CHAPTER 6

ENVIRONMENTAL OVERVIEW

COCHISE COLLEGE AIRPORT
AIRPORT MASTER PLAN

ARMSTRONG

Chapter Six
Environmental Overview

6.1 INTRODUCTION

This environmental overview examines the potential environmental impacts associated with the proposed airport improvements from the preferred development alternative(s) selected in Chapter 4 and listed in the Capital Improvement and Financial Plans in the Chapter 7. The proposed improvements occur on existing airport property and are not likely to significantly impact the natural environment. This Chapter is intended to provide an overview of the potential impacts and identify additional environmental documentation that may be required as a prerequisite to development.

6.2 AIR QUALITY

The Clean Air Act of 1970 was enacted to reduce emissions of specific pollutants via uniform Federal standards. These standards include the National Ambient Air Quality Standards (NAAQS) which set maximum allowable ambient concentrations of ozone (O3), nitrogen dioxide (NO2), sulfur dioxide (SO2), carbon monoxide (CO), lead (Pb) and particulate matter 10 microns or smaller (PM10). Section 176(c) of the Act, in part, states that no Federal agency shall engage in, support in any way or provide financial assistance for, license or permit or approve any activity that does not conform to the State Implementation Plan.

Federal Aviation Administration Orders 5050.4B and 1050.1E require air quality analysis for projects in areas not in compliance with the Environmental Protection Agency (EPA) approved State Implementation Plan (SIP). Because the Airport is located within a nonattainment area coordination with the Arizona Department of Environmental Quality Air Quality Division should be conducted as part of each development project.

Construction emissions, specifically dust, are not a long-term factor. These emissions are described in the "Construction Impacts" section of this Chapter. The necessary permits will be obtained before construction begins and construction projects should conform to FAA Advisory Circular (AC) 150/5370-10F, Standards for Specifying Construction of Airports.

The following best management practices are recommended to minimize construction emissions:

I. Site Preparation and Construction.
   A. Minimize land disturbance.
   B. Suppress dust on traveled paths which are not paved through wetting, use of watering trucks, chemical dust suppressants, or other reasonable precautions to prevent dust entering ambient air.
   C. Cover trucks when hauling dirt or debris.
   D. Minimize soil track-out by washing or cleaning truck wheels before leaving the construction site.
   E. Use windbreaks to prevent any accidental dust pollution.
   F. Segregate storm water drainage from construction sites and material piles.

II. Construction Phase.
   A. Cover trucks when transferring materials.
   B. Minimize unnecessary vehicular and machinery activities.

III. Completion Phase.

A. Revegetate any disturbed land not used.
B. Remove unused material and dirt piles.
C. Remove soil piles via covered trucks.

Temporary air pollution may occur during the construction process of proposed development projects. The design and construction of the proposed improvements will incorporate Best Management Practices (BMP) to reduce air quality impacts, including minimizing land disturbance, wetting down, using water trucks, dust suppressant, covering trucks when hauling soil and the use of wind breaks (see Section 6.5). These practices will be selected based on the site's characteristics. No significant air quality impacts are anticipated as a result of the proposed development.

6.3 COASTAL RESOURCES

There are no coastal zones in the vicinity of the airport or associated with the proposed development. Therefore, compliance with the Coastal Zone Management Act of 1972 and the Coastal Barriers Resources Act of 1982 is not a factor.

6.4 COMPATIBLE LAND USE

Land use compatibility considerations include safety, height hazards and noise exposure. Although extremely rare, most aircraft accidents occur within 5,000 feet of a runway. Therefore, the ability of the pilot to bring the aircraft down in a manner that minimizes the severity of an accident is dependent upon the type of land uses within the vicinity of the airport. Land uses are reviewed in three zones surrounding the airport: the Runway Protection Zone (RPZ), the Approach Zone, the Traffic Pattern Zone and the Airport Influence Zone. These zones are depicted on the Off Airport Land Use drawing contained within the Airport Layout Plan drawing set in Chapter 5. The RPZ is a trapezoidal area extending 1,200 feet beyond the ends of the runway and is typically included within the airport property boundary. Residential and other uses that result in congregations of people are prohibited within the runway protection zone. The approach zone generally falls within the FAR Part 77 Approach Surface area. Within the approach zone, public land uses, such as schools, libraries, hospitals and churches should be avoided. New residential developments within the approach zone should include avigation easements and disclosure statements. The Traffic Pattern Zone is generally the area within one mile of the airport. Within the Traffic Pattern Zone, avigation easements should be considered for residential and public uses within this area and disclosure statements should be included. The Airport Influence Zone is the area where aircraft are transitioning to or from enroute altitude or airport over-flight altitude to or from the standard traffic pattern altitude of 800 to 1,000 feet above airport elevation.

Cochise College obtained avigation easements for the existing approach and departure RPZ's on Runway 5/23 in 2011. The closest population center to the Cochise College Airport is Douglas, Arizona which is located approximately eight miles east of the airport. Cochise College campus is located immediately south of the airport. The airport has a standard left hand traffic pattern to both ends of Runway 5/23.

Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace, provides imaginary surfaces surrounding an airport that should be protected from penetration by objects. These include the approach surface, horizontal surface and conical surface. These surfaces were described in Chapter 3. Proposed structures in the vicinity of the airport should be

reviewed against the Part 77 criteria to ensure hazards to air navigation are not created. Future objects penetrating these surfaces could result in a hazard to air navigation.

The airport is located within unincorporated Cochise County. The County has not implemented an Airport Zoning Ordinance for the Cochise College Airport. Compatible Land Use and Height Restriction drawings are included as part of this Airport Layout Plan as a tool for the College and County to use in reviewing and evaluating the compatibility of proposed development in the vicinity of the Airport. Cochise College Airport and the land surrounding Airport is located in a rural land use (RU-4). The existing land use surrounding the Cochise College Airport is considered to be compatible with the airport. The area surrounding Cochise College is shown in **Figure 6-1**.

FIGURE 6-1 COCHISE COLLEGE AIRPORT SURROUNDING LAND

6.5 CONSTRUCTION IMPACTS

Local, State and Federal ordinances and regulations address the impacts of construction activities, including dust and noise from heavy equipment traffic, disposal of construction debris and air and water pollution.

