

Oak Creek Canyon Area Plan



An Amendment to the Coconino County Comprehensive Plan

**Development by the Residents of Oak Creek Canyon
with assistance of the County Community Development Department**

**Approved by the Coconino County Board of Supervisors February 6, 1984 and
Amended in June 1989**

OAK CREEK CANYON AREA PLAN

Adopted by Resolution February 6, 1984 and subsequently amended June 1989

COCONINO COUNTY BOARD OF SUPERVISORS

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*". . . our citizens must be aroused
as to the problem of vanishing open spaces,
because space is our most precious environmental commodity."*

- Charles S. Thomas

RESOLUTION NO. 84-7

A RESOLUTION OF THE COCONINO COUNTY BOARD OF SUPERVISORS ADOPTING THE AREA PLAN - OAK CREEK CANYON

WHEREAS, the Coconino County Department of Community Development in coordination with the Coconino-Yavapai Counties Interagency Working Group has prepared a study entitled Area Plan - Oak Creek Canyon; and,

WHEREAS, the plan establishes policies regarding future development patterns for all private lands within the Canyon and policies designed to protect and enhance the unique environmental qualities of the Canyon; and,

WHEREAS, specific proposals contained the plan were subject to extensive discussion at several public meetings; and,

WHEREAS, the Coconino County Planning and Zoning Commission conducted duly noticed public hearings regarding the plan, culminating in a determination that the plan was consistent with the County General Plan and a recommendation for approval by the Board of Supervisors; and,

WHEREAS, the Coconino County Board of Supervisors conducted duly noticed public hearings regarding the plan on June 6, 1983 and September 19, 1983;

NOW, THEREFORE, BE IT RESOLVED that the Coconino County Board of Supervisors does hereby resolve to amend the Coconino County General Plan to include the Area Plan - Oak Creek Canyon.

PASSED AND ADOPTED this 6th day of February, 1984 by the Coconino County Board of Supervisors by the following roll call vote:

AYES: Supervisors' Tachias, Wells, Brechan, Yellowman and Chairman English

NOES: None

ABSENT: None

COCONINO COUNTY BOARD OF SUPERVISORS
/s/, Karan L. English, Chairman

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NOTE: Maps, figures, and photos included in the printed version of the Oak Creek Canyon Area Plan have not been included in this electronic document. These illustrations may be obtained from the Coconino County Community Development Department.

I. PURPOSE AND BACKGROUND

The main purpose of this study is to evaluate the existing land use and ownership patterns, identify the major environmental characteristics and propose policies for adoption by the Planning and Zoning Commission and the Board of Supervisors that will serve as a guide for future development within Oak Creek Canyon from Pumphouse Wash to Midgely Bridge.

Formal planning for the area originated in 1976 with the formation of the Sedona-Oak Creek Interagency Executive Committee - a standing committee comprised of a member of the Board of Supervisors of both Coconino and Yavapai Counties and the Supervisors of both Coconino and Yavapai Counties and the Supervisor of the Coconino National Forest. The initial purpose of the committee was to develop a comprehensive land management plan for the Sedona - Oak Creek area. One of the Executive Committee's first actions was to establish a citizens working group to initiate the research of existing conditions in the Sedona area and present recommendations on land use patterns for ultimate consideration and adoption by the three governmental agencies involved. The Sedona Community Plan was subsequently adopted by Coconino County in late 1979 and has since served as the guide to future land use determinations for that portion of the Sedona community located within Coconino County.

Early in 1982, the Interagency Committee met to activate a new citizens Working Group for the purpose of updating the Sedona Community Plan. Recognizing the changes in Oak Creek Canyon that had already occurred since their last planning efforts and the increasing interests in more intensive future development of the Canyon, the Working Group established as its first priority the preparation of a plan for Oak Creek Canyon.

In an effort to maintain a "status quo" and allow time for the Working Group to complete its task, the Coconino County Board of Supervisors on June 24, 1982 adopted a Resolution establishing a "moratorium" on rezoning applications for all properties located within the Canyon; the moratorium expired December 24, 1982. At a special meeting held on December 6, 1982, the Working Group completed the study and transmitted their findings and recommendations to the Interagency Committee and, ultimately, to Coconino County for consideration at public hearings before the Planning and Zoning Commission and Board of Supervisors. The original report of the Working Group together with a minority report (Attachment "B") and supplementary land use recommendations prepared by the group date May 24, 1983, are included in this study as Attachment "A".

Attachment "C" outlines the results of an Oak Creek Attitude Survey conducted under the direction of the Working Group. The summary report of this survey should be reviewed since it gives good insight into what the respondents thought about Oak Creek Canyon and their reaction to development opportunities.

II. ENVIRONMENTAL ANALYSIS

A. SPECIAL RESOURCE AREAS

Community development inevitably modifies the natural features in an area to create an environment with qualities more hospitable for human life. Natural landscapes and wildlife habitat areas typically disappear or undergo severe alteration in the process. The shift from a natural to a more urban setting has already encompassed large areas of the southwest over the last several decades.

Riparian habitat areas such as Oak Creek Canyon represent a major type of unique resource warranting special consideration in the planning process. A riparian community or association is one that occurs in or adjacent to a watercourse and which is further characterized by plant and animal species different from those of the immediately surrounding area. Although riparian communities are typically composed of life forms unique to the riverine environment, they may also exist as extensions of higher climax associations fingering downward along drainage ways. In either case, riparian associations are both interesting and important from evolutionary, ecological and other biological points of view.

Endemism, which is a measure of the degree to which species are restricted to a particular environment, is one approach useful in evaluation the biotic importance of an area. The interdigitation and/or mingling of diverse biotas in riparian areas creates virtually unique associations that are often critical to the survival of certain endemic species. The ability of riparian ecosystems to produce and maintain high levels of biotic diversity is in itself an important quality. Riverine areas at elevations between 3,500 and 7,000 feet are particularly diverse.

Complementary to their biotic and aesthetic contributions to the environment, riparian areas also serve a major function as buffers or filters against sedimentation and debris which would otherwise be deposited into streams. Surface runoff is a primary vehicle for the transportation of sediments to streams from adjacent natural or manmade sources. The herbaceous communities within the riparian zone are effective in reducing the impacts of this runoff, and the larger shrubs and trees prevent larger debris from entering the stream channel. This, of course, also enhances the perpetuation of native fish populations through the reduction of solar radiation, the protection of cover through reduced bank erosion, and the sustenance of higher levels of energy input from vegetational debris and terrestrial insects. Bird populations, which also enjoy higher levels of species diversity in riparian areas, depend upon the preservation of these and other wetland areas for their continued well-being.

Just as the Arizona Natural Areas Program exists for the protection of unique aquatic and terrestrial resources within the state, the Arizona Department of Health Services has recently established its own program for the protection of water quality in streams of exceptional resource significance. The Unique Waters Program seeks to identify and protect from additional pollutant discharge those Arizona streams with outstanding recreational, ecological or wildlife habitat values as per legislatively established criteria for the program. The number of N.P.D.E.S. (National Pollutant Discharge Eliminating System) permits issued for a designated watercourse area would be consistent with the goal of significantly reducing additional water quality degradation. For all practical purposes, therefore, the densities of allowed development would likely decrease proportionately along designated streams relative to program-related effluent disposal limitations.

A comprehensive assessment of Oak Creek Canyon and the forces which lead to its creation and ecological development would entail the review of considerably larger volumes of research materials than could be reasonably included in a report of this nature. Extensive research, in fact, was involved in the preparation of this overview.

Although the following sections present a simplified description of the Canyon, the information herein presented should more than adequately convey the uniqueness of the area and the importance of considering its limitations for future human use and enjoyment.

Man's impacts on the Canyon are also discussed within the report. A field investigation of the Canyon's privately-owned land areas was conducted in the fall of 1982 and utilized in the preparation of the Land Use Survey of this report. Other sections address traffic considerations and recreational usage of the Canyon's resources. Flood hazards and their associated impacts on the Canyon developments are also considered.

B. GEOLOGY

Oak Creek Canyon is a north-south canyon created by earthquake activity associated with the uplifting of the Colorado Plateau. Somewhere between one million and ten thousand years ago very large cracks, or faults, developed in the earth's underlying rock layers as they were being pushed up during the Plateau's formation. One of the larger of these faults formed Oak Creek Canyon.

The evidence of this process is most noticeable by comparing the upper elevations of the east and west walls from the canyon's north rim. The western cliff's upper edge is approximately 500 feet higher than its counterpart to the east. The canyon, confined between these walls, averages almost a mile in width from rim to rim and extends nearly 12 miles in length. At its lower end, near Sedona, it is nearly 2500 feet deep. To the north of this area, the canyon floor tapers upward

leaving a depth of about 1500 feet at the base of the switchbacks at Pumphouse Wash.

Interconnecting side canyons were either formed along other fault lines in the area, or, as in the case of West Fork, through another type of cracking process known as a joint, wherein there is no relative movement of the rock involved.

The geologic formations exposed along the canyon's walls give the canyon much of its charm while at the same time reveal the area's past history and provides insights to the canyon's current state of development through geologic time.

For the most part, the exposed rock surfaces of the canyon represent the remains of alternating sequences of periods where the area was inundated by prehistoric seas intermingled with layers of deposits left behind from much dryer periods. Multi-colored layers of pale red to orange sandstone and less frequently occurring bands of crystalline limestone constitute the predominant types of rock found between the canyon floor and the lower edge of the Moenkopi Formation 200 feet from the canyon's rim.

The last major sea which covered the area left a 400 foot thick layer of Kaibab Limestone immediately below the Moenkopi Formation. Deposits above this limestone layer indicate a dramatic change in their manner of deposition. Seas and deserts no longer dictated the area's composition. Instead, streams draining from the north and east carried great loads of brown and red-brown sand and silt.

During the next period of geologic time, an uplifting of the land occurred in the area to the southwest of Oak Creek Canyon. Stream erosion ultimately carried gravel deposits from this area into what is now one of the upper layers of the canyon walls.

Volcanic activity accounts for the final dark gray to black layer of basalt capping all of the previously referred to rock formations and filling large vertical cracks which concurrently appeared in what is now the canyon walls.

The faulting that occurred and created Oak Creek Canyon not only revealed the area's past but also exposed the variably-resistant surface materials in the canyon walls to a variety of dynamic forces associated with the region's prevailing climatic conditions.

Erosion has significantly influenced the environmental characteristics of Oak Creek Canyon. The high degree of structural variety exhibited by the Canyon's numerous buttes, mesas and promontories are largely the result of flashfloods from the cloudbursts acting in concert with the further erosive action of wind and temperature-induced weathering.

Orientation and topography likewise influence precipitation and wind exposure and cumulatively define the individual climatic conditions best suited for each of the major vegetation groups in the canyon. Soils created through the erosion process also influence native growth.

