

CHAPTER FIVE: ENVIRONMENTAL OVERVIEW

INTRODUCTION

The primary goal of any airport master plan is to map out a long-term development program for an airport through the identification of projects that are technically, financially and environmentally viable. With regards to potential environmental considerations, the Council on Environmental Quality (CEQ) 1501.2 states that, "Agencies shall integrate the NEPA (*National Environmental Policy Act*) process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts." Additionally, Federal Aviation Administration (FAA) Order 5050.4B, *Airport Environmental Handbook*, notes the following:

NEPA requires each Federal agency to disclose to the interested public a clear, accurate description of potential environmental impacts that proposed Federal actions and reasonable alternatives to those actions would cause. . . . In approving the Federal actions necessary to support an airport development proposal, the approving FAA official must consider environmental effects as fully and as fairly as it does technical, economic, and other non-environmental considerations.

As such, identifying the potential environmental impacts that could result from the implementation of an airport development program has become an integral part of the master planning process.

This Environmental Overview chapter has been prepared to identify the potential environmental impacts associated with the proposed airside and landside development projects for Chandler Municipal Airport, as described in Chapter 4, *Development Alternatives*. Additionally, this overview will discuss, where appropriate, the potential mitigation measures that could be considered to help minimize these impacts, as well as identifying those impacts that may require further analysis beyond this master plan. The proposed Airport development projects for Chandler that have the most potential to result in environmental impacts generally include the following:

Airfield

- Extension of Taxiway B to Taxiway H
- Extension of Runway 4R-22L
- Extension of Taxiways B and C to the future ends of Runway 4R-22L
- Extension of Taxiway B to Runway 4L

Landside

- Construction of additional hangar structures
- Expansion of aprons
- Improvements to airport access roads

This Environmental Overview chapter was developed in accordance with FAA Order 5050.4B, *Airport Environmental Handbook*, which requires the analysis of 21 environmental impact categories with respect to the proposed development projects. Those environmental impact categories include the following:

- Noise
- Compatible Land Use
- Social Impacts / Induced Socioeconomic Impacts
- Air Quality
- Water Quality
- Department of Transportation Act, Section 4(f) Lands (recodified as 49 USC, Subtitle I, Section 303 (c))
- Historic, Architectural, Archaeological, and Cultural Resources
- Biotic Communities
- Endangered and Threatened Species of Flora and Fauna
- Wetlands
- Floodplains
- Coastal Zone Management Program
- Coastal Barriers
- Wild and Scenic Rivers
- Farmlands
- Energy Supply and Natural Resources
- Light Emissions
- Solid Waste Impacts
- Construction Impacts
- Potential Cumulative Impacts
- Environmental Justice

The *Airport Environmental Handbook* also outlines the types of potential environmental impacts and the thresholds that determine if a given impact is to be considered significant. In general, projects fall into one of the following three categories:

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Categorical Exclusions – Projects that are categorically excluded include those actions that have been found, under normal circumstances, to have no potential for significant environmental impact.

Actions Normally Requiring an Environmental Assessment (EA) – Projects that normally require an Environmental Assessment are actions that have been found to sometimes have significant environmental impacts.

Actions Normally Requiring an Environmental Impact Statement (EIS) – If a project is found to have significant impacts during the preparation of an Environmental Assessment, the FAA can determine that an Environmental Impact Statement is required to investigate in greater detail a project's potential environmental impacts.

It is important to note that this Environmental Overview chapter constitutes neither a formal Environmental Assessment nor an Environmental Impact Statement. It has been included to provide a limited degree of analysis for those proposed Airport development projects that have the potential to be considered “categorically excluded” from further environmental review. Those projects that are subsequently determined to be not “categorically excluded” will require additional environmental analyses that will likely be in the form of an EA or an EIS.

The following sections discuss the preliminary evaluation of the recommended Airport development projects for each of the environmental impact categories included in the *Airport Environmental Handbook*.

NOISE

Noise is generally defined as “unwanted sound,” which is a definition that encompasses both its psychological and physical natures. While the physical nature of sound is measurable and quantifiable, its psychological component, or the part that generally encompasses the unwanted sound or annoyance factors, makes the determination of acceptable levels of sound for people a subjective one. The standard practice established by the FAA for evaluating noise impacts at airports involves the use of the FAA's Integrated Noise Model (INM), a program specially developed to model current and future noise levels at and around airports. Specifically, INM version 6.2 was utilized for this analysis to develop noise contours for Chandler Municipal Airport based on aircraft operational activity for the existing year (2005) and the forecast year (2025). The details and results of this analysis were presented previously in Chapter 4, *Development Alternatives*.