Construction operations for the proposed development may cause specific impacts resulting solely from and limited exclusively to the construction project. Construction impacts are distinct

in that they are temporary in duration and the degree of adverse impacts decreases as work is concluded. The following construction impacts can be expected:

- A temporary increase in particulate and gaseous air pollution levels as a result of dust generated by construction activity and by vehicle emissions from equipment and worker's automobiles;
- Increases in solid and sanitary wastes from the workers at the site;
- Traffic volumes that would increase in the airport vicinity due to construction activity (workers arriving and departing, delivery of materials, etc.);
- Increase in noise levels at the airport during operation of heavy equipment; and
- Temporary erosion, scarring of land surfaces and loss of vegetation in areas that are excavated or otherwise disturbed to carry out future developments.

Construction projects will comply with guidelines set forth in FAA Advisory Circular 150/5370-10F, Standards for Specifying the Construction of Airports. The contractor will obtain the required construction permits. The contractor will also prepare Storm Water Pollution Prevention and Fugitive Dust Control Plans for construction. These requirements will be specified in the contract documents for the construction of the proposed improvements.

6.6 DOT ACT – SECTION 4(F)

Section 303c of Title 49, U.S.C., formerly Section 4(f) of DOT Act of 1966, provides that the Secretary of Transportation shall not approve any program or project that requires the use of any publicly owned land from a public park, recreation area or wildlife or waterfowl refuge of National, State or Local significance or land from an historic site of National, State or Local significance, as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such project includes all possible planning to minimize impacts. The proposed improvements will not require land from any public park, recreation area or wildlife or waterfowl refuge.

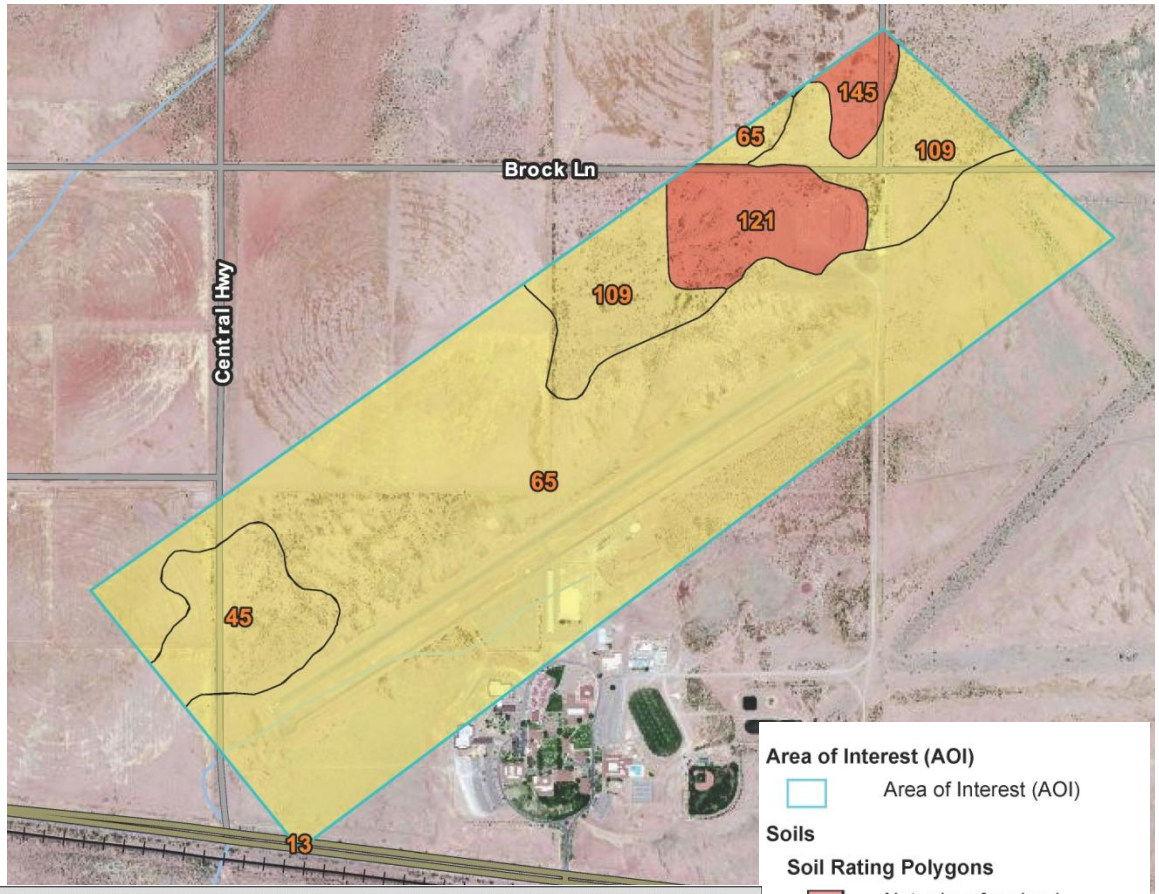
There are no public parks, recreation area or wildlife and waterfowl refuges of National, State or local significance surrounding the airport. The nearest recreation area is located in the City of Douglas over 8 miles from the airport. Pilots are requested to remain at least 2,000 feet Above Ground Level (AGL) over all wilderness areas.

6.7 FARMLANDS

The Farmland Protection Policy Act (FPPA) authorizes the Department of Agriculture to develop criteria for identifying the effects of Federal programs upon the conversion of farmland to uses other than agriculture.

Conversion of "Prime or Unique" farmland may be considered a significant impact. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed or fiber without intolerable soil erosion as determined by the Secretary of Agriculture. Unique farmland is land other than prime farmland which is used to produce specific high value food and fiber crops, such as citrus, tree nuts, olives, cranberries, fruits and vegetables.

Figure 6-2 shows the land surrounding the Cochise College Airport in yellow which indicates that the land would be prime farmland if it was irrigated. Since the land is not irrigated it is not considered to be prime farmland.



