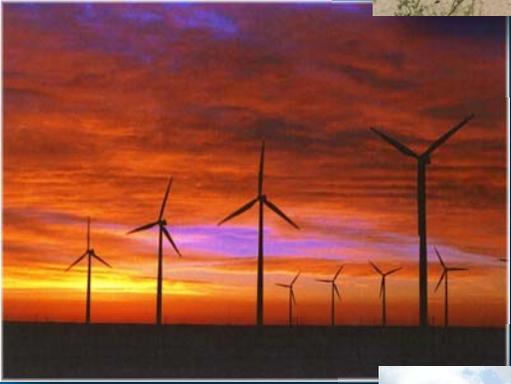


CHAPTER 6: ENVIRONMENTAL



Environmental Element

The management and preservation of natural resources is an important consideration in the General Plan 2025. The purpose of the Environmental Planning Element is to ensure that growth and development that occurs should be balanced with the interest of protecting natural resources.

Ground and surface water quality, air quality, soils conditions, geologic hazards, wildlife habitat must all be maintained and/or evaluated at a high level to insure a safe, healthy and enjoyable environment for the current and future citizens of Coolidge.



Each of these topics are addressed in this section of the Plan. Requirements of ARS § 9-461.05.D.3 state that the Environmental Element must contain analysis, policies and strategies to address any anticipated effects of the Plan's elements and new development called for by the Plan on any water quality and natural resources. These policies and strategies will have community-wide applicability and do not require environmental impact statements beyond those that are already required.

GROUND & SURFACE WATER RESOURCES

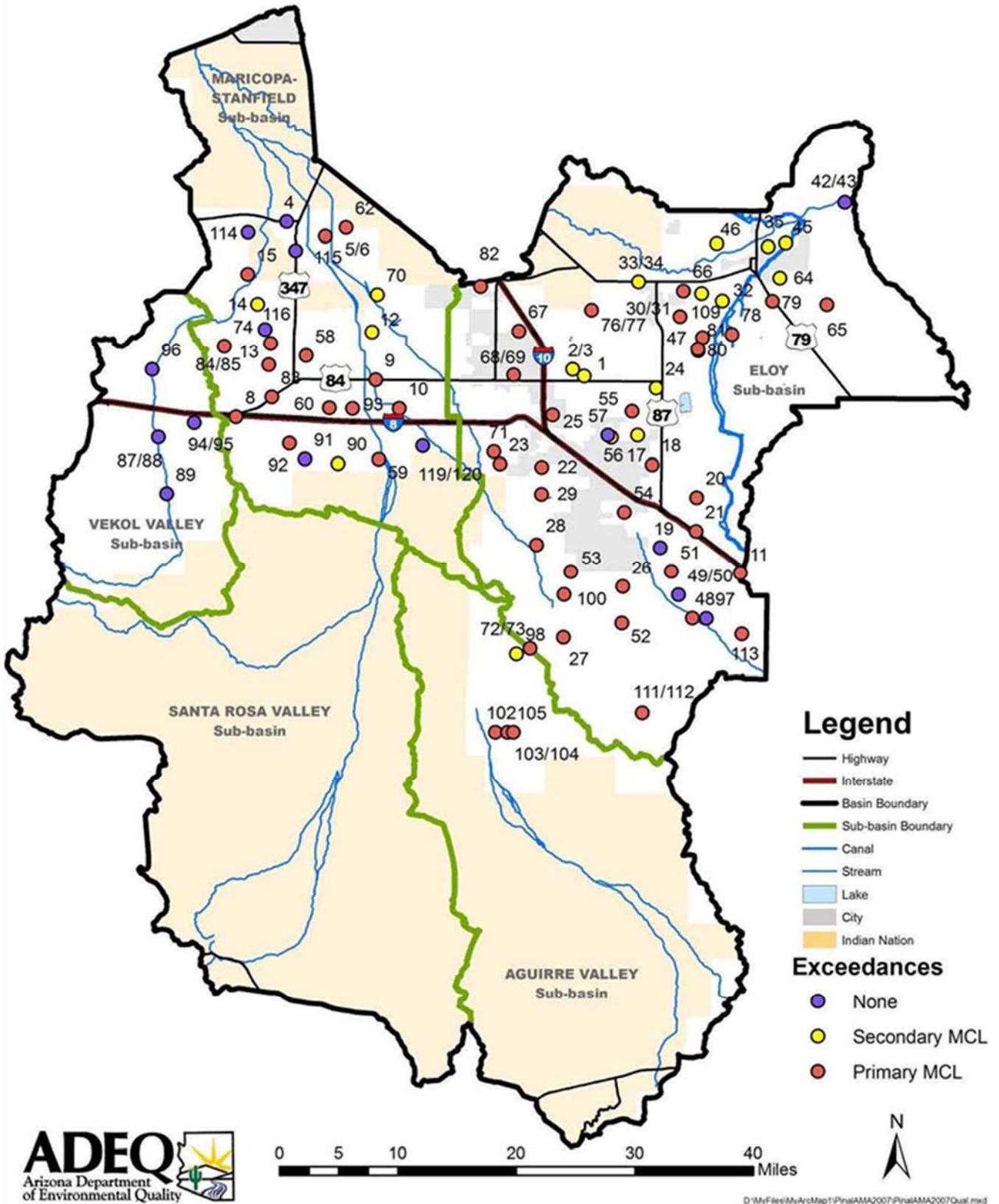
The City of Coolidge Planning Area Boundary is located within the Pinal Active Management Area (Figure 6.1) designated by the Arizona Department of Water Resources. The Water Resources Element in Chapter 7 of this Plan provides a more detailed analysis of Ground and Surface Water Resources which are summarized in this section of the Environmental Element.



