

9.0 ENVIRONMENTAL PLANNING ELEMENT

9.1 AIR QUALITY

During the early 20th century, Prescott's clean air and temperate climate drew many respiratory patients to the area for treatment. Today, good air quality remains an asset of the community, helping to draw tourists and those seeking lifestyles away from large urban areas with poorer air quality. Continued urbanization with its associated increase in traffic may degrade Prescott's air quality in the future, potentially having a negative effect on tourism, growth and the quality of life for the existing population.

9.1.1 Challenges

Although some air pollution is brought into the area by natural air movements, the community can improve air quality by discouraging local pollution. The Circulation Element addresses a reduction in automobile dependence through alternative transportation; however, the overall environment in Prescott is affected by individual auto use.

Dust, smoke, non-native plants and automobile emissions are sources of urban air pollution. Smoke is a problem during winter months from wood burning fireplaces and stoves, and at other times seasonal prescribed burns. In the warmer dry months dust affects air quality due to dirt roads and construction activities. Air quality conditions are exacerbated by a continuing drought.

9.1.2 Air Quality Goals and Implementation Strategies

Goal 1. Maintain Prescott's existing good air quality by protecting it from degradation.

Strategy 1.1 Encourage installation of after-burners or other means of reducing particulate emissions on new wood burning stoves and fireplaces within the City.

Strategy 1.2 Continue the current program of paving unpaved roads within the City. Apply new technologies and methods where appropriate.

Strategy 1.3 Maintain road sweeping with water filled street sweeping machines to reduce dust particulate air pollution, especially during dry periods.

Goal 2. Promote alternative transportation strategies in order to reduce vehicle emissions.

Strategy 2.1 Partner with Central Yavapai Metropolitan Planning Organization (CYMPO) and private industry to develop a

A.R.S 9-461.05

3. An environmental planning element that contains analysis, policies and strategies to address anticipated effects, if any, of plan elements on air quality, water quality and natural resources associated with proposed development under the general plan. The policies and strategies to be developed under this element shall be designed to have community-wide applicability and shall not require the production of an additional environmental impact statement or similar analysis beyond the requirements of state and federal law.

transit system when funding is available and where service is feasible.

Strategy 2.2

Expand the scope and connectivity of the bicycle, pedestrian and trails circulation systems within the city by linking existing networks.

9.2 WATER QUALITY

Prescott enjoys good water quality from deep wells. The City is a water service provider operating a water supply, treatment and distribution system as well as a wastewater collection, treatment and effluent distribution system. These systems are operated in compliance with federal and state water quality regulations.

9.2.1 Challenges

A sustainable balance of water quality, water use, conservation, importation and groundwater recharge is desirable. This requires mitigation strategies with consensus among various water stakeholders. City plans, water allocation policies and adopted codes address water quality and supply issues. These plans, policies and codes should be periodically reevaluated and revised accordingly. More information regarding water may be found in the Water Resources Element.

9.2.2 Water Quality Goals and Implementation Strategies

Goal 1. Protect surface waters and groundwater recharge areas to maintain the high quality of Prescott's water.

Strategy 1.1

Strengthen requirements for building sites with steep grades to prevent erosion and pollution from stormwater runoff.

Strategy 1.2

Discourage industrial development that requires a high volume of water or has the potential to pollute the Little Chino aquifer, other aquifers or surface waters.

9.3 LAKES

The City has full ownership or leases land associated with four bodies of surface water, they are commonly known as upper Goldwater Lake, lower Goldwater Lake, Watson Lake, and Willow Lake. All four water bodies are man-made reservoirs and historically have served as community water supplies either for City water customers or the agricultural industry in the region.

Upper and Lower Goldwater Lake are the smallest of the four with historic legal documents stating the claimed combined capacity to be 620 acre-feet. At one time, lower Goldwater Lake was used to supply water to the City of Prescott by supplementing the water pumped from Del Rio Springs. The City maintains legal documents associated with these water bodies, but now neither upper nor lower Goldwater Lake are used for City water supply. Upper Goldwater Lake is now a public recreational amenity maintained with the City's general fund. This lake is upstream of the community which reduces the effects of the population center; however, it is subject to natural processes such as lake siltation.