Farmland Classification— Summary by Map Unit — Cochise County, Arizona, Douglas-Tombstone Part (AZ671)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
13	Bonita-Forrest complex, 1 to 8 percent slopes	Farmland of unique importance	0.1	0.0%
45	Diaspar sandy loam, 0 to 2 percent slopes	Prime farmland if irrigated	32.1	6.8%
65	Forrest clay loam, 1 to 3 percent slopes	Prime farmland if irrigated	341.3	72.4%
109	McNeal gravelly sandy loam, 1 to 3 percent slopes	Prime farmland if irrigated	59.0	12.5%
121	Pits	Not prime farmland	29.7	6.3%
145	Ubik loam, 1 to 3 percent slopes	Not prime farmland	9.4	2.0%
Totals for Area of Interest			**471.5**	**100.0%**

FIGURE 6-2 FARMLAND MAP

6.8 FISH, WILDLIFE AND PLANTS

This category concerns potential impacts to existing wildlife habitat and threatened and endangered species. Examining both the area of land to be altered or removed and its relationship to surrounding habitat quantify the significance of the impacts in this category. For example, removal of a few acres of habitat which represents a small percentage of the area's total similar habitat or which supports a limited variety of common species would not be considered significant. However, removal of a sizeable percentage of the area's similar habitat or habitat which is known to support rare species would be considered a significant impact. The surrounding area offers an abundance of similar habitat and the proposed improvements are not considered to be a significant habitat loss.

Section 7 of the Endangered Species Act, as amended, requires each Federal agency to insure that "any action authorized, funded or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat of such species . . .".

An Endangered Species is defined as any member of the animal or plant kingdoms determined to be in danger of extinction throughout all or a significant portion of its range. A Threatened Species is defined as any member of the plant or animal kingdoms that is likely to become endangered in the foreseeable future.

The majority of the proposed development projects include maintaining existing facilities including the reconstruction and preservation of existing pavement. Impacts to threatened and endangered species are not anticipated as a result of the proposed development.

Table 6-1 lists each of the species currently listed as threatened, endangered, or candidate for Cochise County. The list provides the biological basis for including or excluding each species from further evaluation of potential impacts from the Cochise College Airport. None of the species are known to occur within the project area. Therefore, none of the planned projects would impact any threatened and endangered species and no further site surveys would be required.

TABLE 6-1 ENDANGERED AND THREATENED SPECIES LIST FOR COCHISE COUNTY

Species[1]	ESA Status	Habitat Requirements	Habitat Present
Beautiful shiner *Cyprinella formosa*	FT	Small to medium sized streams and ponds with sand, gravel, and rock bottoms. < 4,500 ft	NP
Canelo Hills ladies'-tresses *Spiranthes delitescen*	FE	Finely grained, highly organic, saturated soils of cienegas. ~ 5,000 ft	NP
Chiricahua leopard frog *Rana chiricahuensis*	FT	Streams, rivers, backwaters, ponds, and stock tanks that are mostly free from introduced fish, crayfish, and bullfrogs. 3,300-8,900 ft	NP
Cochise pincushion cactus *Coryphantha robbinsorum*	FT	Semidesert grassland with small shrubs, agave, other cacti, and grama grass. > 4,200 ft	NS
Desert pupfish *Cyprinodon macularius*	FE	Shallow springs, small streams, and marshes. Tolerates saline and warm water. < 4,000 ft	NP
Gila chub *Gila intermedia*	FE	Pools, springs, cienegas, and streams. 2,000-5,500 ft	NP
Gila topminnow (incl. Yaqui) *Poeciliopsis occidentalis*	FE	Small streams, springs, and cienegas vegetated shallows. < 4,500 ft	NP
Huachuca springsnail *Pyrgulopsis thompsoni*	FC	Aquatic areas, small springs with vegetation and slow to moderate flow. 4,500-7,200 ft	NP
Huachuca water-umbel *Lilaeopsis haffneriana var. recurva*	FE	Cienegas, perennial low gradient streams, wetlands. 3,500-6,500 ft	NP
Jaguar *Panthera onca*	FE	Found in Sonoran desertscrub up through subalpine conifer forest. 1,600-9,000 ft	NS
Lemmon fleabane *Erigeron lemmonii*	FC	Grows in dense clumps in crevices, ledges, and boulders in canyon bottoms in pine-oak woodland. 1,500-6,000 ft	NP
Lesser long-nosed bat *Leptonycteris curasoa yerbabuenae*	FE	Desert scrub habitat with agave and columnar cacti present as food plants. 1,600-11,500 ft	NS
Loach minnow *Tiaroga cobitis*	FT	Benthic species of small to large perennial streams with swift shallow water over cobble and gravel. Recurrent flooding and natural hydrograph important. < 8,000 ft	NP
Mexican spotted owl *Strix occidentalis lucida*	FT	Nests in canyons and dense forests with multi-layered foliage structure. 4,100-9,000 ft	NP
New Mexico ridgenose rattlesnake Esnake *Crotalus willardi obscurus*	FT	Primarily canyon bottoms in pine-oak communities. 5,000-6,600 ft	NP
Northern aplomado falcon *Falco femoralis septentrionalis*	FE	Grassland and savannah 3,500-9,000 ft	NS

TABLE 6-1 CONTINUED

Species[1]	ESA Status	Habitat Requirements	Habitat Present
Ocelot *Leopardus (=Felis) pardalis*	FE	Desert scrub in Arizona. Humid tropical and sub-tropical forests, and savannahs in areas south of the U.S. < 8,000 ft	NS
San Bernardino springsnail *Pyrgulopsis bernardina*	FC	Springs with firm substrate composed of cobble, gravel, woody debris, and aquatic vegetation. 3,806 ft	NP
Sonoran tiger Salamander *Ambystoma tigrinum stebbinsi*	FE	Stock tanks and impounded cienegas; rodent burrows, rotted logs, and other moist cover sites. 4,000-6,300 ft	NP
Southwestern willow flycatcher *Empidonax traillii extimus*	FE	Cottonwood/willow and tamarisk vegetation communities along rivers and streams. < 8,500 ft	NP
Spikedace *Meda fulgida*	FE	Medium to large perennial streams with moderate to swift velocity waters over cobble and gravel substrate. Recurrent flooding and natural hydrograph important to withstand invading exotic species. < 6,000 ft	NP
Yaqui catfish *Ictalurus pricei*	FT	Moderate to large streams with slow current over sand and rock bottoms. 4,000-5,000 ft	NP
Yaqui chub *Gila purpurea*	FE	Deep pools of small streams near undercut banks and debris; pools associated with springheads, and artificial ponds. 4,000-6,000 ft	NP
m Yaqui topminnow *Poeciliopsis occidentalis sonoriensis*	FE	Small to moderate sized streams, springs and cienegas. Generally found in shallow areas with aquatic vegetations or debris. Tolerates relatively high water temperature and low dissolved oxygen. <4,500 ft	NP
Yellow-billed Cuckoo *Coccyzus americanus*	FC	Large blocks of riparian woodlands (cottonwood, willow, or tamarisk galleries). < 6,500 ft	NP
Arizona treefrog (Huachuca/Canelo DPS) *Hyla wrightorum*	FC	Madrean oak woodlands, savannah, pine-oak woodlands, and mixed conifer forests. 5,000-8,500 ft	NP
Northern Mexican Gartersnake *Thamnophis eques megalops*	FC	Cienegas, stock tanks, large-river riparian woodlands and forests, streamside gallery forests. 130-8,500 ft	NP
Sonoran desert tortoise *Gopherus morafkai*	FC	Primarily rock (often steep) hillsides and bajadas of Mohave and Sonoran desertscrub but may encroach into desert grassland, juniper woodland, interior chaparral habitats, and even pine communities. Washes and valley bottoms may be used in dispersal. <7,800 ft	NP
Sprague's pipit *Anthus spragueii*	FC	Strong preference to native grasslands with vegetation of intermediate height and lacking woody shrubs. <5,000 ft	NS