Noise Exposure Impacts

Noise Exposure Impacts are measured using a metric known as Day-Night Level (DNL) averages. The DNL (also sometimes referred to as Ldn) represents the 24-hour average sound level expressed in decibels, including an additional 10-decibel penalty

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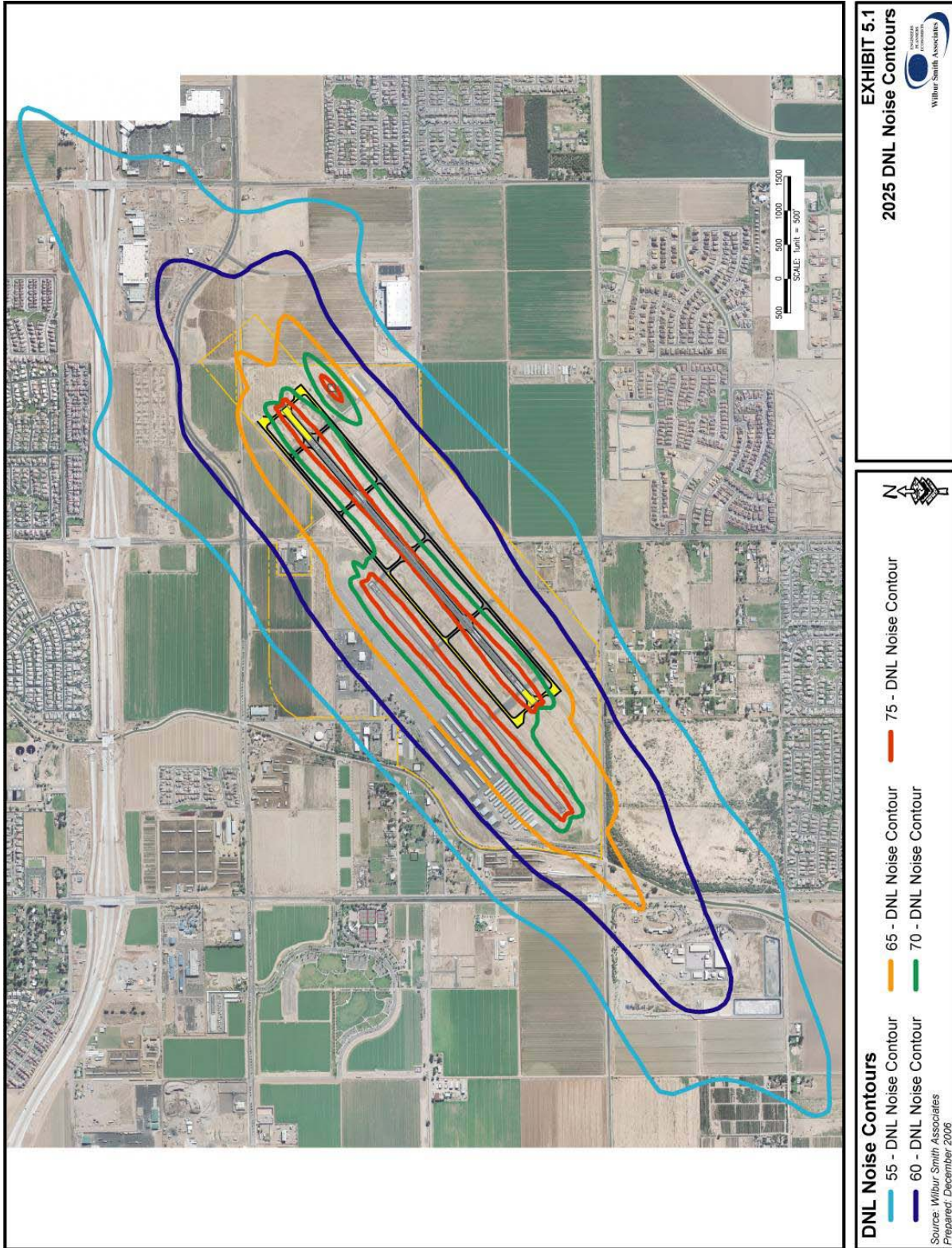
for night-time operations (defined as those operations occurring between the hours of 10 p.m. and 7 a.m.). As indicated in the previous chapter, FAA Order 5050.4B requires that the 65, 70, and 75 DNL noise contours be developed for existing and future airport conditions. Noise levels greater than 65 DNL are generally considered unacceptable for noise-sensitive land uses such as residences, hospitals, and schools. Additionally, the City of Chandler itself has established an Airport Impact Overlay District which uses a more restrictive 55 DNL contour to determine if incompatible uses in the vicinity of the Airport are acceptable. **Exhibit 5.1** reflects the location of the above-described DNL noise contours for the year 2025 based on the projected level of aircraft operations presented in Chapter 2, *Projections of Aviation Demand*.

