



Kachina Village AREA PLAN

A Community-Based Local Area Plan
Coconino County, Arizona





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The final draft plan was approved by the Kachina Village Planning Committee on February 21, 2008 and the Coconino County Planning and Zoning Commission on March 25, 2008. It received final approval and was adopted as an amendment to the *Coconino County Comprehensive Plan* by the Board of Supervisors on May 20, 2008.

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Photography

Photography by John Aber except:
Joan Carstensen: front cover, pages 2, 11, 12, 24 (top),
30, 42, 54, 60
Coconino County GIS: page 71
Shaula Hedwall: page 76
Highlands Fire District: pages 17 (top), 25
Robert McCarter: pages 13, 14, 17 (bottom), 43, 58

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Special Acknowledgements

The Kachina Village Planning Committee devoted a considerable amount of their personal time meeting twice a month for a year and a half to ensure that this plan reflects the values of their community. In addition to the official committee members, however, many others contributed to the planning process, attended numerous planning meetings, and shared their ideas, thoughts, and perspectives. Thank you to everyone who attended meetings, called, wrote, or emailed to provide input. A special appreciation goes out to the 500 Kachina Village residents who responded to the community survey and helped make this a truly community-based plan. Thank you to Pic N Run Market, Kachina Village Utilities, and Highlands Fire Department for providing space for drop-boxes for community surveys.



Executive Summary

A Community-Based Local Area Plan

The *Kachina Village Area Plan* is an amendment to the *Coconino County Comprehensive Plan* providing policy guidance for future development in this unincorporated community. While the *Coconino County Comprehensive Plan* contains general goals and policies that are applicable County-wide, the contents of the *Kachina Village Area Plan* are tailored more specifically to local conditions in Kachina Village. This plan is an update of the original *Kachina Village Area Plan* adopted in 1997 and supersedes that plan. The goals and policies contained in the plan are intended to enhance the positive characteristics of the community while helping to move it toward the future envisioned by residents. A committee of local residents and property owners worked with Coconino County planning staff to identify planning issues, formulate a vision statement, and develop specific goals and policies. Public outreach to the broader community included an Internet-based survey, press releases, newsletter articles, public meetings, and community events. Widespread participation and interest in the 2007 Community Survey provided invaluable input and helped to ensure that the final plan reflects the values and desires of the local community while meeting the statutory direction of promoting the public health, safety, convenience, and general welfare.

Vision Statement

The *Vision Statement* sets the tone for the entire plan. The Kachina Village Planning Committee looked forward to the year 2025 and saw a community where many positive changes had occurred, but where the special qualities that they value had been preserved or enhanced. The *Vision Statement* is divided into four categories or subsections including Quality of Life/Community Values, Natural Environment, Transportation, and Growth and Development. Entitled “Kachina Village 2025 – A Vision for Our Future,” the *Vision Statement* describes a safe, family-oriented community comprised of a culturally- and economically-diverse population. The importance of the natural environment, both within

the community and in the surrounding national forest, is emphasized. Improvements in the transportation system are anticipated including pedestrian and bicycle facilities, trail systems, and public transit. Future growth and development includes the upgrading and redevelopment of run-down properties, new commercial uses emphasizing goods and services beneficial to local residents, and new development that is compatible with the scale and character of existing development patterns.

The Plan Elements

Natural Environment

Public Safety

Circulation

Parks and Recreation

Water Resources

Community Character

Land Use

Future Growth

The eight elements or sections of the plan address the major planning issues investigated by the planning committee. The elements generally follow the format and structure of the *Coconino County Comprehensive Plan* and include: Natural Environment, Public Safety, Circulation, Parks and Recreation, Water Resources, Community Character, Land Use, and Future Growth. Each element is further divided into subsections, and each subsection includes text describing background, existing conditions and trends. Following the text in each subsection is a goal and several policies related to the topic. The goals provide direction for the County’s actions and decision-making, and the policies are specific statements of intent to accomplish the goals. Like the *Comprehensive Plan*, the *Kachina Village Area Plan* maintains a strong conservation focus throughout.

Design Review Overlay Zone

Pursuant to Section 13.10 of the *Coconino County Zoning Ordinance*, a Design Review Overlay (DRO) Zone is established for Kachina Village to protect and enhance the visual quality of the community. The Design Guidelines specified in the DRO do not apply to single family residential properties, but do apply to multiple family, commercial, and public facilities. The Design Guidelines address architectural style, building materials and colors, site design, signs, and outdoor lighting. The Planning and Zoning Commission acts as the review board to ensure compliance with DRO requirements, and a public hearing is required to review all new multiple family, commercial, and public or semi-public uses in the planning area.

Use of the Plan

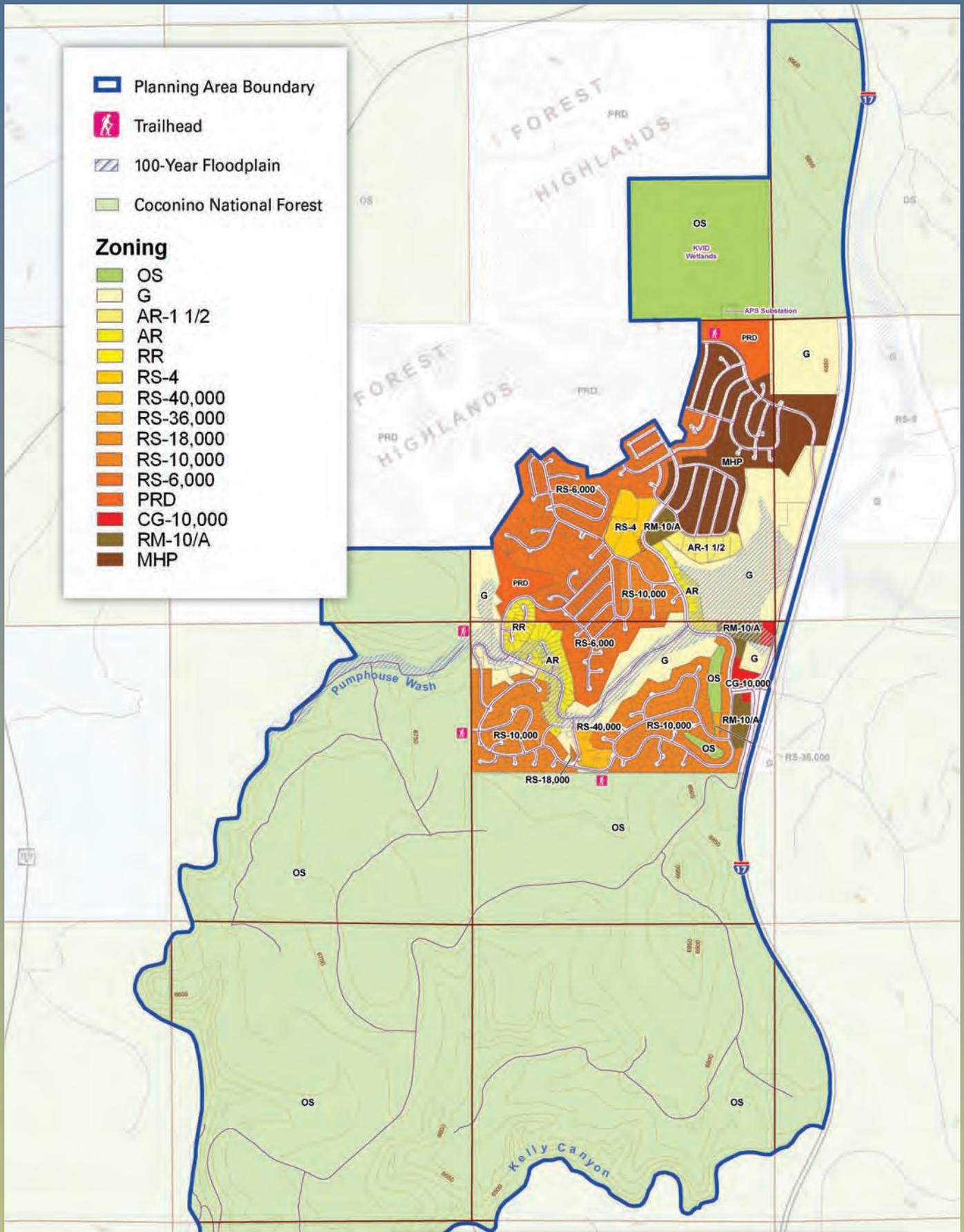
The *Kachina Village Area Plan* can be used as a resource and a decision-making tool by residents, property owners, developers, conservationists, and Coconino County officials. Residents and property owners can gain a better appreciation of how their community has evolved over time from the “Background and History” section and can get a sense of on-going trends and future direction discussed throughout the rest of the plan. Developers and conservationists alike can gain an understanding of the type and scale of development that may be appropriate in Kachina Village and can understand the importance of balancing appropriate development with the conservation of healthy productive ecosystems. The Coconino County Community Development Department, Planning and Zoning Commission, and Board of Supervisors rely on goals and policies in the plan when evaluating projects and making decisions on development proposals.

Kachina Village Planning Area

 Planning Area Boundary
 Trailhead
 100-Year Floodplain
 Coconino National Forest

Zoning

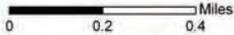
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-  AR
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-  RS-4
-  RS-40,000
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-  RS-10,000
-  RS-6,000
-  PRD
-  CG-10,000
-  RM-10/A
-  MHP



 Coconino County - GIS
 October, 2008



These data are for general planning purposes only. No warranty of accuracy is given or implied.

 Miles
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We are called to be architects of the future, not its victims.

R. Buckminster Fuller

Introduction

Purpose and Scope

The *Kachina Village Area Plan* is intended to preserve and enhance the special characteristics of the community as it continues to evolve over time. It is a community-based plan written by residents incorporating the views and desires of the people who live there. The natural environment is a major contributor to the quality of life in Kachina Village, and the plan has a strong conservation focus intended to help maintain its forest, wildlife, springs and wetlands, and other natural features. In accordance with state statutes related to county planning (ARS §11-802), the plan's purpose is to ensure that future development conserves and promotes the public health, safety, convenience, and general welfare. To that end, the plan serves as an amendment to the *Coconino County Comprehensive Plan*, and guides the decision-making processes of the Planning and Zoning Commission and Board of Supervisors in their consideration of zone changes, subdivisions, conditional use permits, and other development proposals.

The plan does not identify specific land uses for specific locations, but sets forth goals and policies designed to protect the special characteristics of the community, while allowing for orderly, well-planned, and appropriate development.

The geographic area covered by the plan extends beyond the core community of Kachina Village to include national forest lands to the south and west, as well as public and private lands north of the community (see Planning Area map, page vii). Although the County has limited jurisdiction on national forest lands, the Forest Service has expressed a willingness to work collaboratively with the County and the community to accomplish natural resource goals in the wildland/urban interface. While authority over national forest lands remains with the U.S. Forest Service, this plan contains several policies addressing forest management issues in a spirit of partnership and collaboration.

The plan has no fixed time period, but is intended to be applicable for approximately ten years. The plan may be amended periodically, as needed. During the life of the plan, any affected party may request amendments to the plan, which would be considered by the Planning and Zoning Commission and Board of Supervisors through a public hearing process. Eventually, if and when conditions change sufficiently to warrant a major rewrite of the plan, the Board will appoint a planning committee to accomplish that task.

Planning Background

This plan is an update of the original *Kachina Village Area Plan* that was adopted by the Board of Supervisors on September 15, 1997—this plan supersedes the 1997 area plan. In the decade following the adoption of the first *Kachina Village Area Plan*, a number of local conditions had changed sufficiently to justify a thorough review and update of the plan.



Gathering public input at community picnic.

Some of the significant changes included new development that had occurred in the planning area; utility infrastructure capacity had been more specifically identified; emergency response services had expanded significantly; the County acquired more than 100 acres of land to establish the Pumphouse Greenway system and expand Raymond Park; the County adopted a new *Comprehensive Plan*; and the County worked with the City of Flagstaff and other agencies to develop the *Flagstaff Area Open Spaces and Greenways Plan* and the *Flagstaff Regional Plan*. In addition, “*Growing Smarter*” legislation adopted at the state level provided new direction to counties and municipalities in planning for future growth.

This update of the *Kachina Village Area Plan* includes new and updated goals and policies in response to the many changes that have occurred, and is intended to be complementary to and consistent with the current *Coconino County Comprehensive Plan*, the *Flagstaff Area Open Spaces and Greenways Plan*, the *Flagstaff Regional Plan*, and the State of Arizona’s “*Growing Smarter*” legislation.

The Planning Process

The planning process began with the appointment of a citizen planning committee by the Board of Supervisors on September 5, 2006. The committee was comprised of six Kachina Village residents and one local business owner. The Coconino County Community Development Department provided planning staff, and the committee met twice a month for 18 months.

The planning process began with the identification of issues and local conditions that had changed since the 1997 *Area Plan* was adopted. One of the significant changes that had occurred since the *Kachina Village Area Plan* boundaries were established in 1995 was the



Kachina Village Planning Committee visiting potential development site.

development of Forest Highlands Unit Five on what was formerly a section of State Trust Land. Since the rest of Forest Highlands was not in the Kachina Village planning area, the committee modified the boundaries to delete Unit Five from the planning area, as well (see Planning Area map, page vii).

The next phase of the planning process was the gathering of information to identify existing conditions and trends related to each of the planning issues. As part of the information-gathering process, public input was sought through a community survey. After the information-gathering was completed and the results of the community survey evaluated, a draft plan was formulated over a period of several months, and approved by the Kachina Village Planning Committee on February 21, 2008. Public hearings on the draft plan were held by the Planning and Zoning Commission on March 25, 2008 and the Board of Supervisors on May 20, 2008 resulting in the plan's adoption as an amendment to the *Coconino County Comprehensive Plan*.

Community Participation

Planning committee meetings were open to the public and duly noticed in accordance with open meeting laws. In addition to those who physically attended meetings, many others monitored the progress and provided input by email. Press releases were issued to the media, newsletter articles were published and distributed to Kachina Village Utility customers, and public outreach was conducted at the annual Pumphouse Wash Picnic in the Park on September 15, 2007. An Internet-based community survey was utilized to provide every household in the community an opportunity to express their views on a variety of topics—those without access to the Internet were provided printed copies, and an overall response rate of 37% demonstrated widespread participation and interest in the process. Selected survey responses are cited throughout the plan, and the full survey results are maintained on file and available for review at Coconino County Community Development. Additional public input was received at public hearings held by the Planning and Zoning Commission and Board of Supervisors prior to final approval. The input of residents was invaluable and is reflected in every element of the plan.



Old-growth ponderosa pine in Kelly Canyon.

Conservation Focus

In keeping with the “Conservation Framework” of the *Coconino County Comprehensive Plan* (2003), this update of the *Kachina Village Area Plan* contains a strong conservation focus throughout. Like Coconino County in general, Kachina Village features some spectacular landscapes and ecosystems, and those features are critical elements in defining and maintaining the character of the community. Input received from residents reiterates the high level of concern they have for the natural environment and its importance to their quality of life. The *Comprehensive Plan* and the *Kachina Village Area Plan* are both based on the premise that healthy natural ecosystems are essential to healthy and viable human communities, and both plans seek to strike a balance between appropriate development and healthy, productive ecosystems. The plan also acknowledges that wildfire is a natural part of the ecosystem, and the community needs to adapt accordingly to be able to coexist and survive in a fire-prone environment.

Implementation

The *Coconino County Zoning Ordinance* and *Subdivision Ordinance* are the primary tools available for implementing County plans. Both ordinances require that the Planning and Zoning Commission and Board of Supervisors make certain findings of fact in order to approve new development. One of the required findings is that the proposed development is consistent with the goals, objectives and policies of the *Coconino County Comprehensive Plan*, as well as any specific area plan. The *Kachina Village Area Plan* contains goals and policies related to future development in the planning area, and serves as the official guide for future decisions by the Planning and Zoning Commission and Board of Supervisors.

Most development approvals are accompanied by conditions of approval to address certain permit requirements, site improvements, and property development standards. The conditions of approval further serve as a mechanism to ensure compliance with the policies of the *Comprehensive Plan* and *Area Plan*. Implementation of the Design Review Overlay Zone is intended to ensure that approved multiple family developments, and commercial, industrial, and public facilities conform to the policies of the plan.

In addition to development proposals, the goals and policies of the *Area Plan* should be considered by the Board of Supervisors as they make other administrative decisions affecting the study area, and as they direct various County departments in their respective administrative functions. Ideally, such departments as Parks and Recreation, Public Works, and others, will help implement relevant policies as opportunities arise.

Coconino County, however, is only one of several government agencies with authority in the Kachina Village planning area. The U.S. Forest Service is responsible for management of Coconino National Forest lands; Highlands Fire District is the primary emergency response agency; Kachina Village Improvement District operates the community water and wastewater systems; various state and federal agencies have regulatory interests in water resources, wetlands, wildlife, and other natural resources in and around the community. Considering that the agencies all have different missions and responsibilities, implementation of the goals and policies of the *Kachina Village Area Plan* will require the cooperation and collaboration of all affected parties, including government, citizens, and other special interests. Coconino County has enjoyed excellent working relationships with other agencies and citizen groups and will build on those relationships to implement the objectives of the *Kachina Village Area Plan* whenever opportunities arise.



GRAND OPENING

ATTENTION TRAILER and CAMPER OWNERS

BRAND NEW! NEVER OFFERED BEFORE! BEAUTIFUL PINE LOTS ZONED EXCLUSIVELY FOR TRAVEL TRAILERS AND CAMPERS. THIS UNIT IS LOCATED HIGH ON A LEVEL MESA IN A COMPLETELY SEPARATE AREA. NOW YOU CAN HAVE YOUR OWN RECREATION HEADQUARTERS AT A COOL 7,000 FOOT ALTITUDE JUST TEN MINUTES FROM DOWNTOWN FLAGSTAFF.

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Now it isn't necessary to start out on a holiday trip in the middle of the night to beat the crowds to a public recreation area. Now you can own your own Ponderosa Pine lot, waiting for you in Northern Arizona whenever you want to use it. All lots will be fully improved with sewers, water, electricity and year around county-maintained roads. Improvement costs do not begin until all improvements are in. Buy your lot now, at these low introductory prices, and have first choice in this beautiful area.



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There are 100 miles of fishing in the area around Flagstaff. This is a beautiful area for fishing. All you need is the proper gear.



HUNTING
Hunting in the area around Flagstaff is a beautiful area for hunting. All you need is the proper gear.



GOLF
There are three golf courses within a 10 mile radius of Flagstaff. All you need is the proper gear.



SKIING
The best snow ever in the area around Flagstaff. All you need is the proper gear.

ALL TITLES SECURED BY ARIZONA TITLE AND TRUST CO. SINCE 1978



KACHINA VILLAGE

"IN THE HEART OF THE COCONINO NATIONAL FOREST"



ALSO OFFERING (in a separate area)

PONDEROSA PINE LOTS LOCATED IN AN EXCLUSIVE AREA AND ZONED FOR CABINS ONLY

LOT PRICES FROM **\$1795** CASH
EASY CREDIT TERMS AVAILABLE!



ALSO OFFERING (in a separate area)



BEAUTIFUL PINE LOTS AS LEVEL AS YOUR TABLE TOP AND ZONED FOR 10' WIDE MOBILE HOMES

LOT PRICES FROM **\$1295** CASH
EASY CREDIT TERMS AVAILABLE!



COMPLETE COMMUNITY RECREATION FACILITIES

A NEW BUYING PLAN



More than 200 lots are being fully improved now!

Buy Now - Build Later. Now, low monthly terms are now possible under this plan. Buy now for all improvements to PINE you are ready to build your summer cabin or more year round home later on! All property located under this plan will become members of an improved district. They get beautiful Ponderosa Pine lots will be fully developed with County-maintained roads, sewer, water, electricity and landscaping.

RECREATION FACILITIES IN ALL LOTS THAT HAVE BEEN IMPROVED. All lots will have the best landscaping and other improvements. All lots will have the best landscaping and other improvements. All lots will have the best landscaping and other improvements.

THE BEST BUYING PLAN... Buy now for all improvements to PINE you are ready to build your summer cabin or more year round home later on! All property located under this plan will become members of an improved district. They get beautiful Ponderosa Pine lots will be fully developed with County-maintained roads, sewer, water, electricity and landscaping.

Application Form for Kachina Village. Includes fields for Name, Address, City, State, Zip, and a section for 'Comments'.

1969 promotional newspaper ad.

Background and History

Recognizing that native indigenous people have occupied northern Arizona for millennia, this report is limited to summarizing the more recent history of settlement of the area that is known today as Kachina Village. Platt Cline's history of Flagstaff's beginnings, *They Came to the Mountain* (Flagstaff, AZ: Northland Publishing/Northern Arizona University, 1976), is the main source cited for information about the early settlement of the area. Subdivision files and zoning records on file at Coconino County Community Development provide background about the development of Kachina Village from 1965 to the present.

According to Platt Cline, James O'Neill was one of the first American settlers to arrive in the Flagstaff area around 1876. Soon after arriving, he established a homestead at some springs south of Flagstaff on land that eventually became Kachina Village. O'Neill Spring was a reliable water source, providing one of the essential elements necessary for a homestead. Other attributes of the property included native grasses and forage suitable for livestock grazing, as well as merchantable timber that could be sold to the fledgling timber industry in nearby Flagstaff. Ironically, the water source proved more valuable to the timber industry, and the Arizona Timber Company in Mill Town (now West Route 66), just outside the



Monument commemorating Dr. R. O. Raymond at Raymond County Park.

original townsite of Flagstaff, bought the property from O’Neill and built a pipeline into town to supply the mill. The water was also made available to the Flagstaff community when other supplies were low (Cline 96).

The lumber mill and the city eventually developed other water resources, and the land surrounding O’Neill Spring was sold and was primarily used for ranching throughout the first half of the 20th century. Local Flagstaff physician Dr. R. O. Raymond operated a sheep ranch called Pump House Ranch during that time. Upon his death in 1959, Dr. Raymond was buried on-site on a tract of land that was subsequently donated by the Raymond Educational Foundation to Coconino County for the establishment of the park that now bears his name. When Dr. Raymond was buried on his former sheep ranch, it was a much more remote location prior to the construction of interstate highway 17. Dr.

Raymond’s tenure on the land and the subsequent donation of the property for the park is commemorated by a brass plaque near his grave site.

A planned residential development identified as Kachina Country Club Village was proposed in 1965. It was envisioned to include approximately 1,600 homes on 900 acres of land on the west side of I-17 at the Mountaineer interchange. The original development concept, as proposed by the Tucson-based developer, included a recreation-oriented gated subdivision centered on an 18-hole golf course with private paved streets, a private water system, a community sewage treatment plant, and underground utilities. Other features included approximately nine acres of commercial property, about the same amount of acreage for multiple family residential units, a clubhouse, and community stables.

The developer drew upon cultural elements of the Hopi Tribe to create an identity for the Kachina Village community. Not only did the name of the development refer to the Hopi’s spiritual guides, the *katsina*, who reside in the San Francisco Peaks, but most of the street names are of Hopi origin using the names of *katsinam* (plural for *katsina*) as well as Hopi village names. In keeping with the Hopi theme, the cul-de-sac street-type in Kachina Village is uniquely referred to as an “Ovi,” which translates as “high place.” A lesser number of street names are of Navajo origin, and there are several cul-de-sacs using English-language animal names, sometimes referred to as the “critter ovis,” i.e. Deer, Elk, Bear, Fox Ovi, etc.

Kachina Country Club Village was initially marketed as vacation property to Phoenix-area residents, and was anticipated to be one of the prime residential developments in the Flagstaff area. It was expected to be an example of first class master planning in Coconino County. The first unit to be subdivided included 98 acres divided into 160 single family lots and two parcels for commercial and multiple family development. A rezoning and preliminary plat for the first phase was approved by the Coconino County Planning and Zoning Commission on April 6, 1965.

As development proceeded from 1965 through 1971, the reality did not live up to the initial expectations as a high-end premier residential project. The historical record is not entirely clear about why it did not meet expectations, but it is known that the developer experienced financial difficulties, which eventually led to bankruptcy prior to completion of the project. Perhaps the development team simply did not have the expertise or resources to complete a project of the scope envisioned. On the other hand, perhaps the

real estate market of the time was not there to support it. In any case, “Country Club” was dropped from the name after the first unit, all subsequent units were referred to simply as Kachina Village, and the character of the project became decidedly more downscale rather than upscale.

The golf course was never built. A clubhouse, swimming pool and several rental cabins were constructed with the initial development, but eventually fell into disrepair and were removed years later. The homeowners association disbanded and covenants were not enforced. Rather than private paved streets, the developer built the streets to the unpaved County standards of that time, and requested that the County accept them as public streets, to which the Board of Supervisors consented in 1969. The community water and wastewater systems were not up to par, and property owners were saddled with improvement district assessments for years to upgrade the utility systems. Property owners eventually paid additional assessments to pave the roads through a series of road improvement districts.

Notwithstanding all of the problems that occurred in the early years and the unmet expectations, over time Kachina Village developed into a unique and diverse community with many positive characteristics. It offers a range of housing styles and opportunities for residents of different economic levels. It offers the amenities of a natural setting adjacent to national forest yet provides close proximity to town. It offers the full range of community infrastructure including water, sewer and other utilities, public streets, full-service fire protection, community-oriented law enforcement, and park and open space amenities. In short, it probably offers the most fully developed public infrastructure of any unincorporated community in the greater Flagstaff area occupied primarily by the middle class, or workforce, segment of the population. Kachina Village encompasses approximately 700 acres with about 1,400 households, and as of the 2000 Census, contains a population of 2,664 people.