There are four potable water companies within the City of Coolidge Planning Area. Arizona Water Company is largest encompassing approximately 64 square miles. At the end of 2012 this company serviced approximately 4,600 connections within the Coolidge Planning Area. 1,600 of these connections were made in the last ten years demonstrating the significant growth that occurred during the housing boom starting in 2004 and tapering off in 2007.



Figure 6.1 : Pinal AMA Water Quality Status



Environmental Element

To satisfy the Arizona Corporation Commission and the Arizona Department of Water Resources Best Management Practices, Arizona Water Company and the agencies approved the following ten water conservation programs within the City's planning area:

- Public Education Program
- Residential Audit Program
- Customer High Water Use Notification
- Customer High Water Use Inquiry resolution
- Water waste Investigations and Information
- Special Events & Community Presentations
- New Homeowner landscape information
- Landscape Consultation
- Leak Detection Program
- Meter Repair or Replacement Program



The first eight water conservation programs are customer-oriented and the last two are water conservation measures the Arizona Water Company uses to monitor and control water loss. The City of also requires the use of drought tolerant native landscaping in its landscape code and the use of low flow plumbing fixtures outlined in the 2006 International Plumbing Code.

In addition to the groundwater supplies, the Coolidge Planning Area has other sources of water available. The Central Arizona Project has an allocation to the Arizona Water Company for its Pinal Valley water system. Hohokam Irrigation and Drainage District provides irrigation water for 32 square miles of agricultural land within the planning area and the San Carlos Irrigation and Drainage District provides irrigation water for another 28.5 square miles of agricultural land.



The City wastewater treatment facility receives and treats up to 1,000,000 gallons per day and has capacity to treat up to 2,000,000 gallons per day to Class C Effluent Standards. This treated water is delivered to adjacent farms for non-edible food crops. Eventually, the City will treat this water to Class A standards.



