cost of Physical Development	$ 6,380,900

Some of this development may start at once, but, for several reasons, the entire project cannot be completed for several years. First, field surveys and detailed construction plans have to be completed before certain parts of the work can be undertaken. Furthermore, the program for this area is but one part of the MISSION 66 program encompassing all of the 180 areas in the System. All areas will benefit in proportion to their need, and the entire improvement program will be completed by 1966.

CONCLUSION

There is a new day ahead for the visitors to Zion National Park. New developments will, by 1966, prepare the park to return to the people of America a full measure of enjoyment, understanding and inspiration - the products of an unspoiled natural scene. By eliminating the frustrations and delays of traffic jams, providing adequate places to stop and enjoy the scenes, take pictures and enjoy the interpretive exhibits, more time and certainly a frame of mind more receptive to enjoyment will be generated.

For awhile, as new facilities are being installed, there will be a period of some inconvenience - roads, especially, are not rebuilt without some disruptions in traffic. But, on the whole, new construction will be packaged so that each new development will be completed rapidly, economically, and with least disturbance to the visitors. By 1966 the visitor will find Zion attuned to the times, and equipped for the needs of the day.

Quickly settled for the period of his visit in one of the several comfortable and attractive accommodations centers, the visitor will move outward along well-designed roads for his daytime excursions and explorations of the park. Travel along the park roads will be a continuous and meaningful experience in observing, enjoying, and understanding Zion. The motorist will pause frequently at parking strips to savor an exceptional scenic view, to observe wildlife, or to examine the character

of the land and forest. At each pause an interpretive sign or exhibit will aid in his understanding and appreciation of the scene before him. Safe and inviting trails will lead him through the enchanting gorges, to vantage points for the best views, and along routes that reveal the significant aspects of the natural and human history of the Zion Canyon Country.

Sometimes the visitor will join a party under the leadership of a ranger naturalist to explore and become acquainted with the meanings of the trailside. As he browses through the exhibit rooms of visitor centers, he will review the experiences of the day, and get a foretaste of what lies before him the next day. In the evenings, campfire programs and illustrated talks will provide relaxation, bring his park experiences into meaningful relationship, and disclose new facets of this mysterious, intriguing, and scenic country.

But, the MISSION 66 plan means much more than the immediate comfort, convenience, or pleasure of the individual visitor. It is basically a conservation program - conservation accomplished by keeping intensive developments away from the features that distinguish Zion, by confining developments for human comfort to lands of lesser park value, by restoring and preserving the scenic and natural character of those areas whose primary value is scenic and interpretive enjoyment, and by reserving large blocks of the park from all development whatsoever. The Great White Throne, as an example, will remain unimpaired, the beauty of its environment enhanced by the adequate parking area and interpretive exhibits. What is more, once it is devoted exclusively to scenic and interpretive enjoyment, the park will remain unimpaired for the undiminished enjoyment of generations yet unborn.

MISSION 66 PROGRAMS

Zion National Park

December 10, 1956

Plan approved 1/24/57

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1. Statement of Significance

Zion National Park contains grandeur of colorful canyon and mesa scenery that ranks high among the superlative scenic areas of the world. Zion National Park brings to the visitor understanding and realization of the mobility of the earth's crust. Here are manifested exhibits of faulting, folding and volcanism producing an erosional pattern of tremendous proportions. Plants and animals influenced by the geologic processes span life zones from the desert to high mountains. Visitors are impressed with the evidence of powerful natural forces which have been and still are at work, in the serene atmosphere of an outdoor cathedral.

II. Management and Development Theme

The emphasis for the management and development of Zion National Park must be to bring to exhibit for the visitor those dominant and salient features which give it significance among areas of the National Park System. Zion National Park is open to visitors throughout the year and an adequate year round staff is essential. Winter sports are not involved, but protection and interpretation must be conducted through all four seasons.

The great uplifted block lying between the Sevier Fault to the East and the Hurricane Fault to the West exhibits its most spectacular features in Zion. The agents of erosion, water, wind, and temperatures, subsequent to faulting and uplift, have with the aid of time, gouged tremendous canyons into the terraces, leaving within towering peaks, fall-topped mesas, sheer pinnacles, arches and natural bridges. Within the steep, narrow, meandering canyons are streams which continue to carry away the debris of the erosional agents. Amid the sheer walled canyons are cool shady areas within which live a flora and fauna spanning climatic zones without change of altitude or latitude. This area is an elaborate outdoor museum of nature's master work.

There is much evidence of aboriginal occupation. The Basketmakers and Pueblos lived along the periphery depending upon the area for their game, wild fruits, and implements of stone.

The story is three dimensional; geologic, biologic and historic. Of primary importance are roadways into, over, and to important geologic phenomena. A sample canyon can now be entered. A road, so the public may travel over or through one of the great faults, and over the plateau's lava fields to view the scene from above is essential to understanding. Trails are necessary to permit access to features beyond the roadway and for back-country experiences. The vastness of the area, 143,254 acres, and the potential visitation of 750,000 annual visitors, dictates that many of these roads and trails be equipped with interpretative exhibits and self-guiding features. There is needed one large Visitor Center in Zion Canyon where the visitor may be received, informed and oriented to plan his stay for greatest benefit. A second, smaller Visitor Center is planned in the Kolob Area of the Park at LaVerkin Creek where there will be a campground, restaurant, store and trail hub.

The location of the area, at the edge of the great inter-mountain desert, makes it a desirable place to linger overnight or for several days. Remoteness from large centers of population and limited accomodations in nearby rural communities require certain accomodations and services within the area, and adequate camping

and picnicking grounds. Overnight accommodations for four to five thousand people, both inside and outside the area, are considered the minimum for planning development.

Developments planned within irrigable lands permit many activities compatible with preservation. Roads permit the enjoyment of the scenery by automobile. The visitor may hike over the short trails, or via pack or horseback travel over the longer trails. There is swimming, fishing and sun-bathing along with other recreational opportunities. Primarily the visitor will come to enjoy the scenery, seek understanding through the interpretative program, and gain spiritual rest and relaxation.

