ENVIRONMENTAL OVERVIEW

The purpose of this Environmental Overview is to provide a preliminary review of the environmental conditions surrounding Tucson International Airport and to identify potential environmental impacts associated with the Master Plan Development.

1. Environmental Requirements

The National Environmental Policy Act (NEPA) significantly affects airport planning by requiring that environmental impacts of proposed airport development be considered early and throughout the planning process. Environmental feasibility is as important as economic or engineering feasibility in determining how an airport will be developed.

One of the major products of the master planning process is the Airport Layout Plan (ALP), which shows the airport's existing facilities and planned development. Federal Aviation Regulation (FAR) requirements state that an airport operator must submit an environmental evaluation of the planned development for review and approval by the Federal Aviation Administration (FAA) if it plans to apply for federal grants to fund development depicted on the ALP. Nearly all ALPs are conditionally approved by the FAA without a federal environmental document, due to the limited shelf life of an environmental evaluation. The formal environmental evaluation process is undertaken at a later date to ensure that it is current within the time frame of the actual project development.

Federal regulations outline three categories of environmental action relevant to airport development.

1. Categorical Exclusion – applies to those actions that have been found (under normal circumstances) to have no potential for significant environmental impact.
2. Environmental Assessment (EA) – applies to those actions that have been found by experience to sometimes have significant environmental impacts. The purpose of an EA is to determine whether the proposed project will have significant impacts. Upon review of the EA findings, the Federal Aviation Administration (FAA) either issues project approval in the form of a Finding of No Significant Impact (FONSI) or directs the preparation of an Environmental Impact Statement (EIS) to further investigate potential environmental impact before project approval could be granted.

3. Environmental Impact Statement (EIS) – applies to those actions that have been found by experience to usually have significant environmental impacts.

According to FAA Order 5050.4, *Airport Environmental Handbook*, the proposed runway relocation project at Tucson International Airport would fall under the Order's definition of actions that will normally require an EIS – Paragraph 21.a.(2), *Federal financial participation in, or airport layout approval of, a new runway capable of handling air carrier aircraft at a commercial service airport in a standard metropolitan statistical area*.

The remainder of the proposed projects identified in the Master Plan would require environmental approval through the preparation of a Categorical Exclusion Checklist (at a minimum), or a documented Categorical Exclusion (typically referred to as an Environmental Review or White Paper analysis) or an EA. Since it is the FAA that will determine which type of environmental documentation will be required for each potential project, it is recommended that airport staff discuss each project with the agency as early as possible to make certain there is sufficient time to obtain the environmental approval before construction is initiated.

2. Previous Environmental Evaluations

An Environmental Assessment (EA) for land acquisition for the relocation of Runway 11R/29L was completed in 1991.[1] At that time, no known significant environmental impacts were identified. An additional EA for land acquisition for the far parallel runway was completed in 2002.[2] At that time, no known significant environmental impacts were identified as part of the planned land acquisition or as part of the proposed future runway.

3. Existing Airport and Surrounding Land Use

Tucson International Airport currently occupies 8,022 acres with an average elevation of 2,641 feet above sea level. The airport property is irregularly shaped, runs roughly northwest-southeast, and is relatively flat, dipping gently to the northwest with elevations ranging from 2,700 feet above sea level in the southeast to 2,560 feet above sea level on the northwest.

The airport is bordered by Valencia Road, Corona Road, and Los Reales Road to the north; Country Club Road, Alvernon Way, and Craycroft Road to the east; Hermans Road, Hughes Access Road, and Old Vail Road to the south; and Old Nogales Highway to the west. Primary access to TIA along South Tucson Boulevard from the north.

[1] Final Environmental Assessment for Land Acquisition for Runway 11R/29L at Tucson International Airport. Prepared by KPMG Peat Marwick. February 1991.
[2] Final Environmental Assessment for Land Acquisition for Far Parallel Runway at Tucson International Airport. Prepared by CDM. June 2002.

The existing airfield consists of three active runways.