AIR QUALITY

In 1967, the Pinal County Board of supervisors established the Pinal county Air Quality Control District (PCAQCD) to provide for the local protection and regulation of air quality. The District has the primary responsibility for the administration of the County's air quality program. The Pinal County Air Quality department is generally responsible for protecting the public's interest in assuring that the air remains safe to breathe. What ensures this safety is air quality standards which originate from federal, state and local laws and regulations.



Western Pinal County, including the City of Coolidge, has been designated by the EPA as a PM10 Non-Attainment Area. PM10 is particulate matter where the size of the actual particles is 10 microns in diameter or less. PM10 is a type of air pollution that includes dust, soot, and tiny bits of solid materials that are released and move around in the air. This includes burning of diesel fuels, incineration of garbage, mixing and applying fertilizers and pesticides, road construction, steel making, mining, field burning, forest fires, fireplaces and woodstoves. It causes eye, nose and throat irritation and respiratory problems. The primary cause of PM10 in the Coolidge Planning Area is fugitive dust kicked up by vehicles traveling on unpaved roads, farm cultivation, and shaping land. Every precaution should be taken to reduce the amount of dust generated by these activities.



Dust in the air is a hazard to humans for many reasons. As fine particles, dust can have a direct adverse effect on human and animal health. Dust may contain pesticides, pollen, fungi, and other irritants to the lungs and eyes of humans. Dust can affect visibility. Traffic accidents involving up to 100 cars and trucks have occurred at times when dust obscured stopped vehicles on highways. Probably the greatest economic impact of dust is the cost of filters and of wear and tear on vehicles and on mechanical appliances, such as air conditioners. Dust is never appreciated when it enters the home. Soils contribute dust to the atmosphere from natural forces, such as the wind, and from human activities, such as driving vehicles on dirt roads, cultivating fields, and shaping land.



Environmental Element

SOILS CONDITIONS

Figure 6.2 illustrates the types of soils that are commonly found within the Coolidge Planning Area Boundary.

Soil is important but is often an overlooked component of our urban infrastructure. It is especially important in regulating runoff of storm water and in supporting trees, shrubs, lawns, and gardens. Soil erosion during construction commonly is a serious problem. Information about many erosion-control practices is available in local soil and water conservation district offices. Preventing soil-related problems is easier and more cost effective than correcting them later. Developers, contractors, and local governments need to work together to limit compaction and soil loss during construction operations.

Although construction activities may affect only a relatively small acreage of land in a watershed, they can be a major source of sediment and increased water runoff. Construction activities often leave the soil disturbed, bare, and exposed to the abrasive action of wind and water. These conditions greatly accelerate erosion, which produces large amounts of sediment.



The sediment is unsightly in the local area, clogs storm-water drains, reduces the capacity of reservoirs, and adds nutrients and sediment to streams. Erosion on construction sites is commonly 100 times greater than that on agricultural land. Adequate measures are available to prevent onsite and offsite damage.



The City should continue to enforce regulations intended to control or prevent erosion on construction sites by requiring contractors to develop detailed erosion- and sediment-control plans before beginning construction projects.

Soils in the Coolidge area should also be evaluated for their shrink/swell potential. Sandy and Clay Loam soils are the most commonly found within the Planning Area Boundary. Homes built on expanding clays may experience structural damage as the clay takes up water.

The American Society of Civil Engineers estimates that half of the homes in United States are built on expansive soils and half of these will have some damage. The group claims that these soils are responsible for more home damage every year than floods, tornadoes, and hurricanes combined. Building contractors should take precautions to stabilize the structures. One solution is post-tensioned foundations for homes.