A strong interpretative program with appropriate facilities will be developed. With orientation gained at the Visitor Centers and by visits to wayside and trailside exhibits, the public will benefit and be prepared to fully enjoy the area. There must be nightly presentation of campfire talks and programs at the various public use areas. Throughout the park there will be available a goodly number of appropriate, moderately priced publications and printed guides.

This theme of development envisions (1) the presentation of the spectacular scenery to the viewer; (2) the opportunity to aid the understanding of the reader and listener; and (3) the chance to properly invest some leisure time to rest and refresh in Zion; the whole leading to an inspirational experience, traditional, and to be expected in a visit to a National Park.

III. Park Organization

The type of organization required to coordinate the work of three national monuments, a field accounting office, and directly administer Zion National Park is similar to that existent for some years.

The organization charts presented outline first the coordinating office and describe its functions. Zion National Park organization chart is so arranged as to present a single unit with functional descriptions. This necessarily requires some apparent duplication of positions, which is not really the case. For example, the Coordinating Superintendent and the Superintendent of Zion National Park are the same person. This is true of the Park Naturalist under the Technical professional Division of the Coordinating Office, he being also Chief Park Naturalist of Zion. These duplications, requiring the holding of two offices, are indicated by an asterisk.

Coordinating Office Functions: The coordinating office will perform for the small areas coordinated the specialized work for which the small area is not equipped because of the small volume of work required. It gives the small area Superintendent the advantages of having close at hand a specialized staff which it would never be practical for him to attain within his area, and at the same time leaves him free to administer his area on the ground. The coordinating office will furnish the following service to the areas under the coordinating jurisdiction of the office.

Specialist Service: The park engineer, park architect, park biologist and park forester will furnish to the coordinated areas their special skills and advice to the coordinated superintendents in administering their areas. They will perform many jobs within their special training direct for the area superintendent and will furnish their advice to the superintendents.

Administrative Service: The specialized functions of payrolling, personnel, fiscal accounting and property management and accountability will be performed for the areas by the organization at the coordinating office.

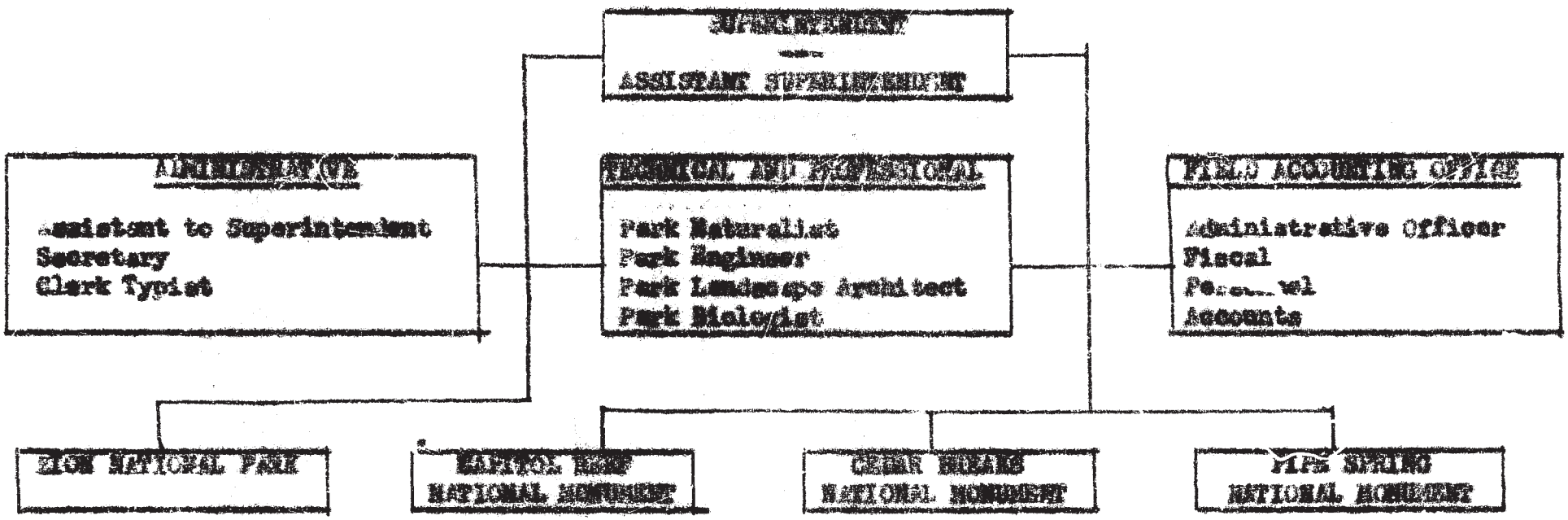
Protection Service: The chief ranger will give special advice on all protection problems to the areas and will assist in solving problems of training, planning, organization and research.

Interpretive Services: The chief park naturalist will aid in the planning, execution, training, and other functions for the coordinated area superintendents. He will put at the disposal of the area superintendents his special skills, experience and equipment in the carrying out of the area program.

Maintenance and Construction: The coordinating organization can furnish the special skilled workers and the heavy and specialized equipment to perform maintenance and construction which it would not be possible to obtain in the area nor to contract in the vicinity. The volume of work combined in all of the areas will enable the one organization to profitably operate special and heavy equipment that would not be practical for the small areas alone to have. Too, skilled operators can be profitably employed year long who cannot be obtained so far from a labor market for short periods of the year. Zion is admirably situated by climate to coordinate the work with the administered areas. The winters are mild enough so that maintenance work and construction can be carried on year long in that area. This enables the heavy equipment crew to perform necessary work in the other areas in summer and work at Zion in winter, and so keeps the crew and equipment profitably employed year long.

ORGANIZATION CHART

COORDINATING OFFICE



ORGANIZATION CHART

ZION NATIONAL PARK

PROTECTION DIVISION

Chief Ranger

Asst. Chief Ranger

Supervisory Park Rangers (3)

Park Rangers (6)

Seasonal Park Rangers (8 MY)

Functions:
a. Protection of the public, b. protection of monument features, c. Protection buildings and facilities, d. Related protection responsibilities.
Campground management, fire protection, shade tree preservation, wildlife management, Management of grazing, Soil and Moisture conservation.