In its early stages of development as a vacation community, and reflecting the nature of the vacation home market of the 1960s and ‘70s, much of the early construction in the Village included fairly modest weekend cabins, A-frames, and mobile homes. As time went on and the community came to be occupied by more full-time residents, the construction of more substantial homes suitable for full-time occupancy followed. As property values in the Flagstaff area have escalated, Kachina Village has experienced rising values as well, but generally has maintained a moderate position in the local housing market providing a relatively affordable alternative compared to some other neighborhoods. As Kachina Village has evolved and matured since its inception in 1965, it has become a significant component of the greater Flagstaff community.



Historic pump house and water tank in Pumphouse Meadow.



Vision Statement

KACHINA VILLAGE 2025 – A VISION FOR OUR FUTURE

Quality of Life/Community Values

In the year 2025, Kachina Village is a unique family-oriented community comprised of safe neighborhoods where residents take pride in their homes and property and enjoy an excellent quality of life for their families and children. The community offers a wide range of housing styles and options for a diverse population of varied ethnic and cultural backgrounds, age groups, economic status, and lifestyles. Residents celebrate a sense of community and cultural diversity throughout the year in a variety of ways from frequent organized events to community improvement projects to neighbors helping neighbors. Residents' physical health and well-being is enhanced by various community features such as pedestrian pathways, bike paths, trails, open space, and park improvements that promote an active lifestyle.

Natural Environment

The citizens of Kachina Village place a high value on the surrounding forest and natural environment. The preservation of natural vegetation, riparian and wetland areas, open space, air quality, and wildlife is a high priority. Access to adjacent Coconino National Forest lands is important to residents, and the community actively participates with the Forest Service in identifying appropriate management strategies for nearby forest lands. Many community members feel a personal commitment to the natural environment, and provide volunteer labor toward open space enhancements and ecosystem restoration projects in the Pumphouse Greenway system and the surrounding national forest.

Transportation

Kachina Village is accessible to safe, efficient transportation options both within the community and connecting to surrounding areas. Residents enjoy safe, well-maintained interior streets and pedestrian pathways, as well as links to regional trail networks and forest roads and convenient access to the services and amenities found in the nearby City of Flagstaff. In addition to motor vehicle transportation, multiple options exist for foot travel, bicycling, equestrian use, and public transportation. Residents are conscious of the environmental consequences of their transportation choices, and they prefer more sustainable modes of travel that minimize emissions and maximize energy conservation.

Growth and Development

As the community approaches full build-out, new development is limited and individual properties are subject to redevelopment. New residential development is consistent with the scale and character of existing neighborhoods and is compatible with the established development pattern. As redevelopment of older homes and mobile homes occurs, the mix of housing styles and options for citizens of all economic levels is maintained. As new commercial uses are established, they provide goods and services beneficial to the local community and consistent with the character of established neighborhoods. Environmentally-sustainable building elements are routinely incorporated into new development and redevelopment projects.





Natural Environment

Introduction

Kachina Village residents have a high level of concern about the environment and the management of natural areas within the community, as well as surrounding national forest lands. The *Coconino County Comprehensive Plan* recognizes the importance of the natural environment to County residents and promotes a “land ethic” as defined by Aldo Leopold as an “ecological conscience” and an ethical obligation to the land (*A Sand County Almanac*, Reissue edition, September 1970. New York, NY: Ballantine Books). Under this philosophy, individual citizens assuming responsibility for the health of the land is fundamental to the development of a sustainable community. Maintaining a healthy natural environment is essential to support a high quality of life, to maintain property values, and to promote appropriate economic development.

Vision and Purpose

The natural environment has always been important in defining the character of Kachina Village and will continue to be in the future. Our vision is of a community in a natural setting where functioning ecosystems and sensitive landscape features are preserved; where the wildlife community exists in harmony with the built environment; where the spread of **invasive species** and **noxious weeds** is controlled; where residents enjoy excellent air quality; and where citizens provide meaningful input into land management processes, and actively participate in volunteer programs in support of public open space and ecosystem restoration.

Environmentally-Sensitive Lands

Environmentally-sensitive lands include floodplains, **riparian areas**, wetlands, seeps and springs, and steep slopes, all of which occur to a significant degree in Kachina Village. Situated at the gateway of the community immediately off I-17, the wetlands of Pumphouse Meadow

SURVEY RESULTS

How concerned are you about the preservation of the natural environment in Kachina Village?

Concerned to Very Concerned:
78%

invasive species

A plant species not historically found in the local area. When introduced into an area, these species proliferate, replacing native species and reducing biodiversity.

noxious weed

Any parasitic or foreign plant that can injure crops, other useful plants, agriculture, livestock, fish, or wildlife resources, or public health; any plant on the Federal Noxious Weed List or the Arizona Noxious Weed List.

riparian area

An area bordering a river or stream that supports an ecosystem of wildlife, vegetation, soils, and water.

are fed by seeps and springs around the meadow's perimeter. The wetlands of the meadow merge to form the more defined drainage of Pumphouse Wash, the major tributary of upper Oak Creek. As Pumphouse Wash leaves the meadow and meanders through the community, it cuts a distinctive steep-walled canyon through the Kaibab limestone.



Pumphouse Wash near Kelly Canyon.

Floodplains, riparian areas, and wetland meadows not only provide for the discharge of floodwaters, but also provide important habitat for plants and animals, wildlife movement corridors, seasonal habitat for numerous bird species, and also act as magnets for human settlement, recreation, and other activities. Such areas are also important for the recharge of subsurface ground water aquifers. In addition to the environmental values of these areas, their richness and biological diversity contributes immensely to the aesthetic values of the community. Pumpphous Meadow and major portions of Pumpphous Wash within Kachina Village are preserved as public open space comprising the Pumpphous Greenway system.

The public open space protects most of the wetlands and floodplain. However, the biological integrity of this system could be compromised by the development of private property around the periphery of the meadow and on other properties along the floodplain of Pumpphous Wash. In addition, certain practices associated with road maintenance, snow removal, and maintenance of utilities can degrade the water quality of wetland habitats and change channel geometry of floodplains.

floodplain

The land area adjoining a river, stream, lake, or other body of water that is susceptible to inundation by a 100-year flood.

100-year flood

A flood that has a one percent chance of being equaled or exceeded in any given year.

floodway

The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the 100-year flood without cumulatively increasing the water surface elevation more than one foot.

flood fringe

The area of the floodplain on either side of the floodway where encroachment of structures or fill may be permitted.

The Federal Emergency Management Agency (FEMA) has identified flood-prone areas along Pumpphous Wash and Pumpphous Meadow that are subject to inundation in a **100-year flood**. The 100-year flood is defined by FEMA as a flood with a 1% chance of being equaled or exceeded in any given year. Coconino County participates in the National Flood Insurance Program (NFIP) for property owners to be eligible to obtain flood insurance. As an NFIP-participating community, the County is required to regulate development in flood hazard areas by adopting regulations that meet certain federally-mandated standards. Coconino County's floodplain management regulations are contained in Section 13.6 of the *County Zoning Ordinance*, and essentially prohibit construction in the most hazardous portion of the **floodway** channel, while allowing construction in the **flood fringe** as long as structures are elevated at least one foot above the 100-year flood elevation.

The wetlands of Pumpphous Meadow are subject to additional restrictions under the federal Clean Water Act, which is administered by the U. S. Army Corps of Engineers. Under Section 404 of the Clean Water Act, any project that results in the discharge of dredged or fill material into a designated wetland is subject to a 404 permit through the Corps. Coconino County has obtained Section 404 permits for several projects in Kachina Village including the Kachina Trail bridge over Pumpphous Wash, as well as several other road and flood control projects.

In the larger landscape context, Kachina Village sits at the head of the Oak Creek watershed and Pumpphous Wash is the major tributary of upper Oak Creek. The Arizona Department of Water Resources (ADWR) has designated Oak Creek as a "Unique Waters of Exceptional Significance." Although Oak Creek is outside of the Kachina Village planning area, it is one of the most significant recreation areas and tourist attractions of the state, and activities in the upper reaches of the watershed can have both beneficial and negative effects on downstream ecosystems. Pumpphous Wash is a relatively wild and pristine canyon, especially in its lower reaches downstream from Forest Road 237, and it is important to protect its special characteristics. Decisions on development proposals and other activities should be assessed with respect to their potential impacts on the broader landscape beyond the immediate community.



Indian Paintbrush.

ENVIRONMENTALLY-SENSITIVE LANDS GOAL:

Preserve and enhance the natural qualities of environmentally-sensitive lands.

ENVIRONMENTALLY-SENSITIVE LANDS POLICIES:

- NE1.** The County encourages the preservation and restoration of natural wetlands, floodplains, riparian areas, distinctive landscape features, and other environmentally-sensitive lands.
- NE2.** Development projects shall be designed to minimize the alteration of natural landforms and avoid disturbance of distinctive natural features.
- NE3.** Development proposals and other land management activities shall be assessed in a landscape context, particularly with respect to potential effects on downstream ecosystems in Pumphouse Wash and Oak Creek.
- NE4.** The County promotes the use of all available mechanisms for the preservation of environmentally-sensitive lands, including but not limited to public acquisition, *conservation easements*, or *cluster development* with open space designations.
- NE5.** Development proposals affecting natural wetlands shall require a wetlands delineation by the U. S. Army Corps of Engineers prior to consideration by the Planning and Zoning Commission or Board of Supervisors in order to provide essential information in the development review process.
- NE6.** The County shall adopt appropriate stormwater mitigation measures to prevent excess runoff, sedimentation, chemical contamination, erosion, and channel modification of natural watercourses, riparian areas, and wetlands.

conservation easements

A legal property interest or right granted by the landowner to another party to maintain or limit use of the land to conservation purposes, typically to maintain its natural state and preclude future development.

cluster development

A development design technique that concentrates buildings on a part of the site to allow the remaining land to be used for recreation, common open space, and preservation of environmentally-sensitive features.

KVID

Kachina Village Improvement District, also known as Kachina Village Utilities, is the provider of water and wastewater services to the community.

Wildlife

Because of the natural setting in which Kachina Village is situated and the presence of high quality habitat such as wetlands, riparian areas, and forests, wildlife is prevalent in the community. Residents enjoy many opportunities for viewing wildlife up-close throughout the year, including Rocky Mountain elk grazing in Pumphouse Meadow during the summer and bald eagles at the *KVID* wetlands in the winter. Other common species include the Abert squirrel, striped skunk, grey fox, turkey, porcupine, and raccoon, as well as coyotes and mule deer. Less commonly seen, but present in the surrounding forest are black bear, bobcats, and mountain lion. There are numerous bird species seen throughout the year, including several species of hummingbirds and a wide variety of migratory water birds visiting the KVID constructed wetlands, as well as the natural wetlands throughout the community.

The level at which wildlife and the human community can remain compatible is dependent upon many different factors. The maintenance of open space for high quality habitat, cover, and movement corridors provides the basic necessities for wildlife. In the context of human neighborhoods, however, free-ranging dogs and cats harass, injure, and kill wildlife. Vehicular traffic, both on and off-road, can harm wildlife. Improper location of roads and trails and improperly engineered drainage systems can cause erosion and sedimentation that damages or destroys habitat.

People often create attractive nuisances for some wildlife species such as elk, raccoons, skunks, grey foxes, coyotes, black bears, and others. Many people often unintentionally



Elk in Pumphouse Meadow.

attract wildlife to their yards by providing the essential elements of wildlife habitat: food (uncontained trash or compost), water (bird baths, leaky hoses), and shelter (brush piles, dense shrubs, open areas under porches and decks). Wildlife are attracted to this neighborhood ‘habitat’ much the same way they are attracted to wildland habitat, and it becomes the residents’ responsibility to help keep wildlife out of trouble.

In addition to those factors that directly harm wildlife and their habitats, the well-intentioned feeding of wildlife by residents is generally not beneficial to the animals. With the exception of most bird feeders, the practice of feeding wildlife can be harmful. Intentional wildlife feeding (salt blocks, hay, pet food), or unintentional wildlife feeding (unruly trash, outdoor storage of pet food, compost) can create nuisance

problems with elk, skunks, raccoons, bears, and other wildlife in ways that compromise the safety of residents as well as the health and survival of the animals.

Even bird feeders can become nuisance problems when they attract large numbers of crows, ravens, or non-native birds (house sparrows, Eurasian collared doves, European starlings). In times of summer drought, black bears will also enter neighborhoods in search of food and water and are often attracted to bird feeders and squirrel feeders. However, these nuisance problems are usually eliminated when homeowners temporarily remove their bird/squirrel feeders until the unwanted wildlife leave the area.

Maintaining an awareness of the many ways that human activities can disturb wildlife or disrupt habitat can help avoid many preventable impacts. Conversely, there are many positive actions that can be taken to enhance or restore conditions that help maintain wildlife populations so they can coexist with the human community. The wildlife of Kachina Village is an important feature of the community that is highly valued by residents, and it is important to maintain or improve conditions that are compatible with healthy wildlife populations.

SURVEY RESULTS

How important is wildlife habitat management on adjacent national forest lands?

Important to Very Important:
90.9%

best management practices

State-of-the-art technology as applied to a specific problem.

WILDLIFE GOAL:

Protect wildlife populations and their habitat.

WILDLIFE POLICIES:

- NE7.** All new development projects, utility infrastructure, and roads and trails shall be appropriately located to minimize impacts to wildlife habitat.
- NE8.** The County shall pursue opportunities to acquire key parcels of land that provide valuable habitat or wildlife movement corridors to be incorporated into the Pump-house Greenway system.
- NE9.** The County Department of Public Works and Kachina Village Utilities shall adopt *best management practices* to prevent the degradation of wetlands, riparian areas, and other wildlife habitats due to road and utility maintenance activities.
- NE10.** The County shall pursue opportunities to discourage residents who feed wildlife intentionally, knowingly, or recklessly, and discourage those who attract or otherwise entice wildlife into an area, not including tree squirrels and birds.

- NE11.** Kachina Village Utilities shall continue to provide a sufficient amount of treated wastewater effluent to maintain viable wildlife habitat at the KVID constructed wetlands. Recognizing that the use of pristine groundwater for golf course irrigation should be minimized, nevertheless the use of treated effluent for habitat purposes shall have priority over other uses such as golf course irrigation.

Vegetation

Natural vegetation is inextricably linked to the character of Kachina Village. Ponderosa pine is not only the dominant vegetation type in the plant community, but also an important feature that makes Kachina Village a desirable environment in which to live. From the earliest marketing of the community in the 1960s, the developer capitalized on the pine forest setting to sell lots. A single advertisement offering lots for sale in 1969 mentioned pine-covered lots no less than six times, and included nine photographs and six illustrations containing pine trees. It is safe to say that the pine forest setting remains the single most attractive characteristic of the community that draws residents to live here. The vegetative community of Kachina Village is, however, more than simply a pretty setting for a cabin in the pines.

The ponderosa pine forest includes an understory of Gambel oak and Rocky Mountain juniper, and there are scattered pockets of quaking aspen in the side drainages off Pumphouse Wash. The riparian areas in the small tributary drainages support a diverse mix of deciduous species including narrowleaf cottonwood, ash, alder, and willow. The meadows and wetlands support a diverse variety of bulrush, sedges, grasses, forbs, and willows that thrive in the wetter areas.

Like elsewhere in Coconino County, the ecosystem and vegetative community of Kachina Village has been negatively affected by the introduction of invasive and non-native plant species and noxious weeds. Such plants tend to spread rapidly, out-compete and displace native species, and disrupt ecosystem processes. If not controlled, invasive non-native plants reduce biodiversity, degrade wildlife habitat, and jeopardize endangered species. Some of the noxious weeds present in Kachina Village include cheatgrass, diffuse knapweed, toad-flax, and scotch thistle.

Controlling the spread of invasive non-native species can be addressed through public education by teaching people to identify and properly remove the appropriate plants. Volunteer weed-pull work sessions have been conducted by the University of Arizona Cooperative Extension agency, Parks and Recreation, and U.S. Forest Service staff at Raymond Park and Pumphouse Greenway. The Cooperative Extension's weed management program is experimenting with *biological control mechanisms* (i.e. insects) along the I-17 corridor as well. Such activities could be more frequent and ongoing in order to aggressively control the further spread of non-natives.

Non-native species invasion is also common along roadsides and in road construction areas in Kachina Village. Coconino County Public Works employs best management practices to limit the spread of non-native plant species during road construction projects. However, invasive non-native species can become established after road construction projects are completed, and repeated visits to treat non-native weeds are necessary to effectively control exotic plant establishment.



Native vegetation is a hallmark of Kachina Village.

biological control mechanism

A method of controlling pests by means of introduced or naturally-occurring predatory organisms, sterilization or the use of inhibiting hormones, or similar methods rather than by mechanical or chemical means.

VEGETATION GOAL:

Preserve native vegetation and improve the health of vegetative ecosystems.

VEGETATION POLICIES:

- NE12.** New development proposals shall protect native plant communities to the greatest extent possible and shall adopt measures to prevent the spread of non-native invasive plants and noxious weeds.
- NE13.** The County Public Works Department and Kachina Village Utilities shall adopt control measures for non-native invasive plants and noxious weeds to be applied to road and utility infrastructure construction and maintenance projects, and shall pursue aggressive weed-control strategies in public rights-of-way and other County-owned properties.
- NE14.** The County Parks and Recreation Department shall pursue opportunities with other agencies and volunteer groups to control the spread of non-native invasive plants and noxious weeds on County parklands and natural areas.
- NE15.** Landscaping for new developments shall emphasize the use of native plants and drought-tolerant species appropriate to the area. Disturbed areas shall be restored and revegetated with native species to the greatest extent possible.
- NE16.** The County supports public education programs to help residents learn how to identify and control the spread of noxious weeds and invasive plants on their property.

SURVEY RESULTS

How concerned are you about the management of adjacent National Forest lands?

Concerned to Very Concerned:
83.8%



National forest land at the south end of the planning area.

Forest Ecosystem Health

Forest ecosystem health is important to Kachina Village because of its location immediately adjacent to Coconino National Forest lands. The Kachina Village planning area includes approximately four square miles of Coconino National Forest land to the south and west bordered by Pumphouse Wash and Kelly Canyon. In addition, there is approximately 200 acres of national forest land in the northeast portion of the study area to the east of the KVID wetlands. These portions of the national forest are administered by the U.S. Forest Service through the Mormon Lake Ranger District. Although all land management authority for the national forest lies with the Forest Service, these areas are included in the Kachina Village planning area in a spirit of collaboratively providing community input to the Forest Service on issues of community concern.

The Forest Service manages the land for multiple uses including timber, grazing, mining, watersheds, and recreation among others. The guiding management document is the *Coconino National Forest Plan* adopted in 1987. In 2006, the Forest Service initiated a multi-year planning process to update the *Forest Plan* in its first complete revision since it was

adopted. The plan revision will include general management guidelines rather than site-specific provisions, but the emphasis immediately around communities like Kachina Village is expected to be fire-risk reduction as it has been in recent years.

The 2003 Kachina Village Forest Health Project (KVFHP) is a forest restoration and fuels reduction project developed collaboratively with the Greater Flagstaff Forests Partnership (GFFP). The KVFHP has reduced the danger of catastrophic wildfire to the southwest between the community and the Oak Creek overlook. The project includes mechanical thinning of approximately 4,800 acres, *prescribed burning*, closure and obliteration of some forest roads, the construction of trails, and the designation of restricted camping areas. Similar Forest Service projects to the west in the Woody Ridge area and to the east in Mountainaire will further help protect the community.

Recreational use of national forest lands in the Kachina Village area is increasing by visitors to the area as well as residents. Residents have pedestrian access to the forest from two points on the west side of the community, including one at Pumphouse Wash next to the wastewater plant and one at Buffalo Trail, and one point on the south side at Toho Trail. In addition, there is vehicular access on Forest Road 237, which connects Kachina Boulevard at the I-17 interchange with Highway 89A approximately four road miles to the west. With increased visitation to Oak Creek, the national forest is experiencing additional spillover recreational usage along FR 237 from Highway 89A. Managing the increased recreational use of the forest is often a balancing act of allowing public access while protecting forest resources.

In 2006, the Forest Service embarked on a 4-year planning process to identify roads, trails, and areas open to motor vehicle use. The Travel Management Rule (TMR) will restrict motor vehicle travel to designated roads, trails, or areas. Some roads and off-road areas have already been closed in the Kachina Village area, and other roads are planned for closure and/or obliteration. Pumphouse Wash downstream from the community was closed to off-road use in 1997. The Forest Service has identified most of the FR 237 corridor in the Kachina Village planning area to be closed to dispersed camping, while allowing two or three designated dispersed camp sites west of Pumphouse Wash off Highway 89A outside the planning area.

Pedestrian activity in the forest has resulted in the proliferation of *social trails* in some areas around Kachina Village. The KVFHP includes plans for a trail network south of the community that will eventually provide a link to the Oak Creek Vista area. Another trail route to the north has been in the planning stages for several years to complete a link between the KVID wetlands and Fort Tuthill, which provides a connection to the Flagstaff Urban Trail System (FUTS). The construction of designated trails and the obliteration of social trails can help protect resources while providing opportunities for non-motorized use of the forest areas surrounding the community. Volunteer community groups could help with trail construction and maintenance, as well as other forest projects, in order to complete them sooner than might be possible with limited Forest Service budgets and personnel.

Other Forest Service issues that could directly affect the community include land exchanges, cattle grazing, and timber sales. There have been no land exchange proposals immediately adjacent to the community in the recent past, and none are currently anticipated. Any such proposal would be subject to a thorough environmental impact study under the National Environmental Policy Act (NEPA), which would include a public involvement process. (Note: This plan does not support national forest land exchanges in the planning area. For more discussion on this issue, see the “Future Growth” element on page 74.)

prescribed burn

The controlled application of fire to wildland fuels in either their natural or modified state, under specific environmental conditions. Prescribed burns are confined to a predetermined area to meet resource management objectives.



Prescribed burns, Highlands Fire District fuels reduction project (top); Kachina Village Forest Health Project slash pile burn (above).

social trail

An unplanned, unauthorized path that developed informally and is not designated or maintained by an agency.

Although the cattle grazing allotment around Kachina Village has not been active in recent years, sheep are occasionally herded through the vicinity when being moved between seasonal grazing areas. The only timber sale activity in the area is associated with forest restoration and fuels reduction projects like the KVFHP, in which wildfire mitigation is the primary emphasis.

FOREST ECOSYSTEM HEALTH GOAL:

Promote forest health and forest ecosystem restoration.

FOREST ECOSYSTEM HEALTH POLICIES:

- NE17.** All land owners and land management agencies in the planning area are encouraged to emphasize forest ecosystem restoration and fire risk reduction for the lands under their respective jurisdictions.
- NE18.** The County supports the efforts of the U.S. Forest Service to prohibit dispersed camping, campfires, and off-road motor vehicle travel on national forest lands in the planning area in the interests of resource protection and community fire risk reduction.
- NE19.** Community residents, property owners, and other agencies are encouraged to participate in forest planning, management, and restoration efforts.
- NE20.** Residents, property owners, and government agencies are encouraged to pursue opportunities for interagency cooperation and community collaboration to accomplish natural resource goals that might not be accomplished otherwise.
- NE21.** Residents are encouraged to participate in the public review process to make their views known to the Forest Service and other public officials regarding any future Forest Service land exchange proposals.

SURVEY RESULTS

How concerned are you about air quality in Kachina Village?

Concerned to Very Concerned:
61.6%



Smoke from prescribed burns (top) and woodstoves cause short-term impacts to air quality (above).

Air Quality

Air quality in Kachina Village is generally excellent with some relatively minor exceptions. Portions of the community with unpaved roads experience degraded air quality caused by road dust. Woodstove smoke results in localized effects on a seasonal basis. Other sources of airborne particulates include natural wind-blown dust, construction activity, off-road vehicle dust, prescribed burns, vehicle emissions, and dust from road cinders.

Some past sources of air quality impacts have been noticeably reduced in recent years. One of the main sources of local air quality issues in the past was road dust, which has mostly been eliminated with the completion of paving; only a few streets remain unpaved. The County is experimenting with the use of de-icing chemicals, which could reduce or eliminate the use of cinders on the roads. However, the use of de-icing chemicals in lieu of cinders could have other environmental consequences (see Environmentally-Sensitive Lands Policy NE6, page 13). Seasonal woodstove smoke has been reduced in recent years with many residents switching to natural gas-fired units and wood pellet stoves, as well as newer woodstoves that meet stricter emission standards. There is less dust generated by construction activity as there are fewer vacant lots available for new construction.

Smoke from prescribed burns is an occasional irritant, but usually of short-term duration. Planned burns are subject to air quality permits through **ADEQ** and are permitted only when conditions are expected to be favorable for the dispersal of smoke away from populated areas.

ADEQ

The Arizona Department of Environmental Quality is the state agency with regulatory responsibility for air and water quality, as well as for the storage, treatment, and disposal of solid and hazardous waste.

AIR QUALITY GOAL:

Preserve and improve the community's air quality.

AIR QUALITY POLICIES:

- NE22.** The County, individual property owners, and road maintenance associations are encouraged to adopt appropriate dust control measures and/or provide dust-free surfaces for roads under their jurisdiction.
- NE23.** Proposed development projects shall be evaluated with respect to impacts on air quality.
- NE24.** Property owners are encouraged to install environmentally-friendly home heating appliances that minimize impacts to air quality.
- NE25.** The County Public Works Department is encouraged to remove cinders from County roadways in a timely manner in order to minimize dust and airborne particulates.