As shown in Exhibit 5.1, two of the noise contours required by FAA (75 DNL and 70 DNL) remain entirely on Airport property, while the third required contour (65 DNL) exceeds the property boundary slightly to the north of Runway 22L and to the south of Runway 4L. Specifically, the areas that lie off-Airport but within the 65 DNL to the north are comprised entirely of unpopulated areas that include farmland and commercial development, while the area that lies to the south crosses both Queen Creek Road and McQueen Road, but overlies a heavy industry site. It is important to note that none of the areas that lie within the 65 DNL contour, contain residences or other noise sensitive land uses.

In terms of the total acreages that these contours will encompass throughout the forecast period (2025), the 75 DNL area is approximately 57 acres in size, the 70 DNL area is approximately 165 acres, and the 65 DNL covers a total of approximately 349 acres. (Note that as shown in the figure above, the 75 DNL and the 70 DNL contours are wholly contained within the 65 DNL contour, and therefore their corresponding acreages should not be considered to be additive.) While a relatively small amount of the 65 DNL contour does lie outside of the Airport bounds, these areas are not currently considered to be noise-sensitive land use areas. Additionally, from a long-term development perspective and as reflected in the Chandler General Plan (adopted March 2002), these areas all lie within either the City's *Employment* or *Open Space* land use designations, neither of which is noise sensitive but are, in fact, considered to be appropriate as "buffers" to noise sensitive residential areas. Therefore, they are viewed as airport-compatible land uses.

As noted previously, the City of Chandler has an Airport Impact Overlay District (Ord. No. 3063, § 3, 11-18-99) in place for Chandler Municipal Airport. This overlay district establishes specific land uses, additional building code requirements, and other restrictions for the explicit purpose of promoting airport noise attenuation. The overlay district utilizes airport zones that correspond to the FAA-required 70 DNL and 65 DNL noise contours, as well as establishes a zone based on a City-required 55 DNL noise contour. Exhibit 5.1 shows that the Airport's 55 DNL noise contour extends north of Germann Road and south of Queen Creek Road along the extended runway centerline, overlying approximately nine existing residences located south of the Airport.

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Additionally, the 55 DNL noise contour extends along sides of the runways, encompassing approximately three residences to the north of the Airport. In total, there are approximately 12 existing residences within the City-required 55 DNL contour.

The land uses within the boundary of the 55 DNL contour also include *Employment, Open Space, Rural Residential, and Low Density Residential*. While the first two uses are not considered to be noise sensitive, new construction in the latter two within the 55 DNL may have some implications. Specifically, any new facility or residence should incorporate noise attenuation into its design and construction in order to achieve a maximum interior noise level of 45 decibels. It should also be noted that based on Exhibit 5.1, as well as the City's current land use plan, any additional restrictions and/or requirements for the 65 DNL and 70 DNL noise contours as related to the Airport Impact Overlay District should not come be an issue for Chandler Municipal Airport.

COMPATIBLE LAND USE

FAA Order 5050.4B states that the compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of noise impacts related to that airport. If the noise analysis concludes that there is no significant impact, a similar conclusion usually can be made with regard to compatible land use. However, other issues such as relocation of residences or businesses and alteration of floodplains, wetlands or critical habitat may also influence property surrounding the airport. For example, land use impacts also can occur if the proposed projects exceed the threshold of significance of other impact areas that have land use ramifications, including disruption of communities, relocation, and induced socioeconomic impacts (FAA's *Airport Environmental Handbook*, Chapter 5). For these reasons, the FAA requires that airports and airport sponsors seek compatible uses for the land surrounding that airport through appropriate zoning and municipal planning efforts.

The 2005 and 2025 noise contours were analyzed to evaluate the impact of aircraft noise on sensitive land uses within the Airport area. Sensitive land uses typically include residential areas, parks, hospitals, churches, amphitheaters, and libraries. FAA Advisory Circular 150/5020-1, *Noise Control and Compatibility Planning for Airports*, has identified land use compatibility guidelines that relate types of land uses to airport noise levels. Based on these guidelines, FAA has determined that all land uses with yearly day-night sound levels below 65 DNL based on airport activities are considered to be compatible with the airport environment.