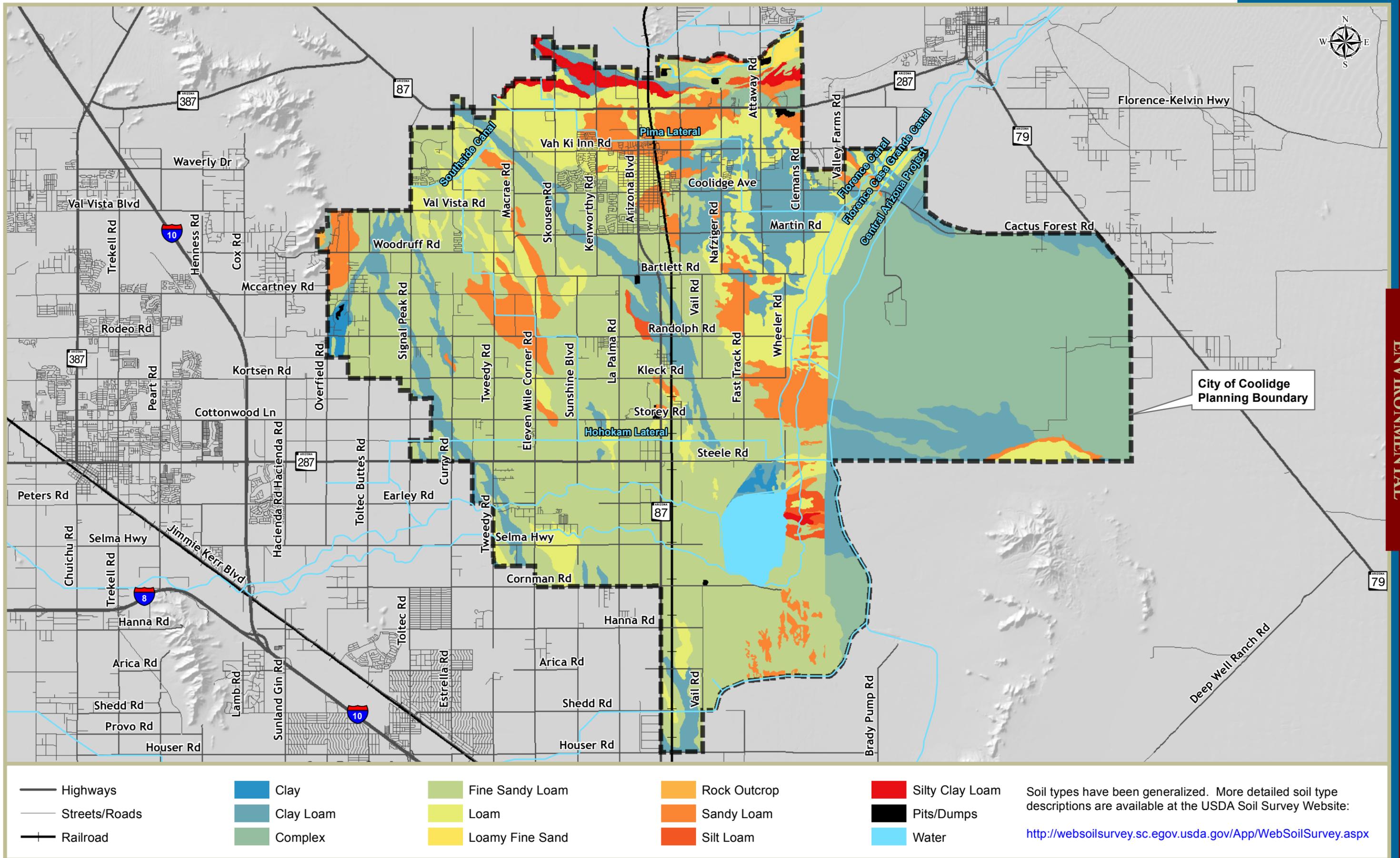