Air quality in Kachina Village is generally excellent.





Public Safety

Introduction

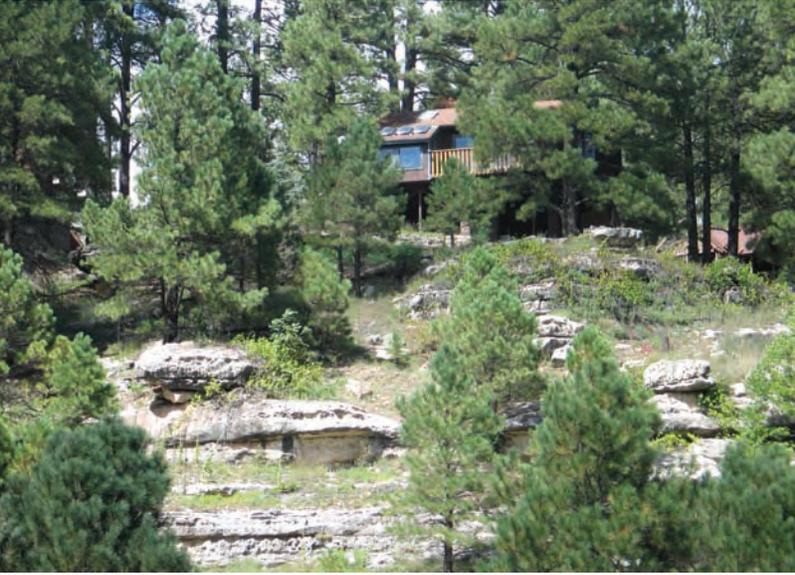
Public services are required to support a community's basic needs for fire protection, emergency medical response, and law enforcement. In addition, because Kachina Village is located in a forest environment in the *wildland/urban interface*, wildfire is a significant public safety issue. This element of the plan promotes an effective level of public safety-related services, and includes goals and policies designed to ensure that adequate services are considered in the development review process and other agency program planning.

Vision and Purpose

As Kachina Village continues to evolve over time, we envision a community where residents feel safe in their homes; where parents are comfortable with their children playing in the neighborhood; where children feel safe; where criminal activity is a rare occurrence and residents are on a first-name basis with the Sheriff's Deputy; where fire and emergency response is prompt, professional, and effective; where residents are aware of the dangers associated with living in a forest environment; where homeowners pro-actively prepare their homes and property for fire safety and react appropriately when a wildfire threatens. The goals and policies are intended to help facilitate the conditions necessary for achieving this vision.

wildland/urban interface

The area in and around a community where the immediate or secondary effects of a wildfire would threaten a community's environmental, social, and economic values, causing serious detriment to the area's overall health and viability.



Homes in the wildland/urban interface are at high risk from wildfire.

Wildland/Urban Interface

Various public land agencies define the wildland/urban interface in different ways, but for purposes of community planning in Coconino County, the *Comprehensive Plan* defines it as the area *in and around* a community where a wildfire would be detrimental to the environmental, social, and economic values of the community. In other words, the wildland/urban interface is not simply the boundary line between national forest land and private property or a certain distance in either direction from that boundary. It includes the entire community in the context of the surrounding forest in which it is situated.

A wildfire in the wildland/urban interface can catastrophically destroy homes, businesses, public facilities, and entire neighborhoods and communities. It can wreak environmental havoc on habitat, soils, forest health,

watersheds, and scenic resources. It can disrupt economic stability, transportation and utility corridors, and recreational opportunities, and can undermine a community's emotional health and well-being. Wildfire is the greatest public safety threat to a wildland/urban interface community like Kachina Village.

The forest environment was the key selling point of the community since its inception. From the beginning, builders and residents tried to preserve as many trees as possible when building homes. Typically, the only trees removed were the minimum necessary for the footprint of the home and a driveway, with many trees left too close to the structure and too closely spaced throughout the rest of the property. While this maintained the forest character of the community, it resulted in dangerous fire potential, as well as stressed and unhealthy trees. Only in recent years have homeowners become more aware of the concept of *defensible space*, as well as the forest health benefits derived from the appropriate spacing of trees and other vegetation in relation to homes.

Defensible space refers to the area between a house and an oncoming wildfire where vegetation has been modified to reduce the fire threat and improve the likelihood that firefighters could successfully defend the structure. It does not mean an area completely devoid of vegetation, but rather that vegetation is appropriately located with adequate separation between plants and that the property is properly maintained to minimize fire risk. The term defensible space, however, implies that firefighters will be available to defend the home. In reality, in the event of a catastrophic wildfire, there will not be enough fire engines and personnel to defend every home in the community.

Recognition of this reality has resulted in the expansion of the concept of defensible space to the idea of *survivable space*. The concept of survivable space is a more comprehensive approach at mitigating fire danger in such a way that the home is more likely to resist ignition and survive a wildfire without the active intervention of firefighters. It includes appropriate landscape design and attention to fuel sources, as well as architectural design and building materials. There are many actions that can be taken by homeowners to make their property more survivable in a wildfire, such as choosing noncombustible roofing and other building materials, thinning trees and other flammable vegetation, relocating woodpiles and other fuel sources away from structures, and incorporating noncombustible *hardscape* materials into landscaping.

defensible space

The area between a structure and a potential oncoming wildfire where the vegetation has been modified to reduce the threat of ignition; this area provides an opportunity to "defend" the structure.

survivable space

The area surrounding a structure that has been designed or modified to increase the likelihood of the structure surviving a wildfire without active intervention by fire protection services.

hardscape

Landscape components consisting of rock, concrete, tile, or other noncombustible materials that may be incorporated into landscape design to prevent the ignition or spread of fire; may also be used in landscaping to reduce water usage.

The National Fire Protection Association (NFPA) and other organizations have developed the Firewise Communities Program to promote development practices that reduce the risk to communities of catastrophic wildfires. Firewise principles address terrain, vegetation, building materials, architectural design and property maintenance to enhance the survivability of communities in the wildland/urban interface.

The likelihood that individual homes in Kachina Village would survive a wildfire is mostly a function of how much effort individual homeowners put toward making their homes and property survivable. More information and assistance is available from the Highlands Fire District, which has a fuels management program dedicated to mitigating the risk of wildfire in the community. Fuels management personnel are available to perform property assessments and recommend actions that property owners can take to improve the fire resistance of their property. The fuels crew also implements fuels reduction treatment projects throughout the district including forest thinning and prescribed burns to reduce fire danger.

In addition to Highlands Fire District's efforts to mitigate fire danger within the community, the U.S. Forest Service is responsible for addressing fire danger on nearby national forest lands. The Kachina Village Forest Health Project (KVFHP) is a Forest Service project to reduce the threat of catastrophic fire to the communities of Kachina Village and Forest Highlands. The project includes forest thinning, prescribed burns, and other management actions including the closure of certain roads, and camping restrictions in some areas. The ongoing effectiveness of the project will depend not only on the initial treatments, but on future thinning and maintenance burning to maintain a lower fire risk. The Highlands Fire District and Forest Service work closely together and often work collaboratively on prescribed burns in the area.

WILDLAND/URBAN INTERFACE GOAL:

Reduce the threat of catastrophic wildfire in Kachina Village.

WILDLAND/URBAN INTERFACE POLICIES:

- PS1.** New development of forested property shall include a forest stewardship/fuels mitigation plan.
- PS2.** Property owners are encouraged to apply Firewise principles to architectural design, building materials, landscaping, and property maintenance for all properties throughout the community.
- PS3.** The Highlands Fire District and U.S. Forest Service are encouraged to continue their efforts to mitigate community wildfire risk and to maintain a reduced level of fire risk over the long term.
- PS4.** Residents are encouraged to develop family emergency action plans that include evacuation procedures, identification of essential items to take, emergency contacts, and plans for re-uniting separated family members.
- PS5.** Property owners are encouraged to recognize that the actions they take to reduce fire danger on their property are beneficial to the broader community and enhance the fire safety of their neighbors as well.
- PS6.** Residents are encouraged to cooperate and participate in interagency mock evacuations and emergency preparedness training exercises.



Removal of trees next to homes increases the home's likelihood of survival in the event of a wildfire.

SURVEY RESULTS

How concerned are you about wild fire hazards affecting Kachina Village?

Concerned to Very Concerned:
92.1%

SURVEY RESULTS

How important is forest fuels management on adjacent National Forest lands?

Important to Very Important:
89.8%



Fire Protection

Fire protection in Kachina Village is provided by the Highlands Fire District (HFD), which was created by the merger of Kachina Village and Mountaineer Fire Districts in 1999. In addition to Kachina Village and Mountaineer, Highlands provides service to Forest Highlands, the Lower Lake Mary area, and Pine-Del. The District encompasses 25 square miles with approximately 6,000 residents, and is staffed by a combination of full-time career fire personnel and volunteers. The District is governed by an elected five-person board of directors or Fire Board. The Fire Board is responsible for setting the District tax rate, approving the annual budget, adopting District policy, and hiring a fire chief. The chief is responsible for hiring personnel, managing operations, and carrying out policy as directed by the Fire Board.



Highlands Fire District provides emergency response services to Kachina Village and surrounding communities.

SURVEY RESULTS

How important do you think it is for individual homeowners to adopt Firewise practices to help protect their homes?

Important to Very Important:
87%

SURVEY RESULTS

How do you feel about the level of fire protection services currently provided?

Positive: **92.9%**
Neutral: **6.4%**
Negative: **0.6%**

The Kachina Village Fire District was originally established in 1972, and the first fire station was built in 1975 at 568 Kona Trail. Station 2 was built on Tolani Trail in 1981. Forest Highlands was annexed in 1988, and Station 1 was remodeled and expanded in 1990 to accommodate the growing organization. Kachina Village merged with Mountaineer in 1999 to form the Highlands Fire District. The Lower Lake Mary area was annexed in September, 2005, and the Pine-Del Fire District, which had previously contracted for fire service with the City of Flagstaff, merged with Highlands in December, 2005. The mergers and annexations reflect a trend of consolidation and regionalization of fire services in the greater Flagstaff area. Highlands is taking an active leadership role in pursuing further regionalization in the interest of extending coverage to areas not currently served and to provide services in a more cost-effective and efficient manner.

As of late 2007, construction was about to begin on a new station in Forest Highlands and a parcel of national forest land on Old Munds Highway was acquired for another station that will replace obsolete facilities in Mountaineer. A small satellite station is maintained in a leased facility in Lake Mary Meadows. The location of fire stations is driven by the results of a *Staffing and Deployment Analysis* completed by the District in 2003 and 2004. The *Staffing and Deployment Analysis* was subsequently incorporated into the *Highlands Fire District Strategic Plan* adopted in 2006. The *Strategic Plan* states the mission, vision and values of the Fire District, as well as goals and objectives, future staffing, and capital improvement plans. It includes immediate short-term goals, as well as a long-term vision including further regionalization.

One of the challenges in providing fire protection in Kachina Village is that when the community water system was constructed in the mid-1960s, it was not engineered to provide the minimum fire flows that are now required for new developments. The Uniform Fire Code (UFC) includes a standard for minimum fire flow of 1,000 gallons per minute (gpm) for a duration of two hours. The Kachina Village water system is not capable of meeting this standard primarily because of inadequate water main sizes and elevation differences throughout the community. As a result, the fire department has adopted various technologies that help mitigate the water system's limited capabilities. Fire engines are equipped with Compressed Air Foam Systems (CAFS) that increase water efficiency by four to eight

times, and tools such as Thermal Imaging Cameras are utilized to locate fire victims quickly, identify hidden fire, and find overheated appliances. The Kachina Village water system is also interconnected with Forest Highlands’ system for emergency purposes.

FIRE PROTECTION GOAL:

Promote a high level of fire protection and safety in Kachina Village.

FIRE PROTECTION POLICIES:

- PS7.** The Board of Supervisors shall determine appropriate fire protection measures for new development projects based on recommendations of the Highlands Fire District.
- PS8.** The County shall prioritize enforcement efforts to reduce fire danger with respect to building setbacks and separation, the storage of flammable materials, and general property maintenance standards.
- PS9.** Highlands Fire District is encouraged to continue their efforts at public education regarding fire safety measures.

Emergency Medical Services

Highlands Fire District is the first responder for Emergency Medical Services (EMS) in Kachina Village. Highlands is an Advanced Life Support (ALS) provider, and personnel include Emergency Medical Technicians (EMT), Intermediate Emergency Medical Technicians (IEMT), and Paramedics. All fire personnel at Highlands are certified EMTs at a minimum. The Fire District responds to more medical calls than any other type of incident; in 2006, approximately 44% of calls were emergency medical versus only 9% fire calls. Of the medical calls, approximately 68% were ALS incidents.

Many of the medical calls in the District are related to vehicle accidents on I-17 and Highway 89A. Although technically outside the District, Highlands is typically the first responder along the I-17 corridor between the Pulliam Airport interchange and Kelly Canyon, and the 89A corridor between Fort Tuthill and the Oak Creek Vista. Ambulance service is provided to the community by Guardian Medical Service located in Flagstaff.



HFD personnel training for emergency helicopter evacuation.

EMERGENCY MEDICAL SERVICES GOAL:

Promote a high level of emergency medical services and response in Kachina Village.

EMERGENCY MEDICAL SERVICES POLICIES:

- PS10.** The County shall help facilitate enhanced 911 service through uniform addressing and street naming protocols, and property identification for emergency response (see related policies regarding street naming in the “Community Character” element on page 57).
- PS11.** The County shall work collaboratively with other public safety agencies to promote greater coordination and advanced planning for emergency response.
- PS12.** Property owners are encouraged to post their street address to be visible from the street in order to help facilitate more effective emergency response.

SURVEY RESULTS

How do you feel about the level of emergency medical services currently provided?

Positive: **73.8%**
 Neutral: **23.5%**
 Negative: **2.6%**

Law Enforcement

The Coconino County Sheriff’s Office (CCSO) is the lead law enforcement agency in Kachina Village. In addition, the U.S. Forest Service has law enforcement officers that respond to incidents on national forest land. The Arizona Department of Public Safety (DPS) patrols the I-17 corridor. There is good coordination between all agencies and they participate in a cross jurisdictional multi-agency law enforcement task force available for addressing large incidents. In Kachina Village, the local face of law enforcement is the community deputy assigned specifically to this area.



The Coconino County Sheriff’s Department maintains a regular presence in Kachina Village.

Kachina Village was the first unincorporated community in Coconino County in the early 1990s to be the recipient of a deputy dedicated specifically to the community. In a program known as “community policing,” a deputy is assigned to work directly with residents to learn about law enforcement issues in the community. By developing personal relationships and a close knowledge of the community, including problem areas and individuals, the deputy is better able to work directly with residents to solve problems before they get to the justice system.

Kachina Village does not experience a high level of criminal activity, and has stayed fairly stable over the last 10 years. Typical law enforcement issues include property damage, drugs, DUI, assault, and burglary. A large percentage of petty crime in the community is committed by juveniles. There is usually a correlation between when school is out of session and an increase in juvenile-related crime. More opportunities for productive juvenile activities could have a positive effect on crime rates. Public transit service to Kachina Village could help provide additional opportunities for youth to get to Flagstaff to participate in more beneficial activities.

The CCSO is increasingly relying on new technology to improve their service and law enforcement response capabilities. They are also pursuing grant opportunities to supplement County general funds. The community deputy is available to work with residents to establish Block Watch programs, and the Sheriff’s office also offers a program to train residents to participate in Community Emergency Response Teams (CERT) to help assist in responding to emergency situations.

SURVEY RESULTS

How do you feel about the level of police protection services currently provided?

Positive: **62.6%**
Neutral: **28.5%**
Negative: **8.8%**

LAW ENFORCEMENT GOAL:

Promote safe, crime-free neighborhoods in Kachina Village.

SURVEY RESULTS

Do you feel safe in Kachina Village?

Yes (Safe to Very Safe): **87.8%**

LAW ENFORCEMENT POLICIES:

- PS13.** New developments are encouraged to incorporate the principles of *Crime Prevention Through Environmental Design* (CPTED) and similar concepts.
- PS14.** The County Sheriff’s Office is encouraged to maintain a high degree of visibility in the community.
- PS15.** Residents are encouraged to participate as active partners in neighborhood crime prevention programs in cooperation with the County Sheriff’s Office.
- PS16.** The County supports and encourages the establishment of organized youth activities, including employment training and community service programs as a crime prevention strategy.

SURVEY RESULTS

Would you be interested in a Block Watch program in Kachina Village?

Yes: **44.7%**

Traffic Safety

Traffic safety is an important issue in Kachina Village, with excessive speed and pedestrian safety being the areas of greatest concern. The Coconino County Sheriff's Office (CCSO) is responsible for enforcing traffic laws, and the Public Works Department is responsible for installing and maintaining traffic control signage. The degree to which traffic safety is achieved is a combination of adequate infrastructure, maintenance, law enforcement, and public compliance.

Pedestrian and bicycle traffic on the streets or roadway shoulders often creates unsafe situations in Kachina Village. Unfortunately, there is often no alternative for pedestrians or cyclists since the original development of the community did not include sidewalks or bike paths. This is especially an area of concern as it applies to children walking to bus stops, particularly along the busiest streets. Caution signs could help alert motorists to the presence of pedestrians and cyclists in the right-of-way, but a more effective solution would be to provide sidewalks and bike paths where possible.

The unofficial snow-play area near the intersection of Kachina and Pinon Trails raises serious traffic safety concerns. Parking along the roadways with people milling about creates a very unsafe condition especially when combined with winter road conditions. If sledding and snow-play activities are going to be permitted to continue at this location, a designated parking area should be provided and roadside parking restrictions should be enforced. A similar situation occurs at this location in the summer when residents stop along the road to view elk in the meadow. A parking lot would improve the traffic safety situation year round.

The hill on Kona Trail is an example of a particularly dangerous location for pedestrians, because of the steep grade, narrow shoulders, and high traffic volumes. In 2006, a sidewalk constructed on the lower portion of Kona Trail and continuing along Kachina Trail to the school bus stop at Pinon Trail resulted in improved pedestrian safety on this dangerous section of roadway. Additional sidewalk improvements are planned for the upper portion of Kona hill and portions of Kachina and Pinon Trails.

TRAFFIC SAFETY GOAL:

Improve traffic safety, achieve greater compliance with traffic laws, and enhance pedestrian and bicycle safety.

TRAFFIC SAFETY POLICIES:

- PS17.** The County Sheriff's Office is encouraged to increase efforts to monitor and enforce speed limits and other traffic safety laws in Kachina Village.
- PS18.** New developments shall include public sidewalks and/or pedestrian pathways and bike paths where it can be demonstrated that such improvements are directly related to mitigating the impacts of the proposed development and would promote public health, safety, and welfare.



Limited options for pedestrians and high levels of vehicular traffic at peak times can cause unsafe situations.

SURVEY RESULTS

How do you feel about the level of speed limit enforcement currently provided?

Positive: **40.3%**
Neutral: **32.8%**
Negative: **26.9%**

- PS19.** Future road improvement projects shall consider the feasibility of including sidewalks or pedestrian pathways and bike paths where possible.
- PS20.** The County Public Works Department shall periodically evaluate traffic control mechanisms throughout Kachina Village to enhance traffic safety in the community.
- PS21.** The County Public Works Department shall adopt appropriate maintenance and snow removal practices for sidewalks, pedestrian pathways, and bike paths in the County right-of-way.
- PS22.** The County Public Works Department is encouraged to remove cinders from County roadways in a timely manner in order to enhance traffic safety.



Natural Hazards: Floods, Earthquakes, and Slopes

Other public safety issues of concern in Kachina Village include the natural hazards of floods, earthquakes, and steep slopes. With the major drainage of Pumphouse Wash bisecting the community, periodic floods occur in response to excessive rainfall and snowmelt. The County regulates construction in flood hazard areas under the provisions of a Floodplain Management (FPM) Overlay Zone, which is contained in the *Coconino County Zoning Ordinance*. Although the overlay zone does not entirely prevent development in flood-prone areas, it is designed to reduce flood damages and it prohibits encroachment on the **floodway**—the main channel required for the discharge of a **100-year flood**. The floodplain management regulations help



Infrequent but severe flooding can occur along Pumphouse Wash.

ensure that property owners can obtain flood insurance under the National Flood Insurance Program (NFIP) and that the County can obtain disaster relief from the Federal Emergency Management Agency (FEMA).

Kachina Village, like Coconino County as a whole, is at moderate risk for earthquakes according to the Arizona Earthquake Information Center at Northern Arizona University. The Cataract Creek fault system underlies the greater Flagstaff area including Kachina Village. Damaging earthquakes occurred in this area in 1906, 1910, and 1912, and minor quakes typically occur every year. In 1993, residents of Kachina Village reported being awakened in the middle of the night by an earthquake centered near Valle more than 50 miles away but on the same fault system. An earthquake of magnitude 6 or 7, which is estimated to have a 50% chance of occurring here in the next 30 years, could cause significant

damage to homes, roads, utilities, and other public facilities in the community. For new construction, the International Building Code (IBC, formerly the Uniform Building Code or UBC) includes earthquake provisions to protect against major structural failure and loss of life, but there are many older structures in Kachina Village that were not built under current codes and may suffer major damage.

There are numerous building lots in Kachina Village affected by steep slopes, which can be hazardous for several reasons—fires spread more rapidly upslope, landslides and slumping can occur because of poor soil conditions, and steep access can hinder emergency response. On the other hand, such properties sometimes offer outstanding scenic views of the surrounding environment. There are no building regulations preventing construction on steep slopes as long as the structures are appropriately engineered for the site-specific conditions. While there are many examples of home construction on steep slopes in Kachina Village, some are more successful than others in terms of how the structure fits the topography. In those situations where construction on steep slopes cannot be avoided, structures should be designed to be compatible with the topography of the site, fire hazards should be mitigated, and access for emergency response and evacuation should receive careful consideration.



Steeply-sloped lots have resulted in some interesting building solutions.

NATURAL HAZARDS GOAL:

Minimize threats to public safety posed by natural hazards.

NATURAL HAZARDS POLICIES:

- PS23.** Builders and property owners are encouraged to avoid identifiable natural hazards where possible and to incorporate adequate access for emergency response and evacuation.
- PS24.** Construction on steep slopes shall be appropriately engineered for site-specific conditions, and architectural design should be compatible with the topography of the site.
- PS25.** All public utilities and other agencies responsible for operation and maintenance of critical public facilities are encouraged to strengthen, relocate, or take other appropriate actions to safeguard facilities in areas subject to elevated natural hazard risk.

Animal Management

Animal management, as a sub-section of public safety, includes vicious dogs and dogs-at-large, animal abuse, rabies control, and the evacuation of domestic animals during a disaster event. The Animal Management Division of the County Health Department is responsible for enforcing state and county ordinances and procedures with respect to these issues. County Animal Management Officers perform routine patrols, and dog licenses are issued as part of the rabies control program. Rabies vaccination clinics are provided at various locations throughout the County.

Common animal management issues in Kachina Village include dogs-at-large, barking dogs, and dog bites. Rabies outbreaks occasionally occur among wild animals such as skunks and bats, which are common in Kachina Village. The County Zoning Ordinance, administered by the Community Development Department, stipulates a one-acre minimum lot size for the keeping of horses, which occasionally becomes an enforcement issue on smaller lots in Kachina Village. As a public health issue, the Environmental Services Division of the County Health Department is responsible for enforcing the proper disposal of dog feces and horse manure.

Enforcement of the County's animal management regulations in Kachina Village is important not only for protecting public health and safety, but also for maintaining a high quality of life and for preventing harm to wildlife and domestic animals. Without a high level of

SURVEY RESULTS

How concerned are you about barking dogs?

Concerned to Very Concerned:
49.3%

SURVEY RESULTS

How do you feel about the level of animal control services currently provided?

Positive: **35.2%**
Neutral: **30%**
Negative: **34.8%**

compliance, issues such as incessantly barking dogs and dogs running at-large can seriously diminish the positive qualities for which people choose to live in Kachina Village. Solutions lie with public education, personal responsibility, and diligent enforcement.

ANIMAL MANAGEMENT GOAL:

Achieve a high level of compliance with animal management regulations.

ANIMAL MANAGEMENT POLICIES:

PS26. The County Animal Management Division is encouraged to conduct public forums and other outreach in Kachina Village to ensure that residents are well educated about the importance of animal control for the safety of people, their animals, wildlife, and the natural environment.

PS27. Animal owners are encouraged to exercise personal responsibility in the proper care and control of their animals in order to help maintain a high quality of life for themselves, their neighbors, and the environment.



Some dog owners are more responsible than others in observing leash laws.



Circulation

Introduction

The circulation system includes the transportation infrastructure necessary for access and mobility both within the community and connecting to other areas. It includes the roadway system, maintenance programs, nonmotorized alternatives such as pedestrian pathways, trails, bike paths, and public transit. This element provides guidelines for maintaining and improving the circulation system in Kachina Village to meet the needs of the community while maintaining environmental compatibility.

Vision and Purpose

Recognizing that the circulation system of Kachina Village as originally developed in the 1960s did not meet the minimum standards of today, our vision for the future includes ongoing improvements that will result in a safe, well-maintained system that provides a range of environmentally-sound transportation alternatives. Rather than focusing solely on roadways to accommodate motor vehicles, pedestrians and other nonmotorized users will have safe alternatives for travel within the community, as well as links to a regional trail network that will connect to Flagstaff and the surrounding area. Public transit will provide service to convenient locations throughout the city. Door-to-door paratransit service will continue to be available for residents with disabilities. As the population of the community approaches its maximum capacity at full build-out, a future scenario is envisioned where traffic volumes will decrease as a result of more transportation choices.