1. Runway 11L-29R
   - Primary runway
   - Used by air carrier and military aircraft.

2. Runway 3-21
   - Crosswind runway
   - Available when weather and wind conditions require its use

3. Runway 11R-29L
   - Temporary runway, 75 feet wide
   - Used by general aviation aircraft

The Air Traffic Control Tower is located approximately 1,000 feet northwest of the passenger terminal building. The passenger terminal complex, which includes the passenger terminal buildings, aircraft parking apron, and entrance and circulation roadways and automobile parking areas, covers a 55-acre area. The terminal building itself measures approximately 320,000 square feet.

General Aviation facilities are located adjacent to the Executive Terminal, northwest of the passenger terminal complex, and in the area north of Runway 3-21 and east of Old Nogales Highway. The Arizona Air National Guard's 162nd Tactical Fighter Training Group is based on an area north of the airport between Runway 3-21 and Valencia Road.

The vast majority of land in the immediate vicinity of the Master Plan Update projects is vacant and undeveloped desert. The developed areas to the north, west, and south of the airport are industrial and commercial. The areas south and southeast of the airport remain largely undeveloped, with several sand and gravel operations located south and east of the Hughes Access Road. Residential areas are primarily located north and northwest of the airport. Additional residential areas are also located south and east of the airport. The majority of land closely surrounding the airport is zoned for industrial uses. The land just beyond that is zoned residential.

Davis-Monthan Air Force Base is located northeast of the airport. The area between the base and the airport is developed with a mix of residential, commercial, and industrial uses.

The San Xavier District of the Tohono O'Odham Indian Reservation is located directly southwest of the airport. The area of the reservation closest to the airport, which is located along Old Nogales Highway, is developed as commercial/industrial and includes the San Xavier Industrial Park and the Desert Diamond Casino. West and south of this development is designated as grazing land in the Tohono O'Odham Land Use Plan.

4. Noise Compatibility

The FAR Part 150 Noise Compatibility Program Update was completed in 1991 as an update to the 1982 Airport Environs Plan.[3] It consists of policies and implementation techniques for the high-noise-exposure area associated with Airport operations and overall policies and implementation techniques for the Airport environs area. Several of the noise abatement and mitigation recommendations from the Part 150 Update have been implemented or are in process through re-zonings, development plans, and modifications to City and County building codes, which include noise attenuation requirements adopted from the Uniform Building Code.

The purpose of the recommended noise abatement measures is to minimize aircraft noise impacts on residents northwest of the airport by ensuring that airport users adhere to existing procedures, establishing new procedures, and providing appropriate procedural supervision and implementation review. The recommended noise mitigation measures are both remedial and preventative with the purpose of mitigating aircraft noise impacts on surrounding residents and discouraging development of new, incompatible land uses in the airport environs.

There are also several techniques available to reduce construction noise impacts on surrounding communities. Examples include the installation of mufflers on trucks and construction equipment, turning off all equipment when not in use, and only allowing construction to take place between 7 a.m. and 7 p.m..

Actual noise exposure impacts of construction and use of the Master Plan projects would be evaluated in the EIS.

5. Air Quality

The Tucson Air Planning Area is currently in attainment of the National Ambient Air Quality Standards (NAAQS for ozone (O3), sulfur dioxide (SO2), lead (Pb), nitrogen dioxide (NO2), and carbon monoxide (CO). Portions of the area are in nonattainment of the NAAQS for particulate matter less than 10 microns in diameter (PM10).

A number of outside factors could affect airport emissions levels associated with construction and use of the Master Plan projects. For example, the U.S. Environmental Protection Agency is investigating aircraft emissions as a significant source of emissions in urban areas, and more stringent emission regulations are being discussed for aircraft engines. Aircraft ground support equipment is also a significant contributor to airport-related emissions. The conversion of this predominantly diesel-powered equipment to alternative fuels is

[3] FAR Part 150: Noise Compatibility Program Update for Tucson International Airport. Prepared by KPMG Peat Marwick. February 2001.

becoming more common at many airports located in regions where air quality is a major concern.

There are also a number of techniques that can be used to reduce construction emissions. Examples include conveyor belt systems, off-site demolition, covering or watering loose materials and truck beds, and washing truck wheel wells before leaving the site.