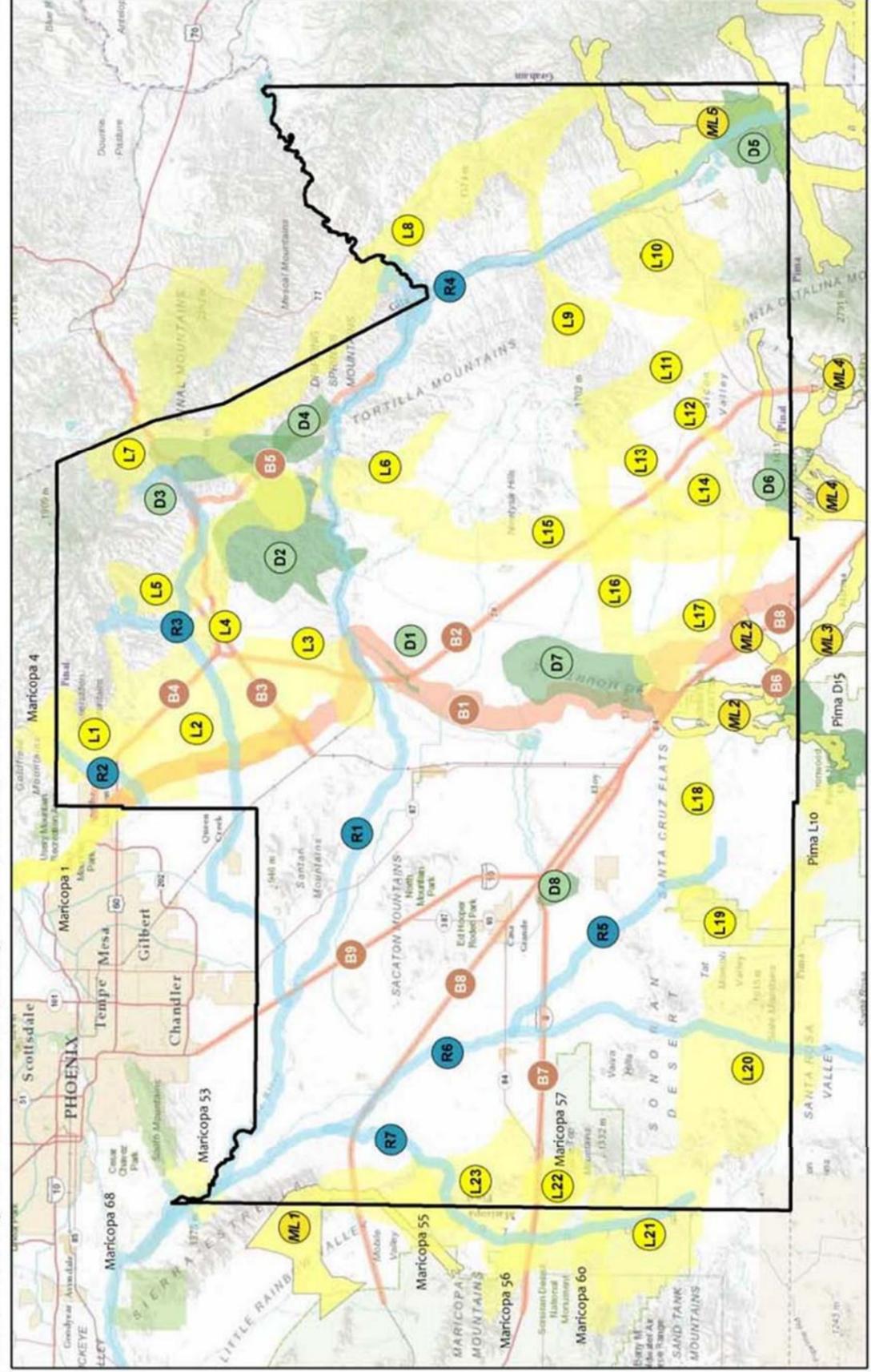