C. SOILS

The physical properties and characteristics of soils not only distinguish them from one another but also define their abilities to support different uses. While community development may occur with little or no consideration for the soils underlying a construction area, inherent differences in soil texture, slope, depth, stoniness, or natural drainage ultimately become apparent through the structural stability (or lack thereof) of foundations and roadways or through the effectiveness and maintenance requirements of associated sanitary facilities. <p>The General Soil Survey of Coconino County includes assessments of soil properties in relation to various aspects of community development. The soil survey presents limitation ratings in the context of modifications required to overcome a soils inherent problems relative to a particular use. Severe ratings, for example, generally require major soil reclamation, special design or intensive maintenance to eliminate major problems likely to occur as the result of development on that particular soil. Compensation in severe ratings is in most cases both extremely difficult and expensive. Severe limitation ratings are generally based upon the existence of steep slopes, shallow bedrock, flooding hazards, high shrink-swell potential, seasonal high water table, or low bearing strength, none of which are easily or inexpensively modified. Moderate limitations, on the other hand, can be more easily overcome with proper planning and maintenance. Typical compensatory treatments include runoff control to reduce erosion, artificial drainage, extended sewage absorption fields, extra excavation, or modification of certain features through manipulation of the soil. Special foundations, extra reinforcement of structures, and sump pumps are other examples of the types of modifications appropriate for use with soils rated as moderate for a particular use. Soils with slight limitation ratings are considered favorably for the rated use.

Although published information on specific soils in Oak Creek Canyon is extremely limited, the General Soil Survey places most of the canyon area in a soils category defined as "Sedimentary Rock Outcrops and Steep Rough Broken Land." The soils of this group are most valuable in relation to their scenic qualities, recreation potential, and wildlife habitat values. Because the main components of these units are excessively steep and/or rocky slopes, they are rated as severely limited for all uses. In recognition of these limitations, the County's subdivision Ordinance prohibits development on lands with slopes in excess of 25 percent. The quality of community development is gauged not only by its condition when new, but more importantly by its ability to retain that condition with limited maintenance and

expense. Structural problems with residential buildings and roads and system failures with sanitary facilities can be avoided through proper planning and effective enforcement. Incorporation of appropriate corrective measures in both the siting and construction of new developments to compensate for the limiting properties of the supporting soils can significantly reduce the potential for future problems.

D. NATURAL VEGETATION

Natural vegetation is structured into recognized world plant formations. These in turn are comprised of plant communities that are distinctive in the species that they contain, their growth forms, abundance, landscape positions, and other ecological features. Each biotic community, or biome, is likewise characterized by the presence and interdependence of natural assemblages of distinctive animals and plants uniquely different and distinguishable from those of other biomes.

Pinion-Juniper Woodland occurs throughout the county, reaching its greatest development on plateaus and mesas at elevations between 5,500 and 7,500 feet. Pure stands of junipers (Utah and one-seed Juniper are most common) usually dominate the woodlands below 6,000-6,500 feet. Pinion pines, on the other hand, are more prevalent in the community at higher elevations, reaching their greatest size and density above 6,500 feet. Understory species often include blue grama grass and Arizona fescue grass, with sagebrush and barberry the most widespread understory shrubs.

Interior Chaparral occurs at intermediate elevations with woodland or coniferous forest above, and ordinarily grassland or desertscrub below. In Coconino County, it is found only along the county's south-central edge, primarily in the canyons of Oak Creek, Sycamore Creek and Bear Creek. Scrub-oak is its more frequently encountered species, accounting for over 90 percent of the stand in some areas. Other associated species include sugar sumac, backthorn, mountain mahogany, bricklebrush, California fremontia and mocklocust.

Riparian Deciduous Forest comprises a limited geographic area that is entirely disproportionate to its landscape importance and recreational value, as well as its immense biological interest. Comprised mostly of tall, winter-deciduous broadleaf trees of the same species and/or genera as in the eastern deciduous forest of the United States, these communities are actually remnants of earlier widespread forests. They are now found only along streamways and drainageways, and at some lakes and ponds, where the necessary stream flow or underflow to support broadleaf forest species is provided.

Both their distinctive life-form and their riparian habitat distinguish these biotic communities from the evergreen western

woodlands and the coniferous forests through which they course fingerlike from our highest spruce-fir forests throughout woodland and chaparral into the grasslands and deserts below. Often the canopy is widely open as in a woodland aspect. Also, as the trees are large with some species reaching heights of 50 to 100 feet, they occasionally form a high-canopied gallery forest with a more or less completely closed cover.

The composition and form of the riparian forest changes with elevation. Higher, in high evergreen woodland and in the coniferous forest, major broadleaf riparian trees are mulberry, elderberry, alder, narrowleaf, cottonwood, boxelder, cherry maple, and mountain willows. Lower, in the lower woodland, chaparral, and grassland into desertscrub, the principal riparian tree species are cottonwood, willow, sycamore, walnut and ash.

Oak Creek Canyon supports seven major plant communities comprising over 130 individual families within which are found nearly 600 separate species of plants. Those species commonly associated with the Ponderosa Pine-Fir Forest dominate the higher elevations at the top of the canyon and extend into the canyon to about one mile south of the confluence of West Fork with Oak Creek.

The chaparral community first appears along south facing canyon walls above Pine Flats Campground and eventually becomes more prevalent southward through the canyon. Although it constitutes the largest vegetational association in the Canyon, the chaparral thins and becomes the understory for succeeding plant communities towards the southerly end of the canyon near Sedona.

Species common to the Pinion-Juniper Woodland favor conditions mid-way between those preferred by the two-preceding communities. As a result, Juniper-Juniper Woodland is often found alongside ponderosa pines in the upper canyon but does not extend south nearly as far as the chaparral. The evergreen Oak Woodland includes a variety of oak and other species and shows up most commonly on dry, flat areas above the canyon floor.

Located in the general vicinity of Indian Gardens is an unusual vegetative community of Arizona Cypress - a community more commonly found in the mountains of southern Arizona. Large stands of cypress trees can be found in isolated pockets in the lower canyon and likely represent the remains of a larger Cypress Woodland from the past.

Upper and lower riparian communities, distinguished from one another by their density of undergrowth and plant composition, are most noticeable from the canyon floor and in many ways exemplify the uniqueness of Oak Creek Canyon. Characterized by dense foliage along the Creek's banks, riparian vegetation is actually comprised of representatives from a number of overlapping communities all of which demand an abundant and reliable supply of water. Species diversity is

accordingly high, thus creating plant associations and wildlife habitat rarely found elsewhere.

E. RECREATIONAL RESOURCES

Life in Coconino County is significantly affected by area resources in several important ways. Perhaps the most obvious of these is the role played by our environment in helping to define the quality of life for county residents. A large proportion of those who reside either permanently or seasonally in Coconino County are at least partially influenced by environmental considerations. The climate, diverse topography, vegetation, and abundant wildlife of northern Arizona all contribute to an environment conducive to an outdoor-oriented lifestyle.

These same factors also attract others to the area, generating a substantial contribution to the county's economic well-being. Tourism has long been and will likely long remain an important element of Coconino County's economy, both as a source of income and as an area in which substantial employment opportunities exist. The September/October, 1982, Arizona Business Scene reported that a total of \$3 billion was spent throughout the state by tourists in fiscal year 1979/80. The report states "...It is clear from the magnitude of these...figures that at least indirectly these activities (sightseeing, site visitation, camping and backpacking) relating to Arizona's natural tourist attractions were a major factor in the out-of-state tourist expenditures." It is for these reasons that the county's recreational resources warrant consideration in our land use planning efforts.

Coconino County's enviable wealth of undeveloped recreational resources is largely a result of the county's high percentage of land in public ownership and the accessibility inherent to such lands. The management and continuing availability of these resources is the responsibility of public agencies, such as the Forest Service, which administers the lands and keeps them open for public use. Nonetheless, the county can significantly influence the maintenance of high quality experiences for those who use public lands by exercising discretion in the review of development proposals which would visually impact major resources areas. Elements of structural design, color schemes, landscaping and environmental impacts should be carefully considered in relation to each area's physical characteristics. In some cases, this might also mean encouraging land uses which are oriented towards servicing the recreationing public rather than a small number of private homeowners. In Oak Creek Canyon, the encouragement of a variety of low-density private recreational developments on creekside properties might represent a development policy more cognizant of the Canyon's unique aesthetic qualities and its appeal to people from throughout the state. Such a policy would also help to accommodate the area's intense pressure for recreational usage...the demand for which

has more than doubled in the last decade while Forest Service operational capabilities have concurrently been halved.

Maintaining acceptable levels of vehicular traffic and associated air quality impacts; adequately managing effluent disposal; and simply finding private parcels suitable for recreational development by the private sector are only a few of the problems which would have to be addressed in any efforts for the reasonable accommodation of recreationists in Oak Creek Canyon.

The following table shows the general increasing level of intensity of usage of existing recreation or sightseeing areas of Oak Creek Canyon as estimated by the U.S. Forest Service.

TABLE I
REPORTED RECREATION USE OF OAK CREEK CANYON FACILITIES

*(Visitor Days)

	1969	1973	1975	1976	1977	1978	1979	1980	1981
Slide Rock	6,600	31,500	35,000	35,000	35,400	41,200	41,200	41,200	82,400
Grasshopper	1,000	4,300	11,300	11,300	11,500	13,200	13,200		15,000
Manzanita	10,500	16,900	17,800	16,700	16,600	16,100	17,300	17,300	18,000
Bootlegger		9,000	9,700	10,100	5,300	5,300	6,700	6,700	7,800
Banjo Bill	6,800	10,000	10,200	10,400	8,300	8,300	8,300	8,300	9,500
Cave Spring	41,200	47,800	50,900	61,900	38,800	38,000	42,800	42,800	49,300
Pine Flat	51,100	52,800	61,700	61,700	35,800	34,800	47,100	47,100	50,800
Encinosa	900	2,100	4,300	4,500	5,500	5,500	7,000	7,000	8,100
Halfway	3,900	4,500	6,000	6,000	5,000	5,500	7,000	7,000	8,100
Midgely Bridge	300	500	1,200	1,200	1,600	1,600	1,600	1,600	1,800
TOTALS	122,300	179,400	208,100	218,800	163,800	169,500	188,200	179,000	250,800

*One Visitor Day represents 12 hours of use

F. WILDLIFE

Wildlife's value to man has traditionally focused on its utilization as an important source of food and clothing. While the survival of our culture is no longer dependent upon each individual's competency at hunting and trapping, wildlife nonetheless continues to play an important role in providing Americans with countless recreational, aesthetic and economic benefits. Recreational hunting, fishing and birdwatching are, of course, the most obvious ways in which our society relates to wildlife. No less important, however, is an appreciation for nature as a series of complex biotic communities of which man is but an interdependent part. The quality of life in our society would surely depreciate if wildlife were no longer a part of our overall lifestyle. Fortunately, we are nowhere near that point.