As such, at Chandler Municipal Airport, the 65 DNL noise contour has been shown to overlie compatible land uses throughout the planning period. There are currently no residences or other noise sensitive uses within this contour, and, based on the City's current land use plan, no future residential or other noise sensitive development should occur within the 65 DNL contour. Additionally, none of the projects proposed within this Master Plan would result in any direct significant land use impacts.

SOCIAL IMPACTS

The purpose of a social impact analysis is to determine the effect airport development could have on the human environment. The types of social impacts typically evaluated are as follows:

- Relocation of residences and/or businesses,
- Alterations in traffic patterns that may permanently or temporarily restrict traditional community access,
- Division or disruption of established communities,
- Disruption of orderly, planned development, and
- Creation of appreciable change in employment.

Each of these considerations is directly addressed below with respect to the proposed Airport development projects at Chandler Municipal Airport.

Relocation of residences and/or businesses: The proposed Airport development projects will not result in the relocation of any residences and/or businesses.

Alterations in traffic patterns that may permanently or temporarily restrict traditional community access: There may be temporary restrictions in access during the construction of the access roadways on the south side of the Airport; however, these restrictions will be short-term in nature and will be mitigated with the implementation of traffic detours. It should also be noted the selection of the preferred Airport development alternative, which keeps development primarily within the boundaries of the Airport, was in large part made to help minimize any potential off-Airport or community disruptions. Airport access is planned to be altered, providing more direct access from Cooper Road, which has an exit ramp from the recently completed Loop 202.

Division or disruption of established communities: There will not be any division or disruption of established communities or neighborhoods adjacent to the Airport as a direct result of the proposed projects.

Creation of appreciable change in employment: The construction of the proposed Airport development projects will not result in any appreciable negative change in employment for the community. However, the proposed development program could result in an appreciable positive change in employment directly through an increase in short-term construction employment, as well as increased long-term employment that would result both directly and indirectly from the construction of business-class airport facilities. Specifically, it is projected that the Airport development projects would result in a direct net increase of 44 employees at the Airport, as well as a number of other unquantifiable jobs that would indirectly result from the economic growth that the additional Airport activity would generate. This increased employment would also

results in increased employment as well as economic spending that will be quantified as part of follow-on analyses.

Based on this analysis, no social impacts would be anticipated within the planning period resulting from the construction of the proposed Airport development program.

INDUCED SOCIOECONOMIC IMPACTS/CUMULATIVE IMPACTS

For major airport development projects, there is a possibility of induced or secondary impacts on surrounding communities. Such impacts include shifts in patterns of population movement and growth, public service demands, and changes in business and economic activity based on airport development. These induced impacts will normally not be significant, except when there are also significant impacts in other categories, especially noise, land use or direct social impacts. Cumulative impacts occur if the proposed airport development projects, combined with other local development projects, such as road improvements or economic development projects, create significant socioeconomic impacts for the surrounding area.

At Chandler Municipal Airport, the socioeconomic impacts of the proposed Airport development projects are expected to be positive in nature and would include direct, indirect, and induced economic benefits to the local area. Improved facilities are expected to enhance safety for the existing types of corporate and business aircraft utilizing the Airport. These Airport improvements are expected to attract additional users, which will, in turn, encourage business development, tourism, industry and trade to enhance the future growth and expansion of the community's economic base. As such, no induced socioeconomic or cumulative impacts are anticipated within the planning period that would require further analysis.

ENVIRONMENTAL JUSTICE IMPACTS

On April 15, 1997, the Department of Transportation (DOT) released DOT Order 5680.1 to comply with the Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*. This Order requires the DOT to identify and address any disproportionately high and adverse human health or environmental effects resulting from their policies or programs on minorities or low-income populations. Environmental Justice must be considered in all phases of planning, since it is essential that any potential impacts to minority and low-income populations be identified early in the planning process so that they can be considered during the evaluation of project alternatives.

At Chandler Municipal Airport, the proposed Airport development projects will not result in any disproportionate adverse impacts to minority and low-income populations since there will be no significant impacts to any areas that are located off Airport and adjacent to any residential areas.