Figure 6.2 : Soil Types Map

Pinal County Wildlife Connectivity Assessment: Overview

2013



Arizona Game and Fish Department
 makes no warranties, expressed or implied,
 with any of the information on this map.

0 5 10 15 20 Miles
 0 5 10 15 20 Kilometers



Wildlife Linkages (Stakeholder Input at Workshop)

- Diffuse Movement Area (Wildlife Movement within a block)
- Landscape Movement Area (Wildlife Movement Between Wildland Blocks)
- Riparian Movement Area (Wildlife Movement Through Riparian Habitat)
- Major Barriers to Wildlife Movement

Wildlife Linkages (Modeled)

- Modeled by Beiler et al and AGFD

Figure 6.3 : Wildlife Connectivity Assessment

BIOLOGICAL HABITATS

The natural habitats of the Coolidge Planning Area are located in the lower Sonoran Desert region. Vegetation in this area of the Sonoran Desert consists of pockets of plant life, usually dominated by creosote bush, bursage and brittlebush scrub with mixed cacti. Mesquite, palo verde, and ironwood trees are also prevalent within the planning area. Since the damming of the river in 1928, the Gila River has been largely barren, with the exception of periods following heavy rainfall. Because of the damming and the current sand and gravel operations along the river corridor, the vegetation and wildlife of this riparian area has significantly decreased. While a large portion of the Planning Area consists of agricultural land, there are still significant areas of natural desert that support native wildlife to be preserved and protected.



The Sonoran Desert region supports a variety of animal and reptile species, including rattlesnake, coyote, black-tailed jackrabbit, cottontail rabbit, javelina, mountain lion, badger, bobcat, and mule deer. A variety of birds also inhabit the area, including dove, quail and red-tailed hawks. Three species in the Planning Area have been defined by the Federal Government as a Species of Concern or Endangered, including the Western Burrowing Owl, Nochol Turk's Head Cactus, and the Arizona Hedgehog Cactus.



In 2006, the Arizona Wildlife Linkages Workgroup (a collection of nine public and nonprofit agencies, including the Arizona Department of Transportation and AGFD) completed Arizona's Wildlife Linkages Assessment (Figure 6.3), which is an initial effort to identify potential linkage zones important to Arizona's wildlife and natural ecosystems that may be interrupted by large transportation infrastructure projects. The two main reasons for this project are highway safety and wildlife conservation. Consideration of wildlife corridors and connectivity can be integrated into the planning stages of transportation projects such as freeways. Through this process, significant wildlife linkages have the potential to be maintained or conserved. The Planning Area has two main designated corridors: the Gila River area and the Central Arizona Project canal. However, the two canals located east of the City Core—Florence Casa Grande Canal and the Florence Canal—are natural wildlife corridors as well, and should be considered for conservation purposes. Arizona State Land and the Bureau of Land Management should also be engaged in land conservation efforts.



Environmental Element

GEOLOGIC & OTHER HAZARDS



Earth fissures and flood prone areas are two hazards that can be encountered within the Coolidge Planning Area. Figure 6.4 depicts the general proximity where these two conditions can exist. Earth fissures have been documented east of Wheeler Road and typically South of the Coolidge Municipal Airport. Earth fissures are associated with basin subsidence that accompanies extensive ground water mining. In Arizona, fissures were first noted near Eloy in 1929. Their physical appearance varies greatly, but they may be more than a mile in length, up to 15 feet wide, and hundreds of feet deep. During torrential rains they erode rapidly presenting a substantial hazard to people and infrastructure. Moreover, fissures provide a ready conduit to deliver runoff and contaminated waters to basin aquifers. Ariz. Rev. Stat. § 27-106 charges the Arizo-



na Geological Survey (AZGS) with comprehensive mapping of earth fissures throughout Arizona and delivering earth fissure map data to the State Land Department to be posted online with other GIS map layers for the public to use to build their own customized maps.



The area with the greatest flood potential is along the Gila River on the north boundary of the planning area and along the McClellan Wash influence area in the Northeast part of the planning area. Other areas prone to flooding are low lying areas along Raymond and Bealey Streets and in several area drainage channels that were developed to convey storm-water around developments like Heartland Ranch.