In fact, Coconino County supports fairly significant populations of a variety of wildlife species. The absolute number and kinds of wildlife are directly related to the county's wide range of topographic, climatic and vegetative conditions. These three factors define the physical environment of a landscape and thus, determine the types and

quantities of food, water and cover available to wildlife in any particular geographic area. AS the essential elements of life support, these latter characteristics comprise what is commonly referred to as the habitat, or home of a species. The diversity of habitat types in turn influences the degree of faunal diversity associated with an area.

The continued abundance of wildlife in the county, however, cannot be taken for granted. The growth of population and its expanding economic needs impose increasing pressures upon what remains of our natural heritage. The development and use of our natural resources causes changes in environmental conditions that can redefine habitat and thus change the mix and abundance of plant and animal species. Some species in the county, like the American Peregrine Falcon, the Black-Footed Ferret, and several of the county's numerous aquatic species are already federally listed as Endangered Species and are no longer capable of surviving change. Habitat preservation is, therefore, vitally important to the maintenance of wildlife diversity in Coconino County.

Oak Creek Canyon, due primarily to its riparian habitat, supports an incredible number and diversity of animal life. In his book Oak Creek Canyon and the Red Rock Country of Arizona, Stewart Aitchison states that "Over 250 kinds of vertebrate ("having backbones") animals are known in this area. Additionally, thousands of species of insects and other invertebrates ("without backbones") can be found." Maintenance of water quality and preservation of the riparian habitat are essential if the wildlife community of Oak Creek Canyon is to be saved from endangerment.

Although physical destruction, chemical contamination, and reduction in water quantity or quality are the major threats to wildlife habitat posed by our society, community development and wildlife preservation need not be mutually exclusive. Through the concerted efforts of State and Federal wildlife management agencies, private interest conservation groups, and land use management agencies, it is hoped that implementation of appropriate policies will help to achieve a new balance between preservation and use of our county resources.

G. WATER AND AIR QUALITY

Water and air quality is directly influenced by population density and the intensity of development patterns associated with a particular area - the higher the population and intensity of use, the greater the probability of degradation of related water and air quality. Surveys conducted by the Working Group clearly indicated that the major concern of people surveyed was the protection of Oak Creek and the underground aquifer from further pollution.

The 208 Water Quality Management Plan as prepared by the Northern Arizona Council of Governments (NACOG) outlines a program for water quality management of Oak Creek. The "208 Report" states in part:

"The first planning priority of the NACOG 208 program is to provide proper water quality management in Oak Creek, a tributary of the Verde River. Water quality in Oak Creek is generally good and fecal pollution at this time is not a major problem. Construction, agriculture, residential, and recreational use of the area have contributed to changes in the environment. The cumulative effect of man's activity and natural processes in Oak Creek can be seen as deterioration at the lower end.

At the present time, Oak Creek's capacity for self-purification from fecal pollution seems, for the most part, equal to the challenge it is receiving. This capacity is finite."

Capacity is indeed finite; and, unrestricted or high intensity development within the Canyon will inevitably degrade the quality of water in the creek to the extent that its inherent and special qualities will be lost to all.

In recognition of the need for preserving the quality of water in Oak Creek and the unique environmental status of the Creek and Canyon, the Coconino County Board of Supervisors has adopted resolutions endorsing the NACOG 208 Plan and nominating Oak Creek for "Unique Waters" status under the Arizona Department of Health Services Regulations. This "Unique Waters" classification if accepted and approved by the State will be the first such designation in the entire state.

The Working Group did not feel there is "...now or will not be in the future, an air quality problem." Therefore, no specific recommendations were made by the group in this area. However, staff feels that more intensive use and development of the Canyon could result in degradation of air quality and have a negative impact on native vegetation primarily due to increased traffic generation associated with intensive development and recreation/sightseeing use of the Canyon.

In summary, the environmental characteristics of Oak Creek Canyon constitute a dynamic and unique ecosystem of such unusual diversity as to be found nowhere else in the State of Arizona. Development of both public and private lands, however, already has impacted the natural or pristine environment of the Canyon. Continued development, particularly of a more intensive pattern that has been realized to date, will not only further disrupt the delicate balance that currently exists between the natural and man-made environments but will pose an unnecessary and, in staff's opinion, an unacceptable threat to the irreplaceable resources and qualities of Oak Creek Canyon.

III. DEVELOPMENTAL IMPACTS

The environmental analysis identifies the natural resources and characteristics of Oak Creek Canyon. The man-made or developmental impacts can be assessed through an evaluation of existing land use and ownership patterns of the 435 acres of private lands within the Canyon, traffic volumes and the developmental constraints associated with the floodplain of Oak Creek.

A. EXISTING LAND USE AND OWNERSHIP PATTERNS

There are a total of 402 separately assessed privately-owned parcels of land within the Canyon and 545 structures including single family dwellings, mobile homes, travel trailers, resort facilities and commercial buildings. In order to facilitate the assessment of existing conditions, the Canyon has been divided into 15 sub-areas as shown on the Oak Creek Zoning Map.

B. TRAFFIC

The extent of traffic congestion along Highway 89A is apparent to anyone who travels along this section of the highway and a veritable bottleneck occurs during the peak user months of May through October. The amount of traffic is directly proportionate to the intensity of tourist activity and to the extent of development that has occurred within the Canyon. Currently, Highway 89A is a state-maintained arterial having a pavement width varying from 20 feet to 24 feet with an average width of 22 feet. The Arizona Department of Transportation has stated that the annual daily average of vehicular traffic in 1981 amounted to 5,000 vehicles per day. Not surprisingly, the months of May through October, historically, represent the peak user months accounting for approximately 63 percent of the total annual traffic volume. For this amount of traffic, particularly during the peak periods, the existing highway improvement is totally inadequate.

Ideally, in designing a highway to accommodate these traffic volumes, and in recognition of the probability of more development occurring, the paving width would be established to accommodate four travel lanes - in other words, Highway 89A through the Canyon should have a pavement width about twice as wide as currently exists. Obviously, the construction of a four-lane highway through Oak Creek Canyon, if physically possible, would result in permanent and in most cases irreparable damage to the environment.

The report of the Working Group indicates a preference "...expressed by the public to retain the aesthetics of the Canyon at the expense of rapid point to point transportation." Consequently, the Working Group recommends that "the existing highway remain unchanged except for

turnouts for passing purposes and that an all weather paved road be constructed over Schnebly Hill to Interstate 17."

Although conditions along Highway 89A will not remain unchanged - due primarily to existing vacant or agricultural lands being developed in the future for some urban use - staff strongly endorses the Group's statement. But, staff suggests going even further than this recommendation. Consideration should be given to establish a total prohibition of all through traffic along Highway 89A in Oak Creek Canyon.

A parking lot is currently located on the rim at the top of the switchbacks. If this parking lot were enlarged and a similar parking lot established near the southerly end of the Canyon, vehicular traffic in and out of the Canyon then could be restricted to residents, property owners, resort/motel and campground users with a simple display sticker permit issued to these groups for identification and clearance. Sightseeing demands, which is primarily visitor traffic, could be accommodated through the initiation of a shuttle bus-type service, preferably privately operated, extending between the northwesterly and southerly parking lots with stops at all of the major view points, activity areas and service commercial uses. A single one-way bus ticket, for instance, could be issued to passengers which would allow them to get on or off at any number of stops along the route. Whether such service operated on an annual basis or only during the peak user month, the result would be a dramatic reduction in traffic congestion and accident levels, and an improvement in air quality within the Canyon.

If a shuttle-type service cannot be established, additional turn-outs and passing lanes should be constructed, additional parking areas should be built and strict enforcement of all traffic and parking laws should be encouraged.

C. FLOODPLAIN CONSTRAINTS

As discussed in the Geology section of this report, Oak Creek Canyon is a north-south canyon created by earthquake activity associated with the uplifting of the Colorado Plateau. The generally accepted point of beginning is at the confluence of Pumphouse Wash with Sterling Canyon approximately 13 miles south of Flagstaff. Because the canyon is narrowly defined, most of the Oak Creek 100 Year Floodplain is coterminous with its floodway. This means that much of the Canyon's 90 acres of flood prone private property is subject to high velocity flood waters that significantly inhibit their development potential despite their high market values. These 90 acres consist of some 102 separately owned parcels of land which are partly or entirely subject to inundation.

1. Background of Prior Flooding

The flood hazards in Oak Creek were recently illustrated during the winters of 1978/79 and 1979/80 when heavy precipitation and melting snow contributed to high water levels in this upper portion of the Verde River watershed. These high waters threatened a number of properties in the Canyon, particularly the several trailer parks, some of which are located within the floodway. In some areas, evacuations were necessary and some properties were virtually inaccessible. The following table summarizes the extent of potential flood hazards in Oak Creek Canyon:

TABLE II-A

FLOOD PRONE HAZARDS IN OAK CREEK CANYON

Population in Floodplain	84
No. of Single Family Residences	19
Valuation of Single Family Residences	\$455,966.00
No. of Commercial Structures	8 resort cabins
Valuation of Commercial Structures	\$168,009.00
No. of Mobile Homes	
Double-Wide	2
Single-Wide	21
Travel Trailers	129
Valuation of Mobile Home Park Improvements	\$85,143.00
Valuation of Miscellaneous Improvements	\$49,024.00
Total Valuation of Private Improvements	\$758,142.00

Source of valuations: Coconino County Assessor - 1981 valuations

The population estimate assumes a two person per unit occupancy of all residences and double-wide and single-wide mobile homes. Travel trailers are assumed to be principally used for seasonal occupancy and ordinarily would not be inhabited during the flood prone winter season. Also, no valuation has been established for mobile homes and travel trailers while on-site improvements to mobile parks have been valued and are included in the total valuation. All valuations were obtained from records in the Assessor's Office for 1981. Obviously, these valuations will vary according to the most recent assessments. Commercial improvements are strictly resort-type development with seasonal occupancy expectations. Flood prone public improvements in Oak Creek Canyon include Slide Rock Bridge and Manzanita and Banjo Bill Campgrounds. Most of Highway 89A lies well beyond the 100 year floodplain.

Perhaps the single most important concern with respect to a 100 year flood event in Oak Creek Canyon is the possibility of uprooted improvements increasing hazards downstream. Portions of the Indian Gardens area and Rainbow Trailer Park, in particular, pose such a possibility. Also significant is the fact that many properties are separated from Highway 89A by Oak Creek and, therefore, could not be reached during a serious flood. Fortunately, Oak Creek Canyon is primarily a seasonal area, experiencing its highest use during the summer months when flood potential is at its lowest. Hence, potential loss of life is not as high as potential loss of improvements.