INTERPRETATION DIVISION

Chief Park Naturalist

Park Naturalist (2)

Biologist (1)

Seasonal Ranger-Naturalists (7 MY)

Functions:
a. Visitor enjoyment
b. Protection through understanding
c. Encourage wise use of area
d. Fact finding through research

ENGINEERING AND MAINTENANCE DIVISION

Engineer

Supervisor Maintenance and Construction

Landscape Architect

Mixed Gang Foreman (2)

Laborer Leadman (2)

Operator General (2)

Maintenanceman (3)

Laborers (3), Janitor

Functions:
On the ground maintenance, and operation of roads and trails, buildings, grounds, campground, utility systems.

ADMINISTRATION DIVISION

Administrative Officer

Supervisory Fiscal Accounting Clerk

Secretary

Administrative Assistant

Functions:
On the ground correspondence, reporting and accounting. Accountability and care of government property. Timekeeping and cost accounting

IV. The Program

1. Visitor Accommodations

a. Provided by Concessioner: Utah Parks Company, Cedar City, Utah, under Contract No. 1-100mp-102, is authorized to furnish the following services:

Lodging, meals, camps, garages, service stations, laundries, barber shop, Turkish and other baths, swimming pools, amusements and sports, newspapers and periodicals, souvenirs, postcards, paintings, photographs, photographic supplies, refreshments, tobacco and smoker's supplies, transportation services for passengers, baggage, express, freight and mail, trail transportation services, general livery business, blacksmith shops, machine shops, stables and corrals, general merchandise stores for groceries, meats, food supplies, dry goods, clothing, shoes, hardware, notions, toilet articles, and rental of fishing tackle.

The concessioner is authorized to use and is responsible for the maintenance of an area of approximately 21 acres surrounding Zion Lodge and the adjacent cabin area; approximately 5 acres occupied by his utility area, and approximately 14 acres at the South Entrance surrounding the cafeteria, cabins and service station.

The existing contract with the Utah Parks Company does not expire until December 31, 1968.

Since operations of the company have shown a loss during the period 1921 to 1955, and since the present facilities of the concessioner are largely obsolete and considering the fact that private capital is providing very acceptable accommodations outside the park, it is not likely that additional concessioner facilities will be needed within Zion Canyon. It has been recommended that at the expiration of the existing contract it not be renewed on the scope which it now encompasses. If, before expiration of the contract, the company wishes to discontinue some of its operations within the park, it should be encouraged to do so.

It is contemplated that overnight accommodations of the type usually furnished by a large concessioner will not be needed in the Kolob section. The extent of the services to be provided will be for campers supplies and food, light lunches, cold drinks, and souvenirs. Overnight concessioner accommodations should not be permitted in the northwest section of the park, particularly not at the Left Fork Creek area.

It would be undesirable to remove the concession operations from Zion Canyon at once. But no more development of overnight accommodations within the park should be permitted. We should look to the time when the existing facilities will be materially reduced to essential day use facilities and services.

b. Provided by the Government: There are at the present time two campgrounds within Zion National Park; the Grotto Campground accommodating fifty parties and the South Campground accommodating 130 parties.

The Grotto Campground is the older of the two and located about a half mile above Zion Lodge. It has never been formally constructed as a campground, although it has been used for that purpose for forty years. It is served by three comfort stations. Because there is insufficient room for expansion, it is planned to convert it to a picnic area for day use only. There is an abundant water supply and by planting grass and native shrubbery and by the provision of tables and erection of controls, it can be made into a delightful area to serve the traveler who wishes to eat his home-packed lunch as he visits the area. It can also be used for groups of school children, family reunion groups, college groups, and other organizational day use.

The South Campground was reconstructed and enlarged in 1953 and is served by three modern comfort stations. It has been planned so that each site can be used either by tent campers or by parties in house trailers. By the construction of two more comfort stations and equipping sites already partially completed, another 30 parties can be served. One hundred sixty sites should be the maximum permitted in this area. Any further expansion must be planned in a less restricted part of the park.

The proposed campground in LaVerkin Creek Canyon will ultimately be expanded to 150 car and trailer sites if sufficient site space is available. It will not be constructed until later in the program, because the west side or Kolob section road must first be constructed to the site. The higher elevation will provide more pleasant camping. The LaVerkin Creek Campground will not have to be operated for as long a season as that in Zion Canyon and can probably be closed shortly after September 30 each year. The campground in Zion Canyon is kept open year long and will carry the winter load.

2. Visitor Services

A Visitor Center is proposed for Zion Canyon as a part of the administrative building at a location near the existing museum and will replace the existing Zion Museum and administration building.

This building will provide adequate space for orientation and information exhibits on the park story; a lobby for general information service and the display of publications and exhibits of an orientation nature, such as maps and relief models; a room for the display of the exhibits designed to present the essentials of the park story; and an assembly room where visitors may gather for museum talks and orientation programs through the media of kodaslides and movies designed to orient them and help toward greater enjoyment and appreciation of the park.

The Zion Canyon Visitor Center will also provide space for the interpretive staff and adequate space for its research facilities, study collections, exhibit preparation and repair, photographic darkroom, and the park library.

Additional interpretive facilities are: the campfire amphitheater in the South Entrance area, with seating capacity of around 450 persons; the concessioners recreation room at Zion Lodge, accomodating about 200, is available for a one-half hour interpretive illustrated talk each evening. Proposed areas: a Visitor Center, campfire circle and wayside exhibits at LaVerkin Creek area, and trailside exhibits at Three Creek area along Taylor Creek.

The Visitor Center proposed for the LaVerkin Creek Area will be smaller than the Zion Canyon structure. It will be the hub of the interpretive program to be presented in the entire Kolob and West Rim Area of the park. The function of this structure will be similar to that at Zion Canyon with emphasis upon the features displayed in the West and North Portion of the park.

The majority of visitors to Zion National Park come in automobiles and for the most part enjoy its scenic beauties while driving over park roads or hiking over short trails from parking areas along the roadside.

Information and interpretation of the area for these visitors will be provided in attractive wayside exhibits. These exhibits will be of the roofed-over type in which fairly complete presentation of the site story can be presented. In addition to the existing exhibit at the Temple of Sinawava the others proposed are four:

(1) The keeping back portion, now with an exhibit on the story of the pioneer struggles in the Rice Valley and the operation of the cable hoist on Cable Mountain. The Rice Valley and Hidden Canyon Trails are also served by this parking area and will be given exhibit space in this crystal building.

