

Town of Buckeye

2007 General Plan Update



One Town, One Vision - Economic Sustainability - Protecting the Unique Southwest Environment - Connectivity

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Goal 10.0. Use Energy Efficiently and Maximize Sustainability

Improve the economic, environmental, and social health and sustainability of the community through the efficient use of energy resources.

- Policy 10.1 Serve as a model for green building programs by implementing energy conservation measures for all Buckeye government sites, buildings, and operations.
- Policy 10.2 Maximize cleaner energy sources and technologies that optimize energy consumption for the entire range of land uses, residential, commercial, industrial, institutional, and both indoor and outdoor recreational uses.
- Policy 10.3 Utilize renewable resources over non-renewable sources.
- Policy 10.4 Minimize energy-related adverse impacts on the local economy, biodiversity, and quality of life.
- Policy 10.5 Minimize locating buildings and human activities around washes and natural storm water drainage systems.
- Policy 10.6 Maximize the use of native vegetation for shade and reduction of energy use for cooling.
- Policy 10.7 Nurture a balanced interaction between the built and natural environments. Aim for reducing the built environment's footprint; maximize undisturbed areas.
- Policy 10.8 Educate residents and business owners about energy conservation techniques. Provide assistance for conversion to renewable resources.
- Policy 10.9 Require new construction, renovations, and redevelopment projects to implement energy conservation measures.
- Policy 10.10 Encourage innovative land use and site planning techniques, such as clustering, building orientation, designing multiple-use facilities, and employing appropriate building materials for construction.
- Policy 10.11 Reduce solid waste through waste diversion strategies, such as recycling and composting.
- Policy 10.12 Encourage energy efficient building designs, employing orientation techniques to benefit from solar access, and providing building overhangs and recessed windows for shade.
- Policy 10.13 Encourage renewable energy sources, such as solar and wind.
- Policy 10.14 Reduce heat absorption for buildings, parking surfaces, outdoor public areas, and parked vehicles through landscaping and native vegetation.

- Policy 10.15 Encourage innovative waste-to-energy solutions.
- Policy 10.16 Initiate a voluntary Green Building Program with specific standards to measure resource consumption, reuse and recycle materials, protect the natural environment, eliminate toxins, apply life-cycle cost methods, and underscore the quality of the built environment. Adopt existing national standards for green buildings, such as Leadership in Energy and Environmental Design (LEED) or equivalent, to impart consistency when evaluating development proposals. Publicly recognize innovative green buildings through an annual awards or awareness program.
- Policy 10.17 Maximize the use of solar and wind energy.

Goal 11.0. Manage Water Resources

Manage water resources to meet current and future demand. Apply state-of-the-art methods and technologies to ensure adequate, suitable, and sustainable water supplies to serve the community.

- Policy 11.1 Inventory water supplies available to potable and non-potable water providers in the Buckeye Planning Area to ensure adequate water supply.
- Policy 11.2 Determine options for securing surface water rights in the Buckeye Irrigation District for potable water for future uses.
- Policy 11.3 Evaluate securing additional Central Arizona Project (CAP) water supplies by leasing from the Gila River Indian Community.
- Policy 11.4 Strengthen Buckeye's role in the region by acquiring, managing, or cooperating with water supply entities. Establish a Greater Buckeye Regional Water Forum, or participate at a high level in West Valley water discussions.
- Policy 11.5 Develop the existing water delivery infrastructure as an amenity in cooperation with area irrigation districts by altering and enhancing requirements in the development agreements.
- Policy 11.6 Develop a strategy for utilizing poor quality groundwater in industrial areas, and plan a system for treating and distributing non-potable water.
- Policy 11.7 Develop a groundwater drainage strategy to reduce water logging, and incorporate renewable energy sources and aesthetically pleasing pumping plants.
- Policy 11.8 Require that all developments have an assured water supply certification and adequate distribution system.

CHAPTER 7: ENVIRONMENTAL PLANNING ELEMENT

We are the children of our landscape; it dictates behavior and even thought in the measure to which we are responsive to it
- Lawrence Durrell

OVERVIEW

One of the core components of the Community Vision is “Protecting the Unique Environment” within the Planning Area. The natural environment is an important element of the community’s quality of life. The Town of Buckeye takes its responsibility for the stewardship of the natural environment seriously, and strives to direct growth and provide services while focusing on ensuring effective environmental planning. A fundamental principle is to protect the environmental integrity that fosters the efficient use of resources and protects the quality and diversity of environmental systems that makes this Planning Area unique. Figure 7-1 shows the existing environmental conditions within the Planning Area.

The intent of this chapter is to provide the Town’s blueprint for managing and protecting the environment within the Planning Area as well as conserving resources for future generations to enjoy. Distinctive natural resources such as land, air, animal and plant habitats, and water are integral to the community’s long-term sustainability.