Actual air quality impacts of construction and use of the Master Plan projects would be evaluated in the EIS.

6. Water Quality

Sections 6.1 through **6.5** describe surface water, ground water, storm water, wastewater, floodplains, and intermittent wetlands associated with the existing airport. All potential future water quality effects are associated with the construction and use of the Master Plan projects. Most of these potential impacts could be mitigated through design considerations, controls during construction, and other mitigation measures. The EIS would address potential water quality impacts.

Several permits, approvals, or certifications associated with water quality may be required prior to development of the Master Plan projects:

- Sole Source Aquifer - According to Section 1424(e) of the Safe Drinking Water Act, the EPA must be contacted if the following criteria are met:
  - The construction project is federally funded; and
  - The project site is located on or has the potential to contaminate an aquifer designated by the US Environmental Protection Agency (EPA) as a sole source aquifer.

  The Master Plan projects will likely be federally funded (either partly or wholly) and are located within the upper Santa Cruz and Avra Basin sole source aquifer designated area (49 CFR 2948). Therefore, EPA Region IX will be sent an agency contact letter when the EIS is prepared. After review of the project, EPA will either issue a letter of approval or require a mitigation plan before the project can proceed.
- National Pollutant Discharge Elimination System (NPDES) Permit - Under the Clean Water Act, construction that disturbs one or more acres requires a Section 402 NPDES permit to minimize impacts from storm water runoff. The Master Plan projects would impact approximately 170 acres of land, which would most likely require a permit. The process includes submittal of a Notice of Intent to be covered under the construction general permit and the

development of a storm water pollution prevention plan indicating the procedures used to reduce or eliminate the potential impacts on water quality from construction activities. The airport has developed a Storm Water Pollution Prevention Plan for Construction Activities template that is used for all Tucson Airport Authority and tenant construction projects.

- Section 404 Dredge and Fill Permit - Clean Water Act Section 404, under the jurisdiction of the Army Corps of Engineers, requires a permit be obtained for dredge and fill activities involving Waters of the U.S. Permitting may be accomplished under either a general permit or an individual permit. Decisions on the type of permit required will depend on the extent of impact from construction activities on effected Waters of the U.S. During the design phase of the Master Plan projects, it is recommended that proposed construction activities be discussed with the Army Corps of Engineers to determine actual permit requirements. Arizona Department of Environmental Quality may have to certify the 404 permits according to the requirements of Section 401 of the Clean Water Act. The need for certification would be determined in the environmental phase.

6.1 Surface Water

There are no rivers or major streams in the vicinity of the airport. Runoff from the airport is conveyed by the Airport Wash, which flows from southeast to northwest toward the Santa Cruz River. There are no specific surface water-quality monitoring activities conducted at the airport. The 2002 EA noted a trend toward fewer flow events of greater intensity between 1972 and 1982, which was attributed to urbanization in the watershed.

Surface water contamination during construction and use of new facilities would be mitigated through the use of controls and by adherence to the airport's General Storm Water Permit for Construction Activities and Multi-Sector General Storm Water Permit for Air Transportation.

6.2 Groundwater

Groundwater flow in the airport area is from northwest to southeast. According to Arizona Department of Water Resources registration records, there are two wells that may be located within the northern area of the airport. Both wells are owned by the Arizona State Land Department and are registered as "exempt" for industrial water production. Complete delineation of these wells would be conducted as part of the EIS preparation process.

In 1981, volatile organic compounds were discovered in groundwater in southeast Tucson. Subsequent investigation delineated several groundwater plumes contaminated with trichloroethylene (TCE), and smaller amounts of dichloroethylene (DCE), chloroform, and chromium, underlying the airport. The site was listed on the National Priorities List in 1982 as the Tucson International Airport Area Superfund site. The site covers approximately five square miles and includes a portion of the airport property as well as the Air Force Plant #44, Arizona Air National Guard facility, and the former West-Cap property, among others.

The 2002 EA stated that remediation of the contaminated groundwater in the regional aquifer was ongoing at that time. It is believed that they have since been remediated, however this would be verified during the EIS preparation process. If they still exist, development in those areas will be limited until the issue is remediated.