(2) At the Court of the Patriarchs, designed to present the geologic story of Zion Canyon with emphasis on the creation of the steep walled canyons and the towering pinnacles and hanging valleys.

(3) At Emma Parks in the Main Canyon, to serve orientation of the visitor as to the visible features, and the period of interest as well as the complete story of the Virgin River and the geologic story of the east of the Virgin Canyon.

(4) At Lava Point from the Timber Creek exhibit will present the story of the uplifted plateau and the forces at work which have created the spectacular scenery of deeply cut canyons, other erosional forms present, and the unique flora and fauna features. Further development under (5) temporary exhibits are placing the "climate tower" on the rim which will be evaluated here.

(5) At a location best suited to present the story of the recent volcanic activity of the area. (A road to the Valley from Hurricane Cliffs to Pioneer Point would make visitors in a ideal location for such an exhibit.)

(6) At Death Point an interpretive crystal exhibit will portray life on the plateau, and geological and historical exhibits explaining spectacular panorama.

Services and Publications. Visitors will be provided with information booklets upon arrival at the park entrance station. These booklets will include maps of adequate size and detail to aid the visitor in finding the major points of interest and the facilities available to him. Information and orientation will be provided at the visitor centers and at major public use areas.

Visitor use is guided by signs and other exhibits and through publications such as booklets, books, leaflets, charts and maps. The use of bookslides and movies, and tape recordings in giving illustrated talks at visitor centers, lodges and campfire amphitheaters will be an important media. Self-guiding nature trails and leaflets are provided for the locations at present and where are planned.

To complete the park story, research must be undertaken in the natural sciences and salient features. Basic study has been accomplished in the geology, biology, botany and archeology. Continuing research should be planned and an effort made to secure the interest and participation of universities and colleges in individuals carrying out projects or studies which phases have important data

on the park's natural or human history.

Problems for Research Study:

In the Field of Geology:

1. Make intensive survey of all formations exposed in the Kolob section of the Park in order to develop a more complete geological story of this area.

2. Make careful analysis of the volcanics exposed in the Kolob Section to determine their composition, age and relation to the geologic story of folding, faulting, uplift and erosion of the sedimentary beds they cover. Careful mapping of all volcanic evidence is needed.

3. Make detailed survey and a collection of the fossils found in the various formations. Dinosaur footprints have been found on a fork of North Creek and this site or some possibly better site may be developed as an important exhibit in place.

4. Make a thorough search for the plant and animal fossils found in the Chinle and Shinarump formation in order to obtain a complete study collection of these species for appropriate description and publication.

5. A study of the amphibian and reptile tracks in the Moenkopi formation is needed.

6. Study is needed to determine the origin and the mode of transportation and method of deposition of the Navajo Sandstone.

In the Field of Biology:

The major problems pertain to the wildlife of the park and the relationship of flora and fauna or vice versa.

1. Make thorough study of Bighorn with emphasis on possibility of restocking.

2. Make range surveys of the forage available and determine the carrying capacity in the prominent deer ranges of the Park and determine the amount of use and whether or not, and where programmed management measures are needed.

3. Determine predator populations especially of cougar, coyote and bobcats and their relationship to the existing deer and other mammal populations.

4. Make careful survey for evidence of porcupine over-populations and the amount of damage to forest species to determine whether or not management measures are needed.

5. Carry out regular inspections of the visitor use areas, campground, lodge and residential areas for evidence of over-populations of rodents, of the disease spreading variety, so that necessary controls may be taken to safeguard visitors.

6. Make surveys or periodic inspections for evidence of the build-up of insect infestations in the area and determine best methods of control; for example, the pine beetle, tent caterpillars and box elder bugs and other insects detrimental to the flora and indirectly to the visitor's enjoyment.

7. Make a study and survey of the exotic plant species and determine best control methods.

8. Make a study of the ecological factors that determine types, variety, and distribution of floral and faunal species found in the different sections of the park.

A program of publication of the results of research accomplishments has been initiated and will be continued in order to provide the visitor with accurate data on the park.

3. Conservation and Protection

a. Protection of People, Park Features, and Buildings and Facilities: All park employees have the responsibility for the protection and conservation of the entire park area, safeguarding the public, promoting beneficial use of the park and the protection of all developments. However, the primary responsibility for these duties falls on the park ranger organization. Park rangers assist extensively in performing visitor services, such as managing campgrounds and giving information. This phase of their work, with the specific aim of securing visitor cooperation in protection problems, is subordinate to the immediate job of protection of visitors, features and developments. Protection activities start at the entrance stations.

b. Protecting the Public: Many visitors to Zion National Park are in an unfamiliar environment and need guidance to keep them from engaging in hazardous activities such as risky mountain climbing, venturesome hikes, exposure to extremes of temperature, and unsafe driving. Rangers enforce traffic regulations, assist stranded motorists, investigate accidents, give assistance to the injured, search for lost persons and make rescues when required. Inspections are made of park food handling establishments, housing facilities, utilities and water supplies for compliance with safety and health standards.

c. Protecting Park Features: Control of permitted grazing and prevention of cattle trespass is a major problem in Zion National Park. Early detection and control of forest fires in the broken and rough terrain of the park is difficult. Vandalism, poaching of wildlife or plant life, timber trespass, detection and treatment of forest diseases or insect infestations, are all examples of the problems for which protection is required. This phase of the work may involve police and court action for violations.

d. Protecting Buildings and Facilities: Protection is provided for all developments in the park through policing them, making necessary inspections and patrols, and organizing, directing and training fire brigades of the park and concessioner. Problems of theft, vandalism, and misuse may occur in this field.

e. Related Protection Responsibilities: A number of protection problems are peculiar to Zion National Park. Inholdings are factors affecting land overuse and other nonconforming activities. Over enthusiastic uranium prospectors pose a continuing threat. Commercial trucking on the Zion-Mt. Carmel Highway and through the tunnel constitutes a hazard to visitor cars and is detrimental to park use.