It is also important to note that other elements of the **Buckeye General Plan** address environmental issues and Chapter 2: Community Vision includes environmental planning goals and policies that address environmental resources specifically related to the particular element.

STRATEGIC DIRECTION

The Town of Buckeye cannot achieve community sustainability alone. The protection and conservation of our water, air, and energy rests with both government and the private sector. It requires a collaborative approach of public and private agencies, citizens, community groups, and landowners to implement a comprehensive sustainable strategy. However, the Town of Buckeye is dedicated to taking a leadership role through its policies, community planning, infrastructure development, and decision-making.

When environmental goals conflict, the Town of Buckeye will ensure that comprehensive costs and benefits analysis of such goals be conducted to ensure that the natural environment and health implications are given just consideration. The Town will continue to engage residents to further the evaluation process as well as the strategic environmental agenda. As in every aspect of community planning, the Town of Buckeye is committed to being proactive in diligently protecting the community’s quality of life.

Sustainability is defined as the ability to achieve continuing economic prosperity while protecting the natural environment and providing a high quality of life.

Buckeye recognizes that the sensitivity of the ecosystem that can be damaged or destroyed through over-use, mis-use, or negligence. The Town of Buckeye continues to put into practice sound environmental policies, programs, and initiatives to ensure the long-term sustainability of the Planning Area's beautiful environment. Additionally, the Town understands that long-term economic development as well as community vitality cannot exist without environmental quality. Furthermore, a clean and attractive physical environment enhances property values.

Sustainability is most frequently thought of as a community's ability to protect and maintain the quality and quantity of its natural resources: air, water, vegetation and wildlife, and unique open spaces. A broader definition would include a community's ability to protect its built environment from blight and deterioration and reduce consumption of resources.

The **Buckeye General Plan** provides the vision for how the community anticipates growth to occur over time. The policies and strategies in the document provide the Town the tools to be able to continually monitor the cumulative impact development and redevelopment has on the overall quality of the environment. Additionally, regular review and update of the General Plan provides that tool to ensure that the natural as well as physical environment is being protected or enhanced and developing in harmony with the community's vision. Strategies for monitoring change over time as a result of development are as follows.

Town Operations

The Town of Buckeye is one of the largest employers within the area and strives to become the leader in environmental resource management.

Town Operation Strategies:

- Through policies, programs, and budgeting impacting Town operation and facilities, reduce the use of toxins, prevent pollution, reuse existing resources, control waste, and protect the natural area's and biodiversity.
- Develop a system to evaluate the long-term environmental costs in all municipal activities.
- Continue to expand educational and communication programs focused on environmental protection, resource preservation, and waste reduction.

Public Facilities and Services

The Town of Buckeye's investment in public infrastructure is intended to meet the current and future community needs while protecting and enhancing community resources.

Public Facilities and Services Strategies:

- Incorporate green building design standards and principles in the design of Town facilities to ensure water and energy conservation.
- Locate public facilities in close proximity to population and activity centers to minimize travel patterns.

- Continue to participate with MAG and Maricopa County to implement regional air quality planning and implementation.
- Support state and county efforts to reduce air pollution.
- Continue to expand and promote multimodal transportation opportunities throughout the Planning Area that will reduce auto emissions as well as congestion.
- Strive to reduce the heat island effect by exploring innovative strategies such as the increase in tree canopies and the amount of permeable surfaces that keep the ground cooler so it does not absorb heat.

Natural Environment

The protection of the Planning Area's unique environmental assets is everyone's responsibility. The natural environment is an important component of the area's quality of life as well as being important to economic vitality. Diverse land characteristics exist that range from river areas to hillsides.

The Desert Space Plan developed by MAG was used to develop the following guidelines and the document should be used as a reference guide.

Natural Environment Strategies:

- Permit only the use of indigenous and compatible materials and plants and avoid the use of plants that are known to be invasive to indigenous vegetation.
- Develop programs and policies that will encourage property owners to leave areas of sensitive lands in their natural state.
- Discourage "mass grading" of parcels by encouraging efficient site planning that clusters development within an envelope that retains a portion of the lot undisturbed.
- Encourage innovative grading solutions to minimize large retaining walls, steep landscape banks, and excessive cut and fill requirements to create buildable parcels.
- Where development does occur, repair impacted lands to ensure compatibility with existing natural areas.
- Discourage new development, except compatible recreation, within floodways, especially major drainage corridors.
- Develop linear improvements such as roads and utility corridors, where appropriate, to run parallel to, not in, the regionally significant rivers and washes.
- Design all road crossings of rivers and washes to minimize disturbance of the natural environment.

- Reduce emissions of greenhouse gases through programs and policies such as the conversion of the Town vehicle fleet to clean alternative fuels.

