

PAYSON GENERAL PLAN UPDATE 2014-2024

DRAFT CHAPTER III – ENVIRONMENTAL PLANNING

Prepared for:

Town of Payson, Arizona



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3 ENVIRONMENTAL PLANNING ELEMENT

Strengthen and expand partnerships to continue environmental innovations

3.1 OVERVIEW

Environmental Vision

Payson's natural environment helps define its quality of life and links to other facets of the community. Other elements in the General Plan Update 2014-2024 contain *Goals and Strategies* related to preserving natural resources, and to natural functions of the environment in and around Town. Soils, surface and groundwater, mature vegetation, and the habitats they provide require active protection. Preserving sensitive environments, streams and their riparian buffers, mature trees, and native vegetation is a critical challenge. The natural functions of these features are crucial to the health and beauty of Payson. If destroyed, the natural functions are expensive to recover.

One of Payson's most impressive natural resources is Tonto National Forest. Large tracts of forested land, both inside and outside the Payson's incorporated municipal boundary provide many benefits to the local community. The un-built lands provide protected habitats for a variety of plant and wildlife species. The forest defines the "rural mountain" character valued by residents. The protected forest provides a growth area boundary, which naturally supports a higher density of land uses in the Town's core. As the Town intensifies development in the core, U.S. Forest Service lands will remain protected and accessible.

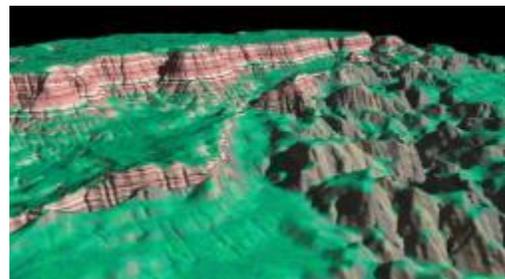
To this end, Payson has planned responsible, well-designed, compact development that encourages green infrastructure, interconnectivity, walkability, fiscal sustainability, and employs the latest in environmental controls. Residential and commercial development is encouraged to use sustainable technologies that employ alternative and renewable energy with minimal to no emissions, and have a positive impact on the tax base. Town of Payson will lead by example incorporating energy efficiency and the use of renewable technologies wherever possible.

Existing Conditions

Geology

The Town of Payson sits on a crudely defined tableland or bench. The Payson platform owes its existence primarily to the erosion resistant Tapeats Sandstone, which forms a thin veneer over much of the area. Where the Tapeats has been removed, the underlying Proterozoic complex, including the Payson Granite, gabbro and diorite south of Payson, is slightly to deeply eroded. Payson itself sits in a high area of Payson Granite that has been eroded beneath the level of the Tapeats Sandstone.

The major lithologic units in the Payson area are the Payson Granite, gneissic granitoids, Gibson Creek Batholith, Tapeats Sandstone and Martin Formation, and Tertiary gravel and limestone. Rocks in the Payson area are extensively faulted and jointed, and most of the faults and joints are steeply dipping, although one set is sub-horizontal.