MISSION 66 plans include expansion of the protection functions in Zion National Park. They provide for increases in the necessary personnel, equipment and facilities for meeting protection responsibilities concurrent with the opening of Taylor Creek-Deerlick Creek sections of the park to public use and for meeting the existing protection responsibilities. Adequate protection today and the increase required to meet 1966 problems require several added permanent and additional seasonal positions.

Increases in facilities are in the main tied to developments proposed for the park, the provision of two ranger stations, one on the Kolob Plateau and the other near U. S. 91 at Taylor Creek. Quarters for fire lookouts and a suitable lookout structure are planned at Lava Point. Modernization of the existing entrance stations will be required to handle a visitation of 750,000 people annually.

Modern and suitable equipment for protection work is a vital part of the program. Airplane and helicopter rental are considered advantageous in certain patrol, rescue, and forest fire situations. Use of such mechanical aids will reduce the actual manpower needs in many instances. Additions to the leased telephone and FM radio system will be required.

Training programs for all supervisors have been conducted during the past two years in Zion National Park and will be continued. Instructors and discussion leaders of local area training sessions are normally the park administrators and supervisors who have attended higher level service training courses. The success of the system depends on the instructors knowledge and his teaching ability. The program will be strengthened by training leaders to develop a larger number of field men.

Emphasis is given to specialized training required in protection work. Law enforcement training schools in the park are conducted by F.B.I. agents. Rangers obtain professional training in fire control and law enforcement from attendance at federal, state, and county agency sponsored cooperative schools. Regional and Service-wide conservation and protection conferences are attended each year by selected ranger supervisors. New methods of forest fire control and structural fire control are presented, as well as refresher training. Forest pathologists and entomologists discuss threatening forest diseases and forest pests, methods of identifying epidemic conditions, recommended control practices and the value of the observations made by men in the field in their day to day work activities. Trainees in turn present the information obtained at these meetings to area employees concerned. Public relations and protection problems are covered by exchange of ideas at such meetings. Such training is

carried through to reach all public contact employees and those assigned other types of protection work. Adequate funds for training aids and for the expense incurred from sending protection personnel to specialized training schools are required.

An informed, confident and poised ranger staff handles the public intelligently, helpfully and courteously and when necessary applies restraints without over-aggressiveness. The park ranger is the first and often the only person in the uniform of the National Park Service to contact millions of Americans who visit the parks. He is the representative of the park superintendent serving all the people with equal courtesy and interest without showing favoritism to any individual or group. Park rangers have established an enviable reputation as public servants and every effort should be made to continue a high standard of morale in the staff of each park in order that there may be a continuation of the tradition.

Management of Use Areas: Camping is a major recreational activity in Zion National Park. Campgrounds and picnic areas are managed on a "First come, first served" basis, and camper conflicts over sites are averted by programing use. Regular inspections are made of sanitary conditions. The South Campground is used by people every month in the year. July and August are the periods of climax use. Normally Grotto Campground is opened to the public Memorial Day and closed the week following Labor Day. However, under the long range plan the area will be used for picnicking only. Group camping during the summer overflow periods will continue at the Grotto. Ranger patrols make many personal contacts with campers which promote visitor cooperation in the care and maintenance of camp sites and sanitary facilities. The work aids to visitor enjoyment and results in maintenance savings. Additional seasonal rangers will be needed in view of the planned expansion and dispersal of camping facilities and the anticipated increase in visitation.

Forestry: There is a wide distribution and variety of plant life in Zion National Park and the vegetative cover types consist of 6,340 acres grassland, 4,000 acres sagebrush, 19,639 acres chaparral, 48,444 acres woodland, and 40,500 acres forest. In addition there are 24,371 acres of barren land in the park. The desert-shrub, pygmy-forest, and coniferous-forest groups lie in broad, indefinitely bounded belts that roughly correspond to altitude. The canyon deciduous woodland trees stand along stream courses at different altitudes but grow best along perennial streams at relative low altitudes. In broad views below 4,500 feet, sagebrush and blackbrush are the most conspicuous; at altitudes above

6,500, ponderosa pine, scrub oak, and aspen stand out; on intermediate slopes juniper and sagebrush seem to be everywhere; and in the valleys cottonwoods attract chief attention. The types overlap as much as 2,000 feet in altitude, and brushland is a characteristic part of the cover in forested areas. All vegetation is essential to the natural scene and forest protection is a ranger staff responsibility.

Fire Control: Fire prevention and control constitute the major portion of the park forestry program. All seasonal fire-control personnel are financed out of the Forestry and Fire Control budget. These men augment the park ranger force as fire lookouts, smoke-chasers or members of suppression crews. The basic fire control staff is provided. However, park enlargement, proposed construction and greater public use require increases for supporting costs. Experience may determine that the services of a patrolman is warranted. The feasibility of a lookout post in the vicinity of Death Point for protection of the western area of the park will be studied. Increases proposed for fire control will provide the additional equipment needed for patrol of new areas opened to public use under the MISSION 66 program and the added costs incurred for leasing commercial communications facilities, both radio and telephone. The amount provided for fire control activities was increased in F.Y. 1963, and must again be increased, based on recent advances in the salary scale and rising costs of all supplemental services. In the past 28 year period there have been a total of 116 fires in Zion National Park and adjacent protection zone. Of this total 102 fires occurred on park lands. Losses from forest fires have been held to a minimum and considering the amount of inaccessible terrain and the incidence of fires on this type of land the record is good. Every effort will be made to continue the work at its present standard.

Tree Maintenance: Cottonwood, willow, ash and boxelder are the important shade tree species. Most of these trees in the developed areas and along the canyon road require pruning, and storm damaged or over-mature dangerous trees must be removed. Occasionally, broadleaved trees requiring irrigation develop chlorosis which can be corrected by treatment, and a number of trees in the campground are treated for the disease each year.

Forest Pest Control: The vegetation in Zion Canyon is subject to attack by several species of defoliators. The most important of these pests is the Great Basin tent caterpillar which attacks all broad leafed plants but particularly the Fremon cottonwood. Control measures have been effective. However, re-infestation occurs from untreated areas in the valley outside the park and annual maintenance control measures will be a recurring activity.