ESA = Endangered Species Act; FE = Federally Endangered; FT = Federally Threatened; FC = Federal Candidate
K = Known, documented observation within the project area.
S = Habitat suitable and species suspected to occur within the project area.
NS = Habitat suitable but species is not suspected to occur within the project area.
NP = Habitat not present and species unlikely to occur within the project area.

[1] *Source: U.S. Fish and Wildlife, 2013*

6.9 FLOODPLAINS

Floodplains are defined by Executive Order 11988, Floodplain Management, as the lowland and relatively flat areas adjoining coastal water . . . including at a minimum, that area subject to a one percent or greater chance of flooding in any given year . . . ", that is, an area which would be inundated by a 100-year flood. If a proposed action involves a 100-year floodplain, mitigating measures must be investigated in order to avoid significant changes to the drainage system.

Portions of the Cochise College Airport are located within the Zone X and Zone A. According to the Federal Emergency Management Agency (FEMA) Zone X are areas of minimum flood hazard, usually above the 500-year flood level. Zone A are within the 100-year floodplain and are areas with a one percent annual chance of flooding and a 26 percent chance of flooding over 30-years. Because detailed analyses are not performed for such areas no depth or base flood elevations are shown with these zones.

As described in FAA Order 5050.4B, an airport development project would be a significant impact pursuant to NEPA if it results in notable adverse impacts on natural and beneficial floodplain values. Mitigation measures for base floodplain encroachments may include committing to special flood related design criteria, elevating facilities above base flood level, locating nonconforming structures and facilities out of the floodplain or minimizing fill placed in floodplains. No significant impacts with regards to floodplains are anticipated as a result of the proposed projects (see **Figure 6-3**).

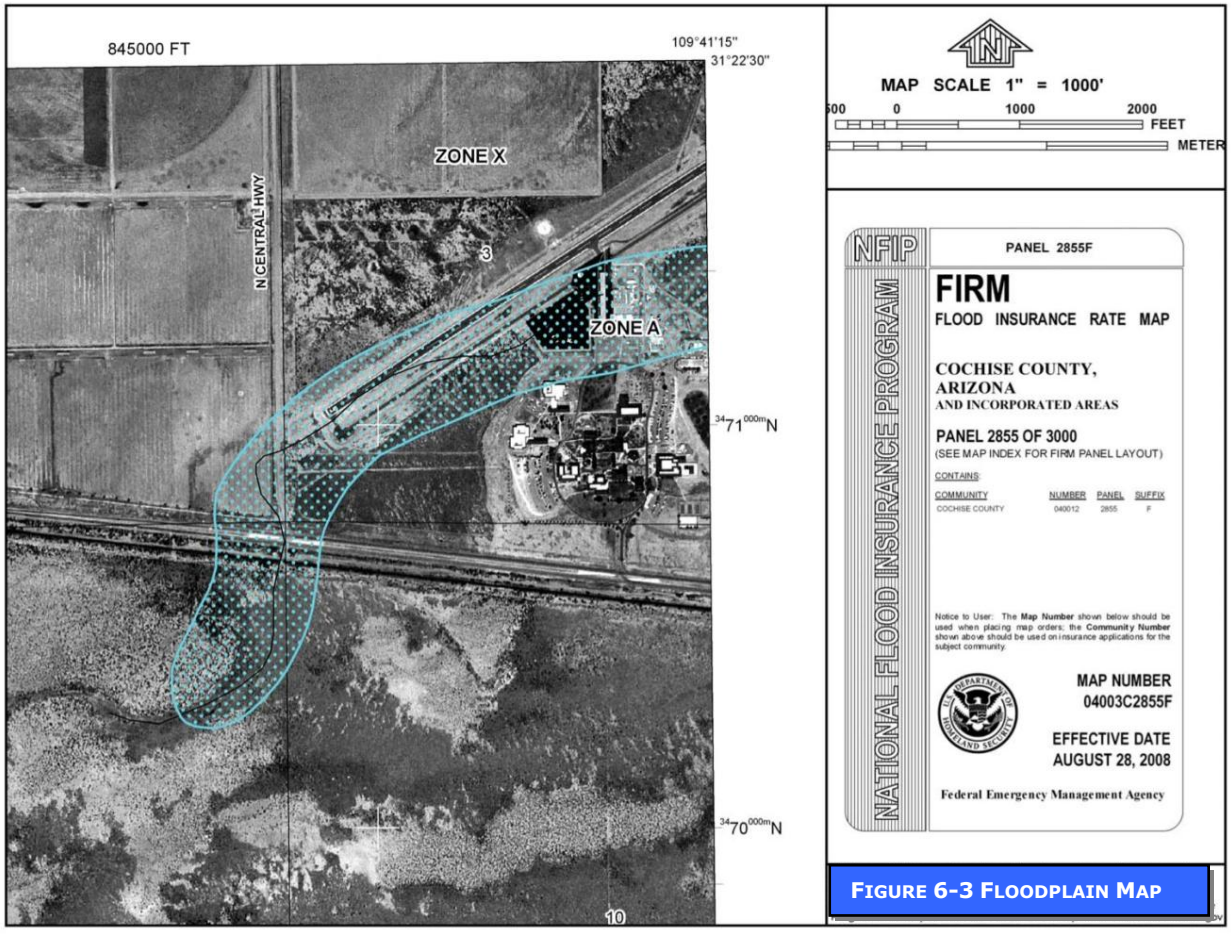


FIGURE 6-3 FLOODPLAIN MAP

6.10 HAZARDOUS MATERIALS, POLLUTION PREVENTION AND SOLID WASTE

Four primary laws have been passed governing the handling and disposal of hazardous materials, chemicals, substances and wastes. The two statutes of most importance to the FAA in proposing actions to construct and operate facilities and navigational aids are the Resource Conservation and Recovery Act (RCRA) (as amended by the Federal Facilities Compliance Act of 1992) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA or Superfund) and the Community Environmental Response Facilitation Act of 1992. RCRA governs the generation, treatment, storage and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment.