AIR QUALITY

As described in the findings of the Air Pollution Prevention and Control Act, “growth in the amount and complexity of air pollution...has resulted in mounting dangers to the public health and welfare.” As such, air pollution prevention and control is of critical importance, and must be considered as it relates to airport improvement projects. The primary laws that apply to air quality include the National Environmental Policy Act of 1969 (NEPA); the Clean Air Act (CAA), as amended; and Title 49 U.S.C. 47106 (c) (1) (B), as amended (formerly sections 509 (B) (5) and (B) (7) of the Airport and Airway Improvement Act of 1982, as amended, PL 97-248). Specifically, for major federal actions, including those of FAA, that have the potential to affect the quality of the environment, including air quality, NEPA requires that federal agencies prepare an environmental document, such as an EA or an EIS to analyze those potential impacts. Additionally, the EPA has adopted air quality standards that specify the maximum permissible short-term and long-term concentrations of various air contaminants. The Clean Air Act (CAA) established the National Ambient Air Quality Standards (NAAQS) consisting of primary and secondary standards for six pollutants, termed “criteria pollutants,” that include the following:

- Carbon monoxide (CO)
- Lead (Pb)
- Nitrogen dioxide (NO₂)
- Ozone (O₃)
- Particulates (PM₁₀ and PM_{2.5})
- Sulfur dioxide (SO₂)

For the practical implementation of the NAAQS, the CAA requires that each state adopt a plan (e.g. State Implementation Plan or SIP) to achieve the NAAQS for each pollutant within the timeframes established under CAA. In addition to NEPA, the CAA 1990 Amendments required that the EPA issue rules that would ensure Federal actions conform to the appropriate SIP. Under the CAA, the federal government requires that a general conformity determination to the SIP be made for all federally approved/funded projects which occur in a “non-attainment” area, defined as an area where air pollution levels persistently exceed the national ambient air quality standards for a particular pollutant.

Specifically, the General Conformity rule establishes the procedures and criteria for determining whether certain federal actions conform to State or EPA (federal) air quality implementation plans. To determine whether conformity requirements apply to a proposed federal action, the following must be considered:

- Non-attainment or maintenance status of the area
- Type(s) of pollutant(s) or emission(s)
- Exemptions from conformity and presumptions to conform
- Project’s emission levels

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- Regional significance of the project's emissions

It should be noted that FAA actions are subject to the General Conformity Rule, but that the General Conformity Rule only applies in areas that EPA has designated non-attainment or maintenance. This is important in that Chandler Municipal Airport is located in Maricopa County, Arizona, currently designated as a non-attainment area for Ozone and Particulate Matter-10 (PM10) pollutants, meaning that the proposed Airport improvement projects are subject to the requirements of the General Conformity rule (see <http://www.epa.gov/air/oaqps/greenbk/>).

Additionally, FAA air quality analysis guidelines indicate that, if a proposed federal action is in a state that does not have applicable Indirect Source Review (ISR) requirements, then the projected airport activity levels should be examined to determine if a detailed air quality analysis is required. The State of Arizona does not have ISR requirements; therefore, the determination of whether or not a detailed air quality analysis is required for a proposed project is based on annual aircraft operations. According to FAA guidelines, an air quality analysis is required for general aviation airports with more than 180,000 projected annual operations. Since Chandler Municipal Airport is located in a non-attainment area, and because the current and projected operations at the Airport are significantly greater than 180,000 annual general aviation operations over the 20-year planning period, a detailed air quality analysis may be required as part of the NEPA documentation for the implementation of the proposed Airport improvement projects.

WATER QUALITY

Potential water quality impacts associated with airport development typically result from the disturbance of large areas of soil during construction, significant alternation of site grading and drainage, creation of large areas of impervious surface, altered storm water runoff volumes and directions of flow, sewage disposal, and the storage and handling of fuels and other solvents. As such, there are several regulatory requirements which must be reviewed and considered with regards to water quality. Of primary importance is the Federal Water Pollution Control Act, as amended (commonly referred to as the Clean Water Act), which provides the authority to establish water quality standards, control discharges, develop waste treatment management plans and practices, prevent or minimize the loss of wetlands, establish location with regard to an aquifer or sensitive ecological area such as a wetlands area, and regulate other issues concerning water quality including all proposed federal actions.

Further requirements could apply, such as the triggering of the Fish and Wildlife Coordination Act, if a proposed federal action would impound, divert, drain, control, or otherwise modify the waters of any stream or other body of water, unless that project is for the impoundment of water covering an area of less than 10 acres. The Fish and Wildlife Coordination Act requires the responsible federal agency to consult with the Fish and Wildlife Service (FWS) and the applicable state agency to identify means to

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prevent loss or damage to wildlife resources resulting from the proposal. Additionally, if a proposed federal project has the potential to result in contamination of an aquifer designated by the EPA as a sole-source or principal drinking water resource for an area, the project needs to be coordinated with the EPA, as required by Section 1424 (e) of the Safe Drinking Water Act, as amended.