6.3 Storm Water

The Tucson Airport Authority has a Multi-Sector General Permit for Air Transportation covering storm water discharges. The storm water detention basin is located northeast of the runway environment. No unusual storm water treatment problems have been documented and no capacity problems are anticipated in the near future. Evaluation of potential effects on storm water as part of construction and use of the Master Plan Update projects would be included in the EIS.

6.4 Wastewater

Pima County Wastewater Management treats all sanitary waste generated at the airport. The Tucson Airport Authority holds several Industrial Wastewater Discharge permits for such facilities as the vehicle wash rack, the field maintenance wash rack, and the Fire Station maintenance bays. No unusual wastewater treatment problems have been documented and no capacity problems are anticipated in the near future. Evaluation of potential effects on wastewater as part of construction and use of the Master Plan Update projects would be included in the EIS.

6.5 Floodplains and Wetlands

Portions of the channels of Airport Wash are located within the 100-year flood zone and contain riparian (i.e. intermittent wetland) corridors. According to county regulations governing development in floodplains and riparian areas (Chapter 16.04 of the Pima County Code), construction of the Master Plan projects would require a Floodplain Use Permit and mitigation for any areas over one-third of an acre disturbed.

Evaluation of potential effects on floodplains and riparian corridors as part of construction and use of the Master Plan Update projects would be included in the EIS.

7. Vegetation

As stated in **Section 6.5, Floodplains and Wetlands**, the Airport Wash supports a riparian corridor, which provides important cover and nesting habitats for many wildlife species, especially migratory birds. The riparian corridors also function as movement corridors for many wildlife species. Healthy riparian communities also perform an important erosion control function. Regardless what may or may not be in the Airport Wash today, a new survey would be conducted to determine potential impacts to riparian vegetation. This survey information would then be included in the EIS.

Permits under the following programs may be required prior to development of the Master Plan Update projects.

- Native Plant Preservation Plan (NPPP) - As per the requirements of the Pima County NPPP (Ordinance No. 1998-39), an NPPP is required on sites for which a grading plan is required or the total area covered by all grading permits is 14,000 square feet or more.
- Arizona Native Plant Law (ANPL) - The ANPL protects plants at some level on all lands, regardless of ownership. When the environmental documentation for the Master Plan Update projects is developed, a notice of intent to clear land per the requirements of the ANPL would be submitted to the Arizona Department of Agriculture (ADA). Following confirmation from the ADA, a salvage permit and tags would be required before any plants are salvaged from the area. Salvage and removal are generally restricted to those individual plants judged to be of medium-to-high quality and possessing moderate-to-high transplant potential.

8. Threatened and Endangered Species

Pima pineapple cactus, which is listed as endangered by the U.S. Fish and Wildlife Service, has a relatively high potential to occur, but has not been observed in the project area. Since the Pima pineapple cactus could potentially exist in the project area, surveys would be conducted according to full standard protocol in cooperation with the U.S. Fish and Wildlife Service, prior to development of the Master Plan Update projects. Survey results would then be incorporated into the EIS.

9. General Wildlife

The following mammals have been observed on airport property:

- Black-tailed jack rabbit *(Lepus californicus)*
- Coyote *(Canis latrans)*
- Desert cottontail *(Sylvilagus audubonii)*
- Javelina *(Tayasu tajacu)*
- Mule deer *(Odocoileus hemionus)*
- Round-tailed ground squirrel *(Citellus tereticaudus)*
- White-throated wood rat *(Neotoma albigula)*

The following bird species (both game and non-game) have also been observed on airport property:

- American kestrel (Falco sparverius)
- Burrowing owl (Athene cunicularia)
- Gambel's quail (Callipepla gambelii)
- Great-horned owl (bubo virginianus)
- Mourning dove (Zenaida macoura)
- Red-tailed hawk (Buteo jamaicensis)
- Turkey vulture (Cathartes aura)

Indirect impacts to wildlife could include noise disturbance from construction and use of the Master Plan projects, which could result in the displacement of some wildlife. However, given the relative abundance of these species elsewhere, it is extremely unlikely that there would be any population-level or cumulative adverse impacts to wildlife in the Tucson Basin. Potential impacts of the development of the Master Plan Update projects would be evaluated during the EIS process.