There is no indication of buried storage tanks or land uses that would indicate the presence of hazardous materials. A windshield tour was conducted of the airport property during the inventory of the Cochise College Airport.

Airport development actions that relate only to construction or expansion of runways, taxiways and related facilities do not normally include any direct relationship to solid waste collection, control or disposal other than that associated with the construction itself. The nature of the proposed airport meets these criteria and will not significantly increase net waste output for the College.

Any solid waste disposal facility (i.e. sanitary landfill) which is located within 5,000 feet of all runways planned to be used by piston-powered aircraft or within 10,000 feet of all runways planned to be used by turbine aircraft, is considered by the FAA to be an incompatible land use because of the potential for conflicts between birds and low-flying aircraft. This determination is found in FAA Advisory Circular 150/5200-33, Hazardous Wildlife Attractants On or Near Airports. There are no solid waste disposal facilities within 10,000 feet of the airport.

6.11 HISTORICAL, ARCHITECTURAL, ARCHEOLOGICAL AND CULTURAL RESOURCES

The National Historic Preservation Act of 1966 requires that an initial review be made in order to determine if any properties in or eligible for inclusion in the National Register of Historic Places are within the area of a proposed action's potential environmental impact (the area within which direct and indirect impacts could occur and thus cause a change in historic, architectural, archaeological or cultural properties).

The Archaeological and Historic Preservation Act of 1974 provides for the survey, recovery and preservation of significant scientific, prehistorical, historical, archaeological or paleontological data when such data may be destroyed or irreparably lost due to a federal, federally funded or federally licensed project. The proposed development projects shown on the Airport Layout Plan are located within areas that have been previously disturbed by paving and airport operations; therefore, impacts to historic, architectural, archeological and cultural resources are not expected.

6.12 LIGHT EMISSIONS AND VISUAL IMPACTS

Airfield lighting is the main source of light emissions from an airport. Rotating airport beacons are provided so pilots can identify the location of an airport at night or in reduced visibility conditions. Rotating beacons consist of alternating white and green lights rotating at 24-30 flashes per minute. Beacons are typically mounted on a tower or on top of a hangar or other building. Specifications for spotting airport beacons allow the beam to be angled from 2 degrees to 12 degrees above the horizon. The standard setting is 6 degrees. If necessary, the beacon can be shielded to reduce visibility of the beacon from below the horizon line. Medium Intensity Runway Edge Lights (MIRLs) are single white or yellow lights mounted on 14-30 inch posts spaced at 200 foot intervals along both edges of the runway. They define the boundaries of the runway surface usable for takeoff and landing. Precision Approach Path Indicators (PAPIs) are used for visual descent guidance and consist of two or four light units located to the left of the runway and perpendicular to the runway centerline. The lights are directed at a glide path angle of 3 degrees above the runway. If the aircraft is above the glide path, the pilot will see all white lights. If the pilot is on the proper glide path, the light unit closest to the runway will be red and the unit farthest from the runway will be white. When the pilot is below the glide path the light units will be red. PAPIs have an effective visual range from the air of approximately five miles during the day and up to twenty miles at night. These visual aids are extremely useful and enhance safety in situations where there are few visual references surrounding the airport. Runway End Identifier Lights (REILs) are synchronized flashing lights located laterally on each side of the runway threshold. They are angled upward and outward from the runway and provide rapid and positive identification of the threshold of a runway. This is especially useful in metropolitan and densely developed areas where lights in the vicinity of the airport make it difficult to identify the runway.

Proposed improvements will primarily replace existing lighting. These improvements will not substantially increase light emission impacts at the Cochise College Airport. If complaints are received, runway and taxiway lights can be shielded/baffled.

6.13 NATURAL RESOURCES, ENERGY SUPPLY AND SUSTAINABLE DESIGN

Executive Order 13123, Greening the Government Through Efficient Energy Management (64FR 30851, June 8, 1999), encourages each Federal agency to expand the use of renewable energy within its facilities and in its activities. E.O. 13123 also requires each Federal agency to reduce petroleum use, total energy use and associated air emissions and water consumption in its facilities.

It is also the policy of the FAA, consistent with NEPA and the CEQ regulations, to encourage the development of sustainability. All elements of the transportation system should be designed with a view to their aesthetic impact, conservation of resources such as energy, pollution prevention, harmonization with the community environment and sensitivity to the concerns of the traveling public.

Energy requirements associated with airport improvements generally fall into two categories: 1) changed demand for stationary facilities (i.e. airfield lighting and terminal building heating) and 2) those that involve the movement of air and ground vehicles (i.e. fuel consumption). The use of natural resources includes primarily construction materials and water.

Energy requirements are not expected to significantly increase as a result of the proposed improvements. During pavement reconstruction process, the existing pavement would be pulverized, recycled and used for the construction of new pavement.

Recycling of asphalt pavement is recommended. Recycling can save money and save energy when recycling is done on site, conserve diminishing resources of aggregates and petroleum products, and help reduce disposal of pavement materials.

Demand for aircraft fuel is not expected to significantly increase. Aircraft fuel should be stored in above ground tanks at the airport that conform to EPA and other applicable federal, state and local regulations. Significant increases in ground vehicle fuel consumption are not anticipated.