Kachina Boulevard at the entrance to the community.

Existing Road System

There are approximately 18.3 miles of County roads in Kachina Village, all but approximately two miles of which are now paved. The roads in Kachina Village amount to approximately 1.8% of the total miles of roads in the County road system. Kachina Boulevard is classified as a major collector, while Kachina Trail, Kona Trail, Pinon Trail, and Tovar Trail are classified as minor collectors. All others are classified as local streets. Local streets are roads used primarily for direct access to and from residential properties. Minor collectors are roads that feed residential traffic from local streets to major collectors or arterials.

The original development concept for Kachina Country Club Village in 1965 included private paved streets to be maintained by a property owners association. However, by 1969 the plans had changed and unpaved County-maintained roads were approved by the Board of Supervisors. At the time, unpaved roads were considered to be adequate for a vacation community that would be occupied mostly by part-time residents. As the community came to be occupied by more full-time residents, however, there was increased demand for road improvements.

As support for paved roads increased, residents petitioned for the formation of road improvement districts in which property owners pay assessments to cover the costs of the paving. Different portions of the community were paved at different times as a majority of owners in each area agreed to the improvement districts. In all, there were three road improvement districts beginning with the southeast portion of the community in 1987, the central portion in 1992, and most of the remaining areas in the north and southwest in 2001. As of 2007, there were only a few local streets that remained unpaved, mostly in the north end of the community where residents requested to be left out of the improvement districts because the assessments would have been a financial hardship.

The only non-County road in the Kachina Village planning area is Forest Road 237 which runs south of the community from Kachina Boulevard through Pumphouse Wash to connect with Highway 89A. FR 237 is not maintained by the County, and receives only limited maintenance by the U.S. Forest Service. It is closed seasonally when impassable due to snow or run-off in Pumphouse Wash. When open, it is used by residents for national forest access and as a short-cut to Highway 89A and points south, as well as by recreationists for dispersed camping and forest access.

ROAD SYSTEM GOAL:

Provide a safe, efficient, and environmentally-compatible roadway system that meets the needs of the community.

ROAD SYSTEM POLICIES:

- CI1.** Developers shall pay the cost of road improvements necessary to provide safe and adequate access to proposed developments. Required improvements shall be directly related to and proportional with the impacts of the proposed development.
- CI2.** Road improvements necessary to support new development shall conform to Coconino County Engineering Design and Construction Criteria in effect at the time of construction.

- CI3.** The impact of proposed developments on the existing road system shall be evaluated prior to approval, and appropriate mitigation measures shall be included in the conditions of approval. Developers shall be responsible for improvements necessary to mitigate impacts on existing roads.
- CI4.** The County shall pursue opportunities to provide road improvements on the remaining unpaved streets in Kachina Village.

Road Maintenance

The County Public Works Department is responsible for road improvements and maintenance of the County roadways in Kachina Village. Funding for road maintenance is primarily derived from the *Highway User Revenue Fund* (HURF), which is generated by gasoline taxes and vehicle license fees. *Payments in lieu of taxes* (PILT) from the U.S. Forest Service are another source of maintenance revenue. PILT funds have diminished substantially in recent years, however, with the lack of timber sale activity on national forest land. Contrary to popular belief, property taxes are not used for road maintenance.

Maintenance of paved roads is more cost-effective than maintenance of unpaved roads. Paved roads are scheduled to be chip-sealed every seven years, and repaired as needed. Unpaved roads are scheduled for grading anywhere from six to 48 times per year depending on the road's level of service.

Snow removal is an important component of road maintenance in Kachina Village, and it is prioritized based on the road classification system. Main arterials, collectors, and main residential streets are plowed first in that order. Once the main routes are cleared, side streets and cul-de-sacs are plowed. This priority system is intended to provide some mobility within the community while keeping emergency service access as open as possible. Kachina Village requires 24-hour coverage for snow removal. The County's stated goal is to have every road open within a 24-hour period, but sometimes due to heavy snowfall, clearing of the main roads takes longer, and clearing of the side streets and cul-de-sacs is delayed accordingly. Residents report that it often takes much longer than 24 hours, sometimes up to several days, to clear cul-de-sacs even for less than major snowfalls.

Coconino County has adopted an ordinance to limit overnight parking in public rights-of-way during snow season between November 1 and April 1. Any vehicle parked in the right-of-way that impedes snow removal may be cited by the Sheriff's Department and may be towed and impounded at the owner's expense.

In addition to snow plowing, cinders are applied to the roadways to provide traction. The use of cinders, however, results in dust when the roads dry out causing air quality problems. The cinders are subsequently washed downstream by way of the drainage system ultimately being deposited into natural drainages, streams, and wetland areas. This deposition affects plant and wildlife habitats by altering soil composition and degrading water quality. It can also have the effect of altering channel geometry of natural floodplains, thereby changing natural hydrology and increasing or worsening flood hazards.

As an alternative to cinders, Public Works is experimenting with the use of de-icing chemicals, which could reduce or eliminate the use of cinders and their associated impacts. De-icing chemicals, however, may result in a different set of impacts on water quality and vegetation. Some combination of cinders, chemicals, and stormwater management practices may help mitigate impacts to the environment while ensuring the safety of the road system.

Highway User Revenue Fund

Federal and state funds generated by gasoline taxes and vehicle license fees distributed to counties and the main source of funding for county road maintenance.

Payments in lieu of taxes

Federal funds typically generated by timber sales on federal lands and distributed to counties containing a large percentage of federal land.

SURVEY RESULTS

How concerned are you about the potential use of road salt or de-icing chemicals on roadways?

Concerned to Very Concerned: **52.4%**

SURVEY RESULTS

How concerned are you about road maintenance and snow removal?

Concerned to Very Concerned: **74.3%**

SURVEY RESULTS

How do you feel about the level of road maintenance currently provided?

Positive: **51.1%**
Neutral: **31.3%**
Negative: **17.7%**

SURVEY RESULTS

How do you feel about the level of snow removal services currently provided?

Positive: **59.3%**

Neutral: **27.3%**

Negative: **13.5%**

ROAD MAINTENANCE GOAL:

Protect the public’s investment in the road system with cost-effective and environmentally-compatible maintenance programs.

ROAD MAINTENANCE POLICIES:

- CI5.** The County shall adopt maintenance programs and practices that are consistent with ecosystem protection.
- CI6.** The County shall develop a stormwater management program including best management practices to reduce physical and chemical discharges to the maximum extent practicable.
- CI7.** The County Public Works Department is encouraged to improve their response time for snow removal on side streets and cul-de-sacs.



The lack of bicycle and pedestrian paths raises safety concerns.

Nonmotorized Circulation

Kachina Village was originally developed without sidewalks, pedestrian pathways, trails, bike paths, or other infrastructure designed specifically for nonmotorized circulation. As a result, a considerable amount of pedestrian and bicycle traffic occurs directly on the streets. Motorized and nonmotorized traffic sharing the same travel lanes is fundamentally unsafe. It is especially dangerous for children walking to and from school bus stops where they have no alternatives.

The County has taken steps to improve pedestrian safety in the community in recent years. In 2006, the Public Works Department constructed approximately 1,200 feet of sidewalk along a portion of Kachina Trail and the lower part of Kona Trail. This project resulted in improved safety for children walking down Kona Trail to the bus stop at the corner of Kachina and Pinon Trails. There are plans to construct an additional 865 feet of sidewalk along the upper part of Kona Trail and approximately one half mile of pedestrian trail along Pinon from Kachina to Tonalea Trail. In addition to these improvements, there are additional trails planned for the Pumphouse Greenway system that are primarily recreation-oriented. Recreational trails are discussed in more detail in the “Parks and Recreation” element of the plan.

In addition to the nonmotorized improvements within the community, there are improvements planned that will provide connectivity to the City of Flagstaff. There is a trail planned from Kachina Village to Fort Tuthill County Park, which will provide a link to the city-wide Flagstaff Urban Trail System (FUTS). The planned trail corridor will provide an alternative to I-17 for bicyclists and other nonmotorized users between Kachina Village and the city.

NONMOTORIZED CIRCULATION GOAL:

Improve nonmotorized circulation networks within Kachina Village and connecting to surrounding areas.

NONMOTORIZED CIRCULATION POLICIES:

- CI7.** Infrastructure for nonmotorized travel shall be required for new developments to provide safe, convenient, and appropriate connectivity.
- CI8.** The County shall pursue opportunities to include sidewalks, pedestrian pathways, and bike paths in Kachina Village where cost-effective and physically feasible.

- C19.** The County shall pursue interagency cooperation in developing regional trail connections that serve Kachina Village.

Public Transit

There is no public transportation service provided to Kachina Village, except limited special needs/paratransit service for residents with disabilities. Public bus service to Kachina Village has been the subject of several studies, pilot projects, and plans by different entities over the years. With the formation of a regional transit authority in 2006, there is increased possibility that bus service could become a reality.

Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA) is a regional transit authority that includes Flagstaff, Sedona, Cottonwood, Coconino County, Yavapai County, and Northern Arizona University (NAU). In the Flagstaff area, NAIPTA operates the Mountain Line bus service serving fixed routes within the city limits and NAU campus. The *Flagstaff Five-Year Transit Plan* adopted in 2005 by the Flagstaff Metropolitan Planning Organization (FMPO) concluded that some communities outside the city, including Kachina Village, may warrant future transit service. In year three of the plan (2008), the transit plan proposes to implement a demonstration commuter express service to Kachina Village. The demonstration program would be dependent upon funding by Coconino County or other grant sources, and is proposed to operate for an 18-month period after which it would be re-evaluated to see if it met projected ridership and performance measures.

In addition to Mountain Line, NAIPTA also offers special needs/paratransit service to persons who, because of a disability, cannot ride the public bus. The paratransit service is called Mountain Lift (formerly VanGo), and operates on a demand-response basis providing curb-to-curb service in the greater Flagstaff area including Kachina Village. The mission of Mountain Lift is to promote independence, integration, and self-sufficiency for persons with disabilities in the greater Flagstaff area.

Public bus service to Kachina Village could prove to be beneficial to the community in several ways. It could provide commuters a cost-effective alternative to single-occupancy private cars, and thereby reduce traffic congestion and vehicle emissions. It could provide people with the opportunity to live in Kachina Village without owning a motor vehicle or at least being less dependent on their vehicle. It could provide opportunities for local youth to travel into town, especially when school is not in session. It could enhance the economic well-being of residents by reducing their fuel and other vehicle-related expenses. Overall, public transit can provide a wide range of environmental, social, and economic benefits to individual citizens and the broader community.

PUBLIC TRANSIT GOAL:

Promote public transit service opportunities for Kachina Village.

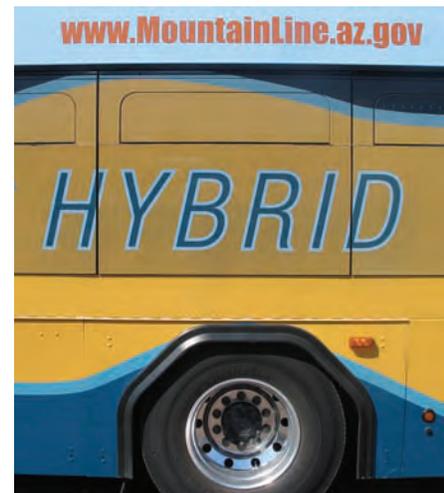
PUBLIC TRANSIT POLICIES:

- C10.** NAIPTA is encouraged to pursue all possible funding opportunities necessary for the implementation of the Mountain Line commuter express service to Kachina Village as proposed in the FMPO *Flagstaff Five-Year Transit Plan*.
- C11.** Coconino County and NAIPTA are encouraged to maintain or enhance special needs/paratransit service to Kachina Village in order to promote independence and self-sufficiency for residents with disabilities.

SURVEY RESULTS

Would members of your household use public transit to go to work or shopping in Flagstaff if bus service was available?

Yes: **59.6%**



Public transit service could be beneficial in a variety of ways.





Parks and Recreation

Introduction

Outdoor recreational opportunities are essential to the quality of life of many Kachina Village residents. The original development concept of Kachina Village in the 1960s included a golf course, community center, swimming pool, and horse stables. Marketing of the community emphasized the proposed recreational amenities, as well as numerous opportunities for camping, fishing, hunting, and skiing in the surrounding area. While the golf course and other planned facilities were never built, other recreational improvements developed over time, including Raymond County Park, Pumphouse Greenway, and the **KVID** wetlands. The adjacent Coconino National Forest provides additional opportunities for hiking, dog-walking, wildlife-viewing, and mountain-biking, among others. As Kachina Village continues to evolve, it is important to improve existing park facilities, preserve public open space and natural areas, and continue to provide a diverse range of recreational opportunities to enhance the well-being and quality of life of all residents.

active recreation

A type of recreation that requires areas and facilities for activities such as softball, baseball, football, soccer, golf, tennis, basketball, and various forms of children’s play.

passive recreation

A type of recreation or activity that does not require the use of organized play areas or developed facilities.

Vision and Purpose

Recognizing that Kachina Village is already host to a wide range of recreational opportunities and open space amenities, our vision for the future includes continuing improvements in park facilities to meet the needs of local residents; expansion of public open space; preservation of sensitive habitats; improvement of regional trail connections; and convenient access to the national forest. We envision a wide array of **active and passive recreational opportunities** integrated throughout the community enhancing residents’ physical fitness, mental health and well-being, and overall quality of life.

Raymond Park

Raymond County Park was established in 1972 when the Raymond Foundation donated five acres of land in Kachina Village to Coconino County. Dr. R.O. Raymond (1876-1959) was an early Flagstaff physician who operated a sheep ranch on land that eventually became Kachina Village, and his grave site is located on the original five-acre park site. As Coconino County acquired additional acreage, the park has expanded to 13.5 acres, and includes playground apparatus, a climbing wall, picnic tables, basketball court, ball field, and pond. In the County Parks and Recreation classification system, Raymond Park is a community park, which is defined as a facility that serves a group of neighborhoods within a five-mile radius.

A master plan for park improvements has been developed to expand and redevelop park facilities, including construction of a new parking lot, restrooms, picnic ramadas, swings, and a second basketball court, as well as new pathways and landscaping. Planned improvements to existing facilities include upgrades to the ball field, basketball court, parking lot, playground, picnic tables and barbeque grills. In the future, the Parks and Recreation Department may explore the feasibility of reestablishing fishing at the pond. As of September, 2007, Parks and Recreation received a Heritage Fund Grant from Arizona State Parks for the planned improvements. Construction design is scheduled for FY 2008 and construction for FY 2009.

RAYMOND PARK GOAL:

Provide community recreation facilities that meet the needs of Kachina Village and other neighborhoods within a five-mile radius.

RAYMOND PARK POLICIES:

- PR1.** The County Parks and Recreation Department shall actively seek community input in planning for future park improvements at Raymond Park.
- PR2.** County Parks and Recreation will maintain connectivity between Raymond Park and other open space areas and regional trail systems.
- PR3.** Future development and redevelopment of private lands near Raymond Park shall incorporate appropriate buffers between the park and potentially incompatible uses, shall protect water quality and **viewsheds** of the parklands, and shall provide trail connectivity as appropriate.



Significant upgrades are planned for Raymond Park.

viewsheds

The area of land within sight of a given location, particularly with respect to scenic views.

Pumphouse Greenway

Pumphouse Greenway is a public open space system in Kachina Village owned and managed by Coconino County. With the support and collaboration of numerous partners, the County intends to permanently protect the natural wetlands that form the core of the greenway system. The multi-faceted goals of the project are to preserve and enhance wildlife habitat, to provide recreational opportunities, to utilize natural waterways for flood control, groundwater recharge, and improved water quality, and to use the wetlands as an opportunity for environmental education and interpretive programs. The wetland meadow fanning out to the northwest of Raymond Park provides rich habitat for a variety of wildlife, including impressive groups of bull elk in the summer and numerous bird species throughout the year. The combination of watchable wildlife and natural open space are attributes of the community that are highly valued by residents.

The greenway system is a direct outgrowth of goals and policies contained in the 1997 *Kachina Village Area Plan*. Beginning in 2000 with a donation of land by the Republic Companies of approximately 38 acres along Pumphouse Wash, and combined with subsequent land acquisitions, the Pumphouse Greenway expanded to approximately 129 acres by 2006. Highlands Fire District and Kachina Village Improvement District contributed key parcels to the greenway system, and the County purchased other properties. Acquisition of additional parcels of private land is planned to complete the system.

Funding has been obtained from a variety of sources, including Heritage Fund grants from Arizona State Parks and Arizona Game and Fish Department, the Five Star Restoration Program of the National Fish and Wildlife Foundation, and wetland mitigation funds from the Arizona Department of Transportation. The voter-approved Coconino Parks and Open Space Program (2002) allocates a portion of sales tax revenues for open space acquisition and park improvements. As of 2007, a permanent **conservation easement** was pending through the USDA Natural Resources Conservation Service (NRCS) Wetland Reserve Program (WRP), which would protect the wetlands in perpetuity and provide additional funding.

PUMPHOUSE GREENWAY GOAL:

Protect, preserve, and enhance the wetland and wildlife habitat values of the Pumphouse Greenway system and provide for compatible recreational and educational uses.

PUMPHOUSE GREENWAY POLICIES:

- PR4.** The County shall pursue opportunities to acquire properties that protect and buffer the Pumphouse Greenway system.
- PR5.** The wetlands of the Pumphouse Greenway shall be permanently protected for their natural values and functions through dedication of a permanent conservation easement.
- PR6.** The County shall encourage and pursue appropriate partnerships and collaboration in the development of restoration and management plans, public education programs, and interpretation of Pumphouse Greenway resources.
- PR7.** Management plans for the Pumphouse Greenway shall include provisions for public access that is compatible with resource protection.

SURVEY RESULTS

How important is open space in the community?

Important to Very Important:
76%



Pumphouse Greenway includes rare wetland habitats.

conservation easement

A legal property interest or right granted by the landowner to another party to maintain or limit use of the land to conservation purposes, typically to maintain its natural state and preclude future development.

- PR8.** The County shall encourage community stewardship and participation related to the management of Pumphouse Greenway by coordinating a “Friends of Kachina Village” volunteer program.
- PR9.** The County Parks and Recreation Department shall work collaboratively with the Department of Public Works and Kachina Village Improvement District to identify appropriate measures and practices to prevent sedimentation, chemical contamination, and other impacts to wetland resources resulting from infrastructure maintenance and snow removal practices.
- PR10.** The Parks and Recreation Department will collaborate with other County departments to develop a public education program regarding water quality issues and stewardship of water resources.
- PR11.** New development and redevelopment projects in the Pumphouse Greenway watershed shall incorporate conservation development principles where appropriate and necessary to protect the wetland’s water resources and viewshed.
- PR12.** It is recommended that all properties comprising the Pumphouse Greenway system and Raymond Park should be rezoned to the OS (Open Space and Conservation) Zoning classification so that the zoning of the property is consistent with its use for conservation, recreation, and educational purposes.



Trails, viewing blinds, and interpretive signs are provided in Pumphouse Greenway.

social trails

An unplanned, unauthorized path that developed informally and is not designated or maintained by an agency.

Trails

The 1997 *Kachina Village Area Plan* reflected the fact that there were no dedicated pedestrian pathways or trails in Kachina Village at that time. By 2007, that had changed significantly in several respects. Approximately 1,200 feet of sidewalk has been constructed on portions of Kachina Trail and Kona Trail. An additional 865 feet of sidewalk is planned for the upper part of Kona hill, and approximately one half mile of pedestrian trail is planned along Pinon Trail between Kachina Trail and Tonalea Trail. There have been trail improvements along Pumphouse Wash, and additional trails are planned for other parts of the Pumphouse Greenway system. A trail extension has been constructed south from Fort Tuthill County Park toward Kachina Village. The final link across national forest land will connect the community to Fort Tuthill and beyond to the Flagstaff Urban Trail System (FUTS). Plans and permits were complete as of August, 2007 with construction scheduled for FY 2008.

A particular concern in the area around Kachina Village is the proliferation of **social trails** or user-created trails. Social trails tend to evolve into a maze of unplanned and poorly located routes that can cause erosion and other ecological impacts. The Forest Service has begun to address the issue through the Kachina Village Forest Health Project by planning for a designated trail network that would eventually link the community by trail to the Oak Creek Vista area. An organized community volunteer group could help facilitate the eventual implementation of Forest Service trail planning and construction. The creation of unplanned social trails is a problem not only on national forest lands, but also on private lands and Pumphouse Greenway parklands as well.

TRAILS GOAL:

Provide a comprehensive trail network and pedestrian pathway system throughout Kachina Village with connections to a broader regional system.

TRAILS POLICIES:

- PR13.** Pedestrian trails and/or trail easements and access to public land shall be required for new development projects where appropriate and where compatible with planned or existing trail systems.
- PR14.** The County shall complete a non-motorized trail connection between Kachina Village and Fort Tuthill County Park in partnership with Coconino National Forest and other organizations.
- PR15.** A comprehensive community trails plan shall be developed through a collaborative process involving the public, relevant County departments, and other agencies to ensure internal and regional connectivity, appropriate public lands access, and resource protection. Unplanned user-created social trails are discouraged.
- PR16.** Community partnerships are encouraged between the County, residents, and users to promote trail stewardship, public education, and maintenance of designated routes.

Recreational Activities

According to the 2007 *Kachina Village Community Survey*, the most popular recreational activities in which Kachina Village residents participate include walking, wildlife watching, and dog walking, in that order. The most popular locations for pursuing those activities, in order of preference, are national forest lands, Pumphouse Greenway, and the KVID wetlands. Jogging and bicycle riding are somewhat less popular, but also occur at those three preferred locations. Other activities such as hunting and off-road vehicle travel, in which the fewest respondents participate, occur almost exclusively on national forest land.

Dog walking, as one of the top recreational activities, has a high potential for conflict in several respects. Although there is a County ordinance commonly referred to as a “leash law” that requires dogs to be leashed at all times when walking, it is not universally observed by all dog walkers at all times—some residents are more diligent than others about keeping their dogs leashed. Some are not aware that the leash law applies on national forest land, as well as all other areas of the County. Unrestrained dogs off leash can cause unsafe situations with other dogs, wildlife, and people. One possible solution would be the development of a “bark park” where dogs could have the opportunity to recreate and socialize with other dogs in an unleashed but controlled environment.

Another specific recreational activity worth noting is the sledding and snow-play that occurs at the corner of Kachina Trail and Pinon Trail. The sledding hill is a steep, north-facing hill adjacent to Pumphouse Wash and the Pumphouse Greenway. Although not a formally-established snow-play site, such activities have occurred at this location on an informal basis for many years. According to the 2007 survey, the majority of respondents’ households use the area for sledding or snow-play occasionally or frequently, and nearly 80% think it is an appropriate use for this location. An unknown percentage of sledders are visitors from outside the community.

SURVEY RESULTS

If a trail system was developed in Kachina Village, how often would you use it?

Daily or more than once a week: **37.8%**

SURVEY RESULTS

Do you think new subdivisions should be required to provide open space and/or trail easements?

Yes: **89.6%**

SURVEY RESULTS

Should provision of trails and open space be considered in approval of zoning changes?

Yes: **92.7%**



Although some residents allow their dogs to run free, unleashed dogs can create conflicts and unsafe situations.

SURVEY RESULTS

What recreational activities do members of your household participate in most frequently?

Wildlife watching, walking, and dog walking.



Public lands around Kachina Village attract an increasing number of winter recreationists.

SURVEY RESULTS

How concerned are you about recreational and youth activities?

Concerned to Very Concerned:
43.8%

SURVEY RESULTS

In what locations do members of your household most often participate in outdoor activities?

In order of preference:
National Forest, Pumphouse Greenway, KVID Wetlands, Raymond Park.

Notwithstanding the community survey results supporting snow-play at this location, there are a number of legitimate concerns related to this activity. Safety issues include parking and pedestrian traffic along Kachina and Pinon Trails, which creates hazardous situations when combined with winter road conditions. There are also some large trees and utility structures in the vicinity that create hazards for sledders and the north-facing slope can become extremely icy. In addition to those safety issues, some residents express concerns about impacts on the wetlands, including littering, and visitors driving off-road, getting stuck and causing severe damage and erosion.

In 2005, faced with a huge increase in winter recreation in the national forest, the U.S. Forest Service convened an interagency task force including Coconino County and others to develop a strategy for dealing with winter recreation issues. The effort is ongoing and a number of options are being considered including the possible establishment of a designated snow-play area at Fort Tuthill County Park or other locations that could accommodate some of the use occurring at Kachina Village and other informal sites.

RECREATIONAL ACTIVITIES GOAL:

Ensure opportunities for a wide range of recreational activities that meet the needs of the community and are compatible with the environment.

RECREATIONAL ACTIVITIES POLICIES:

- PR17.** The County Parks and Recreation Department shall actively seek public input in developing and planning for recreational facilities in order to ensure a wide range of recreational opportunities to serve the needs of the entire community.
- PR18.** The County supports U.S. Forest Service efforts to manage off-road vehicle travel on the national forest lands within the Kachina Village planning area, particularly with respect to prohibiting such traffic in all riparian areas.
- PR19.** The provision of public open space and/or recreational facilities may be required where appropriate for new developments.
- PR20.** The Parks and Recreation Department will explore possible mitigation strategies for addressing safety concerns and environmental impacts of sledding and snow-play activities in the Pumphouse Greenway.
- PR21.** The County will participate with other agencies in evaluating winter recreation opportunities and issues, including the feasibility of snow-play at Fort Tuthill and other options for Kachina Village residents.