10. Archaeological Resources

An area of hangars on the south side of the airport, which were constructed in 1942, is planned for inclusion on the National Register of Historic Places. The potential effects of the Master Plan Update projects on this site would be evaluated as part of the EIS preparation process. A National Historic Landmark, San Xavier del Bac, is located approximately three miles west of the airport. The potential effects of the Master Plan Update projects on this site would be evaluated in the EIS.

Several artifact sites are known to be located on airport property. Most sites are isolated occurrences. Additional archeological surveys in the proposed development areas would be performed for inclusion in the EIS.

11. Social Impacts

No significant adverse social impacts are expected to result from development of the Master Plan Update projects because no relocation of residences or businesses would be required. However, an in-depth analysis of potential social impacts associated with these projects would be conducted for inclusion in the EIS.

12. Induced Socioeconomic Impacts

This impact category generally applies to airport development proposals that might impact surrounding communities through shifts in patterns of population movement and growth, public service demands, changes in business, and/or economic activity. Development of the Master Plan Update is not expected to have significant adverse socioeconomic impacts. However, an in-depth analysis of potential induced socioeconomic impacts associated with the Master Plan Update would be conducted for inclusion in the EIS.

13. Conclusion

Based on this environmental overview, the development of the proposed Master Plan Update projects at Tucson International Airport is not expected to have significant adverse environmental impacts, however the final determination of impacts, mitigation requirements, and permitting will be disclosed for each project in the appropriate environmental documentation as determined by the FAA and as required by the National Environmental Policy Act of 1969.

It is likely that the proposed runway relocation project will require the preparation of an EIS. The remainder of the proposed projects would also require environmental approval through the preparation of a Categorical Exclusion Checklist (at a minimum), or a documented Categorical Exclusion (typically referred to as an Environmental Review or White Paper analysis) or an EA. Since it is the FAA that will determine which type of environmental documentation will be required for each potential project, it is recommended that airport staff discuss each project with the agency as early as possible to make certain there is sufficient time to obtain the environmental approval before construction is initiated.

The environmental categories that may require environmental surveys, approvals, and permitting actions are listed below. Coordination with appropriate environmental regulatory agencies would also take place.

- Water Quality
  - Construction in Sole Source Aquifer designated area requires EPA approval
  - National Pollutant Discharge Elimination System (NPDES) Permit required to minimize storm water runoff in construction areas that disturb one or more acres
  - Section 404 Dredge and Fill Permit required for dredge and fill activities involving Waters of the U.S.

- Floodplains and Wetlands
  - Floodplain Use Permit and mitigation required for construction in floodplains and intermittent wetland corridors with more than one-third of an acre disturbed

- Vegetation
  - Native Plant Preservation Plan required on sites for which a grading plan is required or the total area covered by all grading permits is 14,000 square feet or more
  - Arizona Native Plant Law requires Arizona Department of Agriculture approval and salvage permit before relocation of plants from a construction area

- Noise Compatibility
  - Typically an important community issue, especially during airport development projects
  - Requisite computer modeling (Integrated Noise Model, or INM) would identify potential impacts
  - Appropriate measures recommended to reduce construction noise impacts on surrounding communities

- Air Quality
  - Typically an important community issue, especially during airport development projects
  - Requisite computer modeling (Emission Dispersion Modeling System, or EDMS) would identify potential impacts
  - Appropriate measures recommended to reduce construction air quality impacts on surrounding communities

Appropriate surveys and coordination with environmental regulatory agencies would need to be conducted in the environmental documentation in order to assess potential impacts of the proposed projects on threatened and endangered species, general wildlife, and archeological resources on airport property and in the surrounding area. Potential social impacts and induced socioeconomic impacts would also be evaluated as part of the EIS process.

No potential impacts are expected in the areas of surface water, groundwater, storm water, and wastewater due to permits and controls already in place at Tucson International Airport. This would be verified during the EIS preparation process, however. If potential impacts exist, development in those areas will be limited until the issue is remediated.