- Emphasize non-structural flood control techniques where feasible. Choose and foster flood control methods that retain and maintain natural flooding and riparian vegetation while minimizing damage to private property.
- Establish a scenic corridor along the Gila and Hassayampa rivers. Develop a scenic corridor plan that outlines strategies for environmentally sensitive development and preservation.
- Protect people and property from natural hazards such as flooding, fires, and unstable slopes.
- Provide public education regarding the need for defensible space from fire around structures. Implement a fire mitigation strategy that minimizes open lands fire destruction.
- Provide proper planning of utility corridors in order to mitigate environmental impacts on sensitive landscapes and natural resources.
- Carefully integrate changes to drainage into a master drainage plan that recognizes existing drainage and wash patterns, discharge locations, and storm water flows.
- Consider creative design for storm water harvesting and detention ponds to reduce increased storm water flows and provide an opportunity to channel storm rainwater to native Sonoran Desert plant material.
- Integrate natural drainage into developments as an environmental amenity feature, such as trails and open spaces.
- Explore funding for the development, operations, and maintenance of regional drainage and flood control facilities.

Soils and Geology

Mountains, foothills, rivers, and desert areas are tremendous assets that help to define the character of the Planning Area. These assets are incredibly beautiful and will be enjoyed for their visual and recreational opportunities. However, without careful management, they also create potential hazards to people as well as property. Rockfalls, unstable slopes, subsidence, floods, and soils that have a high incidence of shrink and swell may cause damage. Continued removal of groundwater will increase land subsidence (sinkage). Expansion of the Town into desert and hillside areas will increase the Town's exposure to erosion, illegal dumping, and landslide hazards as those areas are developed. The Town of Buckeye, through its policies and development review, strives to minimize these potential hazards.

Soils and Geology Management Strategies:

- Require all new development to conduct thorough soil testing and analysis of any geological hazards. Review for potential hazard risk and identify acceptable mitigation strategies.

- Develop planning tools to minimize earth fissure and subsidence risks. Using data from the Arizona Geological Survey or other known earth fissures maps should be used to review development projects.
- Adopt specific construction standards to address known or potential earth fissures by local amendment to the current International Building Code.
- Ensure that conceptual planning, rezoning, and entitlement procedures contain requirements to map and design around or mitigate known or potential earth fissures.
- Implement policies and special review procedures for any development within environmentally sensitive areas and on hillside slopes.
- Work closely with private landowners and developers to ensure the protection of the natural environment and sensitive site planning.

Wildlife Habitat

The Town of Buckeye recognizes that the diversity of animal species within the large Planning Area is great; it is essential to maintain this healthy ecosystem. The Town, working with state and federal agencies, will conserve their existing habitat, recreate habitat where it has been destroyed and provide new habitats where appropriate. (Additional resources can be found in Desert Spaces Plan)

Wildlife and Habitat Preservation Strategies:

- Ensure that wildlife corridors are preserved through State Trust lands.
- Limit impacts on riparian and xeri-riparian habitats to those required for road and utility crossings. Revegetate disturbed areas using indigenous vegetation to restore habitat functions and values.
- Conserve corridors along significant ephemeral washes to preserve habitat with the greatest value for wildlife. Include the floodway, floodplain, and an appropriate upland buffer to allow a transition to urbanized areas.
- Design road crossings of washes to minimize impacts on wildlife movement.
- Avoid impacts on special status wildlife by conducting inventories and establishing standard procedures for dealing with such species, if they occur.
- Maintain patches of natural habitat of the appropriate size and spacing to retain wildlife use and movement patterns.
- Allow fencing or walls only where they do not disrupt natural wildlife movement patterns.

- Promote planting and maintenance of indigenous vegetation along canals and in other public places to enhance use by native wildlife.
- Implement use designs and measures that minimize undesirable conflict and contact between humans and wildlife.

Energy Efficiency

Through policies and effective planning, the Town of Buckeye strives to reduce the need for energy resources including the production of energy that generates pollution.

Energy Efficiency Strategies:

- Consider energy conservation when selecting building materials and construction practices.
- Pursue the use of renewable energy sources (e.g., solar) and encourage these sources to be incorporated into private and public developments.
- Develop and implement an energy conservation policy plan.
- As growth and development occurs, explore strategies to minimize the impacts of the urban heat island on the Planning Area.
- Encourage the use of shade trees and landscaping as well as building materials and colors should be encouraged to reduce heat absorption in developments.

Noise and Lighting

Noise from roadways, the airport, and other land uses as well as the glare from lighting can impact residents' enjoyment of daily activities. The Town is dedicated to limiting the impact of and mitigating these negative elements.

Noise and Lighting Mitigation Strategies:

- Develop and implement an ordinance or guidelines to minimize the impacts of glare by adopting and implementing a dark sky ordinance.
- Implement noise mitigation strategies through careful site planning and policy development.
- Consider noise and lighting implications when locating land uses.
- Evaluate future roadway improvements to determine noise implications and appropriate noise mitigation measures such as noise walls, landscape buffers, and materials that soften road noise.
- Implement a comprehensive commercial and industrial lighting ordinance or guidelines to be done to better control lighting levels with new developments.