Wildlife Conservation: The maintenance of animal species in harmony with their environments is not simply a matter of "letting nature take its course" while providing protection from direct outside influences. This principle is best demonstrated by the rapid recovery of deer and cycles of overpopulation in the Zion Canyon deer herd during the past 30 years. Prior to this period the early settlers had practically exterminated the deer in the canyon and drastically reduced their numbers on the adjacent plateau so that the natural balance was being maintained by the remaining predators. In the period 1925 - 1932 the Predatory Animal Control Unit of the Biological Survey killed a number of lions in and adjacent to the park. The deer made a rapid recovery and overstocking was evident as early as 1937. Trapping and transport methods failed to solve the problem and in 1943 the reduction by shooting program was instituted which has resulted in keeping the deer in the canyon in check. Extension of the legal hunting season outside the park may be a factor in the maintenance of the current deer population at a satisfactory status quo. Continuing research of the habitat and management practices is necessary.

At one time the Scouler bighorn sheep was native to the area. They are not positively known to exist at the present time. Studies should be made relative to their demise and chance of survival if reintroduced.

Exotic plants have become a serious problem in Zion Canyon. Among the chief offenders are russian thistle, sand burr, morning glory, June grass, fox tail, sweet clover, tamarisk, and ailanthus. Some of these species are so persistent as to prevent native vegetation from becoming reestablished in large areas.

We have recommended that our staff include a biologist who will make the necessary studies and help the administration in solution of the problems posed.

Soil and Moisture Conservation: About 47 percent, or approximately 69,000 acres of land in Zion National Park have been seriously eroded or are badly depleted because of unnatural erosion and prior misuse. The beginning of the devastation dates from about 1862 when the first settlement was made in Zion Canyon and continued until 1919 when the park was established. However, in the area formerly Zion Monument, dry farming on private lands and grazing of livestock, some in trespass, and other adverse use is heavy even to this day. In many areas, the ground cover was destroyed and erosion of the top soil became progressively severe. To date some control has been carried on in Zion Canyon and a little on the Kim country. A ten-year program costing an estimated $300,000 is required to check the erosion and bring back vegetation to some problem

areas. The work should be vigorously pursued so that all structures and conditions for natural healing are completed by 1966.

4. Circulation System

Sufficient roads will be provided in Zion National Park to take motorists to a representative assortment of interesting and distinguished features. The system will be designed to discourage speed, but promote safety and enjoyment. An integral part of building new roads and rebuilding and relocating old ones will be the provision of informational and interpretive signs, markers, and exhibits, and of the necessary turnouts, parking spaces, and overlooks to enable the visitor to make safe and satisfactory use of the park.

The existing road, Route 1, is a through road leading from the South Entrance of the park to the East Entrance. It traverses very difficult terrain and utilizes two tunnels, one of them more than a mile in length. Maintenance costs are high, but the road can be classed as one of the most spectacular in the country. We propose to rehabilitate the road to make it safer and less expensive to maintain. It was not constructed for modern traffic having only a few inch base beneath the surface. Drainage is inadequate and there are few turnouts. The Mt. Carmel Tunnel here must be painted or lighted for safe travel. Parking areas to encourage the visitor to stop and safely enjoy the striking scenery must be provided. Reconstruction will consist of re-surfacing, painting interior of tunnel, constructing parking areas and turnouts, placing interpretive markers, signs and exhibits throughout its length.

The Floor of the Valley Road, Route 2, is similar to Route 1 in its very poor condition, except that it does not traverse such difficult terrain. It is the means of access to Zion Canyon which contains spectacular features of the park. Reconstruction of the route to consist of re-surfacing, constructing additional drainage and retaining walls, realignment of a short section to get it out of a sump, and adding the necessary turnouts, interpretive signs and exhibits to enable the visitor to get the maximum enjoyment in traversing the route.

The roads system will be supplemented by a trail system which will enable visitors to spend time in the wilderness areas of the park. Surfaced trails are very important to the proper and adequate visitor use of Zion National Park as many features will always be inaccessible by road. The steep sandy terrain is very discouraging to travel without stabilization. Unsurfaced trails

are expensive and difficult to maintain in this region.

From the floor of Zion Canyon, a system of trails has been constructed to allow the visitor to walk or ride to the rim of the canyon where he can get an entirely different perspective of the area features. The West Rim and the East Rim Trails are the major trails to the top. Both trails are in very poor condition due to lack of maintenance, deterioration during the war years and flood damage. Reconstruction of the West Rim Trail is under way.

Most important are the close-in short trails which lead from convenient parking areas to places or features of special interest. They consist of the Narrows Trail, Weeping Rock Trail, Emerald Pools and the Zion Overlook Trail. These short trails require paving over deep sand due to their extremely heavy use.

Proposed Roads and Trails, Kolob Section: The only new roads proposed under MISSION 66 are the roads necessary to enable visitors to see and enjoy representative features and points of interest in the Kolob Canyon section of the park. The proposed road is also justified by the fact that the limited space within Zion Canyon dictates the spread of visitor use to other areas. The proposed road will lead from Highway 91 at Taylor Creek through Timber Creek to LeVerkin Creek to the site of the proposed campground. It will be so located and fitted into the landscape that it will bring to view the natural beauty of the Finger Canyons and the Kolob Plateau and its tremendous spectacular features. We believe it will be one of the outstanding scenic roads in America.

A detached short spur leading from the cross-county road will be constructed to Death Point, one of the most scenic viewpoints on the high rim of the Kolob section.

Short trails will lead from parking areas and turn-outs to enable visitors to make hikes to the Kolob Natural Bridge, into the Finger Canyons, and to other features of the area. The improvement of the LeVerkin River Canyon trail to Bear Trap Canyon and to the Hop Valley Divide are the major trail projects.

Zion Canyon Section: A short road will be constructed in Oak Creek Canyon to enable visitors to view this scenic section. It will be a continuation of the present Utility Area Road.

5. Utility Systems

Zion National Park has never found it possible to keep abreast of the need for sewer and water systems. Systems when built seemed adequate, but hardly had construction been completed when the unprecedented increase in visitation caused them to be overloaded.

Commercial power is available in Zion Canyon and only recently have we been able to contract for telephone and radio services from a commercial firm.