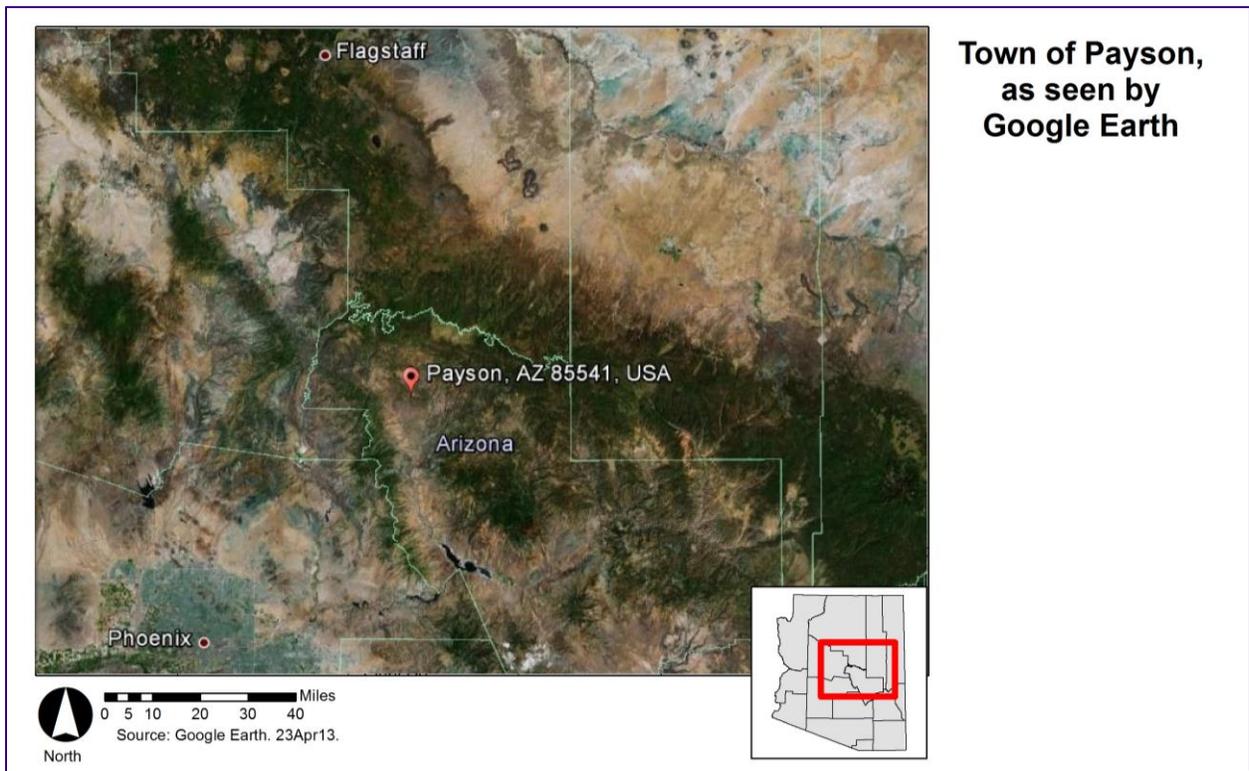


Geography

The Town of Payson is located in Northern Gila County, Arizona, and is anchored by the intersection of State Roads 87 and 260. The Town's geographic location is between 34 degrees 12' 15" north and 34 degrees 15' 50" north latitude, and between 111 degrees 17' 25" west and 111 degrees 22' 11" west longitude. Payson occupies a region of geographic transition between the Mogollon Highland to the North and the Sonoran Desert to the South.

Because of Payson's elevation, (approximately 5,000 feet) it experiences a four-season climate. Winters in Payson are typically cool while summers are warm.

Map 4: 2013 Google Earth®, Town of Payson Arizona



Soils

Rugged terrain composed of primarily Precambrian Granite comprises most of the local topography. Soil types typically found in the Payson area generally reflect the Granite bedrock. Payson soils are typically shallow, sandy, and dry. Primary mineral composition of the area is feldspar and quartz. Several areas within Town contain large granite boulder fields.

Vegetation

Payson occupies a vegetation ecotone (i.e., transition area) characterized by the transition between the Pinion-Juniper life zone and the Ponderosa-Gambel life zone. This transition area provides habitat for numerous species of plants and animals.

The Town of Payson has several different cover types including Pine-Oak-Juniper, Pine-Juniper, Ponderosa Pine, Mixed Pine/Stringer Pine, and Ponderosa Pine/Oak.

Pine-Oak-Juniper

Pine-Oak-Juniper is characterized by Pinion Pine, Emory Oak, and Junipers such as Alligator Juniper and One Seed Juniper. The under story is predominantly Turbinella Oak and Manzanita and is usually very dense, covering almost 100 percent of the ground not covered by the larger trees. Canopy closure for trees ranges from less than 5 percent to as high as 50 percent in some areas. The type as defined in this study is restricted to lower slopes near drainage areas.

Pine-Juniper

Pine-Juniper is characterized by Pinion Pine and Junipers. The understory shrubs such as Turbinella Oak and Manzanita are very sparse, and the open ground is vegetated with various grasses. The primary difference from Pine-Oak-Juniper is the absence of larger Oaks such as Emory Oak. Pine-Juniper occurs on dry slopes and ridges in the Payson area. In the northwestern portion of the Town around the airport mesa and to the west, Junipers predominate. The pines are not obvious, but do occur as seedlings. In time as this reproduction gains maturity, the pines will become a more important component of the cover type.



Ponderosa Pine

Ponderosa Pine stands are almost pure stands located primarily in and along drainages. Understory shrubs and other ground cover is limited in the Payson area.

Mixed Pine/Stringer Pine

This type is predominantly Pine-Oak-Juniper with stringers of Ponderosa Pine threading through the main type.

Ponderosa Pine/Oak

This cover type is associated with the Goat Camp drainage in the very northeastern portion of Payson. Large Oaks and other deciduous trees predominate with scattered Ponderosa Pines.