Watson and Willow Lakes also have an extensive history and were originally built to store and release water from annual precipitation for the use of the downstream agricultural industry. The most current document (Sever and Transfer 98-001) for Watson and Willow states their legal claimed storage capacities to be 4,600 and 5,980 acre-feet respectively with the right to continuous fills and refills. Unlike Goldwater Lake, these lakes are subject to not only natural processes, but to the population center that resides upstream of them. It was not until 1998 that the City purchased these lakes from the Chino Valley Irrigation District in accordance with a voter approved bond measure for fifteen (15) million dollars. The official ballot language, associated City resolution 3033, spoke to property and water rights for water resource and recreational purposes. Since the purchase of Watson and Willow lakes these reservoirs have had a complete shift in their operation. Water is now stored from year to year for water supply, recreation, and fish spawning needs. Releases still occur according to legal documents for downstream surface water right holders and for the storage and recovery of supplies to support City water customers. Due to the multiple uses of these lakes they require both City General Fund and Enterprise Fund expenditures.

According to A.R.S. § 9-461.05 (D) (3), the Environmental Planning Element attempts to address the anticipated effects of the General Plan on air quality, water quality, and natural resources associated with proposed development. It's recognized that surface water bodies in the City's jurisdiction require continued operation and maintenance at standards which are federal, state, or locally imposed. Each reservoir is subject to varying influences from agencies, nature and effects from the nearby population center. The City must cooperate with state entities and others to study and seek options for management of the reservoirs. Meanwhile, there has been a distinct change in reservoir operation since they are no longer drained on an annual basis. Also, the lakes continue to undergo natural processes such as siltation, and those processes will continue into the future.

Statutes state that strategies under this element shall be designed to have community-wide applicability and shall not require the production of an additional environmental impact statement or similar analysis beyond the requirements of state and federal law. Due to the community value of these reservoirs, there are on going efforts to seek maintenance and physical improvements for these amenities. It's clear that the status of these amenities must consider existing development as well as proposed development.

9.3.1 Lakes Goals and Implementation Strategies

Goal 1. Promote water quality and increase legal storage capacity of our publicly owned reservoirs.

Strategy 1.1 Continue to protect the lakes from point source pollution. Compile information to establish solutions using natural processes.

Strategy 1.2 Provide community education to inform the population on ways to protect local surface waters.

Strategy 1.3 Maintain and preserve open space areas which compliment the lakes and the surrounding environment,

wherever possible, through zoning procedures, negotiations and the creation of codes for new and existing development.

Strategy 1.4 Develop recreational trails and park settings that promote low impact uses that will not negatively affect water quality.

Goal 2: Develop an up to date Lakes Management Plan that includes upstream and downstream water and habitat management.

Strategy 2.1 Explore ways and to balance human needs, and flora and fauna needs at a man-made reservoir.

Strategy 2.2 Explore upstream improvements to such as catch basins for capture and filtration of harmful chemicals that address both the natural and population influences.

Strategy 2.3 Collaborate with neighborhoods and specific City departments to participate in better upstream practices for storm runoff protection and water toxin intrusion, by using pollutant management strategies including rainwater harvesting, non-pollutant pesticides and chemicals for outdoor usage and upgrading decaying infrastructures such as sewer/septic systems.

Strategy 2.4 Identify and implement improvements to both upstream and downstream watersheds to improve the City reservoirs as well as downstream streams and rivers.

9.4 WILDLIFE CORRIDORS

The conservation of wildlife habitats and wildlife corridors is an effective way to assist indigenous wildlife and migratory species impacted by human growth and development. There is a particular need in the Prescott area for wildlife corridors to interconnect Pronghorn herds. The Airport Specific Area Plan attempts to address this concern by providing a north/south open space corridor along Granite Creek. Augmentation of wildlife habitats and wildlife corridors through acquisition and conservation of open space during the subdivision platting process is an important step in this process.

9.4.1 Challenges

Growth of new subdivisions and other developments destroy wildlife habitats and threaten to cut off wildlife from other habitats. An evaluation of flora and fauna within development areas is a benefit to plan for appropriate corridors providing safe migration routes. These areas should connect with other open spaces such as parks, golf courses and trails and be designed so that they may be used by migrating wildlife as part of an interconnected cluster of corridors.

9.4.2 Wildlife Corridors Implementation Strategies

Goal 1. Improve the protection of migratory species through the interconnectivity of open spaces and wildlife corridors.

- Strategy 1.1** Encourage infill development rather than development of outlying areas to conserve wildlife habitats and wildlife corridors.
- Strategy 1.2** Require developments to identify migratory animal species within their development sites and conserve appropriate wildlife corridors.
- Strategy 1.3** Plan for connectivity of open spaces and wildlife corridors using Specific Area Plans, neighborhood plans, subdivision master plans, or other appropriate planning tools.
- Strategy 1.4** Coordinate with federal and state agencies, and adjoining jurisdictions to assure regional connectivity of open space and wildlife corridors.