The sewer system at the South Entrance will have to be enlarged. The space for underground disposal of effluent is limited and a pumping station to a new disposal bed will have to be considered. A new sewer system will be required to serve the Visitor Center and residences scheduled to remain in Zion Canyon. The system at the Grotto Campground is obsolete and inadequate. It is proposed for replacement. The system at the Temple of Sinawava has entirely failed. The system at the headquarters site consists only of cesspools and has been condemned by Public Health Service officials. Plans are to carry all the sewage from the South Entrance area to the central disposal plant.

In the Kolob Section at least three systems will have to be constructed to serve the proposed developments. Small systems to serve the areas at Taylor Creek, Three Creeks, and a somewhat larger system will be required for the campground, Visitor Center, and developments at LaVerkin Creek.

Water systems will be constructed to serve Taylor Creek, Three Forks and the La Verkin Creek areas. The East Entrance, and the Temple of Sinawava in old Zion will also require new water systems.

In Zion Canyon it will be necessary to relocate the overhead power and telephone lines in the lower part of the Canyon. They now encroach on the features of the canyon and spoil the views. They will be relocated on the east side of the Virgin River on lower ground and behind the screen of deciduous trees along the river. As the power company and the concessioner have franchises based on the present location, it is likely that the Service will have to stand part of the expense of moving.

While power and telephone service will be available at Taylor Creek, it is rather unlikely that commercial power companies

can be induced to construct lines to serve the LaFerkin Creek area developments. A power house and distribution system will have to be constructed there. Radio communication is planned for the whole Kolob Section, except at the West Entrance development at Taylor Creek and U. S. 91 Highway.

6. Administrative Facilities

The present administrative offices of the superintendent and his staff are crowded into an old converted farm house. The building is neither modern nor fire resistant. As it was never designed as an office building, space is badly planned and lighting is poor. The building is too small and too old to be modernized.

A suitable administrative wing planned for the Zion Canyon Visitor Center will provide suitable work space for the superintendent and his staff which conducts the business functions of managing this park and the monuments coordinated from this office. Included are offices for the superintendent, assistant superintendent, chief ranger, park naturalist, biologist, engineer, landscape architect, and fiscal staff and equipment. It will also contain conference rooms and drafting rooms for technical employees. It will be fire resistant in construction and will contain fire proof vaults which will protect valuable government records.

A district administrative office will be constructed in conjunction with the West (Taylor Creek) entrance. This will provide suitable office and work space for the Supervisory Ranger, park rangers and ranger naturalists and maintenance supervisor assigned to the Kolob Section of the park.

New entrance stations will be provided at the East, South and West (Taylor Creek) Entrances to the park. The existing ones are improperly designed to handle modern traffic entering the park without waste of manpower.

A suitable community building, approximately 2400 square feet is proposed for the Watchman Residential area east of the Virgin River. Year round operations require some place for group meetings and social affairs without the regular disturbance of the employees resident in the Dormitory.

7. Employee Housing

One of the most critical problems in achieving the objectives of MISSION 66 for Zion National Park is the one of housing for employees and their families who are required to live in or near the park. We have set up an objective of obtaining funds for staffing by 1966 as follows:

Management and Protection	22
Maintenance and Rehabilitation	23
Facilitating Personnel	8
Total	~~43~~ 53

In addition to the 45 permanent employees MAP and MRR, there is an added 8 member permanent staff financed by facilitating or reimbursable funds. These are not shown on the staffing schedule or operating requirements. Total permanent employees proposed by 1962 is 63. There are in addition 23 man years of seasonal employees.

We will endeavor to meet in a realistic manner the policy to furnish housing for all employees subject to the rotation policy. In addition, there is the requirement to furnish accommodations to the seasonal management and protection personnel. Fifteen man years in this category means 30 employees at six months, or sixty employees at a 3 month limitation.

Present Housing: There are at present 20 residences, eight of which are substandard and one acceptable residence is scheduled to be razed in the realignment of the Zion Canyon Road. A dormitory for men accommodates 20 MAP male employees.

Needed Housing:

Zion Canyon: For Permanent Staff:

Nine new residences to replace nine substandard units and the one to be razed. Five will be 2 bedroom and four will be 3 bedroom units. Four 2-story apartment houses with carports, each to contain 4 two bedroom units, making 16 family units.

Zion Canyon: For Seasonal Staff:

It is proposed to return to seasonal employee use the 8 substandard houses now occupied by permanent employees. These houses, plus the dormitory and an apartment house containing 10 one bedroom family units, must be made to do for seasonal employees needed in Zion Canyon. A three family efficiency unit for seasonal employees is to be constructed at the East Entrance Station.

Kolob Section: For Permanent Staff:

Quarters for three permanent employees will be constructed at the West Entrance (Taylor Creek). This will consist of one 3 bedroom residence and a duplex family dwelling of two 2 bedroom units.

One duplex residence of two 2 bedroom units will be constructed at the LaVerkin Creek Area for the employees required to maintain, operate, and protect this area. At LaVerkin Creek there will be a Visitor Center, restaurant, picnic-campgrounds and necessary power, water and sewer systems. One duplex residence containing two 2 bedroom units is proposed for the Firepit Knoll area on top of the plateau.

Kolob Section: For Seasonal Staff:

An efficiency building of the motel type is planned for six seasonal employees at Taylor Creek. These units should be suitable for full housekeeping.

Housing Recapitulation:

			Structures	Family Units
Permanents:				
Existing:	Suitable Residences		11	11
New:	Residences:			
	Zion Canyon	9		
	Taylor Creek	1	10	10
	Duplex Residences			
	Firepit Knoll	1		
	Taylor Creek	1		
	LaVerkin Creek	1	3	3
	Apartment Houses			
	Zion Canyon		4	16
	Totals		28	43 Employees

Housing Recapitulation:

		Structures	Family Units
Seasonal:			
Existing:	Dormitory (Zion Canyon)	1	-
	One-bedroom Residences (Zion Canyon)	8	8
New:	3-family Efficiency Unit (East Entrance)	1	3
	Apartment House, (Zion Canyon) (10 one-bedroom units)	1	10
	6-family Efficiency Units (Taylor Creek)	1	6
		12	17 Family
	Rooms and Dormitory Space		20 Male only
	Total for M&P Seasonal		47 Employees

The housing existing and proposed will provide for 43 permanent employees and 47 M&P seasonal employees. Under this program approximately 25% of the permanent employees, 25% of the M&P seasonal employees and 100% of the E&R seasonal employees will have to secure quarters outside the park. We doubt very much that this ratio of 3 inside and 1 outside can be maintained as none of the small villages and communities within commuting distance of the park have residences or rooms for rent.