6.14 NOISE

Noise analysis considerations include whether the Federal thresholds of noise exposure are exceeded, whether the 65 day-night level (DNL) noise contour extends beyond airport property and if there are any residences, churches, schools or hospitals within the 65 DNL noise contour. The basic measure of noise is the sound pressure level that is recorded in decibels (dBA). The important point to understand when considering the impact of noise on communities is that equal levels of sound pressure can be measured for both high and low frequency sounds. Generally, people are less sensitive to sounds of low frequency than they are to high frequencies. An example of this might be the difference between the rumble of automobile traffic on a nearby highway and the high-pitched whine of jet aircraft passing overhead. At any location, over a period of time, sound pressure fluctuates considerably between high and low frequencies. **Figure 6-4** depicts a Sound Level Comparison of different noise sources.

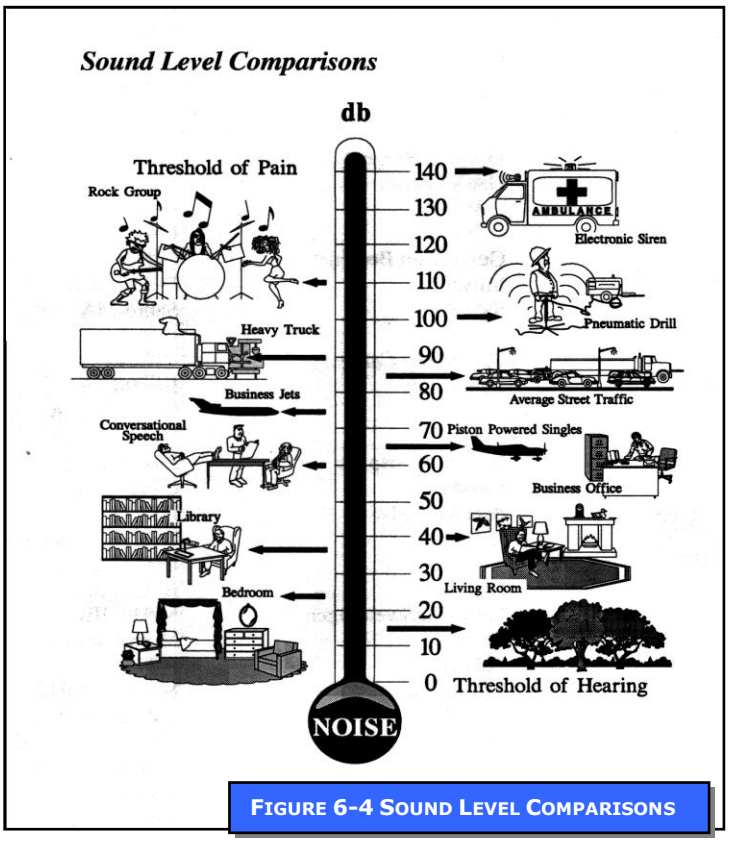


FIGURE 6-4 SOUND LEVEL COMPARISONS

The identification of airport generated noise impacts and implementation of noise abatement measures is a joint responsibility of airport operators and users. FAA Order 5050.4B states that "no noise analysis is needed for proposals involving Design Group I and II airplanes operating at airports whose forecast operations in the period covered by the EA do not exceed 90,000 annual adjusted propeller operations or 700 annual adjusted jet operations . . .". Noise analysis is not required for the Cochise College Airport since operations are forecasted to be 67,901 in 2030; however a 65 DNL noise contour for forecast year 2030 was developed for the Cochise College Airport and is shown in **Figure 6-5**. The forecasted 65 DNL noise contour is not expected to expand onto any noise sensitive land uses.