9.5 DARK SKIES, GLARE AND LIGHTING

Prescott's clear dark night sky is an environmental asset that the community wishes to protect. The Land Development Code primarily regulates commercial outdoor lighting by addressing light fixture types and light output measured in watts. However, new energy efficient technologies, such as hi intensity discharge (HID) and light emitting diode (LED) make it difficult to regulate light output solely by energy consumption.

Light color has an effect on glare and sky-glow. For example, narrow-spectrum amber LED lighting is more desirable for outdoor lighting since it contributes 75% less sky-glow when compared to white-blue LED lighting. Color Temperature expressed in degrees Kelvin has become a popular standard for describing color or the "warmth" of a light source. A color temperature of 3000 degrees Kelvin or below emits a warm yellow or reddish light, while a color temperatures between 4000 and 6000 degrees Kelvin emits a bluer light.

Residential lighting may be addressed in the lighting code, where an appropriate balance may be met between lighting, which is both adequate for residents, yet preserves the dramatic nighttime sky. Exterior lighting provides safety, security, visual enjoyment of outdoor living spaces and requires careful consideration.

9.5.1 Residential Lighting

All exterior residential lighting should be "dark-sky" compliant, with a concealed or shielded light source. Light should be directed to the ground or toward the residence and be of low luminosity to minimize glare. No light source should be visible across any property line. Flood lighting or overhead lighting of any kind should not be permitted unless controlled by a motion sensor. Safety lighting should be used to illuminate vehicular and pedestrian circulation and is to be used only when receiving guests or circulating outdoors. Home entrance lighting should be frosted bulbs, non-glaring, 600 lumens (40 watts incandescent) or less, and garage lights should not exceed 375 lumens (25 watts incandescent) or less.

9.5.2 Residential Landscape Lighting

Landscape lighting or low level path lighting should serve as the primary form of exterior lighting. Street, walkway, driveway and landscape lighting should be of low luminosity, low profile and be of a concealed light source meeting “dark-sky” requirements.

Minimal lighting within residential yards is encouraged. Except in the case of up-lighting key trees and plants, down-lighting is encouraged because it has less impact on the night sky. All yard lighting should utilize low luminosity sources with a maximum 300 lumens fixtures. Landscape light fixtures should be non-reflective, solidly mounted into the ground and provide indirect ambient light for visibility. Landscape and security lighting fixtures should be installed at a height not to exceed ten (10) feet above ground level. If wired systems are used, they should be installed on a timer to save energy and turn off when not needed for pedestrian or vehicular circulation.

9.5.3 Dark Sky Goals and Implementation Strategies

Goal 1. Adopt a lighting code that addresses new technologies and includes residential light sources.

Strategy 1.1 Adopt a lighting code that addresses lumens instead of wattage.

Strategy 1.2 Encourage all outdoor lighting, especially parking lot and street lighting, to have a color temperature of 3000 degrees Kelvin or less.

Strategy 1.3 On-street illumination (street lights) should occur only at intersections or to illuminate signage.

Strategy 1.4 Adopt a residential lighting code adequate for residents and yet reduces glare to adjoining properties and preserves the nighttime sky.

Strategy 1.5 Encourage lighting with a low luminosity output in both commercial and residential uses to save energy, reduce glare and reduce sky-glow.

9.6 REGIONAL COOPERATION

A regional approach to growth management, wildlife corridors, open space, recreation, transportation and land planning is important to the protection of natural resources and effective sustainable use of the land.

Regional coordination and cooperation can reduce incompatible land uses at corporate and planning boundaries and reduce the demands upon individual jurisdictions by allowing adjacent communities to provide complementary services. Provision of complementary services rather than duplicated or competing services is more practical and cost effective. For example, one community may develop a park near a common planning boundary, while the adjacent community creates a hiking trail.

For regional roadway coordination, the Central Yavapai Metropolitan Planning Organization (CYMPO) is the principal forum for local government cooperation. Managing and improving the regional roadway network is important to all jurisdictions in the area. Prescott, as a primary economic driver in the region, should maintain an active role in CYMPO and should promote land use planning as an integral part of regional transportation planning.

9.6.1 Regional Cooperation Implementation Strategies

Goal 1. Coordinate with other regional entities to provide recreational, open space and transportation opportunities to the residents of Prescott.

Strategy 1.1 Actively participate in regional organizations to assure that the interests of Prescott are appropriately communicated and protected.

Strategy 1.2 Establish a forum to meet regularly with each of Prescott's regional neighbors to coordinate projects having regional implications and to avoid duplication of services and amenities such as parks, trails and library facilities.