Water Resources

Introduction

Water is essential for life and adequate water supplies are essential for human communities and healthy natural ecosystems. Kachina Village is fortunate to have access to water of excellent quality for domestic purposes, as well as rare natural springs and wetlands that support the native plant and animal communities with which we coexist. With care and vigilance, the community will continue to enjoy the benefits of this most critical and essential element far into the future.

Vision and Purpose

Water resources, especially in an arid region, are not to be taken for granted. Our vision for the future includes diligent protection and responsible management of our domestic water supplies and distribution system; continuing improvements and upgrades to the water and wastewater infrastructure; protection and restoration of springs and natural wetlands; implementation of water conservation practices by all residents; and the adoption of *best management practices* to reduce contaminated stormwater runoff to the maximum extent practicable.

Domestic Water Supply

Kachina Village water supply comes from an underground aquifer in the Coconino sandstone at depths ranging from approximately 650 to 1,100 feet below land surface. The system includes five wells and four storage tanks along with booster pumps and distribution pipelines. It is operated by Kachina Village Improvement District (*KVID*), also known as Kachina Village Utilities.

The community water system was initially constructed between 1965 and 1972 by the developers of the subdivision. KVID was established as a county improvement district by order of the Coconino County Board of Supervisors in 1965 pursuant to Arizona Revised Statutes (ARS). The Board of Supervisors acts as the Board of Directors of KVID, and the district is funded by special district taxes and assessments, fees paid by customers, and charges for services. Otherwise, KVID receives no funding from the County.

hypochlorination

A chemical system utilizing sodium hypochlorite to disinfect a public drinking water supply.

The portion of the Coconino Aquifer tapped by Kachina Village wells produces water of excellent quality. Although the water meets all drinking water standards directly out of the wells, as an added public health precaution, the water supply is treated with **hypochlorination** at all wells and sand separation at one well. KVID routinely monitors water quality to ensure that it meets all federal and state drinking water health standards, and annual Consumer Confidence Reports provide water quality information to all customers. In addition to its high quality water, the Coconino Aquifer is also a very reliable water source. KVID management cites data from the U.S. Geological Survey (USGS) that shows only a slight draw-down of the water table since the 1970s.



KVID business offices.

The Coconino Aquifer, also referred to as the C-Aquifer, is regional in extent. It extends from the Grand Canyon in the north to the Mogollon Rim in the south, and from the Defiance Uplift area in western New Mexico to an area west of Williams. The aquifer is not uniformly saturated, however, nor is water quality uniform throughout the regional aquifer. The C-Aquifer is essentially dry west of Flagstaff beginning at the Mesa Butte Fault. Water quality in the upper and middle parts of the aquifer, the portion tapped by the wells in Kachina Village, is generally good to excellent. Water in the lower parts is often salty and poor quality. Recharge areas are mainly to the south along the Mogollon Rim and to the east in the Defiance Uplift area. Other communities in the vicinity that draw from the C-Aquifer include the City of Flagstaff, Flagstaff Ranch, Forest Highlands, Doney Park, and Mountaineer.

As of 2007, Kachina Village Utilities serves approximately 1,400 service connections. An engineering study in 2001 evaluated the water and wastewater systems to determine their estimated capacity to accommodate additional connections. The major water system components that were the focus of the study included well supply, water storage, and the capacity of the wastewater system. The overall capacity of the system is determined by the component of the system that is most limiting. It concluded that well supply is the most limiting factor, and based on an estimated maximum daily usage of 250 gallons per unit per day, the system has a capacity of 1,690 connections.

SURVEY RESULTS

How do you feel about drinking water services currently provided?

- Positive: **82.9%**
- Neutral: **11.8%**
- Negative: **5.4%**

DOMESTIC WATER SUPPLY GOAL:

Ensure a safe, reliable, and sustainable water supply and distribution system for domestic purposes.

DOMESTIC WATER SUPPLY POLICIES:

- WR1.** The costs of water system improvements necessary to serve new development shall be borne by the developer.
- WR2.** Prior to approval of any new development, the developer shall provide documentation that adequate water supply is available for domestic use and fire protection.
- WR3.** New water system facilities shall be located appropriately to avoid environmentally-sensitive landscape features.

- WR4.** The provision of new water service connections to serve new development shall not diminish the level of service or quality provided to existing water customers.

Wastewater Treatment

The existing wastewater treatment plant (WWTP) was constructed in 1988 after the original plant, which was constructed in the 1960s, was determined to be violating allowable water quality standards for the discharge of wastewater effluent. The existing facilities include an extended aeration treatment plant and a constructed wetlands for the disposal of effluent. Effluent generated by the Kachina Village WWTP is rated Class B, meaning that it is suitable for non-potable uses such as irrigation and water features such as ponds, but not for full body contact.

One of the major components of the wastewater system is the constructed wetlands, which was designed not only as an effluent disposal feature, but also as wildlife habitat for migratory waterfowl. Walking trails throughout the wetlands provide residents with opportunities for bird watching and dog walking, and are generally recognized as a positive amenity in the community. School groups and others use the wetlands as an outdoor laboratory for environmental education programs and research projects.

In addition to providing water to the wetlands, KVID sells surplus effluent to Forest Highlands for golf course irrigation. The use of recycled effluent, rather than pristine groundwater, for golf course irrigation is preferable from a conservation standpoint, and from a revenue-generating standpoint, the sale of effluent is beneficial to KVID and its customers. However, with a limited amount of effluent available and competing demands, it is important to achieve a balance between maintaining viable wildlife habitat at the wetlands versus golf course irrigation. Kachina Village residents recognize the environmental and conservation-related benefits of both uses.

Since the existing WWTP was built in 1988, the system has generally been in compliance or in substantial compliance with ADEQ regulations. During the mid-1990s, there were some problems with the inflow and infiltration (I&I) of stormwater runoff into the sewer system. An aggressive repair program has since corrected most problems, and KVID's strategic plan identifies capital improvement projects for five years out and a 20-year maintenance plan to keep up with aging infrastructure. Various improvements in sludge handling, energy controls, and other efficiencies are helping to control costs and increase operational efficiency. One notable innovation is an experimental pilot project to make compost from sewage sludge mixed with wood chips—the intended result being to take a waste product that formerly required disposal at significant cost and converting it to a usable product.

WASTEWATER TREATMENT GOAL:

Maintain cost effective and environmentally-compatible wastewater collection, treatment, and disposal facilities.

WASTEWATER TREATMENT POLICIES:

- WR5.** Kachina Village Utilities is encouraged to utilize the by-products of the wastewater treatment process for environmentally-compatible applications, including but not limited to the use of effluent for wildlife habitat and irrigation, and sludge composting.



KVID wastewater treatment plant.

SURVEY RESULTS

How do you feel about sewage disposal services currently provided?

Positive: **77.1%**

Neutral: **18.5%**

Negative: **4.3%**

- WR6.** The costs of any wastewater system improvements necessary to serve new development shall be borne by the developer.
- WR7.** Kachina Village Utilities is encouraged to adopt environmentally-responsible maintenance practices for the wastewater collection and treatment system consistent with all applicable state and federal regulations.



Spring snowmelt in Pumphouse Wash.

Surface Water Resources

Surface water resources in Kachina Village include rare wetlands and springs in and around Pumphouse Meadow, Pumphouse Wash and Harrenburg Wash. Approximately 55 acres of wetlands in those three areas has been officially delineated and is proposed for permanent protection under a conservation easement that would prevent future development and preserve the area for open space, wildlife habitat, flood control, groundwater recharge, recreation, and environmental education. The conservation easement would apply only to County-owned properties within the Pumphouse Greenway, but not neighboring private land.

The County acquired the wetland properties through a combination of land donations, transfers, and purchases. In the general election of 2002, County voters approved a one-eighth cent sales tax to raise \$33 million for the purchase of environmentally-sensitive natural areas. Approximately \$720,000 of the Coconino Parks and Open Space Program (CPOSP) was earmarked for purchase of wetlands in Kachina Village. As of 2007, most of the targeted wetland properties had been acquired and incorporated into the Pumphouse Greenway system while the purchase of a few key parcels remains to be accomplished.

Due to the extreme rarity of high elevation wetlands in the region—such lands comprise less than 1% of the land area of Arizona—it is highly important to protect, preserve, and restore the wetlands for the important natural functions and ecological services they provide. Residents enjoy the open space qualities of the wetlands and the wildlife they support. In addition to providing food, water, and cover for wildlife, the natural functions and ecological services of wetlands include their ability to filter out certain pollutants and enhance water quality, to accommodate the discharge of floodwaters, and to facilitate groundwater recharge. While the hydrology of the Pumphouse wetlands is not entirely understood as yet, their preservation will provide opportunities for further research in support of appropriate management plans and restoration programs aimed toward the protection and enhancement of their unique and ecologically valuable attributes.

SURFACE WATER RESOURCES GOAL:

Protect, preserve, and restore the rare high elevation wetlands and springs of the Pumphouse watershed.

SURFACE WATER RESOURCES POLICIES:

- WR8.** Protection of surface water resources shall be a factor in the consideration for approval of new development proposals.
- WR9.** Developments that include the drilling of new wells shall be required to provide hydrology reports identifying potential impacts to existing wells, springs, and other water sources in the vicinity.

SURVEY RESULTS

How concerned are you about protecting wetlands and creek habitats in Kachina Village?

Concerned to Very Concerned:
85.5%

Water Conservation

As population continues to increase in Kachina Village and surrounding communities, there is increased pressure and demands on the regional aquifer from which the community's water supplies are obtained. Although the Coconino Aquifer is considered to be a reliable water source, it is not an unlimited resource, and increased pumping will inevitably result in further draw-down of the water table. New wells may be developed or existing wells may be deepened or improved to enhance their water production capabilities, but water conservation is a key strategy in responding to increased demand. Water is too valuable a commodity to use it wastefully or inefficiently.

Water conservation is everyone's business and everyone has a role to play in its successful implementation. The County promotes water conservation through public education and encourages developers to incorporate conservation elements into development projects; KVID conserves water through the re-use of reclaimed wastewater and promotes water conservation through their water rate structures; residents can practice water conservation by using low-flow plumbing fixtures, repairing leaks promptly, harvesting rainwater for landscape irrigation, and planting native and drought-tolerant landscaping. In 2001, ADEQ adopted regulations to allow residential users to reuse the *gray water* generated by their household for *nonpotable* uses such as irrigation. All of these techniques are being practiced to a certain extent, but as demands increase, it becomes more critical that water conservation practices become more universally adopted wherever opportunities occur.

The high price of water at Kachina Village is the main motivating factor for customers to conserve, but significantly more could be done both on the supply side and on the customer side to achieve additional water savings. Some basic measures that can be implemented by the provider include 1) distribution system leak detection and repair and 2) the replacement of aging meters, both of which have been done or are on-going by KVID. Other supply-side tools include conservation rate structures—already implemented by KVID—and peak season surcharges, which have not yet been implemented. KVID uses treated effluent for habitat conservation purposes and golf course irrigation, but an expanded program to distribute reclaimed water for other approved purposes in the community could be beneficial. Large-user audits (typically commercial uses) and large-landscape audits are possible avenues toward identifying opportunities for greater efficiencies, but have limited applicability in Kachina Village at present. Legal requirements and policy guidelines could include water waste ordinances, turf restrictions, sub-metering requirements for multi-family units, water shortage ordinances, and large-user policies. Financial incentives can include rebates, fixture giveaways, turf-reduction incentives, and incentive-based hook-up fees, among others. These approaches to achieving greater water conservation are discussed in more detail in the 2002 *North Central Arizona Water Demand Study* (NCAWDS).

On the customer side, there are numerous efficiencies and conservation measures that can be implemented. According to the NCAWDS, the current national standards on maximum water-use rates for plumbing fixtures no longer represent the best available technology, and customers can take advantage of advanced technology to significantly reduce water use. Fixtures that use less water than standard fixtures are referred to as “beyond-standard” fixtures. For example, the national standard flow rate for both faucets and showerheads is 2.5 gallons per minute (gpm). Beyond-standard showerheads are available that use 2.0 gpm,



Coconino County environmental specialists monitor spring water quality in Pumphouse Greenway (top); KVID wetlands information sign (above).

gray water

Wastewater, collected separately from sewer flow, that originates from a clothes washer, bathtub, shower, or sink, but not from the kitchen sink, dishwasher, or toilet.

nonpotable

Water not suitable for drinking and cooking purposes.



Pumphouse Greenway.

and some as low as 1.5 gpm. Beyond-standard faucets are available for various uses at reduced flow rates: 2.2 gpm for residential kitchens, 1.0 to 1.5 gpm for residential bathrooms, and as low as 0.25 to 0.5 gpm for public bathrooms. There are many other examples of high-efficiency plumbing technology that can be employed to conserve water in both residential and commercial applications. Promoting the use of best available technology for both replacement/retrofitting and for new construction can result in significant water-use reduction.

One of the challenges for KVID is the fact that the district is primarily funded by their customers' water bills. When they first adopted a tiered rate structure in 1995 to encourage conservation, the response was so successful that KVID experienced a dramatic drop in revenues and had to substantially increase rates in 1997. Another major rate increase was implemented in 2006, and even so, revenue

projections predict a deficit situation within five years without further rate increases. Therefore, from a revenue-generating standpoint, it is not in KVID's best financial interest to promote water conservation. In the long term, however, if water conservation eliminates the need for future wells or other capital improvements, it would be beneficial to the district. Balancing the needs of providing a high level of service, maintaining a long-term capital improvements program, and conserving water resources is critical to the future of the community.

SURVEY RESULTS

How concerned are you about water conservation?

Concerned to Very Concerned:
78.8%

SURVEY RESULTS

Do you think there should be water use limitations to increase water conservation?

Yes: **57%**

WATER CONSERVATION GOAL:

Promote a wide range of water conservation practices and strategies by water providers and users.

WATER CONSERVATION POLICIES:

WR10. Water conservation elements shall be incorporated into all new development proposals.

WR11. New developments shall avoid design elements that include constructed water features such as fountains, lakes, or ponds.

WR12. Kachina Village Utilities is encouraged to promote water conservation through a tiered fee structure that rewards low-water use, and to explore other possibilities such as rebate and fixture giveaway programs, partnerships with other utilities, public education, and other tools and techniques designed to reduce water use in a manner that is cost-effective and of long-term benefit to residents of the district.

WR13. Residents are encouraged to practice water conservation by installing high-efficiency low-flow plumbing fixtures, repairing leaks promptly, harvesting rainwater for landscape irrigation, planting native and drought-tolerant landscaping, and utilizing gray water systems.

WR14. The County shall promote the use of best available technology for both replacement/retrofitting and for new construction through its Sustainable Building Program and other avenues as opportunities arise.

Stormwater Management

Stormwater runoff is a major source of water pollution as it discharges untreated contaminants into washes, streams, wetlands, and other surface water bodies. As stormwater flows downward through a watershed, it transports litter, debris, dirt, chemicals (including road salts), and other pollutants, and ultimately deposits those materials in drainages or water bodies downstream. Kachina Village is not only located in a watershed containing some rare and environmentally-sensitive high elevation springs and wetlands at the local level, but is also situated at the headwaters of Oak Creek, which is in turn part of the larger Verde River watershed. Given the fact that stormwater runoff does not respect political boundaries, federal and state regulations require that the County adopt a Stormwater Management Program (SWMP) to address potential sources of contamination and their control.



Road cinders are a major source of stormwater contamination.

Coconino County's SWMP is administered by the Public Works Department and is referred to as the *Clean Stream Program*. Kachina Village is one of seven unincorporated communities in the County designated as a *Small Municipal Separate Storm Sewer System* (SMS4) that discharges stormwater runoff into "*waters of the United States*" from roadside drainage ditches or other street drains. The Clean Stream Program commits the County to develop best management practices (BMPs), measurable goals, and target dates for implementation of various program elements. The program will include the adoption of regulations to address illicit discharges, regulate construction site runoff, and address post-construction runoff management. Contaminants that will be addressed include sediment, excess nutrients, bacteria, debris, household hazardous waste, automotive waste, and other identified sources of polluted stormwater.

Although the SWMP is intended to address illicit discharges from all sources including residential and commercial properties, construction sites, and others, the majority of discharges in Kachina Village will be resolved by the County's mitigation of discharges generated by road maintenance and, particularly, snow removal—the use of cinders on the roads in the winter probably far exceeds all other discharges combined, and the possible future use of de-icing chemicals will constitute an additional discharge that will have to be mitigated through appropriate management practices.

In addition to the regulatory aspect of the program, it includes a public education component, as well as public involvement and volunteer opportunities. The public education component seeks to inform property owners about the things they can do to avoid illicit discharges in their home-based activities involving auto care, landscaping and lawn care, maintenance of septic systems, disposal of pet waste and livestock manure, and disposal of household hazardous waste. Information is also provided to make people aware of things they can do at work to avoid discharges such as containing and cleaning up spills, properly securing and disposing of trash, and proper disposal or recycling of chemicals.

Citizen volunteers can help make the program a success by helping to identify problem areas and sources of illicit discharges, and by exercising stewardship of local streams and wetlands. In Kachina Village, there are overlapping opportunities for residents to help address the goals of the Clean Stream Program along with the goals of preserving and restoring the wetlands of the Pumphouse Greenway. Some of the things volunteers can help with include developing a monitoring program, making visual observations and reporting the impacts of storms, cleaning up drainages and waterways, restoring degraded habitats, and evaluating the success of BMPs designed to mitigate problems. As of August, 2007,

Clean Stream Program

A public education and outreach initiative promoting Coconino County's Stormwater Management Program to prevent pollution of lakes, streams, and rivers.

Small Municipal Separate Storm Sewer System

Areas defined by census boundaries within the County and designated by ADEQ as having a flow conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains that are owned and/or operated and regulated by the County and that require regulations to protect stormwater quality entering and leaving these conveyances.

waters of the United States

All surface waters, whether permanent or ephemeral, including wetlands, lakes, dry lakes, rivers, streams, ephemeral washes and arroyos, mudflats, sandflats, sloughs, wet meadows, playa lakes, and natural ponds.

Public Works has taken initial steps to coordinate with the Parks and Recreation Department as they jointly develop citizen volunteer programs to promote community participation and stewardship of local water resources.

STORMWATER MANAGEMENT GOAL:

Reduce or eliminate contaminants from stormwater runoff to the maximum extent practicable.

STORMWATER MANAGEMENT POLICIES:

WR15. The County Public Works Department shall identify and implement best management practices with respect to road maintenance and snow removal that eliminates, or minimizes to the maximum extent possible, the illicit discharge of contaminants into wetlands and waterways, and provides appropriate mitigation measures when discharges cannot be entirely avoided.

WR16. The County Public Works and Parks and Recreation Departments are encouraged to work collaboratively to develop a community volunteer program to promote local stewardship of natural wetlands, springs, and waterways.

WR17. Residents of Kachina Village are encouraged to adopt appropriate practices consistent with the County’s Clean Stream Program to prevent the discharge of household-related substances from residential properties.



KVID constructed wetlands.



Community Character

Introduction

The character of a community is defined by its many components and attributes including not only the demographics, ethnicity, and other characteristics of its residents, but also its physical design; its mix of housing types and other land uses; its public spaces and activity centers; its historic and cultural resources; its scenic vistas and *viewsheds*; and other qualities important to residents such as the natural environment, open space, starry skies, and soundscapes. The character of Kachina Village, like most communities, has evolved over time and is not a static condition—it continues to evolve as a result of many interacting factors and influences. This element of the plan describes some of the attributes that combine to create the character of Kachina Village as it exists now, and provides some direction through goals and policies to preserve and enhance the positive qualities of the community's character in the years to come.

Vision and Purpose

The natural environment and forest setting in which Kachina Village is situated is arguably the single most important element in defining the character of the community. In the context of this setting, our future vision of Kachina Village is a family-oriented community offering a mix of housing types and styles; a community comprised of a diverse population of varied ethnic and cultural backgrounds, age groups, economic status, and lifestyles;

viewshed

The area of land within sight of a given location, particularly with respect to scenic views.



Kachina Village contains a mix of housing styles and types.

SURVEY RESULTS

How concerned are you about preservation of the “Village feel”?

Concerned to Very Concerned:
74.4%

SURVEY RESULTS

Would you be interested in a Homeowners Association for Kachina Village?

No: **72.6%**

where residents participate in events and activities that demonstrate their sense of community; where neighborhoods and individual properties reflect pride and stewardship; and where the built environment is complementary to the natural environment. We envision a community that continues to evolve in a positive direction with individuals upgrading and improving their homes and properties while public and community facilities are developed that provide greater opportunities for community interaction and participation.

Community Design

Community design is comprised of all of the components of the built environment—the mix of land uses, public facilities, services, and infrastructure—and the arrangement of all those elements in relation to each other and to the natural environment. Kachina Village is somewhat

unique in terms of community design compared to other subdivisions in the greater Flagstaff area that were developed in the mid-1960s. What sets it apart is its mixed-use design which includes a variety of housing types ranging from a mobile home park comprised of rental spaces to individually-owned manufactured home sites to single family lots of various sizes, as well as a number of multiple family rental units. The diversity of residential opportunities serves a broad spectrum of the housing market from low-cost rentals to high-end custom homes. In addition, there is some neighborhood-scale commercial development, as well as a public park and open space system. This mixed-use pattern is in contrast to other developments with a more homogeneous, single-use design intended for a narrower segment of the market.

In some ways, the mixed-use design of Kachina Village anticipated by several decades the recent emphasis on neo-traditional mixed-use design that is more in vogue today. In other ways, however, the design of Kachina Village reflects the 1960s automobile-dependant culture where it was assumed that everyone went everywhere in cars, and sidewalks and pedestrian systems were deemed unnecessary—bike paths were not on anyone’s radar screen. In fact, under the original development concept, it was anticipated that most residents would be arriving by automobile from Phoenix for weekend or seasonal vacation use, as opposed to living here full-time and working in Flagstaff.

As Kachina Village has evolved into a primarily full-time community over the years and the public’s preferences and needs have changed, there has been more demand for pedestrian and bike paths, dedicated public open space and park improvements, a higher level of local services, and more transportation choices. Fortunately for residents, there have been opportunities to retrofit some of these elements, and further opportunities remain for continued improvements. For example, in most small communities of comparable size, it would not be possible to retrofit a substantial open space and greenway system after four decades of development. In this case, however, several large parcels of private land had remained undeveloped because of various environmental constraints, and the County was able to acquire some key properties to establish the Pumphouse Greenway system and expand Raymond Park. The need for pedestrian and bike paths has begun to be addressed and more improvements are planned. By taking advantage of existing conditions, as well as new opportunities, Kachina Village can continue to enhance its community design and provide improved amenities and services for residents.

Since 1997, the Kachina Village Design Review Overlay (DRO) Zone has helped to ensure that new commercial and other uses are designed appropriately to blend into the fabric of the existing community. The DRO addresses architectural style, building materials and colors, overall site design, signage, and outdoor lighting (see page 79). The design guidelines contained in the DRO do not dictate specific architectural styles or design elements, but provide direction and enough flexibility to promote creative design intended to ensure that new development is architecturally and aesthetically compatible with the community and the natural environment in which it is situated. In addition to commercial uses, the DRO applies to industrial uses, public facilities, and multiple family uses, but not single family residential.

Community gateways are unique areas that warrant special design considerations. In this context, gateways serve as the entrance to a community typically on a major transportation corridor. The major roadways approaching a community are referred to as gateway corridors. In Kachina Village, the gateway area at the entrance to the community includes the commercial properties on Kachina Boulevard, as well as Raymond Park and the open meadows and wetlands of Pumphouse Greenway. These areas are important for reflecting the character, tone, and scale of development in the interior of the community and deserve special consideration because of their prominence. Considering the importance of gateway development, it is worth noting that there are several existing properties that present a less than desirable image resulting from abandoned or dilapidated structures, excessive outdoor storage of miscellaneous materials, and poorly maintained property. Such properties present opportunities for redevelopment to present a more positive gateway image.

In a larger context, Kachina Village is a gateway community in relation to Flagstaff, and consideration should be given to ensure that development within view of I-17 reflects positively on the greater Flagstaff area as a whole.

COMMUNITY DESIGN GOAL:

Preserve and enhance the mixed-use design of Kachina Village; maintain compatibility between the built and natural environments; and emphasize sensitive design features at gateway locations.

COMMUNITY DESIGN POLICIES:

- CC1.** Future development projects shall be considered in relation to the scale and character of existing neighborhoods and should help maintain a balanced mix of land uses to accommodate a diverse community.
- CC2.** Conservation design techniques shall be utilized to preserve environmentally-sensitive landscape features.
- CC3.** Sustainable building elements and energy conservation features are encouraged in all new developments.



Personal expression contributes to community character.

- CC4.** Property owners are encouraged to initiate higher levels of property maintenance to promote increased property values, aesthetics, and public safety.
- CC5.** The County shall pursue proactive enforcement of property performance standards, as resources permit, with public health and safety violations receiving the highest priority.
- CC6.** All future development at the entrance to the community, as well as redevelopment of existing blighted properties and any development visible from Interstate 17, shall preserve or enhance the aesthetic quality of the gateways to Kachina Village and the City of Flagstaff.
- CC7.** Future commercial, public, semi-public, and multiple family development shall conform to the Kachina Village Design Review Overlay Zone.