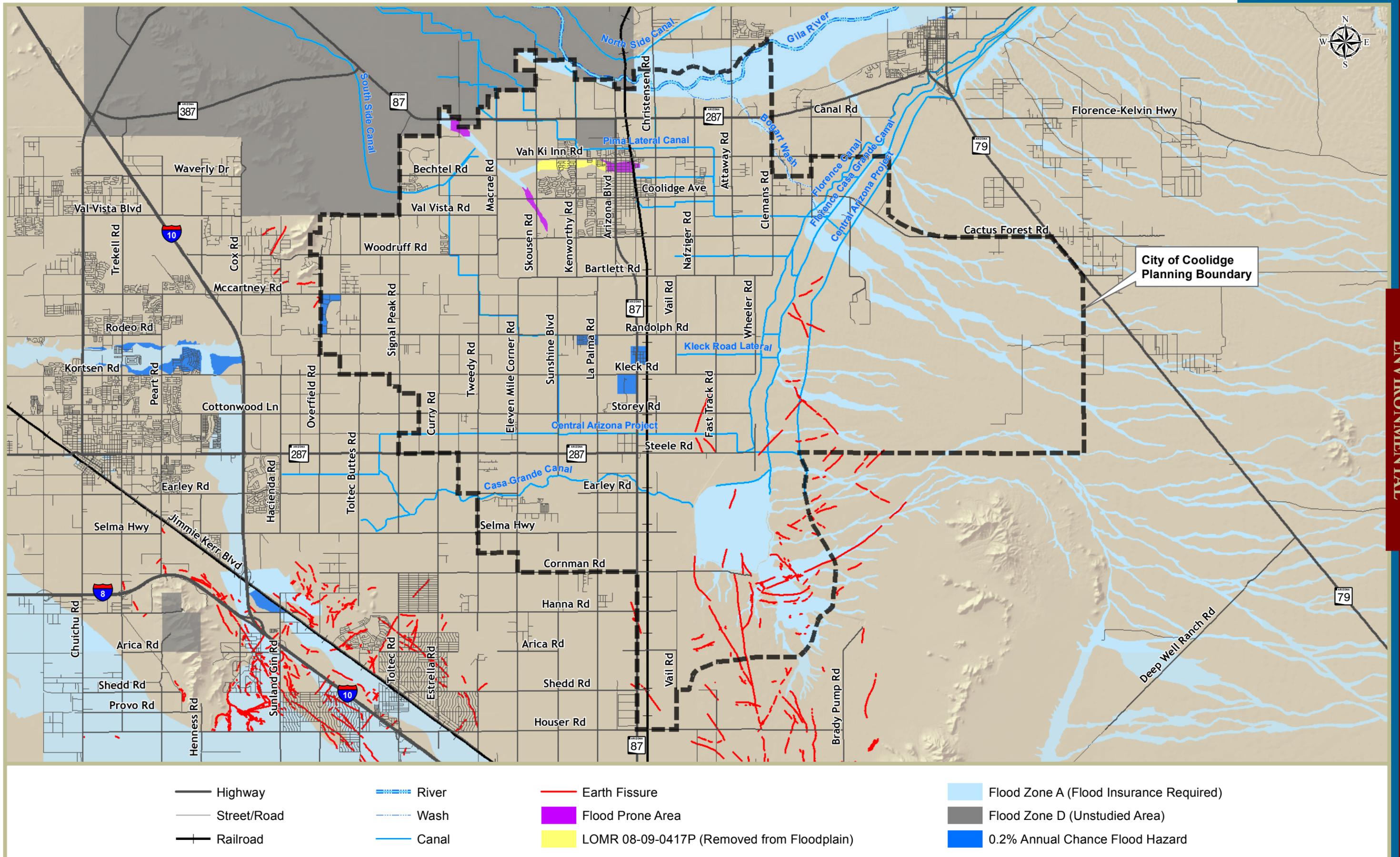


Figure 6.4 : Environmental Hazards

*The time to repair the roof is when the sun is shining.
-John F. Kennedy*