Open Space

Open space in Payson can be categorized in three primary ways:

1. Privately owned open space is land typically associated with a private residence or business and may not be open to public access.
2. Common open space is land reserved for open space in a development and is usually intended solely for use by that development's residents.
3. Publicly owned open space is land intended for use by the entire community.

All three categories of open space are important, and each contributes to the overall quality of life in the community. Open spaces also help to preserve and protect natural features such as groundwater recharge areas, steep slopes, and wildlife habitats. The protection of these significant open spaces will play an important role in guiding the Town's future.

Green Infrastructure

Green infrastructure can take any of the three open space forms and is an integral component to the sensitive development of the land. Preservation of wetlands, wildlife corridors, and other sensitive habitats and environments not only lessens a project's environmental impact but also benefits the final development product. Subdivisions with open spaces such as greenways and parks are more attractive and bring a higher market value than those developments without such amenities. Green infrastructure creates integrated neighborhoods and communities as opposed to isolated developments.

Other environmental techniques that are synonymous with green infrastructure include low-impact development (LID) and stormwater management systems (e.g., rain gardens, green roofs, rain barrels, cisterns), alternative energy sources (e.g., geothermal, wind, and solar), porous pavement, and an increasing number of others. New development and redevelopment proposals are encouraged to incorporate these types of techniques.

Urban Forestry, or the planning and management of vegetation in developed areas, is another important green infrastructure tool. The system of National Forest, parks, Ponderosa Pines, street trees, landscaped boulevards, gardens, greenways, and natural areas is a complex and important contributor to the natural feel of the mountain town. A community's trees contribute to the overall quality of life and place.

Improved water quality is another benefit of conserving natural resources. Reducing urban sprawl, using porous paving materials, using green infrastructure as natural stormwater buffers and filters, and maintaining healthy vegetative buffers around waterways helps to protect surface and groundwater resources.

What is green infrastructure?

- "An interconnected network of green spaces that conserves natural ecosystem values and functions and provides associated benefits to human populations."
- Open space with a purpose!
- Like "gray infrastructure" (roads, utilities, and so on), green infrastructure provides a community foundation.

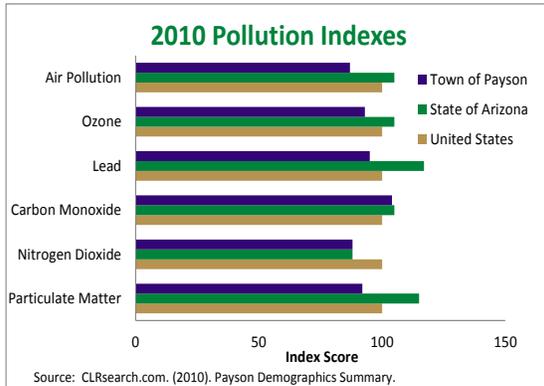
What does a green infrastructure system look like?

- Hubs—large patches of preserved land that anchor the system
- Links—corridors that connect the system together and provide a way for animals, seeds, and/or people to get from one hub to another
- Sites—smaller areas of some significance that may not be connected

What can we do with green infrastructure?

- Protect water quality
- Provide recreation areas
- Conserve critical elements of native ecosystems
- Provide large habitat areas and corridors for wildlife and seeds to move between
- Allow for a more consistent water supply
- Enhance community appearance
- Protect working lands with ecological value

Air Quality



Payson’s air quality is a major asset to the scenic beauty and environmental health of the Town. Air pollutants in the area are generated primarily by the combustion of fossil fuels from stationary and mobile sources. Transportation accounts for most of the energy consumed in the area. Energy efficiency, as discussed previously, is a critical component to preserving the Town’s air quality. Advancement of the community as an energy efficient model will lessen energy consumption locally, and encourage surrounding communities to conserve, which will lead to a reduction of migratory pollutants as well.

Energy Efficiency

A growing green government movement promotes sustainability through energy efficiency. There are numerous reasons why increasing energy efficiency makes sense from environmental to economic considerations, particularly with the increasing rise in energy costs.

Economic development is a major reason cited for going green. As new technologies and services evolve, there is an opportunity for investment in job training programs and locating new businesses. According to the U.S. Environmental Protection Agency (EPA), as much as 30 percent of the energy consumed in commercial buildings, including government, is used inefficiently or unnecessarily. By diversifying the economic base of the Town and reducing direct energy costs, energy efficiency can save taxpayer dollars, create jobs, and improve the overall health of the local economy.