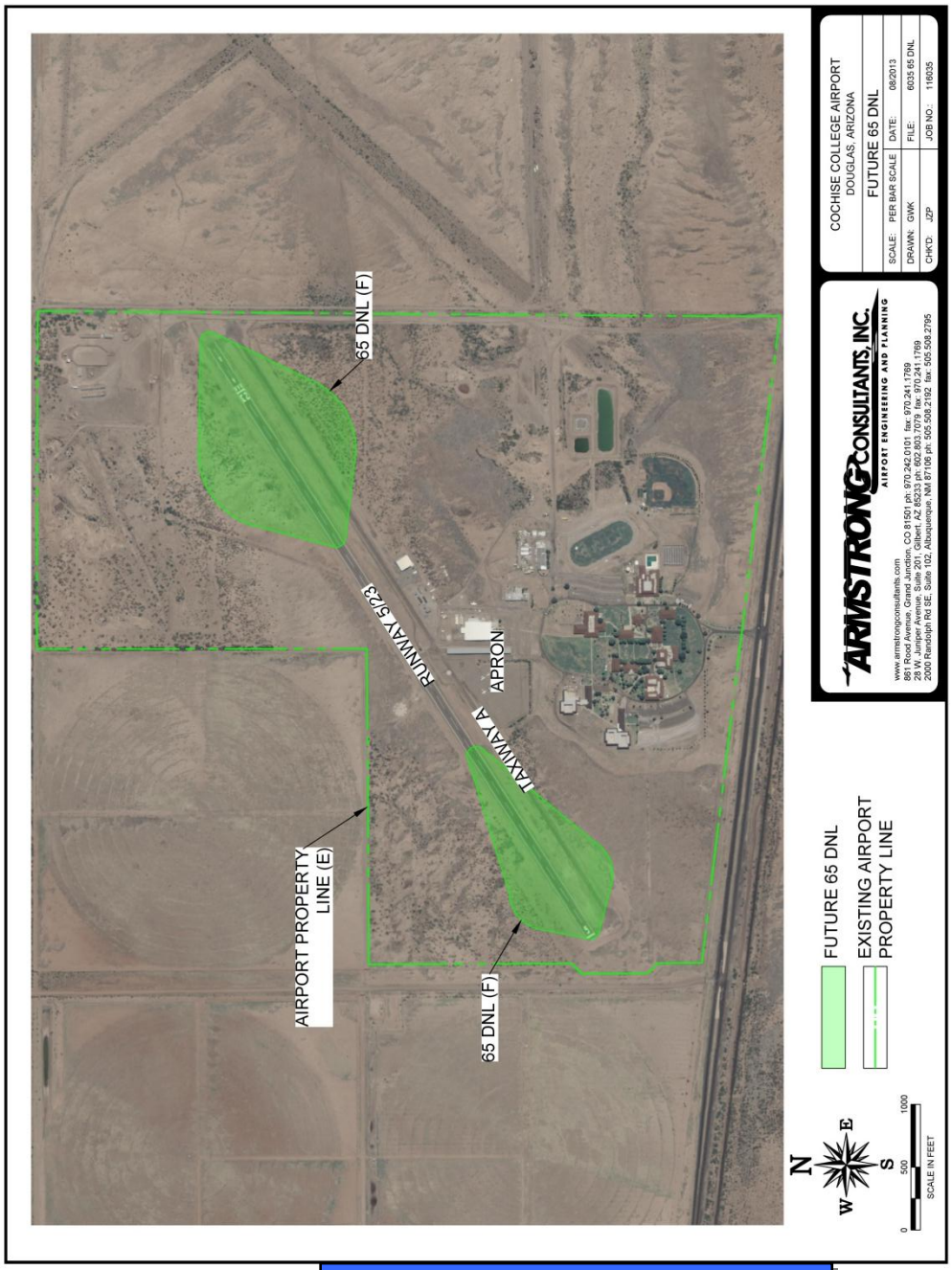


FIGURE 6-5 FUTURE 65 DNL NOISE CONTOUR

6.14.1 VOLUNTARY NOISE ABATEMENT PROGRAM

Although the noise exposure levels will not exceed 65 DNL over any noise sensitive area, several voluntary measures can be applied to minimize noise exposure to surrounding areas. Several of these measures are listed below. It is recommended that a voluntary noise abatement program be implemented for the airport and publicized to all based and transient pilots.

Pilots:

- Be aware of noise sensitive areas, particularly residential areas near the airport and avoid low flight.
- Fly traffic patterns tight and high, keeping the aircraft as close to the field as possible.
- In constant-speed-propeller aircraft, do not use high RPM settings in the pattern. Propeller noise from high-performance singles and twins increases drastically at high RPM settings.
- On takeoff, reduce to climb power as soon as safe and practical.
- Climb after liftoff at best-angle-of-climb speed until crossing the airport boundary, then climb at best rate.
- Depart from the start of the runway rather than intersections, for the highest possible altitude when leaving the airport vicinity.
- Avoid prolonged run-ups and do them inside the airport area, rather than at its perimeter.
- Try low-power approaches and always avoid the low, dragged-in approach.

Instructors:

- Teach noise abatement procedures to all students, including pilots you take up for flight reviews.
- Know noise-sensitive areas and point them out to students.
- Assure students fly at or above the recommended pattern altitude.
- Practice maneuvers over unpopulated areas and vary practice areas so that the same locale is not constantly subjected to aircraft operations.
- During practice of ground-reference maneuvers, be particularly aware of houses or businesses in your flight path.
- Stress that high RPM propeller settings are reserved for takeoff and for short final but not for flying in the pattern. Pushing the propeller to high RPM results in significantly higher levels of noise.

Fixed Base Operators (FBOs):

- Identify noise-sensitive areas and work with customers to create voluntary noise abatement procedures.
- Post any noise abatement procedures in a prominently visible area and remind pilots of the importance of adhering to them.
- Call for the use of the least noise sensitive runway whenever wind conditions permit.
- Initiate pilot education programs to teach and explain the rationale for noise abatement procedures and positive community relations.

Airport Owner and Surrounding Jurisdictions:

- Maintain appropriate zoning in the vicinity of the airport and see that noise sensitive land uses are not authorized within pattern, approach and departure paths.
- Disclose the existence of the airport and the airport influence area to real estate purchasers.

- Publish voluntary noise procedures on the Internet.
- Publish voluntary calm runway use procedures.

Source: Aircraft Owners and Pilots Association (AOPA)

6.15 SECONDARY (INDUCED) IMPACTS

These secondary or induced impacts involve major shifts in population, changes in economic climate or shifts in levels of public service demand. The effects are directly proportional to the scope of the project under consideration. Assessment of induced socioeconomic impacts is usually only associated with major development at large air carrier airports, which involve major terminal building development or roadway alignments and similar work.

The extent of the indirect socioeconomic impacts of the proposed development is not of the magnitude that would normally be considered significant; however, positive impacts can be expected in the form of direct, indirect and induced economic benefits generated from the airport.

6.16 SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, the accompanying Presidential Memorandum and Order DOT 5610.2, Environmental Justice, require the FAA to provide for meaningful public involvement by minority and low-income populations and analysis, including demographic analysis that identifies and addresses potential impacts on these populations that may be disproportionately high and adverse. Included in this process is the disclosure of the effects on subsistence patterns of consumption of fish, vegetation or wildlife and effective public participation and access to this information. The Presidential Memorandum that accompanied E.O. 12898, as well as the CEQ and EPA Guidance, encourage consideration of environmental justice impacts in EA's especially to determine whether a disproportionately high and adverse impact may occur. Environmental Justice is also considered during evaluation of other impact categories, such as noise, air quality, water, hazardous materials and cultural resources.

6.16.1 SOCIOECONOMIC IMPACTS

Induced socioeconomic impacts are usually only associated with major development at large air carrier airports. The socioeconomic impacts produced as a result of the proposed improvements to the Cochise College Airport are expected to be positive in nature and would include direct, indirect and induced economic benefits to the College and local area. These airport improvements are expected to attract additional users and in turn to encourage tourism, industry and to enhance the future growth and expansion of the community's economic base.

If acquisition of real property or displacement of persons is involved, 49 CFR Part 24 (implementing the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970), as amended, must be met for Federal projects and projects involving Federal funding. Otherwise, the FAA, to the fullest extent possible, observes all local and State laws, regulations and ordinances concerning zoning, transportation, economic development, housing, etc. when planning, assessing or implementing the proposed action.

6.16.2 ENVIRONMENTAL JUSTICE

The focus of the Environmental Justice evaluation is to determine whether the proposed action results in an inequitable distribution of negative effects to special population groups, as compared to negative effects on other population groups. These special population groups include minority or otherwise special ethnicity or low-income neighborhoods.

The proposed action is not expected to result in any significant negative impacts to any population groups and therefore, would not result in disproportionate negative impacts to any special population group. Socioeconomic and induced economic impacts are expected to be positive in nature and are expected to benefit all population groups in the area.

6.16.3 CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Pursuant to Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, Federal agencies are directed, as appropriate and consistent with the agency's mission, to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. Agencies are encouraged to participate in implementation of the Order by ensuring that their policies, programs, activities and standards address disproportionate risks to children that result from environmental health risks or safety risks. The proposed improvements are not expected to result in any environmental health risks or safety risks on children.