2. Mitigation

The cost of floodproofing existing improvements has not been estimated at this time. However, it is safe to suggest that such floodproofing would be significantly less than the construction of flood control facilities, channelization and/or purchase and removal of improvements. The cheapest solution involves the application of the County's Floodplain Management Zone thereby precluding additional development in the floodway and insuring that future improvements in the floodplain are floodproofed. As older structures deteriorate and amortize, the County could enforce its non-conforming provisions of the Zoning Ordinance, thereby achieving mitigation over a period of years. In order to diminish immediate hazard, the County Sheriff's Office does have evacuation plans if a flood event should occur. Gauges strategically located along Oak Creek and its tributaries warn local officials of increasing hazards.

Owners of floodprone properties could obtain economic relief through a voluntary land trade with the U.S. Forest Service or possibly with the State of Arizona. Another alternative would be for the County to apply for grants-in-aid, such as through the Land and Water Conservation Act, the Historic Preservation Act or through the use of Community Development Block Grant Funds, in order to acquire (purchase) identified properties. In any event, the floodplain of Oak Creek presents a constraint to development and must be taken into consideration in the planning, review and construction of all new land use projects.

In conclusion, in staff's opinion, unrestricted or intensive development of the Canyon will result in a decrease in open space, wildlife habitat and visual resources; will create a negative impact on endangered species habitat; will increase erosion; and, will potentially reduce or degrade water quality. Other negative impacts will be an increase in traffic congestion and accidents with a concomitant degradation in air quality.

IV. POLICY RECOMMENDATIONS

1. Oak Creek Canyon from Pumphouse Wash to Midgley Bridge shall be designated as a Special Resource Area.
2. Coconino County shall coordinate with all other agencies responsible or involved in the management of Special Resource Areas in the review of development proposals affecting Oak Creek Canyon.
3. Coconino County shall exercise discretion in the review of development proposals for private lands in Oak Creek Canyon by paying particular attention to the suitability of the proposed uses to the environmental, aesthetic and recreational characteristics of their surroundings.
4. Coconino County shall encourage the conservation of permanent open spaces and the preservation of scenic and recreation areas through the application of Open Space and Conservation (OS) Zoning to all lands within the Canyon now under the jurisdiction of the Coconino National Forest.
5. Coconino County recognizes the high recreational values of Oak Creek Canyon and encourages the limited development of additional low intensity recreational areas on publicly-owned creekside lands to help accommodate public demand.
6. Coconino County shall coordinate with State and Federal wildlife management agencies, conservation groups and other land management agencies in the interest of preserving important wildlife habitat areas.
7. Coconino County shall encourage the incorporation of recognized wildlife enhancement measures into the design of all future development activities in Oak Creek Canyon.
8. Coconino County shall work to minimize conflicts between proposed land uses and the mitigation routes and staging areas of wildlife species within the Canyon.
9. Coconino County shall encourage the utilization of supportive zoning or other land use controls, as appropriate, to minimize conflicts with and enhance the preservation of wildlife habitat areas which are recognized as critical to the continued survival of wildlife species in Oak Creek Canyon as such areas are identified by the State Department of Game and Fish.
10. Coconino County shall cooperate with wildlife experts from the Arizona Game and Fish Department in the development and implementation of plans for the preservation and management of important riparian habitat areas.
11. Coconino County shall encourage the preservation and enhancement of riparian habitat by recognizing it as an environmentally sensitive resource and supporting, through the incorporation of recognized wildlife enhancement measures and more flexible design parameters, only those development proposals which likewise recognize its sensitivity and importance.
12. Coconino County shall support, and where applicable, implement the Arizona Unique Waters Program in its efforts to preserve the high water quality of Oak Creek by assisting in the

collection of pertinent evaluation data necessary for Oak Creek's designation as a Unique Waterway and by requiring compatible development policies within the Canyon. Effluent disposal systems required for all new developments shall be based, in part, on the need to preserve the quality of water in Oak Creek.

13. The use of Oak Creek to dispose of sewage and other wastes, whether by direct introduction of raw sewage and solid wastes from defective or inadequate septic systems and landfills must be discontinued.
14. All current health, sewage and water quality regulations shall be rigorously enforced.
15. All land areas stripped of vegetation during the construction process must be revegetated with native plant materials and stabilized to minimize creek water turbidity.
16. The conservation of water resources shall be a major consideration in all new building construction and shall be enhanced through such programs as the installation of water-saving plumbing fixtures and separate water meters for individual units in all new construction within the Canyon, rigid administration of the County Grading Ordinance and control of run-off or drainage related to new development.
17. Soil capabilities and limitations shall be recognized and appropriately considered in the County's long-range planning, development, review and implementation functions as they relate to properties within Oak Creek Canyon. In accordance with this policy, the following procedural sub-policies shall be initiated.
 - a. Comprehensive on-site soil investigations, conducted by a registered/licensed soils engineer, shall be required for all major development proposals.
 - b. In areas not served by an approved community effluent disposal and treatment system, the suitability of local soils for the establishment of septic tank absorption fields shall be assessed and all necessary corrective measures shall be incorporated in the proposed disposal system to insure against soil-related system failures.
 - c. In developments requiring an Excavation and Grading Permit from the County Engineer, the capabilities and limitations of on-site soils shall be appropriately addressed prior to the initiation of construction.
 - d. Erosion and sediment control measures shall be incorporated in all new construction projects.
 - e. The issuance of Building Permits in areas with severe soil limitations shall be conditional to the incorporation of appropriate structural modifications to compensate for applicable limiting soil characteristics.
18. It is considered desirable that lands acquired by the Forest Service or such organizations as the Trust for Public Lands, Federal Land Exchange or Nature Conservancy, on a willing buyer-willing seller basis, be developed to meet public needs and resolve management problems or maintained as or restored to open space, consistent with the philosophy of preserving the environmental quality of Oak Creek.

19. The existing highway (S.R. 89A) shall remain basically unchanged except for the establishment of new turnouts for passing purposes and Schnebly Hill Road from Sedona to Interstate 17 shall be graded on a regular basis and improved (though not necessarily paved) in order to facilitate vehicular traffic.
20. The County shall encourage and, if necessary, participate in a study into the feasibility of establishing a shuttle bus-type service through the Canyon as discussed in the Traffic Section of this report.
21. All future development of undeveloped lands within the Canyon shall be restricted to single family uses at a density not to exceed one unit per net developable acre.

"Net developable acre" shall be interpreted to mean the gross or total land area proposed for development less that portion of the property located within the floodway of Oak Creek and that portion where existing slopes exceed 25 percent.

22. A Design Review Overlay Zone shall be applied to all properties within the study area of the Canyon in accordance with the recommendations of the Working Group and as identified in Attachment "D". Staff and/or the Planning and Zoning Commission shall constitute the authority for design review approval.
23. REDEVELOPMENT. "Redevelopment" shall mean the altering of developed land by the addition, removal, or change in structures or their use or the significant altering of the land. It does not include the repair, maintenance, or refurbishing of existing structures thereon or a parcel of land that has been legally altered for human occupancy.

All future redevelopment of private land in Oak Creek Canyon shall seek by the year 2000 to achieve a net reduction in density of dwelling units and intensity of use of non dwelling units. It is not intended that reductions shall apply uniformly to all properties on redevelopment, but rather on the Canyon as a whole. To accomplish this the following policies shall be implemented:

- a. All future redevelopment shall minimize human activity on the Canyon, preserve the viewshed defined in the Scenic Highway designation, minimize visual, air, water, light and noise pollution by the application of the best available technology, minimize the removal of trees and retain the historic character of the Canyon

"Historical Character" refers to those recreational and residential structures and uses which originated and remain in the Canyon because of its unique natural environment and which consider and are responsive to retaining this natural environment. Services provided relate to serving the Oak Creek Canyon community and not duplicate services available in nearby communities.

- b. All future redevelopment of property currently developed with single family residential uses shall not exceed current densities. All future redevelopment of conforming and nonconforming commercial uses, uses approved through a conditional use permit, or of trailer or mobile home parks shall not exceed a density of 4 units per net developable acre or result in more than 20% of gross acreage in impervious surfaces, whichever is the more restrictive. The intensity of use of non dwelling units shall not increase except to accommodate permitted increases in density of dwelling units. Nonconforming commercial uses 50% of which structures have been destroyed or removed within a 5 year period, shall become conforming uses.

"Impervious surfaces" are those which do not absorb water. They consist of all building, parking areas, driveways, roads, sidewalks, and any areas of concrete or asphalt.

OAK CREEK CANYON AREA DESCRIPTIONS

AREA I

Area I is comprised of the Pine Flats Subdivision and the Chipmunk Lodge area and is located in the extreme northern end of Oak Creek Canyon.

Pine Flats is currently zoned RS-6,000. It contains approximately 9.2 acres of land and is subdivided into 82 individual lots, 30 of which are vacant. There are 51 single-family residences within the subdivision, all of which are permanent and represent substantial investments for their respective owners.

Besides the 51 residences located within the subdivision, there is a Memorial Park Chapel that is utilized for religious services. This structure, although not a residence, conforms with the architecture and landscaping of the other dwellings with the subdivision

The Chipmunk Lodge area contains 2.559 acres of land currently located in the CG-10,000 (Commercial General) Zone. Development includes six small lodging units, four within the lodge and two in separate cabins; a small grocery store and a restaurant facility capable of accommodating approximately 160 patrons. With the exception of the restaurant, the structures are relatively old and do not now represent an investment potential which would preclude their elimination and eventual replacement with newer units in a more intensive overall development pattern for this site. However, requirements for accommodating effluent disposal may restrict further intensive development of this site.

AREA II

Area II includes the southern most parcel of privately-owned land identified on Map 5 and all private lands on Map 6 of the County Assessor's maps for Oak Creek Canyon. The former of these (II-A) is located one-half mile south of the Chipmunk Lodge and about 800 feet north of the Forest Service campground at Cave Springs. This area is known locally as the Troutdale Ranch and includes 5.006 acres of land now situated in the G (General) Zone. Approximately one-half of the land on this site is within the floodplain of Oak Creek.

There are currently three single-family dwellings located on the Troutdale Ranch property. All are small in size and appear to have been developed many years ago. The removal of these structures and redevelopment of the site at some point in the near future (5-10 years) would not be an unreasonable assumption, given the age and condition of existing site improvements.

Area II-B consists of a 1.16 acre parcel of land on the westerly side of Highway 89-A approximately three-quarters of a mile south of the Troutdale Ranch. This parcel is currently in an AR (Agricultural Residential) Zone and is developed with one single-family dwelling. The dwelling is well-constructed and beautifully landscaped and represents a substantial investment on the part of its owners. The potential for a change in development patterns on this site appear highly unlikely.