A National Pollution Discharge Elimination System (NPDES) permit would be required if more than five acres of existing vegetated land are disturbed as a result of the proposed federal action, with "disturbance" being defined as activities such as clearing, grading, and excavating that leave soil exposed. The general NPDES Construction Permit requires the submittal of a Notice of Intent and an Erosion and Sediment Control Plan to the county conservation district. If less than five acres is disturbed, only an Erosion and Sediment Control Plan would be required. This Erosion and Sediment Control Plan would include procedures for the development, implementation, and maintenance of best management practices to be used during the construction phase to minimize non-point source pollution. Additionally, measures identified in FAA Advisory Circular 150/5370-10A, *Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control*, should also be incorporated into the design and construction of the proposed Airport development projects to minimize adverse water quality effects, including control of water pollution during construction.

At Chandler Municipal Airport, the proposed Airport improvement projects would not impound, divert, drain, control, or otherwise modify the waters of any stream or other body of water. Therefore, the Fish and Wildlife Coordination Act does not apply to these projects. In addition, Chandler Municipal Airport is not within an area of a Sole Source Aquifer; therefore, Section 1424(e) of the Safe Drinking Water Act, as amended, does not apply. With regard to proposed construction activities, the Airport and all applicable contractors will need to comply with the requirements and procedures of the construction related NPDES General Permit, including the preparation of a *Notice of Intent* and a *Stormwater Pollution Prevention Plan*, prior to the initiation of product construction activities.

DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(f)

The Department of Transportation Act of 1966, Section 4(f), recodified at 49 USC, Subtitle I, Section 303, provides that no project shall be approved if it requires the use of land from a publicly owned park, recreational area, wildlife refuge or historic site, unless there is "no feasible and prudent alternative." Additionally, Section 6(f) of the Land and Water Conservation Act prohibits the taking of lands purchased with land and water conservation funds.

At Chandler Municipal Airport, because the proposed Airport development projects will occur within Airport property and the areas of potential impact, including the areas

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within the 65 DNL contour, do not include any Section 303 (c) lands, there will be no direct or indirect impacts to Section 303 (c) or Section 6(f) lands.

HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

The National Historic Preservation Act of 1966 (NHPA), as amended, provides for the preservation of historic and archaeological resources including districts, sites, buildings, structures, objects, and landscapes included in or eligible for inclusion in the state and National Register of Historic Places (NRHP), or areas designated as historically or archaeologically sensitive. In addition, Section 106 of the NHPA directs the heads of federal agencies and departments, or independent agencies that have direct or indirect jurisdiction over a federal or federally assisted action to “take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register.”

The Archaeological and Historic Preservation Act of 1974 provides for the survey, recovery, and preservation of significant scientific, prehistoric, archaeological, or paleontological data when such data may be destroyed or irreparably lost due to a federal, federally licensed, or federally funded project.

At Chandler Municipal Airport, data from the State Historic Preservation Office (SHPO) including locations of Official Historical Markers and National Register of Historic Places properties indicates that there are no historical sites located on Airport property or within areas associated with the proposed Airport development program. However, prior to construction of the proposed projects, further coordination with the Arizona State Historic Preservation Office should be undertaken to confirm the action’s adherence to NHPA requirements.

BIOTIC COMMUNITIES/THREATENED AND ENDANGERED SPECIES

Section 7 of the Endangered Species Act (ESA), as amended, applies to federal agency actions and requires each agency, generally the lead agency, to ensure that any action the agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of any federally listed endangered or threatened species or result in the destruction or adverse modification of critical habitat. In addition, the Fish and Wildlife Coordination Act requires that agencies consult with the state wildlife agencies and Department of the Interior (FWS) concerning the conservation of wildlife resources where the water of any stream or other water body is proposed to be controlled or modified by a federal agency or any public or private agency operating under a federal permit.

Chandler Municipal Airport is located within a highly urbanized area. As part of the environmental studies that would be performed for the environmental documentation in conjunction with the proposed Airport projects, an on-site biological survey would be

performed to ensure that no threatened and endangered wildlife or plant species occur within the project area.

WETLANDS

EO 11990, "Protection of Wetlands," DOT Order 5660.1A, the Rivers and Harbors Act of 1899, and the Clean Water Act, Section 404, address activities in wetlands. Specifically, E.O. 11990 requires federal agencies to ensure that their actions minimize the destruction, loss, or degradation of wetlands. It also ensures the protection, preservation, and enhancement of the nation's wetlands to the fullest extent practicable during the planning, construction, funding, and operation of transportation facilities and projects (7CFR Part 650.26, August 6, 1982). DOT Order 5660.1A establishes DOT policy that transportation facilities should be planned, constructed, and operated to ensure protection and enhancement of wetlands.