6.17 WATER QUALITY

Water quality considerations related to airport development often include increased surface runoff and erosion and pollution from fuel, oil, solvents and deicing fluids. Potential pollution could come from petroleum products spilled on the surface and carried through drainage channels off of the airport. State and Federal laws and regulations have been established to safeguard these facilities. These regulations include standards for above ground and underground storage tanks, leak detection and overflow protection. An effective Storm Water Pollution Prevention Plan (SWPPP) identifies storm water discharge points on the airport, describes measures and controls to minimize discharges and details spill prevention and response procedures. In July of 2002, the EPA amended the Oil Pollution Prevention Regulation at Title 40 of the Code of Federal Regulations, Part 112 (40 CFR Part 112). Subparts A through C of this regulation are often referred to as the "SPCC rule" because they describe requirements for certain facilities (including airports) to prepare and implement Spill Prevention Control and Countermeasure (SPCC) Plans.

Before a facility is subjected to the SPCC rule it must meet three criteria: 1) it must be non-transportation related; (non-transportation-related facilities may include the following but are not limited to airports, oil drilling, power generators, oil refineries, marinas, fish canneries, farms, construction sites, oil storage and oil production) 2) it must have an aggregate aboveground storage capacity greater than 1,320 gallons, or a completely buried storage capacity greater than 42,000 gallons; and 3) there must be a reasonable expectation of a discharge into or upon Navigable Waters of the United States.

In accordance with Section 402(p) of the Clean Water Act, a National Pollution Discharge Elimination System (NPDES) General Permit is required from the Environmental Protection Agency for construction projects that disturb at least one acres of land. Applicable contractors will be required to comply with the requirement and procedures of the NPDES General Permit,

including the preparation of a Notice of Intent and a Storm Water Pollution Prevention Plan, prior to the initiation of construction activities.

Recommendations established in FAA Advisory Circular 150/5370-10F, Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion and Siltation Control, will be incorporated into the project design and specifications. The design and construction of the proposed improvements will incorporate Best Management Practices (BMP) to reduce erosion, minimize sedimentation, control non-storm water discharges and to protect the quality of surface water features potentially affected. These practices will be selected based on the site's characteristics and those factors within the contractor's control and may include: construction scheduling, limiting exposed areas, runoff velocity reduction, sediment trapping and good housekeeping practices.

Future fuel storage and dispensing facilities should be designed, constructed, operated and maintained in accordance with Federal, State and Local regulations. Waste fluids, including oils, coolants, degreasers and aircraft wash facility wastewater will be managed and disposed of in accordance with applicable Federal, State and Local regulations.

6.18 WETLANDS

Wetlands are defined in Executive Order 11990, Protection of Wetlands, as "those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support, a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs and similar areas such as sloughs, potholes, wet meadows, river overflows and natural ponds. Jurisdictional Waters of the United States may also include drainage channels, washes, ditches, arroyos or other waterways that are tributaries to Navigable Water of the United States or other waters where the degradation or destruction of which could affect interstate or foreign commerce.

According to the United States Fish and Wildlife Service's National Wetland Inventory, there are no wetlands or Waters of the United States surrounding the Cochise College Airport (see **Figure 6-6**). Therefore no impacts to wetlands are anticipated to occur as a result of the proposed development.

FIGURE 6-6 WETLAND MAP

6.19 WILD AND SCENIC RIVERS

The Wild and Scenic Rivers Act (PL 90-542) describes those river areas eligible for protection from development. As a general rule, these rivers possess outstanding scenic, recreational, geological, fish and wildlife, historical, cultural or other similar value.

The Wild and Scenic River list from the National Park Service indicated two Wild and Scenic Rivers listed in Arizona. The Fossil Creek and Verde River are the closest river listed as wild and scenic to the Cochise College Airport. Both rivers are located more than 200 miles north of the airport and would therefore not be affected by the proposed improvements.

6.20 MEANS TO MITIGATE AND/OR MINIMIZE ADVERSE ENVIRONMENTAL IMPACTS

Where appropriate, the mitigation or minimization of environmental impacts was noted in the discussion of impacts. These actions are summarized below:

- Maintain compatible land uses in the vicinity of the airport;
- Utilize pilot controlled lighting on all airfield lighting. Utilize timers or motion sensors for apron and automobile parking area lights;
- Floodplains – design future improvements to minimize surface runoff and;
- Adhere to FAA AC 150/5370-10F, Standards for Specifying the Construction of Airports and best management practices to minimize or eliminate impacts to water quality and air quality during construction;

6.21 SUMMARY AND CONCLUSIONS OF ENVIRONMENTAL IMPACTS

Table 6-2 provides a summary of the analysis ratings for the eighteen environmental impact categories with respect to the proposed airport improvements. While some categories indicate a potential impact, they are all estimated to be below the threshold of significance as described in FAA Order 5050.4B. In most cases a Categorical Exclusion will be the applicable NEPA environmental determination. However, for some projects, such land acquisition of more than three acres, a full Environmental Assessment may be required to comply with ADOT policy.

TABLE 6-2 RECOMMENDED DEVELOPMENT POTENTIAL ENVIRONMENTAL IMPACTS

ENVIRONMENTAL CATEGORY	IMPACT LEVEL	DESCRIPTION
Air Quality	⦿	Short-term dust and exhaust
Coastal Resources	○	
Compatible Land Use	○	
Construction Impacts	⦿	Short-term dust and exhaust, erosion
DOT Act Section 4(F)	○	
Farmlands	○	
Fish, Wildlife and Plants	○	
Floodplains	○	
Hazardous Materials Pollution Prevention and Solid Waste	○	Prepare SPCC plan
Historical, Architectural, Archaeological and Cultural Resources	○	
Light Emissions and Visual Impacts	○	
Natural Resources and Energy Supply	○	
Noise	○	
Secondary (Induced) Impacts	⦿ Positive	Economic benefit from airport
Socioeconomic Impacts, Environmental Justice and Children's Environmental Health	⦿ Positive	Economic benefit from airport
Water Quality	⦿	Storm water runoff, prepare SPCC plan
Wetlands	○	
Wild and Scenic Rivers	○	

Legend:
○ No Impact
⦿ Minor Impact
● Significant Impact