AREA III

Area III includes the Rosa Thomas Tracts of land located on the northerly side of Highway 89-A approximately one-half mile northeast of the junction of Oak Creek with its West Fork. Much of the land within this area is topographically flat and includes dense vegetative cover. Approximately 11.097 acres of private lands are included in the area, which is now situated in the RS-10,000 (Residential Single Family) Zone. Subdivision into 18 separate parcels occurred many years ago and the individual lots are now developed with a corresponding number of single family dwellings. Each dwelling represents a significant investment for its respective owner.

The entire development conforms architecturally with the landscape and appears to have a minimal impact upon the surrounding environment. The potential for changes in development patterns within this area are correspondingly low.

AREA IV

Area IV is comprised of approximately 32.63 acres of private lands situated on both sides of highway 89-A in the general vicinity of Oak Creek's confluence with its West Fork. These lands situated on the highway's westerly side include 28 individual parcels now being utilized for single family residential purposes in the RS-10,000 Zone. Portions of all of these parcels are encumbered by the floodplain of Oak Creek. A total of twenty-five houses have been constructed on these parcels. Almost all of these represent substantial investments; are architecturally compatible with their surroundings; are well maintained; and are likely to remain in substantially the same condition and character of development for the foreseeable future.

An additional 19.28 acres of private lands exist on the highway's easterly side. This entire acreage now comprises a single undeveloped parcel of land in the G (General) Zone. The area is characterized by severe slopes and dense vegetation and is extremely limited in development potential due to its inherent physical constraints.

Area V is comprised of 59.92 acres of land now developed into five slightly different but compatible patterns of land use. These

functional sub-areas are located geographically as shown on the attached map and are committed to the following land uses:

V-A: This sub-area consists of two individual parcels of land now located in the G (General) Zone and developed with a single-family dwelling each. The dwelling located on the westerly side of the highway is reasonably new, well-maintained, and likely to remain in its present condition for many years to come. That on the highway's easterly side is not so new and may well be renovated or replaced in the foreseeable future.

V-B: Approximately 8.2 acres of land now situated in the RS-36,000 (Residential Single Family) Zone comprise this sub-area. Although now undeveloped, this area has been approved for the future development of six single family dwelling units in a cluster arrangement. Construction is anticipated within the new few years.

V-C: Don Hoel's Cabins are a legally non-conforming resort development now located on approximately 12.5 acres of land in the G (General) Zone. Twenty-four small cabins and a general store are included in the resort, which has existed on the property for many years. All of the structures utilize natural materials in their construction and have been well-maintained over the years. The resort is popular, blends well with its surroundings and represents a substantial investment for its owners. Major changes in the development of this site appear unlikely at this time.

V-D: Area V-D consists of a single 24.8 acre parcel of land on the westerly side of Highway 89-A. With the exception of a Fire Station adjacent to the highway, the parcel is undeveloped and likely to remain undeveloped due to severe slopes, flooding potential, and other physical constraints inherent to the property.

V-E: The Forest Houses development, which includes twelve single-family homes on the westerly side of Oak Creek, constitutes the fifth functional sub-unit of Area V. Natural materials have been utilized in the construction of the houses, each of which represents a significant investment likely to be maintained. Collectively, the area projects an image typical of nicer residential neighborhoods and blends well with its environmental setting with minimal visual impacts to Oak Creek Canyon. Some of the structures are within the floodplain and, therefore, susceptible to future flood damage.

AREA VI

Area VI consists of 39.62 acres of land functionally divided into three different sub-areas of land use. These are located geographically as shown on the attached map and are committed to the following development patterns:

VI-A: The Junipine Resort now occupies the 10.69 acres of land included in this sub-area. Current development associated with the resort includes 18 small cabins and a general store with attached dining facilities. Major changes have been proposed and approved for this site, however. On March 2, 1982, Zone Change No. Z-82-1 and Preliminary Plat No. 1253 were approved by the Board of Supervisors of Coconino County. These actions placed this property in the RC (Resort Commercial) Zone category and authorized the redevelopment of the property through the clearance of all existing structures and the establishment of a new 50 unit time-share resort development. The resort will also include a reconstructed general store, a new restaurant and bar, a manager's living quarters and incidental recreation and off-street parking facilities to serve the entire project. The transformation of this site is expected to occur within the next few years. A small fire station now exists on the easterly side of the highway within the area encompassed by the proposed development. It will not be effected.

VI-B: This sub-area consists of 20.01 acres of land located on the westerly side of Oak Creek across from the Junipine Resort. Existing development is confined to the remnants of an early homesteaders cabin, but this property too will undergo dramatic changes in the near future. On July 6, 1981, the Board of Supervisors of Coconino County approved revised Tract Map No. 1243 to provide for the division of this parcel into 18 single family residential lots as per a master plan for development associated with the PRD (Planned Residential Development) zoning for the property. This development is anticipated for completion within the next few years.

VI-C: Sub-area VI-C consists of an 8.92 acre parcel of land now situated in the RC (Resort Commercial) Zone and developed and utilized as the Garland's Resort. Garlands is now located on the westerly side of Oak Creek and approximately one-quarter mile south of the Junipine Resort. Current uses and improvements on the property consist of two orchards between which are located a main lodge and dining facility, 11 guest cabins, the owner's residence, a dwelling and two cabins for employee housing, several accessory buildings, and various driveways providing access to the property and on-site parking areas. The facilities provide quiet, secluded, and exclusive service to guests of the resort.

A revised master plan allowing for expansion of this resort to a maximum of 17 guest cabins with a corresponding increase in associated service areas and employee housing was approved by the Board of Supervisors on November 17, 1981. The expansion will occur over the next few years.

AREA VII

Area VII consists of a 46.66 acre parcel of land located immediately south of the Slide Rock area of Oak Creek. Now situated within the G

(General) Zone classification, the majority of the land is vacant, but includes a small fruit stand operated during the summer months on a legal non-conforming basis as well as four small cabins and an old stone structure west of the highway. None of these latter structures represent indispensable investments and are thus likely to be destroyed and removed from the property if redevelopment were to occur.

Redevelopment of this site is highly probable. The area west of the highway, where most of this acreage exists, is physiographically flat and largely devoid of dense vegetation. Proximity to Slide Rock, one of the Canyon's most popular visitor attractions, also enhances the site's development potential. Although a specific proposal for redevelopment of this parcel has not yet been filed with Coconino County, such an application is expected in the very near future.

AREA VIII

Area VIII is located six-tenths of a mile south of Slide Rock and includes approximately 5.9 acres of land on the westerly side of Highway 89-A. The northernmost 3 acres (Area VIII-A) is subdivided into 17 individual parcels now located in the RS-6,000 (Residential Single Family) Zone and developed with 14 single family dwellings. These homes are attractively finished, well-maintained, and blend reasonably well with their surroundings.

The 2.9 acre parcel of land immediately south of these homes (Area VIII-B) is now situated in the CG-10,000 (Commercial General) Zone and developed as the Slide Rock Lodge. The lodge includes 20 motel units, a small coffee shop, and a residence for the owner/operator of the motel. A substantial investment not easily replaced is represented by this development.

AREA IX

The Rancho Shangri-La Subdivision, located one mile south of Slide Rock Lodge on the easterly side of Oak Creek, constitutes the private lands of Area IX. Approximately 9 acres, subdivided into 38 individual lots and developed with 19 single family dwellings, are encompassed by the subdivision. The area is currently zoned RS-6,000 (Residential Single Family).

Fifteen of the homes in this area represent substantial investments for their owners. As such, they are not likely to be replaced as a part of a redevelopment proposal for this area. The remaining four homes are considerably older and in need of repair or replacement. Two abandoned cabins in an extremely dilapidated condition are also found at the northernmost extremities of the subdivision.

Although there are quite a few undeveloped lots in this subdivision, the likelihood of the areas conversion to a more intensive development pattern appears rather slim.

AREA X

Area X consists of approximately 9.26 acres of land located on both sides of Highway 89-A about two miles north of Sedona. The entire area is now situated in the AR (Agricultural Residential) Zone and includes a variety of non-conforming uses. These uses functionally divide this portion of the Canyon into the following four sub-areas:

Sub-Area X-A: Private lands located on the westerly side of Highway 89-A and developed with the Twin Oaks Restaurant constitute sub area X-A. Three small homes situated on a hill directly behind the restaurant are also found on the property. While this sub-area includes a fairly large tract of undeveloped land, severe slopes limit the viability of more intensive development proposals.

Sub-Area X-B: This area is comprised of the Hidden Oaks Mobile Park and is located on the easterly side of the highway adjacent to Oak Creek. Development within the mobile park consists of 19 travel trailers, three mobile homes and eight houses of conventional construction. All are used as permanent residences. More than half of the trailers have been modified with room additions or cabanas. These additions, coupled with the number of dwellings situated in this sub-area, make for a very high density of residential land use on this relatively small area.

Sub-Area X-C: The Oak Creek Terrace Motel is situated on the easterly side of Highway 89-A, as shown on the accompanying map. Nine motel units and a registration office are included in the development. A substantial investment not likely to be removed and replaced with a more intensive development scheme is represented by this project.

Sub-Area X-D: Creek Side Mobile Village occupies the southernmost portions of this land area. Sixteen mobile homes are established as permanent residences on this site. All are well-maintained, nicely arranged and landscaped, and represent one of the nicer areas for mobile home living in the entire county. The likelihood for a change in development on this site appears minimal at this time due to the good condition and degree of investment inherent in these properties.

AREA XI

Area XI includes approximately 53.79 acres of private lands situated primarily on the easterly side of Highway 89-A at the confluence of Munds Park Wash and Oak Creek. This acreage is situated in the AR Zone and is functionally divided into five sub-areas of non-conforming uses

as depicted graphically on the accompanying map and as further described in the following paragraphs.

Sub-Area XI-A: The Twin Springs Terrace Mobile Home Subdivision is currently developed with ten mobile homes and one single family dwelling of conventional construction. All of the dwellings in this area appear to represent substantial investments for their owners. The subdivided area also includes a number of undeveloped lots.

While future development may reasonably be foreseen for this area, portions of the subdivision have inherently steep slopes that would limit development potential.

Sub-Area XI-B: This area, located to the northwest of the Twin Springs Terrace Mobile Home Subdivision, is currently developed with 11 single family dwellings of conventional construction. These homes are almost totally concealed from view from Highway 89-A by virtue of the area's topographic and vegetative characteristics. The dwellings conform with their surroundings and represent fairly large investments for their owners. A significant number of undeveloped lots also exist here, giving this sub-area a high potential for future development, which would most likely be of a single family residential type.