At Chandler Municipal Airport, there are no wetlands located within or adjacent to the Airport. Therefore, there will be no impacts to wetlands resulting from the proposed Airport development projects.

FLOODPLAINS

Floodplains are land areas adjacent to a river or stream or other body of flowing water which is, on the average, likely to be covered with flood waters resulting from a 100-year frequency storm. Maintaining floodplains are critical in that they provide important flood water storage functions, and projects that propose building or filling a floodplain must provide compensation for any waters that might be displaced during a flood event. Development in a floodplain must also be managed so as to prevent any potential release of hazardous materials or wastes during a flood.

EO 11988 directs federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by floodplains. Agencies are required to make a finding that there is no practicable alternative before taking action that would encroach on a base floodplain based on a 100-year flood (7 CFR Section 650.250).

According to the Flood Insurance Rate Map (FIRM) for Maricopa County, Arizona dated September 30, 2005 (Panel 2665 of 4350), a 100-year floodplain (Flood Zone AH) exists along the eastern side of the levee on the western and northwestern borders of the Airport, including the existing approach end of Runway 4L, the existing southwest end of Taxiway A, and a portion of the aircraft parking apron on the north side of the airfield. It should also be noted that Flood Zone AH is the flood insurance rate zone that corresponds to the areas of 1-percent annual chance shallow flooding with a constant water-surface elevation (usually areas of ponding) where average depths are between 1 and 3 feet. Mandatory flood insurance purchase requirements apply.

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Based on review of FEMA maps, the southwestern-most portion of the proposed extension of Taxiway B to the end of Runway 4L would extend into this Zone AH floodplain boundary. This designation indicates that this portion of the study area is within the boundaries of the 100-year floodplain and that base flood elevations and flood hazard factors have been determined. Federal regulations allow development encroachment into the floodplain if the encroachment does not increase the base flood elevation by more than one foot. During construction of the proposed Airport improvement projects, local regulations must be complied with and precautions taken to minimize potential impact to the existing floodplain and floodway areas.

COASTAL ZONE MANAGEMENT PROGRAM AND COASTAL BARRIERS

The Coastal Barriers Resources Act (CBRA) and the Coastal Zone Management Act (CZMA) govern federal activities involving or affecting coastal resources. Since neither Chandler Municipal Airport nor its host community lie within the vicinity of a coastal zone or barrier, these requirements do not apply to the proposed Airport improvements.

WILD AND SCENIC RIVERS

The Wild and Scenic Rivers Act (P.L. 90-542, as amended) protects rivers that are listed on the National Inventory of Wild and Scenic Rivers. However, there are no rivers in the vicinity of the Chandler Municipal Airport listed in the U.S. Department of Interior's Inventory of National Wild and Scenic Rivers (see <http://www.nps.gov/rivers/wildriverslist.html#az>). Therefore, there can no impacts to designated wild and scenic rivers as a result of the implementation of the Airport projects included in the Master Plan Update.

PRIME AND UNIQUE FARMLANDS

The Farmland Protection Policy Act (FPPA) requires that federal actions consider the impact to prime or unique farmland, and that such actions must be compatible with state, local, and private programs intended to protect farmland. The requirements of FPPA are not applicable to farmland already committed to urban development by designation as commercial, industrial and residential use in a state or local zoning ordinance or land use plan.

At Chandler Municipal Airport, the proposed Airport development projects will occur on Airport property which is dedicated to Airport use. There will be no impacts to farmlands as a result of the proposed projects.

ENERGY SUPPLY AND NATURAL RESOURCES

FAA Order 1053.1, *Policies and Procedures for Energy Planning and Conservation*, provides for assessing energy demands related to airport improvement projects. The effects of the airport development on energy supply typically relate to the amount of energy required for the following:

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- Stationary facilities (such as terminal building heating and cooling and airfield lighting)
- Movement of air and ground materials

At Chandler Municipal Airport, the effects of Airport development on natural resources typically relate to the transportation and installation of basic construction materials, such as gravel, fill dirt, etc. From an airfield and facilities operations and maintenance perspective, it is anticipated that the local power company will have no difficulty in meeting the future energy demands of the proposed hangar facilities. Additionally, it should be noted that total aviation activity at the Airport is projected to increase approximately 2.7 percent compounded annually. At these levels of total growth, energy consumption by aircraft and vehicles will not be expected to appreciably increase as a result of implementing the proposed Airport development program.