The annual Pumphouse Picnic in the Park attracts hundreds of residents.

Activity Centers

Activity centers are community gathering places or focal points where people come together and interact for commerce, services, recreation, and other purposes, and the nature of activity centers can play a significant role in defining the character of a community. Clustering of related or complementary uses is a common characteristic of activity centers, and they are typically located where transportation infrastructure converges such as major street intersections or crossroads. Rural activity centers (defined as being outside the city limits) have the added objective of meeting residents' day-to-day needs locally without requiring travel into town or out of the immediate area. The commercial area at the entrance to Kachina Village is identified as a rural activity center in the *Flagstaff Regional Plan*.

The existing convenience store is a commercial activity center serving the residents of Kachina Village, as well as highway travelers. The convenience store is the modern equivalent of the traditional general store, which historically served as a community gathering place. While the existing store does not rise to the level of meeting all of residents' day-to-day needs, it does provide a range of products from basic staples to fuel sales, as well as video rentals, a sandwich shop, and a community bulletin board. As the only general retail use in the community, it is typically a bustling place, particularly during peak commuting hours and weekends when residents are stopping by for essential items.

In addition to the existing store, there is approximately 2.6 acres of undeveloped commercially-zoned property on the north side of Kachina Boulevard adjacent to Raymond Park and the Village Land Shoppe real estate office. By comparison, the existing convenience

market is located on a 0.64-acre parcel. The 2.6 acres of vacant commercial land represents an opportunity for a wide range of commercial uses that could be developed to serve the community as a much-expanded activity center. According to the results of the 2007 Community Survey, residents are overwhelmingly supportive of neighborhood-oriented businesses that would provide goods or services that benefit local residents—a small restaurant, café, or coffee shop was mentioned most often as a preferred type of commercial use, which is consistent with the concept of activity centers being community gathering places.

Raymond Park provides a recreational component of the activity center, and lies immediately to the north of the vacant commercially-zoned property. Planned park improvements will enhance this already popular gathering place and provide expanded opportunities for fostering a greater sense of community. Ideally, when the neighboring commercial property is developed, the design should consider its adjacency to the park and provide for appropriate connectivity, buffering, and compatibility of uses. There is a great opportunity to integrate the recreational uses at the park with future commercial uses in a manner that promotes public interaction, involvement, and community pride.

The Pumphouse Greenway system as a whole, and particularly the trails within it, serves as an activity center in terms of recreational use and social interaction among users. The 2007 Community Survey identifies walking, wildlife watching, and dog walking as the most popular recreational activities with Kachina Village residents—the national forest, Pumphouse Greenway, and KVID wetlands are the locations where they engage in those activities most often. The survey also made clear that a community center or recreation center, particularly one that provides facilities for families and children, would be a desirable addition to the community. The survey results in general support the notion that activity centers are important in fostering a sense of community among residents.

ACTIVITY CENTER GOAL:

Encourage and support the development of centralized commercial and public land uses that meet residents' needs for services, recreation, and social interaction.

ACTIVITY CENTER POLICIES:

- CC8.** The general area at the intersections of Kachina Boulevard, Tovar Trail, and Kachina Trail is identified as a rural activity center suitable for the clustering of community-oriented commercial and public uses that promote community interaction.
- CC9.** Commercial development in activity centers and adjacent to County parklands shall provide for appropriate connectivity, buffering, and compatibility of uses.
- CC10.** All development within activity centers shall be compatible with the scale and character of surrounding neighborhoods, and shall provide for appropriate connectivity, buffering, and compatibility of uses.
- CC11.** Circulation infrastructure improvements—particularly pedestrian trails, bike paths, and public transit—shall be prioritized at activity centers and shall reflect the important role of such sites as central community gathering places.
- CC12.** Community-oriented public facilities and activities that promote public interaction, involvement, and community pride are encouraged and supported at activity centers.



The convenience market serves as a commercial activity center.



The historic pump house (top) and Shetland sheep on a small Kachina Village farmstead (above) harkens back to the days of Dr. Raymond's sheep ranch in the early 1900s.

Historic and Cultural Resources

Historic and cultural sites are nonrenewable resources that help define a community's identity. Preserving such sites helps us understand the historic and cultural context in which our community exists, as well as those civilizations that came before ours. In Kachina Village, there are at least two identified historic sites that are protected on County parklands—Dr. Raymond's grave site in Raymond Park is one, and the old stone pump house in the meadow is the other.

A commemorative plaque at Dr. Raymond's grave identifies the site as his former sheep ranch prior to his death in 1959. Dr. Raymond was a physician in Flagstaff during the first half of the 20th century, and he reportedly acquired the land that became his Pump House Ranch as payment for medical debts from a local pioneer family. Sometime after his death, most of the land was sold and not long afterward the development of Kachina Village began. The five-acre parcel containing Dr. Raymond's grave was donated to Coconino County by the Raymond Educational Foundation in 1972 for purposes of establishing the park that now bears his name.

The pump house in the meadow is an historic structure that was probably built sometime between 1920 and 1942, according to a 2007 report prepared by the USDA-NRCS Arizona State Office entitled "Preliminary Historical Background for the Pumphouse Wash Wetland." Other published documents, as well as unpublished sources, establish that there was a pump house in the vicinity as early as the 1880s, and that there were homesteaders living in the area at that time and referring to it by the place name of "Pumphouse." The history, however, is

not well documented. The original homesteader is identified as James O'Neill by Flagstaff historian Platt Cline in his book, *They Came to the Mountain* (1976). According to Government Land Office records, however, a person named Oscar O'Neal acquired a major portion of the meadow from the U.S. Government in 1884. The springs are named in various documents as O'Neal, O'Neil, or O'Neill, and one or more pipelines were constructed from the pump house to Flagstaff to reportedly serve the Arizona Lumber and Timber Company sawmill, the railroad, and/or the city depending on which source is consulted. In any case, it is crucial to preserve the historic remnants of early settlement so that we can continue to learn about our history and celebrate our heritage.

Indigenous cultural resources and archaeological sites are also important elements of a community's character. There are no known or identified archaeological sites in Kachina Village, but the locale lies within the traditional territory of the Hopi people who currently reside on reservation lands approximately 80 miles northeast of Flagstaff. Although there have been no archaeological sites identified in the community, the Hopi almost certainly were familiar with the area prior to Euro-American settlement and at a minimum traveled through it while hunting, gathering plants, or visiting other important sites—it is highly likely that they were aware of the springs in the area since water sources are always of critical importance in an arid environment. The Yavapai Apache and other regional indigenous people no doubt utilized the area as well.

The original developer of Kachina Village drew upon cultural elements of the Hopi to create an identity for the community. The name of the development refers to the Hopi's spiritual

guides, the *katsina*, and most of the street names are of Hopi origin, as well. In keeping with the Hopi theme, the cul-de-sac street-type in Kachina Village is referred to as an “Ovi,” a Hopi word that translates as “high place.” A few street names use words of Navajo origin. Although the “borrowing” of cultural elements from the tribes to create the community identity was no doubt done without their consent, the Kachina theme is firmly established and residents should be aware and respectful of its cultural origins.

Because the street names are derived from the names of Hopi villages and *katsinas*, as well as other Native American sources, many of the names are unusual and perhaps somewhat difficult to pronounce. As such, they would possibly not be acceptable under the current Coconino County “Street Naming and Standard Addressing Ordinance.” The ordinance is intended to enhance emergency response through the 911 system by avoiding difficult or unusual street names. In administering the ordinance, the County is reviewing new street names and changing existing duplicate street names, such as situations where a street and a cul-de-sac, for example, have the same name (e.g. Kona Trail vs. Kona Ovi). When the County street naming and addressing program is implemented in Kachina Village, there are numerous existing street names that may be affected. Likewise, any new street names would be subject to the requirements of the ordinance. The preference is that any new names or the re-naming of existing streets would acknowledge the established character of the community, would be compatible with the established theme, and that the re-naming of existing streets would be avoided to the greatest extent possible.

HISTORIC AND CULTURAL RESOURCES GOAL:

Protect the historic and cultural resources of Kachina Village.

HISTORIC AND CULTURAL RESOURCES POLICIES:

- CC13.** The County encourages the preservation and interpretation of local historic structures and sites in Kachina Village.
- CC14.** The County supports the celebration and commemoration of local history, culture, and heritage through public art, events, and interpretive exhibits.
- CC15.** New street names and the re-naming of existing streets shall acknowledge the established character of the community, shall be compatible with historic or cultural themes, and the re-naming of streets shall be avoided to the greatest extent possible under the terms of the “Street Naming and Standard Addressing Ordinance.”

Vistas and Viewsheds

It is well established that the natural environment and its scenic vistas and viewsheds are major contributors to the character of Kachina Village. From different vantage points in the Village, viewsheds can be as far reaching as the San Francisco Peaks, A-1 Mountain, Dry Lake Crater, Woody Ridge, and Woody Mountain. More localized vistas include Pump-house Wash, Dolan Meadow, Harrenburg Wash, nearby Coconino National Forest, or simply the wooded neighborhood surrounding one’s home. In any case, scenic views are cherished by residents, and are a valuable resource worth protecting.

Various types of development can affect views to varying degrees—ridge top development, telecommunications towers, above ground utility installations, and large-scale structures are some examples. Roads, driveways, and buildings constructed on steep slopes can cause massive scars that can be seen for great distances. Such development should be avoided if at all possible or mitigated to the greatest extent possible when it is unavoidable. When homes

SURVEY RESULTS

Do you think all electric and phone lines should be required to be placed underground for new developments?

Agree: **74.3%**



Scenic views are important elements of community character.

Conditional Use Permit

A permit issued by the Planning and Zoning Commission for a use that is allowed within a zoning district after a public hearing. Approval is at the discretion of the Commission based upon certain findings of fact, and conditions are typically applied to the operation of the use.

integrated conservation design

A development concept that considers site characteristics and layout in the larger context of surrounding parcels, and preserves important natural features such as open space, viewsheds, scenic corridors, and wildlife habitat.

or other structures, for example, are built on steep slopes or ridge tops, sensitive architectural design techniques can be employed such as a stepped, multi-level design where the structure follows the natural landforms, and avoids excessively tall stem walls or piers. Preserving native trees and other vegetation helps mitigate the impact of structures on highly visible sites. Other mitigation measures include the use of natural colors, the avoidance of highly reflective materials, and maintaining appropriate scale to blend with the landscape.

Certain structures are unavoidably large and obtrusive, but serve an important public purpose nonetheless. Some examples are telecommunication towers, water storage tanks, and other utility installations. While certain “stealth” designs can be applied in some cases, such as the camouflaging of cellular communications equipment, for example, it is not always possible to hide large obtrusive structures. In those cases, it is necessary to carefully consider all options to appropriately site such facilities where they will have the least impact possible, and employ appropriate mitigation measures. Most such facilities are subject to ***Conditional Use Permits*** (CUPs) approved by the Planning and Zoning Commission, as well as DRO requirements, and the public review process is intended to ensure appropriate siting and mitigation, and to protect the character of affected neighborhoods.

VISTAS AND VIEWSHEDS GOAL:

Preserve and enhance the scenic resources of Kachina Village.

VISTAS AND VIEWSHEDS POLICIES:

- CC16.** Development on prominent ridgelines, or within the viewshed of scenic vistas generally should be avoided when possible, or otherwise mitigated when such development is unavoidable. Appropriate mitigation measures will be determined on a case-by-case basis, but may include the preservation of natural vegetation, landscaping, appropriate colors, nonreflective materials, stealth designs, and other architectural approaches or design elements to minimize visual impacts to the greatest extent possible.
- CC17.** Utilities shall be placed underground for all new major developments whenever possible. Existing overhead utility lines shall be relocated underground if feasible and when opportunities arise.
- CC18.** The County encourages the use of ***integrated conservation design*** to minimize impacts on scenic vistas and viewsheds by appropriate siting of buildings and infrastructure.

Dark Skies

Kachina Village residents, like others in the greater Flagstaff area and Coconino County as a whole, place a high value on the incredible star-filled night skies that can be experienced here to an extent not possible in most other parts of the country. Our high-elevation topography, clean air, and atmospheric conditions combine to create ideal conditions for viewing the stars. As a result, the area is not only unsurpassed for the sheer beauty of the stars, but is also ideally suited for professional astronomical observatories.

Coconino County has been a leader in the field of outdoor lighting, and the *County Zoning Ordinance* includes regulations designed to prevent light pollution and preserve our dark sky resource. In addition to protecting the substantial investments in astronomical observatories in the area, the ordinance is intended to promote lighting practices that minimize light pollution and light trespass, and conserve energy while maintaining night-time safety and security. The County is divided into three “Lighting Zones” based on distance from astronomical observatories. Kachina Village is mostly located in Lighting Zone 2, which is between 2.5 and seven miles from the nearest observatory, and the Kachina Village DRO applies Zone 2 lighting regulations to the entire planning area.

DARK SKIES GOAL:

Preserve the dark star-filled night skies of Kachina Village.

DARK SKIES POLICIES:

- CC19.** In order to avoid light pollution, light trespass, and unnecessary glare, property owners are encouraged to install only the minimum level of outdoor lighting necessary for safety, security, and utility purposes; architectural and landscape lighting for ornamental purposes is discouraged.
- CC20.** Fully-shielded, downward-directed light fixtures are recommended for all outdoor lighting to contain direct illumination to the property of origin.
- CC21.** Motion detectors are recommended for security lights; street lights and dusk-to-dawn lighting is discouraged.

Soundscape

Natural quiet is a desirable community characteristic that is increasingly threatened by noise pollution from a variety of sources. The main sources of noise affecting the soundscape of Kachina Village include highway traffic, aircraft, and barking dogs; other sources include occasional shooting and off-road vehicles on the national forest. The limited commercial uses in Kachina Village are not currently significant noise generators, but any new commercial or public uses should be evaluated for potential noise impacts. When noise cannot be entirely avoided, its impacts can be mitigated through a variety of methods, including sound walls, landscaped buffers, acoustic insulation, hours of operation, and others.

Excessively barking dogs are probably the most intrusive examples of noise impact in the community. In response to numerous complaints (not all of which originated in Kachina Village), the County adopted an ordinance to address “excessive and unrestrained” barking dogs. The ordinance is enforced on a complaint basis, and is administered by the Animal Management Division of the County Health Department. A designated Hearing Officer is empowered to hear testimony, render judgments, and impose fines up to \$500.00.



Coconino County lighting regulations allow adequate lighting for safety and security while preventing light pollution and preserving starry skies.

SURVEY RESULTS

How concerned are you about airplane noise?

Concerned to Very Concerned:
38.9%

Responsible pet oversight and consideration for one's neighbors is the preferable solution to barking dogs, but like other animal management issues, a certain amount of enforcement is sometimes required as well.

SOUNDSCAPE GOAL:

Preserve natural quiet and reduce the effects of noise pollution.

SOUNDSCAPE POLICIES:

- CC22.** Potential noise impacts shall be a consideration in the review of proposed development projects, especially when adjacent to residential and recreation areas.

- CC23.** Developers of residential projects shall consider the impacts of existing noise generators, such as highways and airport flight paths, and mitigate those impacts where feasible.

- CC24.** Dog owners are encouraged to exercise personal responsibility and oversight of their animals to avoid noise impacts on their surrounding neighborhood, and the County Animal Management Division is encouraged to respond promptly and diligently to complaints of excessive barking.

- CC25.** As noise from highway and air traffic increases, mitigation measures shall be implemented where possible and speed limits, flight paths, and other applicable regulations shall be diligently enforced.





Land Use

Introduction

Land uses in the Kachina Village planning area include a wide variety of residential styles and types, some commercial and public facilities, and a substantial network of park lands, open space, and national forest. There is a limited amount of undeveloped private land. The planning area also includes several square miles of national forest land managed by the U.S. Forest Service. This element of the plan provides background information, describes existing land uses and development patterns, and sets forth goals and policies related to future land uses, housing affordability, and zoning enforcement.

Vision and Purpose

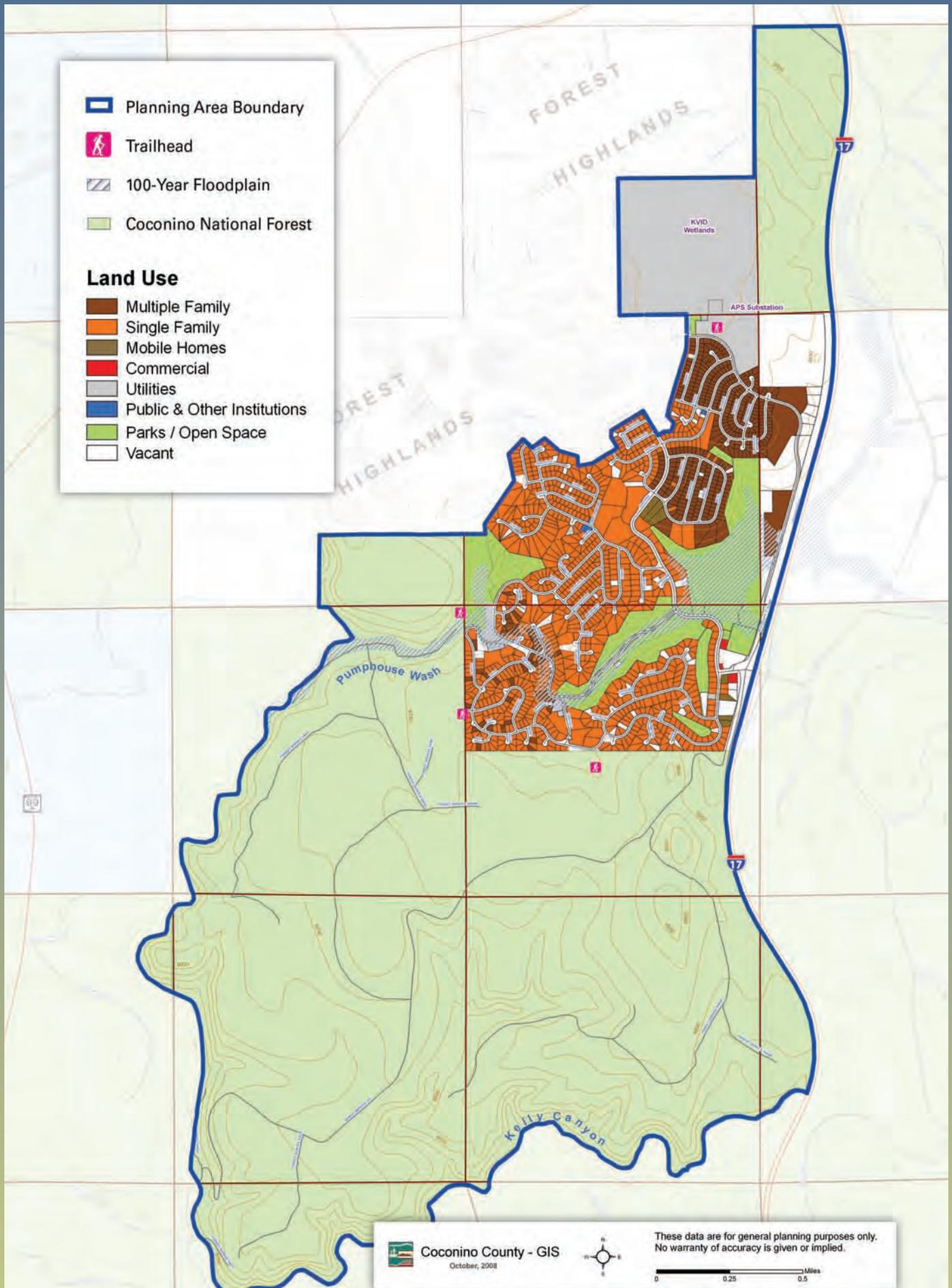
In the future, we envision Kachina Village maintaining a diverse mix of land uses consistent with the established character and scale of the existing community. As redevelopment of individual properties occurs, the mix of housing options for citizens of all economic levels is maintained, and Kachina Village remains a relatively affordable place to live for middle income and workforce families. As new commercial development occurs, businesses are established that provide goods and services primarily intended for the local community and compatible with the character of established neighborhoods. Adequate public facilities are provided to serve the needs of residents, and the County achieves a high level of zoning compliance, enhancing the overall appearance and quality of the community.

Kachina Village 2007 Land Use Survey

-  Planning Area Boundary
-  Trailhead
-  100-Year Floodplain
-  Coconino National Forest

Land Use

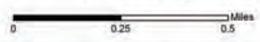
-  Multiple Family
-  Single Family
-  Mobile Homes
-  Commercial
-  Utilities
-  Public & Other Institutions
-  Parks / Open Space
-  Vacant



Coconino County - GIS
October, 2008



These data are for general planning purposes only.
No warranty of accuracy is given or implied.



Existing Land Use

Existing land use patterns in Kachina Village were established as a result of subdivision activity between 1965 and 1972. During that time period, the appropriate zoning classifications were established by the Board of Supervisors as each subdivision unit was approved. The resulting mix of land uses includes residential, commercial, open space, and public facilities. The residential uses reflect the diversity of the community and include rental units, owner-occupied primary dwellings, and part-time vacation homes. Commercial uses include the Pic-N-Run convenience market and Village Land Shoppe real estate office along with approximately 2.6 acres of undeveloped commercially-zoned land. Public parklands include Raymond County Park and the Pumphouse Greenway system. Other public facilities include two fire stations, various Kachina Village Utility installations, an Arizona Public Service (APS) substation, a Qwest telephone switching facility, and a wireless telecommunications tower.

During the decade following the adoption of the *Kachina Village Area Plan* in 1997, a number of land use changes occurred. In 1997, there were approximately 190 vacant lots—in 2007, there were less than 50. In 1997, there was approximately 11.5 acres of undeveloped commercially-zoned land—in 2007, there were 2.6 acres available for commercial development (the other commercial acreage was acquired by the County for park expansion). In 1997, County parklands included the original five-acre Raymond Park—by 2007, Raymond Park had grown to 13 acres and the Pumphouse Greenway was established to preserve approximately 120 acres of public open space. By 2007, the available inventory of vacant land suitable for development includes 40 acres at the northeast corner of the community and a few small parcels scattered elsewhere throughout the Village.

EXISTING LAND USE GOAL:

Maintain a mix of land uses that promotes diversity, is beneficial to residents, and is consistent with the established character of the community.

EXISTING LAND USE POLICIES:

- LU1.** Proposed developments and zone changes shall be compatible with the *mixed-use development* pattern of the community.
- LU2.** Proposed zone changes that would substantially reduce the diversity of the community shall not receive favorable consideration.
- LU3.** Existing County parklands and open space properties, as well as future acquisitions, should be rezoned to the OS (Open Space and Conservation) Zone for the zoning to reflect the established use.

Residential

Residential uses fall into several categories in Kachina Village, including agricultural residential, rural residential, single family residential, multiple family, and *manufactured homes*. The quality and style of the housing varies greatly throughout the community, and ranges from simple cabins and *mobile homes* originally intended for part-time vacation use to substantial homes designed as full-time residences. As the community has evolved over time, many of the older cabins that were originally built for weekend or summer occupancy have been converted to full-time use and upgraded accordingly. Many of the older mobile homes (including some travel trailers) have been replaced with new manufactured or *modular homes*. In general, the trend has been toward more substantial construction than was typical in the early years of the development.



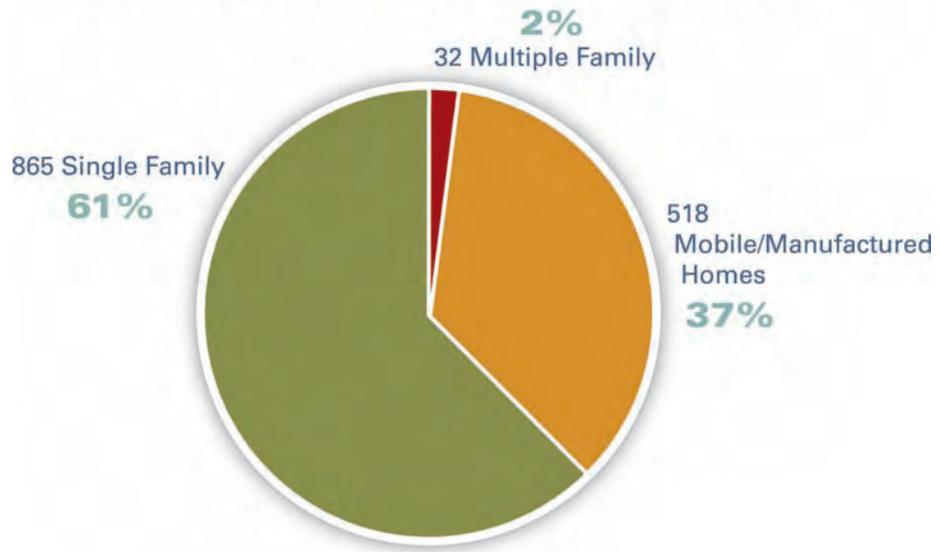
Various housing styles in Kachina Village.

mixed-use development

The development of a tract of land, building, or structure with a variety of complementary and integrated uses, such as, but not limited to, residential, office, manufacturing, retail, public, or entertainment, in a compact urban form.