Sub-Area XI-C: The sand sculptures located adjacent to Highway 89-A serve as a readily-recognizable landmark for this area. Immediately to the east of the sculptures is Indian Gardens Terrace Trailer Park, a small land area on which 33 trailers have been established over the years as permanent residences. A large number of these units have had room additions constructed onto the trailers, resulting in practically non-existent setbacks between dwellings and one of the highest densities of residential living areas now found in Coconino County. Although "home" to their respective owners, the trailers collectively constitute an extremely odd assortment of dwelling units sub-standard to any residential areas which would now be permitted as new development in the County. The potential for redevelopment of this area is probably low due to the quantity of owners who would have to be dealt with as well as the inherent limitations of the land area involved.

Sub-Area XI-D: This area is developed with eight single family dwellings of conventional construction located on the easterly side of the highway. The area is well-maintained and represents substantial investments for its residents. Some undeveloped lots also exist, portions of which appear to be located in the floodplain of Oak Creek.

A small fire station is located across from the subdivision on the west side of Highway 89-A.

Sub-Area XI-E: Sub-Area XI-E includes approximately 24.22 acres of land now developed with one single family dwelling of conventional

construction as well as a single mobile home. Several slopes hinder the potential for future development of this area.

AREA XII

Area XII is made up of Indian Gardens and adjacent private property. The entire study area encompasses about 18.47 acres, with 5.88 acres located within the G (General) Zone and 12.59 acres situated in an AR (Agricultural Residential) Zone. Dwellings within the study area include 12 single family residences, 8 mobile homes, and 31 trailers.

Those lands located northwest of Highway 89-A are within the G (General) Zone. Occupying this zone are the Indian Gardens General Store, a residence for the owners of the store, one restroom facility, 4 trailers and 2 additional unoccupied stone structures. All of the structures are situated on one parcel of land and are operating on a legal non-conforming basis. All of the structures are situated on one parcel of land and are operating on a legal non-conforming basis. All of the buildings could be perceived as needing renovation and the land is susceptible to future development.

The AR (Agricultural Residential) Zone is located southeast of Highway 89-A. Fourteen trailers with constructed additions lie directly adjacent to 89-A. These trailers can easily be seen from the highway and do not blend with the creekside scenery. The entire trailer complex lies in the middle of the Oak Creek floodplain.

Across from the trailers and Oak Creek lies some very attractively constructed and landscaped homes. These dwellings are located along Lower Indian Gardens Drive. This housing development represents a sharp contrast to the trailers across the creek. The entire development lies outside of the floodplain of Oak Creek and represents substantial owner investments of a more permanent character than adjacent land uses.

Southeast of the housing complex are two homes and some trailers located on Upper Indian Gardens Drive. This area is not as attractive as the lower drive development; however, the land uses do conform to some extent. Some redevelopment could be perceived as possible in the upper drive area.

AREA XIII

Area XIII includes 50.12 acres of land situated on both sides of U.S. Highway 89A about two miles north of Midgely Bridge. Those lands on the easterly side of the highway encompass about 28 acres and are divided into four areas of different land uses as described in the following paragraphs. All of these lands are now within the G (General) Zone classification.

XIII-A: This area contains 10.77 acres of relatively flat land, approximately half of which is within the floodplain of Oak Creek. Development is limited to four single family dwelling which appear to have been on the property for some time and are in need of repair. Relative good access from 89A and dense vegetation along Oak Creek enhance this sub-area's potential for future changes in development patterns.

XIII-B: This area is now developed with the Rainbow Trailer Park, a legal non-conforming use established on the property more than thirty years ago. The park encompasses about 8.25 acres of land and now supports approximately 73 travel trailers and 18 mobile homes.

XIII-C: The Rainbow Trout Farm, occupying 1.75 acres, operates from this property. Development includes a quarter-acre pond, one hatchery building, a cleaning house, one barn for equipment storage, seven trailers for employee housing, and fish tanks capable of supporting 2.5 million trout per year. Changes in the development of this property are extremely unlikely.

XIII-D: The 17.6 acres of land within this sub-area are now developed and used as the Living Springs Church camp. A conditional use permit was granted to the camp in January of 1981 for a period of five years. Approved development includes two dormitory type cabins, three large tents, a kitchen and dining room, two shower and restroom structures and seven family cabins for Church camp use. Two maintenance buildings, a corral and several spring houses also exist on the property.

XIII-E: The lands included in this sub-area are located on the northwest side of Highway 89A and developed with a small mobile home park operated under a recently renewed 1972 Use Permit. Three mobile homes are authorized by the permit. Development potential is seriously constrained due to severe slopes throughout most of this area.

AREA XIV

Area XIV encompasses a total of 40.73 acres of private lands situated on both sides of highway 89A approximately a mile and one-half north of Midgely Bridge. This area is functionally divided into five sub-units as shown on the above map and as described in the following paragraphs.

XIV-A: Nine acres located on the northwesterly side of Highway 89A comprise this unit. These lands now situated in the G (General) Zone, are undeveloped, and will likely remain undeveloped due to the extremely steep slopes prevailing on the property.

XIV-B: This 5.48 acre parcel of land is currently developed and used as the Terracotta Inn. Four small cottages, two duplexes, one

conventionally-constructed dwelling, and one mobile home now exist on the property. Future redevelopment is constrained due to the location of approximately two-thirds of the property in the floodplain of Oak Creek.

XIV-C: The Briarpatch Mobile Home Park is the primary use made of this 2,925 acre area. Eighteen mobile homes, a manager's residence, an older dwelling of small size and poor condition, and a community garden constitute the development on this land area. All of the mobile homes are in excellent condition and represent substantial investments for their respective owners. Significant changes in development patterns appear unlikely.

XIV-D: This area consists of 1.757 acres of land divided into six individual lots for single-family residential purposes. Four of the lots are now developed with attractive and well-maintained homes. Changes in development patterns appear unlikely.

XIV-E: This area consists of 21.57 acres of undeveloped, relatively flat land situated to the east of Oak Creek and well-screened from Highway 89A. Potential for change appears high.

AREA XV

Area XV is comprised of seven individual parcels of land encompassing a total of 42.78 acres. All of the parcels are currently undeveloped, situated in the G (General) Zone classification, and are topographically conducive to future development.

ATTACHMENTS

ATTACHMENT "A"

FINDINGS AND RECOMMENDATIONS OF INTERAGENCY
WORKING GROUP ON OAK CREEK CANYON
October 29, 1982

YAVAPAI COUNTY REGULAR COMMITTEE
MEMBERS

Norm Cavanaugh
M.W. Crafford
Kathy Levin
Hamp Merrill
Bill Pritchard
Thron Riggs
Nancy Tafel

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I. GENERAL SUMMARY OF RECOMMENDATIONS

Oak Creek Canyon is a unique natural resource of aesthetic and economic importance. To guide its planned and orderly development with maximum positive impact on those values which make it important is the object of this study and resulting recommendations.

These values, in order of the importance of their impact on development are: 1) the high quality of water in Oak Creek and the subsurface aquifers, 2) the natural beauty of the area, 3) the lack of urban density and 4) the high quality of the air. Public input gave clear and strong direction to the

recommendations concerning the maintenance of water quality as well as the preservation of existing natural values in the Canyon. In considering urban density there were conflicts of interests between the private property owners in the Canyon who wished to sell, those which intended to continue as residents, the public which wanted to expand public uses for recreation, the public which sight sees the Canyon for its natural beauty and those with commercial interests related to tourism. Recommendations reflect those areas of general agreement which should provide guidelines for future site specific action in the planning and zoning process.

II. BASIS FOR FINDINGS AND RECOMMENDATIONS

The Working Group from February 1982 to October 25, 1982 held 15 public meetings conducted in accordance with the current open meeting law. Notices of meetings and results of meetings were publicized by well over 1000 column inches in local newspapers (as of October 12) as well as in a half hour special radio broadcast and numerous radio spot announcements during this period. Pertinent data and surveys made a part of the previous Working Groups study were reviewed. The WG or its various subcommittees obtained information in part from the following sources: 1) a report on the one year study made by the Arizona Department of Health Services on aerobic system functioning in the Sedona area, 2) a presentation by the Forest Service of current management problems in the Canyon, 3) a review of the current status of the Sedona Sanitary District, 4) a presentation by Coconino Department of Community Development of current and possible future development under existing zoning, 5) a presentation of a projection of future population growth in the Sedona area by Eggert Economic Enterprises and a second projection by NACOG, 6) a presentation by the Forest Service of the current Forest Service Multiple Use Plan for the Canyon and current land acquisition and exchange policies, 7) consultation with planning and zoning professionals from the City of Scottsdale, 8) a presentation by representatives of the Arizona Department of Health Services Bureau of Water Quality Control on Unique Waters Policy, 9) a presentation by Field Biologist Stewart Aitchison on man's impact on the ecology of the Canyon, 10) a review of Denver ordinance 645 relating to preservation of mountain views, 11) a review of land acquisition programs for public use conducted by the Federal Land Exchange, the Nature Conservancy, and the Trust for Public Lands, 12) various presentations and consultations on water quality in the Canyon by Dr. Dale Nations, Professor of Biology NAU, Dr. Harry Agenbroad, hydrologist, Dept. of Biology NAU, Dr. E.L. MacFarlane, Member Advisory Group Arizona Bureau Water Quality Control, 13) a review of the records at the Coconino County Department of Health in Flagstaff pertaining to existing septic systems in the Canyon, 14) a review of traffic on Arizona Highways conducted by the

Arizona Department of Transportation in 1981, and 15) consultation with Dr. Saarinen, graduate Department Land Use and Geography, U. of A. on attitudinal surveys on environmental perceptions.

A representative from the Coconino Department of Community Development attended each meeting as our advisor. Public input was received through letters addressed to a special Working Group Post Office Box JJ, public meetings with attendance from 20 to 270, surveys conducted of Canyon residents, Flagstaff residents, visitors in the Canyon, and Sedona residents.

III. FINDINGS AND RECOMMENDATIONS

- A. Water quality, both of Oak Creek and the underground aquifer, was clearly perceived as the most important restraint on development in the Canyon, and the most important factor to be preserved to maintain the economic well being of the area. The following recommendations were made by unanimous vote.

"The preservation of the purity of the drinking water of Oak Creek Canyon and Sedona and the protection of the underground aquifer from contamination must be of prime concern."

"The economic values of a pristine Oak Creek must be preserved."

The pollution of Oak Creek has been made the subject of much study and there appears to be adequate monitoring in certain specific areas to indicate the source and nature of some major stream pollutants. Slide Rock, Indian Gardens and other high density uses have been clearly pinpointed as problem areas. A review of the records of the Department of Health of existing septic systems in the Canyon indicates that there are no records for an estimated major portion of the existing systems. It indicates further that many of the known and recorded existing systems are inadequate and outmoded by today's standards. The discovery and correction of improper or illegal systems currently polluting the water supply would not only improve existing water quality but make it possible for more development to take place than could safely occur otherwise. The following recommendations addressing this problem were passed unanimously.

"The use of Oak Creek to dispose of sewage and other wastes, whether by direct introduction of raw sewage and solid wastes or from defective or inadequate septic systems and land fills, must be discontinued."