LIGHT EMISSIONS

Airport-related light emissions and the resulting glare from lighted and flashing airport lighting facilities have the potential to create an annoyance to surrounding residential communities. In general, however, light emissions created by general aviation airports are considered to be minimal. As indicated in FAA Order 5050.4B, light emissions generally do not result in impacts to adjacent residential communities unless there are unusual circumstances, such as high intensity strobe lighting aimed directly at an individual house.

The proposed development projects at Chandler Municipal Airport include the extension of Runway 4R-22L, the extension of parallel taxiways to the end of Runway 4L and both ends of Runway 4R-22L which would include the installation of additional taxiway and runway lighting. They will not include the installation of approach lighting systems, which are most often the source of light emissions concerns. It is not expected that the installation of standard runway and taxiway lights would result in an increase to any existing light emission impacts currently being realized by nearby residences. In fact, it should also be noted that there have never been any complaints regarding the existing taxiway and runway lights on the Airport.

SOLID WASTE IMPACTS

Two of the most important statutes in the construction and operation of airport 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 (also known as Superfund). RCRA governs the generation, treatment, storage, and disposal of hazardous wastes and CERCLA provides for the cleanup of any releases of a hazardous substance (excluding petroleum) into the environment. FAA actions to fund, approve, or conduct an activity require consideration of hazardous material and solid waste impacts.

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In an effort to identify any presence of known hazardous waste sites within the areas that could be impacted by the construction of the proposed Airport improvement projects, the EPA databases of hazardous waste information was reviewed. These databases include information on hazardous waste generators, as well as hazardous waste sites (see <http://www.epa.gov/enviro/html/rcris/>). Based on this review, two RCRA-listed sites were identified in the vicinity of Chandler Municipal Airport. One is Estergard Aviation Inc, located at 2330 S. Airport Boulevard, and the other is Varga Enterprises located at 2350 S. Airport Boulevard. Estergard Aviation is not located on Airport property.

In addition to these two sites, there are no aged crop duster areas on the Airport as well as underground storage tanks that have been remediated through the Arizona Department of Environmental Quality (ADEQ). These remediation sites will be evaluated in subsequent environmental analyses to determine their impact as a result of the proposed Airport development plan.

Prior to further Airport development, the project areas will be the subject of further investigations so as to identify and remediate any other areas of potential hazardous waste contamination in accordance with state and federal regulations.

In addition to hazardous waste sites, solid waste impacts must be evaluated in conjunction with airport development. These impacts include the following:

- Impacts on solid waste generation
- Location of existing solid waste disposal facilities in the vicinity of proposed runways

At Chandler Municipal Airport, no significant increases in solid waste generation are anticipated as a result of the proposed Airport improvements, with the only additional waste expected to be that which will be associated with the construction of the aviation facilities. Existing waste collection and disposal facilities will be adequate to handle the waste associated with the construction of these Airport facilities.

FAA Order 5200.5, *FAA Guidance Concerning Sanitary Landfills On or Near Airports*, states that "sanitary landfills will be considered as an incompatible use" if located within 1,500 meters (approximately 4,921 feet) of all runways planned to be used by piston type aircraft and within 3,000 meters (approximately 9,843 feet) of all runways planned to be used by turbo aircraft. Airports located closer than these distances to sanitary landfills have an increased risk of bird hazards. There are no active sanitary landfills within five miles of Chandler Municipal Airport; therefore, there would be no potential bird hazards as a result of the proposed runway improvements.

CONSTRUCTION IMPACTS

Specific impacts that can occur as a result of construction activities include noise of construction equipment on the site, noise and dust from delivery of materials through local streets, disposal of soil, air pollution from construction equipment exhaust and dust, and water pollution from erosion. To the extent necessary, mitigation of construction impacts would be accomplished by incorporating in the project specifications from the provisions of FAA Advisory Circular 150/5370-10, *Standards for Specifying Construction of Airports*, and FAA Advisory Circular 150/5370-10A, *Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control*. Potential construction-related water quality impacts would be minimized through the implementation of a sediment and erosion control plan.

Note that construction activities would require workers and machinery to be present in and about the operations areas of the Airport. In some cases, runway or taxiway closures may be required for short periods of time. Guidelines as cited in FAA Advisory Circular 150/5370/2C, *Operation Safety on Airports, During Construction*, would be enforced where applicable. Runway or taxiway closure conditions will be kept to a minimum in an effort to minimize inconvenience to Airport users.

SUMMARY

There are no major environmental issues on or around Chandler Municipal Airport that would preclude or impede the implementation of the proposed Airport development projects. As part of the NEPA documentation process, additional coordination with resource agencies will be required prior to project construction, but no significant impacts are apparent.