Existing Housing Types in Kachina Village in 2007



The mix of residential zoning classifications reflects the intent of the original development concept to provide for different types of housing in different parts of the community. The areas restricted to *mobile, manufactured* or *modular homes* is the MHP (Manufactured Home Park) Zone, which applies to the mobile home park with rental spaces, as well as the subdivided manufactured home lots. Areas restricted to site-built or modular homes include the RS (Residential Single Family) and RR (Rural Residential) Zones. The AR (Agricultural Residential) Zone allows a mix of manufactured, modular, and site-built homes. Multiple family homes are allowed in the RM (Residential Multiple Family) Zone. See the zoning map for the specific locations of the various zoning classifications (Note: The numerical designation after the zoning classification indicates the minimum lot size).

The 2007 Community Survey results indicate a close split on whether or not any additional housing should be developed in Kachina Village with 38% of respondents in favor, 15% don't care, and 47% not in favor. Regarding preferences for different types of housing, most respondents clearly prefer single family homes, and just as clearly do not favor mobile homes, multiple-family homes, town homes, condominiums, or apartments. Regarding lot size in future housing developments, there was general support for lot sizes that are comparable to the existing lots in the community, i.e. about five lots per acre. A strong majority (80%) of respondents were in favor of zone changes in the mobile home area that would allow conventional home construction, i.e. site-built homes.

The MHP Zone allows mobile, manufactured, and modular homes, but not conventional site-built construction. On the one hand, this allows for consistency in neighborhood character and helps maintain the inventory of relatively affordable properties. On the other hand, some property owners in the MHP Zone would like to upgrade their homes or replace them with more substantial site-built homes. While certain upgrades and additions are possible in the MHP Zone, the construction of site-built homes is not possible without a change in zoning. The RMH (Residential Manufactured Home) Zone is a possible alternative as it allows both manufactured and site-built homes. Rezoning of individual lots, however, is not desirable in terms of maintaining consistency in neighborhood character, but in larger block areas where a majority of property owners are in favor of RMH Zoning, it may be appropriate.

mobile home

A dwelling unit built on a permanent chassis prior to June 1976, capable of being transported in one or more sections, and designed to be used with or without a permanent foundation.

manufactured home

A factory-manufactured dwelling unit built after June 1976 to standards established by the U.S. Department of Housing and Urban Development (referred to as the HUD Code).

modular home

Also known as a Factory Built Building (FBB), a dwelling unit preassembled in the factory and constructed under the International Residential Code (formerly Uniform Building Code), installed on a permanent foundation, and built with exterior materials customarily used on conventionally-constructed homes.

There are approximately 30 *legal nonconforming mobile homes* in the southwest portion of the community where the zoning restricts housing to site-built or modular homes. The nonconforming mobiles were established years ago before the current zoning was adopted. They can remain indefinitely, but any replacement with another manufactured unit would require a *Conditional Use Permit* approved by the Planning and Zoning Commission. The intent of the *Zoning Ordinance* is that nonconforming uses be phased out over time and replaced with permitted uses. The nonconforming mobiles are generally expected to be eliminated over time, and replaced with site-built homes, but there may be hardship situations, such as fire or other calamity, when replacement with another manufactured unit may be reasonable.

legal nonconforming mobile home

A mobile home that was legally established on property that is no longer zoned to allow mobile homes; sometimes referred to as a “grandfathered” mobile home.

RESIDENTIAL GOAL:

Ensure a range of housing alternatives for a diverse population.

RESIDENTIAL POLICIES:

- LU4.** New residential subdivisions shall include building lots that are comparable in size to the established development pattern of Kachina Village.
- LU5.** New multiple-family development shall be compatible with the scale of surrounding neighborhoods.
- LU6.** All new multiple-family development and expansion of existing multiple-family housing shall conform to the Kachina Village Design Review Overlay Zone.
- LU7.** Any future redevelopment of the existing mobile home park shall include full compliance with the property development standards of the MHP (Manufactured Home Park) Zone.
- LU8.** Rezoning from MHP to RMH (Residential Manufactured Home) may only be considered for block areas where a majority of property owners within the block favor such a change to allow mixed manufactured and site-built homes. Zone changes for individual lots shall not be approved. For purposes of this policy, a block is defined as an area consisting of multiple lots bounded by streets, adjacent zoning boundaries, natural features, or other physical characteristics that separate it from adjacent blocks or uses.
- LU9.** As legal nonconforming mobile homes in the RS (Residential Single Family) and RR (Rural Residential) Zones are phased out over time, they shall be replaced with site-built or modular homes except when extenuating circumstances exist to justify replacement with another manufactured unit through the Conditional Use Permit process.

SURVEY RESULTS

Are you in favor of any additional housing being developed in Kachina Village?

Yes: **38.1%**

No: **47.4%**

Neutral: **14.8%**

Housing Affordability

Housing affordability is one of the most challenging community development issues in the greater Flagstaff area. As the cost of housing escalates elsewhere in Flagstaff, it does so in Kachina Village as well. However, for many years Kachina Village has not only contributed to the inventory of affordable housing by providing a range of housing options suitable for residents of all economic levels, but has done so in a beautiful setting in a community with a wide range of amenities. Many residents who initially moved to Kachina Village for its affordability, choose to stay for the other positive benefits of living in an environment that is close to nature yet not far from employment, shopping, and other services available in the



Multiple-family rental housing.

city. The goal of this plan with respect to housing affordability is to maintain a mix of housing options to serve an economically-diverse population while encouraging new approaches that enhance housing opportunities for the underserved entry-level and workforce segments of the community.

The mix of housing types that contribute to affordability in Kachina Village include mobile home rental spaces; subdivided lots zoned for mobile, manufactured, and modular homes; duplex rental units; and single family homes available for rent or ownership. Approximately 28% of the subdivided lots in the community are located in the MHP (Manufactured Home Park) Zone, which allows mobile, manufactured, or modular homes only, and thereby contributes significantly to the inventory of affordable units. In the interest of maintain-

ing the inventory of affordable housing, it would not be desirable to rezone MHP properties to zoning classifications that do not allow manufactured homes. An alternative, however, for property owners in the MHP zone who wish to upgrade to site-built homes may be the RMH Zone, which allows a mix of site-built and manufactured homes (see further discussion of this option in the “Residential” subsection of this element on page 64). By maintaining a mix of residential zoning classifications that provide for different types of housing, Kachina Village will continue to provide relatively affordable alternatives in the Flagstaff housing market.

SURVEY RESULTS

Of the following housing types, rank your preference for future housing development in Kachina Village.

Apartments:
86.3% Low Preference;

Townhomes/Condominiums:
67.3% Low Preference;

Duplex/Triplex:
66.6% Low Preference;

Mobile Homes:
74.1% Low Preference;

Single Family, small lot (6,000 sq. ft.):
42.6% Moderate to High Preference;

Single Family, medium lot (1/8 to 1/4 acre):
61.7% Moderate to High Preference;

Single Family, large lot (>1/4 acre):
52.3% Moderate to High Preference.

Notwithstanding the range of housing options available in Kachina Village, affordability is still an elusive thing for many in the local workforce, especially lower-paid service workers who struggle to find affordable rent in Flagstaff let alone home ownership. There are several local government-sponsored programs, as well as non-profit organizations, designed to assist low- and moderate-income families and individuals with housing issues. The Northern Arizona Council of Governments (NACOG), and Coconino County Community Services Department, along with the local affiliate of Habitat for Humanity and the affordable housing non-profit Bothands, provide housing assistance in various forms.

One recent trend that can negatively affect housing affordability is sometimes referred to as “mansionization” or the building of large over-sized homes that are out of scale with the character of established neighborhoods. This is sometimes accomplished by tearing down older small or modest-sized homes to make room for a new “McMansion,” which is often an absentee owner’s vacation home. This kind of development changes the character of established neighborhoods and can make them less desirable and less affordable for local residents. Kachina Village has experienced only a limited amount of this type of building, but the potential exists for more. Under existing regulations, the strict enforcement of required building setbacks, height limits, and lot coverage provides some level of control, but does not entirely prevent mansionization.

At the other end of the spectrum from mansionization, is the concept of small cottage-type residential units. Smaller cottage homes have several obvious advantages related to affordability, as well as environmental sustainability. With a smaller building footprint, less land is consumed per unit; fewer building materials are utilized in construction; less energy is required for heating and cooling; and less effort is required for ongoing maintenance. Sustainable building elements such as appropriate building orientation, solar design, energy-efficient appliances and lighting, water conservation measures, proper ventilation

and air-flow, sustainable building materials, recycled materials, and innovative building designs enhance affordability by reducing operations and maintenance costs of the home over time. Although contrary to recent trends for ever-larger homes, there is clearly an unmet need and a market for smaller, more affordable homes, and such designs would be compatible with historical usage and development patterns in Kachina Village.

Other approaches to enhancing housing affordability could include accessory dwelling units such as living quarters over garages or other outbuildings, or mixing residential with commercial by allowing living quarters above commercial buildings or offices. Some accessory living quarters are already allowed—subject to certain restrictions—in all residential zones for family members or guests, but are not allowed as separate rental units. Amending the *Zoning Ordinance* to allow accessory rental units in single-family residential zones could help provide additional affordable housing inventory, but would have to be considered carefully with respect to potential impacts to existing neighborhood character. Mixed residential and commercial is not possible on the existing commercially-zoned property in Kachina Village (except in very limited circumstances), but a *Zoning Ordinance* amendment may be possible to accommodate an appropriate mix of residential and neighborhood-oriented commercial uses that would be compatible with surrounding neighborhood character.

HOUSING AFFORDABILITY GOAL:

Maintain and enhance the inventory of affordable housing stock of various types integrated throughout the community.

HOUSING AFFORDABILITY POLICIES:

- LU10.** Proposed development that includes an affordable housing component is encouraged and shall receive favorable consideration.
- LU11.** Zone changes that would have the effect of reducing the inventory of affordable housing stock shall generally not be approved; for example, the rezoning of properties in the MHP (Manufactured Home Park) Zone to the RS (Residential Single Family) Zone shall not be approved.
- LU12.** Development projects that include small, efficient, and environmentally-sustainable cottage-type residential units are encouraged.
- LU13.** Appropriate Zoning Ordinance amendments to allow for accessory rental units and mixed residential/commercial uses may be considered provided that such provisions maintain or enhance neighborhood character.

Commercial and Industrial

There is approximately 3.75 acres of commercially-zoned land located on Kachina Boulevard at the entrance to the community. Existing commercial uses include the Pic-N-Run convenience market and the Village Land Shoppe real estate office. The convenience market occupies 0.64 acres on the south side of Kachina Boulevard, and has been serving the community since 1987. The real estate office occupies 0.5 acres, and has had a presence in the community for many years, but has been at its location on Kachina Trail since 2000. Approximately 2.6 acres of commercially-zoned land on the north side of Kachina Boulevard adjacent to Raymond Park is vacant, and has been on the market for more than a decade—a commercial project was approved for this site in 1987, including a second convenience market, a laundry, and a day care facility, but it was never built.

In 1997, when the *Kachina Village Area Plan* (KVAP) was adopted, there was approximately eight acres of additional commercially-zoned land north of Raymond Park with frontage on both Kachina and Tovar Trails. In 1999, most of that property (6.45 acres) was re-zoned to multiple-family zoning at the request of the property owner for the purpose of building nine duplex rental units. Prior to construction of the housing project, however, the property was purchased by the County for expansion of Raymond Park and thus removed from the inventory of developable private land.



Pic N Run convenience market.

The 2007 Community Survey revealed that a large majority of respondents (86%) support policies that limit future commercial development to neighborhood-oriented businesses that provide goods or services that benefit local residents. When asked what kind of commercial uses would be appropriate, a restaurant or coffee shop was mentioned most frequently—other frequently-mentioned uses included a grocery, laundry, day care facility, and car wash. Approximately 84% of respondents feel that highway-oriented or tourist-oriented commercial businesses are not appropriate in Kachina Village, and 86% feel there is no need for any additional commercially-zoned land beyond what currently exists.

While it is important to recognize that residents are strongly in favor of neighborhood-oriented businesses, it is also important to recognize the economic reality that some types of businesses may require a certain amount of highway traffic to remain viable while also providing valuable services to the local community. The existing convenience market is an example of a business that serves highway traffic, as well as local residents. Other potential businesses such as a restaurant—which would be highly favored by residents—would also serve customers from outside the immediate community while being consistent with the desires of residents. By contrast, a strictly highway-oriented business such as a hotel would not be consistent with the expressed desires of the community and therefore not appropriate.

Certain types of commercial uses may be established in residential zones, including home-based businesses, small-scale bed-and-breakfasts, feed stores, kennels, and recreational facilities. Most of these types of commercial uses are subject to Conditional Use Permits, and they typically require large-lot residential zoning of one acre or more. Two categories of home-based businesses include “home occupations” and “cottage industries.” Home occupations are operated out of a home office, do not involve customer traffic to the home, and do not involve any outside employees—they are permitted in any residential zone subject to certain guidelines. Cottage industries are slightly more intensive home-based businesses that can be conducted in a separate accessory building or workshop, may include limited customer traffic, and may involve up to three outside employees—cottage industries are subject to approval of a Conditional Use Permit, and are only possible under large-lot zoning.

There are quite a few home occupations located in Kachina Village, which due to the nature of home occupations, are generally not apparent to neighbors or the casual observer. There have only been two cottage industries approved, one for a catering business, and one for a retreat center offering pre-hospice education for families and caregivers who learn coping skills relative to end-of-life issues. Home-based businesses, whether home occupation or

SURVEY RESULTS

What kind of commercial uses do you think would be appropriate in Kachina Village?

- Most frequently mentioned:
1. Restaurant or café
 2. Grocery or market

SURVEY RESULTS

Should future commercial development be limited to neighborhood-oriented businesses that provide goods or services beneficial to local residents?

Yes: **86.4%**

SURVEY RESULTS

Would highway-oriented or tourist-oriented businesses be appropriate?

No: **86.5%**

cottage industry, clearly serve a beneficial purpose for the business owner, and as long as they do not negatively affect the surrounding neighborhood can be appropriate under the right circumstances.

There are no industrial uses or industrial zoning in Kachina Village. Industrial uses are generally not compatible with the predominantly residential character of the community, and would be more appropriately located in designated industrial parks or in the city where more adequate support services, public utilities, and infrastructure exist to support such use.

COMMERCIAL GOAL:

Ensure commercial development that is appropriately located and primarily designed to serve the local community.

COMMERCIAL POLICIES:

- LU14.** Commercial development shall be limited to community-oriented businesses that primarily provide goods or services beneficial to local residents. Exclusively high-way-oriented, tourist-oriented, and regional-oriented businesses are generally not appropriate.
- LU15.** Commercial development shall include adequate buffers between the proposed use and adjacent residential properties and/or adjacent public facilities.
- LU16.** Commercial development shall include appropriate connectivity to roadways, bike paths, pedestrian systems, public parks, and other facilities.
- LU17.** Commercial uses shall conform to the Kachina Village Design Review Overlay Zone.
- LU18.** Commercial development shall be located in the vicinity of the activity center at the junction of Kachina Boulevard, Kachina Trail, and Tovar Trail.
- LU19.** Commercial development shall adopt and maintain recycling programs and shall make every effort to eliminate escaped trash and litter from their property and the lands adjacent to their property.
- LU20.** The County shall continue to support home occupations, cottage industries, and other home-based businesses that do not intrude on the residential character of neighborhoods.
- LU21.** Industrial development and industrial zoning shall not be approved in the planning area.

Public Facilities

Existing public facilities (referred to in the *Zoning Ordinance* as “public and semi-public uses”) include Raymond Park, Pumphouse Greenway, two fire stations, various Kachina Village Utility installations, an APS substation, a Qwest telephone switching facility, and a wireless telecommunications tower. All such uses are subject to Conditional Use Permits, which require approval by the Planning and Zoning Commission through a public hearing process. Public facilities should be designed to be compatible with the character of existing neighborhoods and should include appropriate mitigation measures to minimize possible negative impacts. The Planning and Zoning Commission determines the appropriateness of proposed public uses at any given site on a case-by-case basis, and the Design Review Overlay Zone helps to ensure compatibility with the surrounding neighborhood.

SURVEY RESULTS

Is there a need for additional commercially-zoned land in Kachina Village?

No: **86.5%**



Kachina Village Utilities (top); APS substation and telecommunications tower (above).



Common zoning violations include junk vehicles and property maintenance issues.

Class 2 misdemeanor

A criminal offense for which the penalties may not exceed four months in jail and/or a fine of \$750.00.

SURVEY RESULTS

How do you feel about the level of zoning enforcement currently provided?

- Positive: **34.5%**
- Neutral: **37%**
- Negative: **28.4%**

PUBLIC FACILITIES GOAL:

Ensure that public facilities are designed to support local needs and are compatible with the character of established neighborhoods.

PUBLIC FACILITIES POLICIES:

LU22. Proposed public facilities shall conform to the Kachina Village Design Review Overlay Zone, and shall include adequate landscaping, buffering, and other appropriate mitigation measures designed to minimize impacts on surrounding neighborhoods.

Zoning Enforcement

The provisions of the *Coconino County Zoning Ordinance* are intended to help implement the goals, objectives, and policies of the *County Comprehensive Plan* and local area plans. The *Zoning Ordinance* is also intended to promote and protect the public health, safety, and welfare, and to safeguard and enhance the appearance and quality of development in the County. It is unlawful to establish any land use in violation of the provisions of the Ordinance, and a violation is a ***Class 2 misdemeanor***. Code Enforcement Officers are responsible for investigating alleged zoning violations and administering the enforcement provisions of the Ordinance. With limited staff, however, enforcement action is typically prioritized based on complaints. In addition to complaints, the Code Enforcement Officers also pursue obvious violations, particularly if they entail serious threats to public health and safety.

In Kachina Village, the most common violations include excessive outdoor storage of miscellaneous materials and inoperable vehicles, auto repair and other businesses conducted in residential zones, and temporary occupancy of travel trailers. The goal of the enforcement process is not punitive, but simply to achieve compliance, and by doing so, to protect the public health and safety, and preserve or improve neighborhood character. County staff provides property owners abundant opportunities to resolve violations cooperatively before pursuing more coercive remedies through a hearing process. In worst-case situations where the responsible party fails to take remedial action, the case can be referred to Superior Court and substantial fines and penalties may be applied.

ZONING ENFORCEMENT GOAL:

Achieve compliance with the provisions of the *Coconino County Zoning Ordinance* to protect the public health, safety, and welfare of residents, to improve the appearance of the community, and to enhance property values throughout the community.

ZONING ENFORCEMENT POLICIES:

LU23. All provisions of the *Zoning Ordinance*, particularly with respect to illegal businesses in residential areas and outdoor storage issues, shall be rigorously enforced, both as a response to complaints and on the proactive initiative of code enforcement staff.



Future Growth

Introduction

Planning for appropriate future growth is essential to achieving our goals of preserving and enhancing the established character of Kachina Village while protecting the natural environment in which the community is situated. The *Flagstaff Regional Plan* established **Rural Growth Boundaries** around Kachina Village identifying it as an area suitable for rural development under the existing low density County zoning. Although generally anticipating development under existing zoning, the *Regional Plan* also includes provisions for rezoning to higher densities where adequate infrastructure exists, including utilities and emergency services, and where such development is consistent with local area plans and will result in minimal impacts.

Vision and Purpose

As Kachina Village continues to grow and evolve over time, there is limited opportunity for new development and more emphasis on infill and redevelopment. Where vacant developable land exists, we envision a limited amount of growth consistent with the character

Rural Growth Boundary

The line on a map that is used to mark lands in unincorporated areas of the county that are suitable for rural development, as well as lands to be preserved as open lands (per the *Flagstaff Area Regional Land Use and Transportation Plan*).



Vacant developable land is limited.

infill

The development of new housing or other structures on scattered vacant sites within built-up areas.

redevelopment

The reconstruction, conversion, or alteration of previously developed land or structures for new, upgraded, or different purposes.

infrastructure

Facilities and services needed to sustain industry, residential, commercial, and all other land use activities; includes water, sewer, utilities, streets, communications, and public facilities such as fire protection, parks, schools, and such.

integrated conservation design

A development concept that considers site characteristics and layout in the larger context of surrounding parcels, and preserves important natural features such as open space, viewsheds, scenic corridors, and wildlife habitat.

of the existing community. Any new neighborhoods are an extension of the existing development pattern with similar lot sizes and designed with family occupancy in mind. As *infill* and *redevelopment* of individual properties occurs, new construction enhances and revitalizes established neighborhoods while maintaining their positive qualities. Long-time residents and newcomers alike share the expectation that surrounding national forest lands will remain public for the indefinite future. Adequate levels of *infrastructure* and services are provided to support new development without added costs or a diminished level of service to existing residents. *Integrated conservation design* is the preferred approach to new development, and *environmentally-sustainable building elements* are routinely incorporated into all new development and redevelopment projects.

Existing Land Availability

Future growth in Kachina Village is limited by the lack of available land—there simply is not much undeveloped private land available for further development. The “Existing Land Use” map on page 62 shows the status of existing land uses as of 2007. The only vacant property of any substantial size available for new development is 40 acres of land located generally northeast of the developed areas of Kachina Village. The property is bounded by national forest land to the north, Interstate 17 to the east, the mobile home park and individual manufactured home lots to the south, and Forest Highlands’ utility compound to the west. The KVID constructed wetlands are located northwest of the 40 acres. The property is heavily forested with ponderosa pine, and is situated on a broad upland plateau of rolling terrain that continues to the northwest. There is a drainage running from north to south through the central portion of the property, and some prominent basalt outcrops and several natural springs and wetlands located on the southeastern tail of the property that connects to Tovar Trail.

The 40 acres is currently located in the General Zone, which requires a 10-acre minimum lot size. Therefore, a rezoning would be required to develop the property at any greater density. Most of the property does not have any major physical constraints (with the possible exception of the drainage) that would preclude its development at a density comparable to the rest of Kachina Village. However, the rock outcrops, springs, and wetlands located on the portion of the property that connects to Tovar Trail present some significant challenges related to access. Goals and policies in the “Natural Environment” element and elsewhere in this plan, call for the preservation of environmentally-sensitive lands and other natural features to the greatest extent possible. Access to any proposed development of the 40 acres would need to avoid any significant impacts to those prominent features in order to be consistent with the overall direction of the goals and policies of this plan.

Except for the 40 acres of undeveloped land, by the end of 2007 there were not many properties available to accommodate additional growth. There are approximately 36 vacant residential lots scattered throughout the community. There are three parcels in the RM-10/A Zone, which could accommodate a relatively small amount of multiple family development—two of the RM parcels are approximately one half acre each, and the third

is 1.8 acres. There is 2.6 acres in the CG-10,000 Zone, which could be developed for commercial uses. Otherwise, there is only one additional vacant parcel of 0.93 acres in the General Zone, which was formerly occupied by a church, but is zoned for residential use—it would accommodate a single residential unit under existing zoning, and would require a rezoning for any greater density.

EXISTING LAND AVAILABILITY GOAL:

Provide for appropriate growth consistent with the scale and character of existing development patterns while preserving open space and the natural landscape.

EXISTING LAND AVAILABILITY POLICY:

FG1. Any proposed development that differs from the land use designation contained in the *Flagstaff Area Regional Land Use and Transportation Plan* shall require a Regional Plan amendment and may be approved only if supported by applicable policies contained in the *Kachina Village Area Plan*, the *Coconino County Comprehensive Plan*, and the *Flagstaff Regional Plan*.

Infill and Redevelopment

Infill is the development of new housing or other uses on vacant properties within established communities. Redevelopment of run-down or blighted properties combined with infill development can be an opportunity to accommodate growth while avoiding additional sprawl. Significant efficiencies can be achieved by infill and redevelopment compared to other forms of growth. For example, in most cases of infill and redevelopment, utilities and streets are already available and therefore major investment in new infrastructure is not necessary. Also, by containing growth within the existing “footprint” of the established community, sprawl into previously undeveloped areas is avoided. Redevelopment of run-down or obsolete properties has the added advantage of revitalizing neighborhoods and improving property values in the vicinity.

There is some opportunity for both infill and redevelopment in Kachina Village. The availability of vacant properties scattered throughout the community has been discussed in the previous section. In addition to the relatively small number of vacant properties, there are a few properties currently developed with duplex rental units that may be able to accommodate a few more similar units. There are also some relatively large single family residential lots where property owners have expressed an interest in splitting off a portion of their property to create new building sites. Any such development, whether it involves expansion of existing housing units or the creation of new building sites, should be evaluated case-by-case for compatibility with the surrounding neighborhood. It is most important that any infill development maintains the scale and character of the established neighborhood and does not create any great disparities. Likewise, *spot zoning* of individual parcels that is not consistent with surrounding land uses is not desirable and generally shall not be approved.

There are some residential and a few quasi-commercial properties where redevelopment would be beneficial to the greater community. Some individual residential properties that were developed in the early years of the community are becoming run-down and substandard by today’s standards. Some of those properties are occupied by older mobile homes or even travel trailers that would not be allowed under current codes. Many of these residential units are being replaced as the property changes ownership or existing owners desire

environmentally-sustainable building elements

Building materials and techniques that minimize the use of nonrenewable natural resources, conserve energy and water, and result in lower costs of operations and maintenance over time.



Some properties present opportunities for redevelopment.

spot zoning

Rezoning of an individual lot or parcel of land for a use that is incompatible with surrounding land uses; that conveys a special privilege to the individual property owner; that is not in the public interest; and that is not in accord with a comprehensive plan.

SURVEY RESULTS

What level of infill development would you support in Kachina Village?