"All current health, sewage and water quality regulations should be rigorously enforced.

It was recognized that further development involved disturbing the existing earth and vegetation, creating a source of pollution in the Creek which should be controlled if development is to take place. The following recommendation was passed unanimously.

"All land, stripped of vegetation during the construction process must be stabilized and revegetated to minimize creek water turbidity."

Little is known of the pollution of Oak Creek itself. There is concurrence among geological experts and hydrologists as to the nature of the process of polluting the underground aquifer either through Oak Creek itself or by sub-surface discharges. The nature and exact location of faults together with the means of entrance to, or the location of, the aquifer is not well known or understood in the process by the USGS, sufficient time or moneys were not available for such a study to be included in this report. It is clear that in view of the importance of the water supply to our economy that where questions of acceptable practice arise they should be resolved conservatively in favor of not risking the underground water supply. While pollution of the Creek itself can be corrected, errors which cause pollution of the underground are both serious and irreversible. Errors which unduly prevent pollution can be corrected in time as knowledge and technology permit. The following recommendation was passed unanimously.

"A study should be undertaken immediately to determine the adequacy of existing septic and waste water systems and the ability of the Canyon's Geology to safely assume the existing and ultimate population sewage effluent. Existing studies underway should be utilized in this comprehensive study.

Upon completion of this study, appropriate action must be taken."

- B. Maintaining the natural values in the Canyon was expressed by the public as a clear priority. Minimizing the visual impact of all man made structures and activities on the Canyon is essential to development compatible with the preservation of the existing environment. Accordingly two recommendations were passed unanimously, one to provide such guidelines which are made a part of this report, the second to help implement it.

"That a Design Review Overlay Zone be approved to cover all development."

"That an Advisory Development Review Board be appointed by the Coconino Board of Supervisors with representation from the Coconino section of the Study Area. The function of this committee will be as follows:

- a. Review preliminary plans for all developments
- b. Make recommendations to the Planning and Zoning Commission relative to the appropriateness of the development of the property, taking into consideration: Zoning, Density Relative to Topography, Natural Features of the Area, Effect on Air and Water Quality.
- c. That the proposed development meets all requirements of the proposed Design Review Overlay Zone."

A number of other areas responsive to public input were reviewed relating to improving tourist usage of the Canyon. Recommendations for walking paths along the Creek were considered but defeated based upon property owners objections and physical and cost problems of implementation. Other recommendations were incorporated in the proposed DRO guidelines. Comments regarding expanded or improved visitor uses and property owner objections to some of these suggested uses resulted in the following recommendation, which passed unanimously.

"It is recommended that the Forest Service prepare and execute a plan for the elimination of the existing problems of overcrowding, water pollution, parking congestion and litter at Slide Rock."

A need was expressed for more scenic turnouts, tourist information, and parking areas reflected in the following unanimous recommendations.

"The need for designated, well signed and situated scenic turnouts has strong public support and the Committee feels that there are three areas which should be considered. They are:

4. Between Midgley Bridge and one-fourth mile north of Grasshopper Point;
5. North of the Slide Rock area; and
6. The Call of the Canyon area (U.S.F.S. day use area).

The facilities at the turnouts should include restrooms, parking, limited or no picnic sites, "skyline" topography

identification or geology description, where appropriate, and be combined with hiking trailheads, where suitable.

The Midgley Bridge and Slide Rock turnouts are intended for stop-and-look. The Call of the Canyon turnout should provide easy creek access for longer stays.

It is recommended that the U.S.F.S. and A.D.O.T. and Coconino County jointly prepare a feasibility study of these recommended areas or others which may be more suitable to determine the requirements for access, signing, number of vehicles to be accommodated, excavation and grading, etc."

"We recommend that the Forest Service Plan for northbound and southbound information stations be implemented."

- C. Recognizing that the degradation of air and water quality and natural values is a function of population density the general thrust of recommendations in this area was to encourage the maintenance of existing low densities provided for in current zoning. Recommendations for specific uses for specific sites were not acted upon, but rather provisions were made for the inclusion of alternate new residential uses under restricted conditions. The following recommendations, all passed.

"That there be no change in areas in the Canyon now zoned residential single family (RS-6,000 and RS-10,000)."

Unanimous

"All agricultural and general zoned properties that are currently developed as "non-residential" uses remain as they are (grandfathered). Future redevelopment of these lands is subject to the obtaining of a conditional use permit in keeping with existing uses and practices in Oak Creek Canyon which are residential types of uses such as condominiums, single family residence, and resort commercial, all with maximum density of five units per developable acre." Not unanimous.

"All other undeveloped land presently zoned agricultural (AR) and General (G) shall only be considered for use other than as permitted residential use when such use shall be consistent with the needs of this unique area and the developer specifically demonstrates that such proposed development will not add pollutants to Oak Creek, materially damage vegetation outside building areas or obstruct its natural vistas designated as in the public interest and otherwise conforms to the DRO ordinance."

Unanimous.

In public meetings considerable concern was expressed over the possibility of condemnation of private lands by governmental bodies despite comments to the contrary by the Forest Service. Evidence of conflict between private land owners and public recreational area users was evident. This resulted in a negative reaction to a Forest Service proposal to acquire property next to Slide Rock for parking purposes. This was perceived as an attempt to increase use of Slide Rock rather than control it as proposed. Although it was clearly evident that some sort of buffer was required between the two uses, no specific recommendations were agreed upon. As a solution to the problem of limiting future high density campground usage, of eliminating the fear of property condemnation, of providing an acceptable mechanism for a buffer between public use and private property, the following recommendation was passed. (14 yes, 1 no).

"It is considered a desirable use of land that all private lands acquired by the Forest Service or by or through such organizations as the Trust for Public Lands, Federal Land Exchange or nature Conservancy, on a willing buyer, willing seller basis be maintained as or restored to open space."

A clear preference was expressed by the public to retain the aesthetics of the Canyon at the expense of rapid point to point transportation. The following recommendation was unanimous.

"Highway congestion: The existing highway remain unchanged except for turnouts for passing purposes and that an all weather paved road be constructed over Schnebly Hill to Interstate 17."

- D. The effect of development in the Canyon and projected increased traffic loads was reviewed for its impact on air quality. In the opinion of a professional air pollution consultant, but in the absence of any air quality monitoring studies, it was felt that there is not now or will not be in the future, an air quality problem. From the aesthetic standpoint, the public felt that campfire or residence smoke from wood fires was not currently a problem and recommendation to restrict further wood burning uses were not approved. If smoke from wood fires in the Canyon does become a problem it can be dealt with by restrictive measures as in other communities. No recommendations therefore are made in this area which would affect future development.

ATTACHMENT "B"

December 16, 1982

Mr. Dennis Wells
Chairman, Executive Committee
Sedona-Oak Creek Interagency Study Group
Sedona, Arizona

Subject: Minority Report - Oak Creek Canyon Study

Dear Mr. Wells:

In accordance with the guidelines of the Interagency Study Group, we the undersigned hereby submit a minority report. In this report, we take exception to two parts of the majority report, specifically:

1. The usage of the word "gross" vs. "developable" relative to the maximum density recommended for land which is to be redeveloped; and
2. The statement that, "There is concurrence among geological experts "...as to the nature of the process of polluting the underground aquifer..."

Relating to the first issue we recommend that redevelopment under a conditional use permit have either a maximum of 5 (five) units per gross acre or not state any maximum or minimum figure. The five unit per acre figure evolved out of the Junipine zoning case, and was a density agreed upon by the engineers, architects, the developer, and the County Planning Department as a figure that that particular piece of property could support. It does not mean that each parcel of property is the same or could support the same density.

If the wording is left as "maximum density of five units per gross acre", it does not mean that the Board of Supervisors has to allow that much density. They would consider all of the other restraints, as mentioned in the Interagency report, consider all of the other restraints, as mentioned in the Interagency report, consider economic feasibility, assess the value of the redevelopment in curing existing problems of sewage, aesthetics, and antiquated construction, and ascertain whether or not the project fulfills a need of the community. This would also apply if there were no minimum or maximum figures cited as the land topography, ability to handle sewage, traffic concerns, scenic vista considerations, and other factors would all be considered by the Board of Supervisors before a decision to approve or deny was made.

Quality projects, well conceived, provide opportunities to remove antiquated structures, improve sanitary waste disposal techniques, improve aesthetic considerations, and provide substantially more tax

base than do outmoded projects which were developed without concern for the various constraints and considerations cited above. By stating an exact, non-flexible density figure you may preclude the development of a very desirable project by rendering it economically unfeasible.

There is a need for prescribed services in the Canyon, and it would be to the public's advantage to have good projects replace the mistakes of the past and provide a tax base to support the variety of public services which the public is continually requesting.

Relative to the second point we do not feel that, "There is concurrence among geological experts and hydrologists as to the nature of the process of polluting the underground aquifer either through Oak Creek itself or by subsurface discharges." To the contrary, we heard a variety of positions which seemed to indicate that there was no knowledge that existed that any surface pollution was able to permeate down through several hundred feet of rock and rubble to pollute the underground aquifer. It has constantly been shown that surface pollution exists at various times, but no one has ever suggested that pollution of the aquifers has occurred through the process of pollution in Oak Creek Canyon intruding into the aquifer.

We support the statement made in the report that the pollution of Oak Creek by the direct introduction of raw sewage and other wastes or from defective or inadequate septic systems must be discontinued. We are concerned with the definition of "adequate". We support the position that when a redevelopment or new project follows the guidelines of the State and the County, is willing to put approved equipment and systems in place, is willing to properly maintain and monitor that equipment and assure that the effluent discharge is handled in a proper manner and is of proper quality, that this meets the intent of the law and the desires of the public. Even the "State of the Art" equipment produced today is not perfect. A town wide sewer system will not be perfect. We do not feel that all development should be stopped because there does not exist perfect systems for sewage disposal, especially when in most redevelopment projects the new systems will provide for greater protection of the public interest than the outdated, poorly designed systems of the past.

We respectfully request that you consider our positions and forward them on for consideration at the public meetings to be held by the Planning and Zoning Commission and the Board of Supervisors.

Sincerely yours,
Michael Bower, Joe Beatty, Bill Pritchard and Hamp Merrill

ATTACHMENT "C"

OAK CREEK CANYON ATTITUDE SURVEY SUMMARY REPORT October, 1982

Four sample groups were selected for this survey and a different methodology was used for each group. The sampling groups, techniques and total number of surveys completed for each group are discussed below. Highlights of the survey are also provided.