The plan is to construct the additional houses for Zion Canyon east of the Virgin River which may best be referred to as the Watchman Residential Area.

C. Maintenance

At the present time the coordinating headquarters has the equipment and the skilled overhead to carry on heavy maintenance on roads and trails and utilities for Zion, Cedar Breaks, Pipe Spring, and Capitol Reef. Some maintenance work will be performed by contract whenever the opportunity permits, but unfortunately this may not be practical. We are located in a very sparsely settled part of the west. It is 300 miles to a locality where contractors headquarter, and our operations are normally not large enough to move equipment this distance for a small job without prohibitive cost. Local county organizations are not equipped to offer any relief. The State Highway Department is usually not interested because their operations are spread over great distances.

We plan to keep the organization and equipment to maintain our own roads and trails.

The same situation as pertains to roads and trails is generally true with respect to the maintenance of buildings and utilities. We plan for an organization to maintain and operate the following facilities:

75 buildings with a valuation in excess of 3 million dollars
7 water systems with more than 75,000 lineal feet of pipe
7 sewer systems with more than 25,000 lineal feet of line
5 campgrounds with a total capacity of 300 cars
3 picnic grounds to accomodate 75 cars
20 comfort stations
200 miles of boundary fence

In addition many structures, as bridges, tunnels, campfire circles, parking overlooks and hundreds of signs, tables, fireplaces, et cetera must be maintained.

9. PHYSICAL IMPROVEMENTS

(Filed in Plans and Projects Control Section)

10. Land and Water Rights

There are a total of 15,666 acres of inholdings in Zion National Park, belonging to 18 owners. It is necessary to obtain the land to permit construction of roads and other developments for public use. The estimated cost of acquisition is placed at $200,000.

It will be necessary to obtain rights to springs in Taylor Creek for water for the proposed development at Taylor Creek, and to perfect rights to the springs close to the proposed interpretive and rest-stop development at Three Springs. The developments at LaVerkin Creek will require water. Springs close by will furnish a good flow of high grade water. Rights will be established or recommended for purchase.

It is necessary to obtain water rights outside the park for a source of water for the East Entrance development. It is now necessary to haul water. A spring about a mile from the east entrance, outside the exterior boundaries of the park, will be recommended for purchase and water commonically piped to the East Entrance for the operation of public comfort stations, residences and entrance station.

A boundary study of the park as enlarged by the addition of Zion National Monument will be given high priority. Preliminary study indicates that minor adjustments are desirable to add some small parcels of land that will be necessary for protection of natural scenic values.

Of the total alien land, 1,[illegible] acres is owned by the State of Utah, for which we are negotiating acquisition by exchange. The balance is privately owned, and will be purchased from the owners. A complicating factor is that many of the owners also own land outside the boundaries. Their total holdings constitute an economical unit. Such cases will require special handling.

Management and Protection [illegible]

June 30, [illegible]

Man-Years for Fiscal Years Shown

[illegible]

Administrative (Total)

Superintendent

[illegible]

Maintenance and [illegible]

Position	1957	1958	1959	1960	1961	1962	1963	1964	[illegible]	[illegible]
Roads and Traffic (total)	[illegible]	[illegible]	[illegible]	[illegible]	12	[illegible]	[illegible]	16	[illegible]	16
Engineer	[illegible]	[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]	1	[illegible]	1
Supervisor, Rd.	[illegible]	[illegible]	[illegible]	[illegible]	3	[illegible]	[illegible]	[illegible]	[illegible]	3
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Labor Foreman	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]
Labor Leader	[illegible]	[illegible]	[illegible]	[illegible]	2	[illegible]	[illegible]	3	[illegible]	2
Operator (General)	[illegible]	[illegible]	[illegible]	[illegible]	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Truck driver, [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]	1	[illegible]	[illegible]
Tractor driver, [illegible]	[illegible]	3	[illegible]	[illegible]	4	[illegible]	[illegible]	3	[illegible]	3
Laborers	[illegible]	[illegible]	[illegible]	[illegible]	3	[illegible]	[illegible]	3	[illegible]	[illegible]
Buildings [illegible] (total)	[illegible]	[illegible]	[illegible]	[illegible]	10	[illegible]	[illegible]	12	[illegible]	11
Building Trades	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Caretakers	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Laborers	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Janitor	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

June 30, 1

Maintenance and [illegible]

Expenditures for Fiscal Years Shown

[illegible]

Temporary [illegible]

Buildings and Utilities [illegible]

Maintenance or repair

Labor [illegible]

[illegible]

[illegible]

Other

[illegible]

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JUL 8

[illegible]

[illegible]

Proposed Drilling

Elm National Park

June 30, 1[illegible]

Footages in Final Year Shown

Positions	[illegible]	[illegible]	[illegible]	[illegible]	100	[illegible]	[illegible]	100	[illegible]	[illegible]
Mineral and Minerals										
Property Not [illegible]										
Elm National Park										
[illegible]										
[illegible]										

[illegible]

[illegible]

Mukuntuweap [illegible] Monument was created by proclamation of President Taft July 31, [illegible], to preserve what is known today as Zion [illegible]. The original proclamation set aside [illegible] 15,2[illegible] acres which lay on either side of the canyon.

On March 18, 19[illegible], by proclamation President Wilson added [illegible] acres of land, all in Washington County, and changed the name to [illegible] National [illegible]. This addition was for the purpose [illegible] [illegible].

[illegible]

[illegible] 13, [illegible], Congress approved [illegible]. [illegible] First Congress [illegible] 1[illegible],[illegible]1.86 acres to the [illegible].

[illegible] National [illegible] was established [illegible] proclamation. [illegible]

[illegible]

	Federal	Gross Area
[illegible]	[illegible]	[illegible]

[illegible]

[illegible] Chester [illegible] is 42[illegible] miles so[illegible] Salt Lake City; [illegible] miles northeast of [illegible]. Bryce Canyon National Park and Grand Canyon National Park [illegible] [illegible].