High Density Multiple Family:
86.7% Low Preference;

Medium Density Multiple Family:
62.9% Low Preference;

Small Lot Single Family:
39.2% High Preference.

to upgrade. A couple of quasi-commercial properties, such as the storage of materials and equipment for a commercial bee-keeping operation, and a couple contractors' yards, could be redeveloped for uses more compatible with their neighborhoods. The mobile home park is another possible candidate for redevelopment that could prove beneficial to the community. Like infill, it is important that any redevelopment maintain the scale and character of established neighborhoods. It is also important to maintain the existing diversity and mix of housing options available for all segments of the population.

INFILL AND REDEVELOPMENT GOAL:

Promote infill and redevelopment projects as preferred methods of accommodating future growth while revitalizing established neighborhoods and containing sprawl.

INFILL AND REDEVELOPMENT POLICIES:

- FG2.** Infill and redevelopment shall be compatible with the scale and character of surrounding neighborhoods.
- FG3.** Spot zoning of individual parcels that is not consistent or compatible with surrounding land uses shall not be approved.
- FG4.** Redevelopment of the mobile home park for other forms of residential use shall emphasize workforce housing and housing affordability.



Maintaining access to national forest land is important to residents.

National Forest Land Exchanges

There is approximately four square miles of national forest land within the boundaries of the planning area (see planning area map on page vii). National forest land is subject to land exchanges that can result in public land being conveyed to private ownership and thereby being made available for development. In general, isolated or scattered tracts of forest lands within or adjacent to existing communities are usually the most likely candidates for exchange in order to improve the efficiency of Forest Service land management and to accommodate expanding communities. Large contiguous tracts of land, and land with high-value natural resources are less likely to be considered for exchange.

The *Coconino National Forest Plan* adopted in 1987 identified approximately 400 acres immediately west of Kachina Village as available for exchange (portions of Sections 24 and 25, T20N, R6E). Since then, however, the

U.S. Forest Service has been a collaborator with Coconino County and the City of Flagstaff in developing the *Flagstaff Area Open Spaces and Greenways Plan (OS&GW Plan, 1998)* and the *Flagstaff Regional Plan (2001)*. The Forest Service has committed to using these more recent planning documents as a guide for land exchanges.

The *OS&GW Plan* identifies all national forest land in the Kachina Village planning area as “high priority for retention” as public land, and thus not available for exchange, except for approximately 80 acres in the SE quarter of Section 24 identified as “low priority for retention.” The 80 acres is immediately south of Forest Highlands and west of Kachina Village and contiguous with Pumphouse Wash. The *Kachina Village Area Plan* proposes that the

80 acres has higher value as public land than was recognized when the 1998 *OS&GW Plan* was adopted, and should be reclassified as “high priority for retention.” The area was included in the U.S. Forest Service’s Kachina Village Forest Health Project in 2003, and subsequently was subject to forest restoration treatments of thinning and prescribed burning to restore more natural conditions. The area is bounded by habitat-rich riparian areas on three sides including the primary drainage of Pumphouse Wash and two tributary drainages. It has high environmental and habitat values, as well as great value to neighboring residents for recreation and natural open space. Its environmental and social values make the area highly inappropriate for exchange to private ownership.

Approximately 200 acres of national forest land at the north end of the planning area in Section 17, T20N, R7E, is identified in the *OS&GW Plan* as “high priority for retention.” Some of the attributes that were identified as reasons for retention as public land include its function as a scenic buffer for the I-17 corridor between Kachina Village and the Fort Tuthill/Pulliam Airport area, the presence of an important drainage, neighborhood recreational use, and a planned trail corridor. The *Kachina Village Area Plan* concurs with the rationale contained in the *OS&GW Plan* that the area north of the community should remain as public open space. All national forest lands in the planning area contain important attributes that provide higher value to the public-at-large by remaining public and therefore should be classified as “high priority for retention.”

NATIONAL FOREST LAND EXCHANGE GOAL:

Retain as public land all national forest lands within the Kachina Village planning area.

NATIONAL FOREST LAND EXCHANGE POLICIES:

- FG5.** The County does not support national forest land exchanges in the Kachina Village planning area.
- FG6.** The *Flagstaff Area Open Spaces and Greenways Plan* should be amended to reclassify the national forest land in Section 24, T20N, R6E as “high priority for retention” and all other national forest lands in the planning area shall remain classified as such.
- FG7.** The U.S. Forest Service is strongly encouraged to engage the local community and consider their input in evaluating any proposed land exchanges at the earliest opportunity.

Infrastructure and Service Capacity

In the 1997 *Kachina Village Area Plan*, the capacity of the community water and wastewater systems was identified as a possible constraint to future development. At the time, the capacity of the utilities to support additional development beyond the number of connections already allocated was not known. Since then, a capacity study has determined that the systems could serve about 200 additional connections, which would accommodate all of the undeveloped properties if developed under the existing zoning, and could accommodate some rezoning to higher densities. There have been no capacity issues or constraints identified with respect to the other utilities’ ability to serve future development in Kachina Village—electric service, natural gas, telephone, and cable TV are available with sufficient capacity to serve anticipated growth within the community.

SURVEY RESULTS

What level of importance would you rate National Forest land exchanges in the areas around Kachina Village?

Important to Very Important:
66.6%



KVID has enough capacity to serve approximately 200 additional homes.

Highlands Fire District (HFD) provides fire and emergency medical services to Kachina Village and would serve any future growth in the community. HFD has adopted a *Strategic Plan* to identify immediate and future needs, to plan for appropriate staffing, to identify adequate levels of service, and to anticipate budgetary goals. The HFD *Strategic Plan* is reviewed and updated annually, and can be amended as necessary to react to changing conditions. As future growth occurs in the Kachina Village planning area, HFD will adjust its operations as necessary to provide emergency services to new development, as well as the existing community.

INFRASTRUCTURE AND SERVICE CAPACITY GOAL:

Ensure an adequate level of public services and infrastructure exists or will be provided to support new development proposals.

INFRASTRUCTURE AND SERVICE CAPACITY POLICY:

FG8. It shall be the responsibility of the developer or applicant to demonstrate that an adequate level of services and infrastructure exists or will be provided by the developer to support the proposed development.

Integrated Conservation Design



Meadows and wetlands support wildlife habitat while building lots are located in less sensitive areas.

Integrated conservation design is a conservation-based approach to development advocated by the *Coconino County Comprehensive Plan*. It is an approach to development that protects environmentally-sensitive lands while offering more flexible options than the conventional grid-like subdivision pattern. In conventional subdivision design, developers and engineers typically begin the design process by laying out roadways and lot lines with only the most basic consideration given to the character of the landscape. In contrast, integrated conservation design begins with the identification of environmentally-sensitive features that warrant protection, such as springs, wetlands, steep slopes, and wildlife habitat. Those sensitive features are set aside for protection or to be incorporated into public common

areas to be enjoyed by all residents. Next, suitable road alignments are determined in relation to the physical character of the land, and finally, lot lines are laid out on the remaining buildable portions of the property.

In Kachina Village, most of the large parcels of environmentally-sensitive land have been acquired by the County and incorporated into the Pumphouse Greenway system as permanently protected public open space. The only large parcel of private land subject to development where conservation design could be applied is the 40 acres of undeveloped land north of the mobile home park. It has several environmentally-sensitive features worthy of protection, including natural springs and wetlands, slopes, and prominent basalt rock outcrops. Virtually all of these features are confined to a limited portion of the property with the exception of a drainage that runs through the main part of the property. The most challenging aspect of the 40 acres is that the sensitive features are generally clustered on the portion of the property required for access to the more buildable portion. Creating adequate access and protecting the natural features could be a difficult challenge.

In the unlikely event that any national forest land in the planning area is conveyed to private ownership in the future, conservation design would most likely be appropriate there as well.

INTEGRATED CONSERVATION DESIGN GOAL:

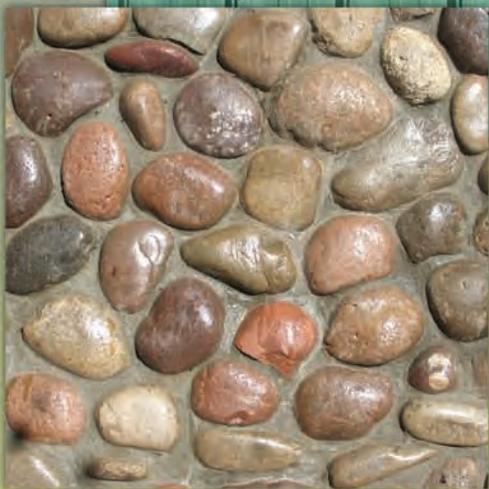
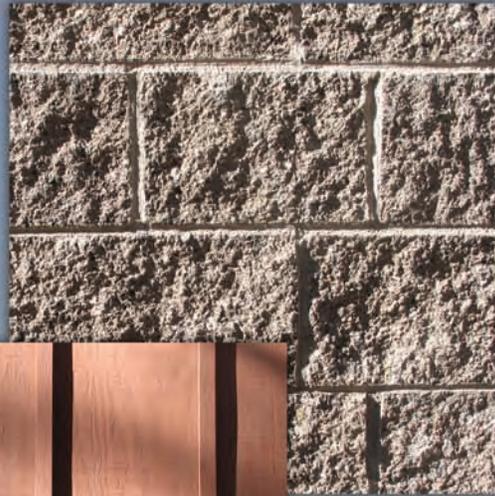
Promote integrated conservation design as the preferred approach for development of property that includes environmentally-sensitive lands and prominent landscape features.

INTEGRATED CONSERVATION DESIGN POLICY:

FG9. Developments that include environmentally-sensitive lands and/or prominent natural landscape features shall utilize integrated conservation design concepts to ensure their preservation and protection.



NOTE: Pursuant to Section 13.10 of the *Coconino County Zoning Ordinance*, a Design Review Overlay (DRO) Zone is established for Kachina Village to protect and enhance the visual quality of the community. The following Design Guidelines DO NOT apply to Single Family Residential properties—they DO apply to all Commercial, Multiple Family Residential, and Public Facilities. A public hearing is required before the Coconino County Planning and Zoning Commission for all uses subject to the Design Review Overlay Zone.



Design Review Overlay Zone

Purpose

In order to protect and enhance the visual and aesthetic qualities of Kachina Village, consistent with the goals of this plan and with the desires of the community, a Design Review Overlay Zone is established for all new multiple family, commercial, industrial, and public or semi-public uses within the study area. Design review guidelines are established to ensure that such development is architecturally and aesthetically compatible with the natural forest environment that characterizes Kachina Village. The design guidelines are intended to integrate the built environment with the natural terrain and landscape, and to ensure a visually harmonious and aesthetically pleasing community.

While recognizing that preservation of the natural forest environment is important for maintaining the established character of the community, it is also important to emphasize that preservation of the forest environment does not preclude tree removal or other vegetation treatments that may be necessary for the improvement of forest health and the reduction of wildfire hazards. These design guidelines are intended to allow for appropriate vegetation management, including tree removal where necessary, as long as it is done in a manner that promotes forest health and fire risk reduction while maintaining community character.

The design guidelines are not intended to dictate a single architectural style for Kachina Village, but to provide a direction for creative design consistent with the natural forest and mountain environment in which the community is situated. The guidelines do not apply to single family residential construction. However, by identifying certain unifying design principles that characterize Kachina Village, and applying those principles to future multiple family, commercial, and public facilities, the visual and physical identity of the community will be preserved and enhanced.

The architectural design theme of the first buildings planned by the developers of Kachina Village could perhaps be described as “rustic mountain contemporary.” Subsequent construction by builders and homeowners included a variety of architectural styles ranging from simple rustic vacation cabins to more sophisticated contemporary designs, as well as common suburban ranch styles and others. In spite of the wide variety of residential styles, however, there are a number of common design elements that tend to characterize the community and relate to its forest setting. Some common elements include the generous use of natural building materials such as logs, wood and native rock. Coloring and building finishes, for the most part, tend to be muted and natural earth-tone colors that reflect the colors found in the natural vegetation, rocks and soils in the area.

Requiring such design elements for new multiple family, commercial, and public facilities will help to integrate those uses into the community and into the natural setting in a manner that blends with and enhances existing neighborhood character. In addition, by incorporating Firewise principles into architectural design and site planning, fire risk will be reduced and the community will be better able to cope with a fire-prone environment. And finally, strict application of outdoor lighting regulations will help to preserve the outstanding dark star-filled skies above the community while conserving energy, preventing light trespass, and providing for public safety.

ARCHITECTURAL STYLE

- DR1.** Architectural style shall be consistent with the rural forest environment of Kachina Village. Modernist, urban-oriented or whimsical designs that have no relationship to the established character of the community shall not be approved.
- DR2.** The scale and mass of buildings shall be in balance with natural features of the landscape, and shall not dominate the natural setting.
- DR3.** Architectural features which serve to reduce the apparent mass of a building may be employed, such as telescoping gable ends, variations in roof forms, and the use of dormers and *clerestories* (a windowed wall that rises above the roofed section of a building).
- DR4.** Existing vegetation and landforms shall be incorporated into architectural design strategies.
- DR5.** Some types of uses, such as multiple family housing, may require the clustering of smaller buildings rather than a single massive structure in order to maintain a compatible scale with the surrounding neighborhood.
- DR6.** Projects comprised of multiple buildings shall employ creative site planning techniques, such as offset or staggered building footprints, to avoid a barracks-like symmetrical appearance.
- DR7.** Maximum building height shall be 35 feet and two stories.
- DR8.** Firewise design principles shall be applied to architectural design, the siting of structures, landscaping, and other site improvements.



MATERIALS AND COLORS



- DR9.** Building materials and colors that blend with the natural environment should be emphasized.

- DR10.** Natural materials such as wood, logs and native rock are recommended for integrating structures into the forest setting. High-quality natural-appearing synthetic materials or manufactured materials such as synthetic rock, split-faced block, log siding, concrete tile shingles, and other such materials are acceptable alternatives if it can be demonstrated that the proposed application would result in an appearance consistent with these guidelines.

- DR11.** Heavily textured materials or design elements that create shadow patterns are encouraged. Lap siding, board and batten, and rough-sawn wood siding materials create visually interesting shadow patterns and textures consistent with rustic design principles.

- DR12.** Architectural color schemes shall be consistent with the earth-tone palette of the natural landscape. Muted, natural tones should be emphasized. The use of predominantly glossy, bright or “unnatural” colors that contrast with the surrounding environment shall not be approved.

- DR13.** Roofing materials shall meet the same color requirements as the rest of the building, and bright, highly reflective roofing shall not be permitted.

- DR14.** Fire resistant or non-combustible building materials shall be incorporated into all projects to the greatest extent possible.

SITE DESIGN

- DR15.** Development shall be designed to fit the natural existing landforms as much as possible without resorting to radical grading, terracing, filling or other alteration of existing terrain. Where cuts and fills are required, they shall be landscaped or otherwise treated to blend with adjacent natural terrain to the greatest extent possible.
- DR16.** Preservation of existing trees and vegetation is encouraged to the greatest extent possible consistent with forest health and fire risk reduction. Site plans shall indicate all existing trees and plant material that will be retained, as well as existing trees that will be removed.
- DR17.** Detailed landscape plans shall be required for Planning and Zoning Commission review for all DRO applications. Landscaping shall emphasize xeriscape techniques using indigenous plant species and similar species adapted to the local environment. Exotic plants that could escape to the surrounding area and displace native vegetation shall be prohibited.
- DR18.** All required landscaping shall include a mix of landscape materials including a variety of plant materials, sizes and types, as well as hardscape materials such as crushed rock, boulders, fencing, etc., designed to blend with native materials. All landscaping shall be provided with a low-flow irrigation system sufficient to establish and maintain plants in a healthy condition. The use of gray water and/or treated effluent for landscape irrigation is strongly encouraged.
- DR19.** In addition to required street frontage landscaping, all parking lots shall include additional landscaping around the periphery and interior of the lot in order to break up impermeable surface coverage. This may include landscaped islands within the lot and the clustering of parking spaces rather than long expanses of pavement which results in an urban appearance.
- DR20.** All mechanical equipment, utilities, dumpsters, storage containers or structures, and service areas shall be screened from view with walls, fences, or landscaping consistent with the architectural and landscaping requirements of these guidelines. All utilities shall be underground.
- DR21.** Adequate buffering shall be provided between uses subject to these design guidelines and adjacent single family residential development. Such buffering may consist of landscaped berms, fencing or other methods approved by the Planning and Zoning Commission.
- DR22.** All undeveloped site area shall be maintained in a natural condition or landscaped in a manner that complements the natural surroundings.
- DR23.** Clearly delineated pedestrian pathways and bike paths shall be incorporated into site design where appropriate.



SIGNS



- DR24.** All provisions of Section 16, *Signs (Coconino County Zoning Ordinance)* shall be applicable except as modified herein.
- DR25.** Signs shall be subject to the same requirements of design, materials and colors specified above. A detailed sign plan shall be submitted for Planning and Zoning Commission review for all DRO applications.
- DR26.** Signs shall not be attached to or painted on natural objects such as trees and rocks.
- DR27.** Lighted signs shall be internally-illuminated, except that signage constructed of natural materials may be lighted with fully-shielded, downward-directed fixtures. Internally-illuminated signs shall be designed with an opaque background and translucent letters and symbols. Lighted signs shall not remain lighted after normal business hours or after 10 p.m. for a non-business use.
- DR28.** Internally-illuminated canopy signs shall include the entire illuminated portion of the canopy in the sign size calculations.
- DR29.** Temporary banners and other temporary or portable signage shall not be permitted except for real estate “open house” signs identifying property which is for sale or lease.
- DR30.** Low profile signage shall be encouraged. Variances for sign height, area, or number shall generally not be approved.
- DR31.** The base of freestanding signs shall be located in a planter box or landscaped area.

LIGHTING

- DR32.** All outdoor lighting provisions of Section 17, *Lighting (Coconino County Zoning Ordinance)* shall be applicable except as modified herein.
- DR33.** All outdoor lighting in the study area shall conform to the requirements of Lighting Zone 2, as specified in Section 17. A detailed lighting plan shall be submitted for Planning and Zoning Commission review for all DRO applications.
- DR34.** All light poles and fixtures shall be compatible with the architectural style of the development consistent with these design guidelines.
- DR35.** Light poles shall be in scale with the surrounding landscape and development, but shall not exceed 15 feet in height.
- DR36.** All light fixtures shall be fully-shielded and directed so that direct illumination is contained on-site.
- DR37.** All outdoor lighting for uses subject to these design guidelines shall not remain lighted after normal business hours or after 10 p.m. for a non-business use unless specifically approved otherwise by the Planning and Zoning Commission.





Glossary

100-Year Flood: A flood that has a one percent chance of being equaled or exceeded in any given year.

ADEQ: The Arizona Department of Environmental Quality is the state agency with regulatory responsibility for air and water quality, as well as for the storage, treatment, and disposal of solid and hazardous waste.

Active Recreation: A type of recreation that requires areas and facilities for activities such as softball, baseball, football, soccer, golf, tennis, basketball, and various forms of children's play. *See also:* Passive Recreation.

Best Management Practices (BMP): State-of-the-art technology as applied to a specific problem.

Biological Control Mechanism: A method of controlling pests by means of introduced or naturally-occurring predatory organisms, sterilization or the use of inhibiting hormones, or similar methods rather than by mechanical or chemical means.

Class 2 Misdemeanor: A criminal offense for which the penalties may not exceed four months in jail and/or a fine of \$750.00.

Clean Stream Program: A public education and outreach initiative promoting Coconino County's Stormwater Management Program to prevent pollution of lakes, streams, and rivers.

Clerestory: A windowed wall that rises above the roofed section of a building.

Cluster Development: A development design technique that concentrates buildings on a part of the site to allow the remaining land to be used for recreation, common open space, and preservation of environmentally-sensitive features.

Conditional Use Permit (CUP): A permit issued by the Planning and Zoning Commission for a use that is allowed within a zoning district after a public hearing. Approval is at the discretion of the Commission based upon certain findings of fact, and conditions are typically applied to the operation of the use.

Conservation Easement: A legal property interest or right granted by the landowner to another party to maintain or limit use of the land to conservation purposes, typically to maintain its natural state and preclude future development.

Defensible Space: The area between a structure and a potential oncoming wildfire where the vegetation has been modified to reduce the threat of ignition; this area provides an opportunity to “defend” the structure. *See also:* Survivable Space.

Environmentally-Sustainable Building Elements: Building materials and techniques that minimize the use of nonrenewable natural resources, conserve energy and water, and result in lower costs of operations and maintenance over time.

Flood Fringe: The area of the floodplain on either side of the floodway where encroachment of structures or fill may be permitted. *See also:* Floodplain and Floodway.

Floodplain: The land area adjoining a river, stream, lake, or other body of water that is susceptible to inundation by a 100-year flood. *See also:* 100-Year Flood.

Floodway: The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the 100-year flood without cumulatively increasing the water surface elevation more than one foot. *See also:* 100-Year Flood.

Gray Water: Wastewater, collected separately from sewer flow, that originates from a clothes washer, bathtub, shower, or sink, but not from the kitchen sink, dishwasher, or toilet.

Hardscape: Landscape components consisting of rock, concrete, tile, or other noncombustible materials that may be incorporated into landscape design to prevent the ignition or spread of fire; may also be used in landscaping to reduce water usage.

Highway User Revenue Fund (HURF): Federal and state funds generated by gasoline taxes and vehicle license fees distributed to counties and the main source of funding for county road maintenance.

Hypochlorination: A chemical system utilizing sodium hypochlorite to disinfect a public drinking water supply.

Infill: The development of new housing or other structures on scattered vacant sites within built-up areas.

Infrastructure: Facilities and services needed to sustain industry, residential, commercial, and all other land use activities; includes water, sewer, utilities, streets, communications, and public facilities such as fire protection, parks, schools, and such.

Integrated Conservation Design: A development concept that considers site characteristics and layout in the larger context of surrounding parcels, and preserves important natural features such as open space, viewsheds, scenic corridors, and wildlife habitat.

Invasive Species: A plant species not historically found in the local area. When introduced into an area, these species proliferate, replacing native species and reducing biodiversity. *See also:* Noxious Weed.

KVID: Kachina Village Improvement District, also known as Kachina Village Utilities, is the provider of water and wastewater services to the community.

Legal Nonconforming Mobile Home: A mobile home that was legally established on property that is no longer zoned to allow mobile homes; sometimes referred to as a “grand-fathered” mobile home.

Manufactured Home: A factory-manufactured dwelling unit built after June 1976 to standards established by the U.S. Department of Housing and Urban Development (referred to as the HUD Code).

Mixed-Use Development: The development of a tract of land, building, or structure with a variety of complementary and integrated uses, such as, but not limited to, residential, office, manufacturing, retail, public, or entertainment, in a compact urban form.

Mobile Home: A dwelling unit built on a permanent chassis prior to June 1976, capable of being transported in one or more sections, and designed to be used with or without a permanent foundation.

Modular Home: Also known as a Factory Built Building (FBB), a dwelling unit pre-assembled in the factory and constructed under the International Residential Code (formerly Uniform Building Code), installed on a permanent foundation, and built with exterior materials customarily used on conventionally-constructed homes.

Nonpotable Water: Water not suitable for drinking and cooking purposes.

Noxious Weed: Any parasitic or foreign plant that can injure crops, other useful plants, agriculture, livestock, fish, or wildlife resources, or public health; any plant on the Federal Noxious Weed List or the Arizona Noxious Weed List. *See also:* Invasive species.

Passive Recreation: A type of recreation or activity that does not require the use of organized play areas or developed facilities. *See also:* Active Recreation.

Payments in Lieu of Taxes (PILT): Federal funds typically generated by timber sales on federal lands and distributed to counties containing a large percentage of federal land.

Prescribed Burn: The controlled application of fire to wildland fuels in either their natural or modified state, under specific environmental conditions. Prescribed burns are confined to a predetermined area to meet resource management objectives.

Redevelopment: The reconstruction, conversion, or alteration of previously developed land or structures for new, upgraded, or different purposes.

Riparian Area: An area bordering a river or stream that supports an ecosystem of wildlife, vegetation, soils, and water.

Rural Growth Boundary: The line on a map that is used to mark lands in unincorporated areas of the county that are suitable for rural development, as well as lands to be preserved as open lands (per the *Flagstaff Area Regional Land Use and Transportation Plan*).

Small Municipal Separate Storm Sewer System (SMS4): Areas defined by census boundaries within the County and designated by ADEQ as having a flow conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains that are owned and/or operated and regulated by the County and that require regulations to protect stormwater quality entering and leaving these conveyances.

Social Trail: An unplanned, unauthorized path that developed informally and is not designated or maintained by an agency.

Spot Zoning: Rezoning of an individual lot or parcel of land for a use that is incompatible with surrounding land uses; that conveys a special privilege to the individual property owner; that is not in the public interest; and that is not in accord with a comprehensive plan.

Survivable Space: The area surrounding a structure that has been designed or modified to increase the likelihood of the structure surviving a wildfire without active intervention by fire protection services. *See also:* Defensible Space.

Viewshed: The area of land within sight of a given location, particularly with respect to scenic views.

Waters of the United States: All surface waters, whether permanent or ephemeral, including wetlands, lakes, dry lakes, rivers, streams, ephemeral washes and arroyos, mudflats, sandflats, sloughs, wet meadows, playa lakes, and natural ponds.

Wildland/Urban Interface (WUI): The area in and around a community where the immediate or secondary effects of a wildfire would threaten a community's environmental, social, and economic values, causing serious detriment to the area's overall health and viability.