A total of 319 surveys were returned. The tally was as follows:

1) Oak Creek Canyon Property Owners (54% of those identified)	139
2) Guests of resorts, motels and cabins	79
3) Campground, picnic and day use area users	64
4) Flagstaff area	37
TOTAL	319

1. Oak Creek Canyon Property Owners

The current Coconino County Assessor's Records, on microfiche, were used to identify property owners. A total of 258 property owners were identified from the following records:

Book 401-12-1 to 9D
Book 405-04-1 to 35

The survey was mailed out on September 24, 1982 with a return deadline of October 4, 1982 by the Coconino County Community Development Department. A cover letter from Brian Hawley, Director, was enclosed along with an addressed, stamped return envelope.

There were 139 completed surveys returned and 20 were undeliverable. The response rate was 54%.

2. Motel/Cabin/Resort Guests

A total of ten private resorts were identified in Oak Creek Canyon and 25 surveys were distributed to each between September 20th-23rd. There were 79 completed surveys picked up on October 5th.

3. 3. U.S.F.S. Campgrounds and Picnic/Day Use Areas

Three N.A.U. students conducted field surveys from September 24th-31st in the following areas:

Pine Flats Campground
Manzanita Campground

Encinosa Picnic Area
Slide Rock Area
Grasshopper Point

There were a total of 64 completed surveys.

4. Flagstaff Community

Four N.A.U. students conducted a random telephone survey of the Flagstaff area. One hundred random numbers were selected yielding 51 valid telephone numbers. Of this 51, 6 had been disconnected and 3 refused to respond. From the remaining numbers, there were 37 completed surveys.

Survey Highlights

A. Respondent Characteristics

Residency:	Sedona	- 5%
	O.C.C.	- 21%
	Flagstaff	- 18%
	AZ, Other State/Country	- 56%
	O.C.C. Property Owners	- 45%

B. Sex:

C. Female - 46%

D. Male - 54%

E. Age:

F. 50+ - 46%

G. 30-39 -31%

H. Education Level:

I. High School - 15%

J. Some College - 42%

K. College Degree + - 42%

L.

M. Problems Seen/Experienced in O.C.C.

Four most important: Overcrowding at Slide Rock, Traffic Volume, Litter, Inadequate Parking.

N. Areas regularly visited

West Fork, Midgley Bridge, Wilson Mountain area, Slide Rock

O. Areas Avoided

Slide Rock, Grasshopper Point
Why? Drinking, litter, pollution

P. Especially Beautiful Areas

West Fork, Switchbacks, Overlook

Q. More Development In O.C.C.?

	<u>Flagstaff</u>	<u>Resorts</u>	<u>Campgrounds</u>	<u>OCC Prop. Owners</u>	<u>Combined</u>
Yes	5	25 (32%)	17 (27%)	56 (43%)	103 (33%)
No	31 (84%)	43 (55%)	36 (57%)	71 (55%)	181 (50%)
No op.	1	10 (13%)	10 (16%)	3 (2%)	24 (8%)
TOTAL	37	78	63	130	308

If yes, what kind?

SF	-	5	-	25	30
MH/MHP	-	-	-	-	-
SF MH/MHP	-	1	1	3	5
Tourist Res.	-	3	1	8	12
Condos	1	-	1	-	2
Comm'l.	-	-	-	3	3
Tourist, Condos.	-	4	-	2	6
Public Uses	4	11	12	9	36
All of Above	-	8	2	11	21
Other			(A couple of main themes)		
TOTAL	5	32	17	61	115

R. Development Alternatives

	<u>Flagstaff</u>	<u>Resorts</u>	<u>Campgrounds</u>	<u>OCC Prop. Owners</u>	<u>Combined</u>
No more Limited Areas	20 (54%)	24 (33%)	29 (46%)	55 (42%)	128 (42%)
Anywhere	15 (41%)	41 (57%)	26 (41%)	54 (41%)	136 (45%)
No op.	1	6	1	21 (16%)	29 (10%)
TOTAL	37	72	63	131	307

S. Purchasing private properties from willing sellers

Yes	22 (59%)	25 (33%)	35 (55%)	42 (32%)	124 (40%)
No	6	32 (42%)	15 (23%)	83 (64%)	136 (44%)
No op.	9	19 (25%)	14 (22%)	5	47 (16%)
Total	37	76	64	130	307

T. Specific guidelines for architectural style, height, color of buildings and signs

Yes	33	65	52	112	262 (87%)
No	-	5	6	17	28 (9%)
No op.	4	-	4	3	11 (4%)
Total	37	70	62	132	301

DESIGN REVIEW OVERLAY ZONE FOR OAK CREEK CANYON

I. ARCHITECTURAL STYLE

- A. Architectural building forms should express sensitivity to the unique environmental setting, historic building styles, reflecting pioneer development, the land and vegetative forms of Oak Creek Canyon and to the architectural styles of those buildings which have demonstrated similar sensitivity. The goal is for creative and functional design solutions that take advantage of unique and functional design solutions that take advantage of unique characteristics of site, fit lightly on the landscape and contribute to the character and quality of the built environment while in harmony with the natural environment. It is not the intent to dictate specific architectural styles, but in general, styles of a formal nature are not in keeping with the character of the Canyon.
- B. Scale and mass of new developments or redevelopments should be compatible with the surrounding neighborhood and the historic structures in Oak Creek Canyon. Siting should subordinate the structure to the natural features of the landscape and should not block off views of scenic features. Scale and mass of buildings should be compatible with the natural features of the landscape rather than dominate it. Scale and mass can be reduced through creative and coordinated use of articulated facades, variations in setback on a property, siting to take advantage of existing vegetation and landforms, and by landscaping with specimen trees.
- C. Articulated design elements shall be incorporated into the overall architectural design so as to add interesting shadow, shape and depth to structures. Covered walks, arcades, loggias, patios, trellises, recesses for planting and wide overhangs to create shade and shadow are desirable means preventing boxiness and unrelieved mass. Such design will also create "positive" outdoor spaces that have their own identity, function and microclimate due to their enclosure and solar orientation. All sides of a building visible to the public shall receive such design consideration.

II. BUILDING MATERIALS AND COLORS

- A. External building materials should be predominately those that fit the natural landscape such as native stone, logs, wood, slump brick, broken-faced block, exposed aggregate concrete; with wood stakes, heavily textured shingles, coarse textured gravel and matte finished tile for roofs. Because of visibility of rooftops from surrounding heights, aluminum or white roofs are not permitted. Roofs must meet color requirement of the building and not be reflective.

Use of highly reflective metals, plastics and fiberglass is specifically not permitted. Heavily textured materials and materials, which, upon completion of a building, create heavy shadow patterns are encouraged. Creative and tasteful integration of various building materials in the design can add pleasing variety and reduce contrasts with the surrounding environment and reduce apparent scale and mass.

- B. Building colors, alone, can be the most important factor in the successful achievement of harmonizing the built environment with the natural environment. Exterior building colors shall be compatible with the surrounding natural environment. Buildings in prominent public viewing locations and in scenic view corridors shall have colors that do not create contrasts that cause the building to become a focal point when viewed from public access routes.

The predominant colors of Oak Creek Canyon landscape are the dark bluish greens of the vegetative color; the reddish-browns, dark grays and black of the soil and rock formations; and the dark grays and blacks of the shadows and trunks and branches of tree and shrub cover. Almost all natural backdrop colors are several shades darker than the individual rocks, soil particles, leaves and bark flakes due to the influence of heavy shadow patterns. Most natural colors are of muted tones and lacking in glossiness.

Colors of low contrast such as soft and dark earth and vegetative tones are to be used as they will best blend with the natural landscape. Such colors are generally the darker flat tones of green, brown, gray, as well as black. Various mixes of such dark colors plus slight reddish additions will ordinarily achieve similar levels of low contrast.

- C. No structures (except signs) or natural vistas shall be lighted by directing light upon them for visual effect. Illumination of parking areas and walkways shall be by low (3-4 ft.) downward directed mushroom type lighting.

III. SITE PLANNING

- A. No structures built atop ridges and knolls shall break treeline or impinge upon views and vistas from Highway 89A or surrounding property.
- B. Buildings and parking areas shall be located on a site in such a manner that they are screened by vegetation from that portion of 89A adjacent to the site and do not significantly alter the natural near vistas from other portions of 89A.
- C. Resort and multifamily and planned residential developments shall not be monolithic in nature, but broken up into separated and screened by vegetation in such a manner as to be integrated with the natural vegetation and topography.

- D. No structure shall be placed upon a site having a slope in excess of 25%. Building height shall be restricted to a maximum of two stories and 30 feet above grade.
- E. For commercial and multifamily buildings, vehicle and pedestrian ways shall be clearly delineated to prevent congestion and conflicts. Service vehicle areas shall be located in the area with the least visual prominence from public ways and private properties.
- F. Utilities such as meter boxes, mechanical installations and trash containers shall be screened in a manner harmonious with the building. All utilities shall be underground.
- G. All required landscaping should emphasize indigenous or native-type plant varieties. Preservation of existing trees and other native vegetation is encouraged to the greatest possible extent.
- H. All land which must be stripped of vegetation or disturbed during the construction process must be stabilized and revegetated to minimize water turbidity in Oak Creek.

IV. SIGNS

A. A. General

- 1. 1. All provisions of Section 16.1, 16.2, 16.3-C and 16.3-D of the Coconino County Zoning Ordinance shall be applicable in Oak Creek as may be modified herein.
- 2. 2. Signs shall not be attached to or painted on natural objects such as trees or rocks.
- 3. 3. Portable sandwich-type signs shall not be permitted except for real estate "open house" signs identifying property which is for sale or lease.
- 4. 4. Signs shall be made of the same materials as provided in IIA, with muted colors consistent with the building or portion thereof to which it relates. Letters of contrasting off white or muted yellows, beige, reds, green, blue are permitted. Corporate logos used must be modified to conform.
- 5. 5. Lighted signs shall use downward directed light shielded so that direct rays do not project above 10 degrees below the horizontal or project into adjacent properties or rights of way. Internally illuminated signs of wood with translucent cutout letters are acceptable.
- 6. 6. Lighted signs shall not remain lighted after normal business hours or after 10 P.M. for a non-business use.

B. Permitted Signs

- 1. Attached Signs
 - a. For each use, one single-faced wall or canopy sign not exceeding one square foot of area for each lineal foot of building fronting on a public road not to exceed 40 sq. ft. A 20 sq. ft. sign is permitted for any building.
- 2. Freestanding Signs

- a. a. For each property, one freestanding sign 20 square feet in area for each street frontage; provided, however, that there be no more than one sign per lot or parcel of land except for corner lots where a maximum of two such signs will be permitted. Where more than one business is being conducted on a single lot or parcel of land, the permitted sign area for each business shall be combined up to a maximum combined area of 60 square feet.
- b. The maximum height of a freestanding sign shall be six feet above grade.
- c. The base of a freestanding sign shall be located in a planter box or landscaped area.

Property owners are encouraged to conform to the above signing requirements for all signs existing as of the date of adoption of this guideline