Environmental conservation is a motivating reason to become more energy efficient. Based on data collected by the EPA, for the ENERGY STAR Program, energy use in commercial buildings and industrial facilities creates over 45 percent of all U.S. carbon dioxide emissions. Recycling and using renewable resources conserve natural resources, and promoting growth in Town’s development core helps to preserve wildlife habitats and future recreational and environmental amenities.

Goals and Strategies identified to concentrated development in core areas, and to expand the inventory of interconnected greenways, bikeways, and walkways will improve transportation energy efficiency and reduce pollutant emissions. As population growth continues, the Town will explore opportunities for public transportation investments.

3.2 CRITICAL ISSUES

- 3.2.1 Preserve and maintain excellent air quality
- 3.2.2 Protect threatened natural resources, wildlife, and open space
- 3.2.3 Balance natural resource preservation with the built environment
- 3.2.4 Implement mandatory recycling in the Town
- 3.2.5 Develop an environmental plan including recycling, alternative energy policy, and other sustainability issues for both existing infrastructure and new construction
- 3.2.6 Develop incentive to encourage participation in the Town's Arizona Solar Community program

Discussion

The primary environmental issues identified by Payson stakeholders during the General Plan Update process are consistent with the issues outlined above. The Payson community is aware of, and sensitive to, its natural environment and wants to preserve its excellent air quality, water quality (and quantity), and other natural resources.

The above six *Critical Issues* set the stage for the General Plan's environmental protection implementation. Preserve species diversity and natural habitats, reduce finite resource dependence, and increase energy efficiency are predominant themes reflected by the *Goals & Strategies*.

3.3 GOALS AND STRATEGIES

- 3.3.1 **Implement a modified version of the American Gulch Study**
 - 3.3.1.1 Seek funding for Gulch improvements and work with land owners to implement
- 3.3.2 **Improve stormwater management facilities and practices for treatment quantity and quality**
 - 3.3.2.1 Require construction planning to protect natural vegetation and minimize changes to ground topography
 - 3.3.2.2 Encourage natural stormwater control methods that retain natural systems and minimize potential damage to private property
- 3.3.3 **Develop and implement an Urban Forestry and Native Species Protection Plan**
 - 3.3.3.1 Reduce heat island effects by encouraging green roofs, tree canopies, and permeable surfaces
 - 3.3.3.2 Actively protect native trees currently in the Town's commercial areas
 - 3.3.3.3 Ensure any urban forestry lost is replaced tree for tree
 - 3.3.3.4 Develop a tree inventory to set a level of service to be maintained or increased through a planting program
 - 3.3.3.5 Require "Ponderosa Pine" protection/replacement town-wide
- 3.3.4 **Protect air quality**
 - 3.3.4.1 Enforce clean air standards and regulations
 - 3.3.4.2 Work with Gila Community College and other higher education providers to develop a workforce prepared for clean energy jobs of the future
 - 3.3.4.3 Encourage development which reduces vehicle miles traveled through multi-modal transportation connectivity

3.3.5 Develop and adopt a comprehensive energy policy

- 3.3.5.1 Support the five percent solar energy initiative by developing specific implementation incentives and actions
- 3.3.5.2 Establish fleet management and fuel usage standards for Town vehicles
- 3.3.5.3 Identify a green roof demonstration project
- 3.3.5.4 Create development incentives to encourage use of alternative energy sources
- 3.3.5.5 Waive or reduce the permit fees for solar panel installations and other alternative energy improvements
- 3.3.5.6 Benchmark other communities that require new single-family homes to meet minimum solar system requirements and modify local regulations as appropriate

3.3.6 Negotiate development agreements to encourage infill, less impervious surface, and economically viable commercial activity

- 3.3.6.1 Develop a model shared parking agreement to incentivize development by alleviating parking standards
- 3.3.6.2 Work with property owners to maintain vacant commercial space and market it for infill

3.3.7 Identify and conserve natural wildlife corridors

- 3.3.7.1 Incorporate natural wildlife habitats and corridors into developments

3.3.8 Proactively address solid waste management and illegal dumping

- 3.3.8.1 Develop and implement a municipal recycling program in partnership with local waste management companies
- 3.3.8.2 Work with state and private partners to provide semi-annual large appliance and electronics collections
- 3.3.8.3 Organize hazardous waste collection events

3.3.9 Promote sustainability initiatives

- 3.3.9.1 Train staff to encourage and promote sustainable building practices including reducing environmental impacts and integrating alternative building materials
- 3.3.9.2 Create a Sustainability Advisor position (possibly with existing planning staff) to develop an Environmental Plan to provide guidance for redevelopment and new development