

## CHAPTER 5.0 MITIGATION

### 5.1 INTRODUCTION

This chapter describes the mitigation program that would be developed for the ADP Alternative following review of any comments received on the FEIS should the ADP Alternative be selected as the preferred alternative by the FAA. As discussed in [Chapter 4.0](#), Environmental Consequences, there are no significant environmental impacts associated with the ADP Alternative. The ADP Alternative would reduce air emissions at PHX resulting from aircraft engine and motor vehicle operations. The ADP Alternative would result in non-significant environmental impacts to several resource categories, which would not require mitigation. However, construction and/or operational mitigation measures may be implemented to minimize the potential for any impact.

The mitigation program detailed in this chapter describes the existing pollution prevention programs in use at PHX which would be continued under the proposed project. As determined necessary and appropriate, the City will develop additional programs and procedures during of the design phase of the ADP Alternative to address unavoidable, non-significant environmental impacts resulting from ADP construction and/or operational activities. These measures are discussed in [Section 5.2](#) and [Section 5.3](#). The City of Phoenix Aviation Department has committed to coordinate ADP construction activities with Federal, state, and local agencies, and perform construction activities in compliance with applicable environmental regulations.

The City currently participates in measures to minimize ongoing effects associated with operational activities at the airport. PHX has air quality emission reduction measures already in place which include the use of efficient layout and design of the runway/taxiway/terminal area systems enabling smooth, swift, and uninterrupted movements of aircraft from the runway ends to the terminal/cargo areas; thereby reducing fuel consumption and the resultant emissions. In addition, the airport layout provides for adequate capacity and efficient design of the landside infrastructure (e.g., access/egress roadways, terminal area curb front, and on-site parking facilities), which help to reduce excess emissions associated with slow-moving, idling, and roaming motor vehicles. Currently, the airport access/egress road (e.g., Sky Harbor Boulevard) provides for efficient circulation to, from, and circulating about the terminal areas; the short and long-term parking facilities are conveniently accessed; and the terminal building curb front remains uncongested. Layout and design efficiencies associated with the ADP would further improve traffic flow within the airport boundaries.

The City of Phoenix has a recycling program, "Phoenix Recycles," capturing as much material from the solid waste stream as possible. The Aviation Department currently participates in the recycling program and intends to continue to do so. CRInc's Phoenix Materials Recovery Facility (MRF) and the MRF at the 27th Avenue Solid Waste Management Facility help handle the amount of materials collected from all Phoenix serviced residences.

[Section 5.2](#) describes potential pollution reduction measures to be considered during construction of the ADP Alternative. These measures are identified as possible methods to be used for the reduction of adverse impacts resulting from development of the ADP Alternative. Although any adverse impacts from implementation of the ADP Alternative would be non-significant and would reduce on-airport air emissions, [Section 5.3](#) describes the potential operational pollution reduction measures that could be

implemented by the City in addition to the existing programs currently in place. In all cases, the construction and operational pollution reduction measures would be implemented prior to or in conjunction with the realization of the actual impacts.

## **5.2 POTENTIAL CONSTRUCTION POLLUTION REDUCTION MEASURES**

As an integral part of the ADP design and construction process, applicable state and local environmental construction controls will be examined to determine their effectiveness in reducing or eliminating impacts associated with construction of the ADP Alternative. The following sections describe potential construction pollution reduction measures associated with air quality, floodplains, hazardous substances, historic and archaeological resources, socioeconomics, and water resources.

### **5.2.1 AIR QUALITY**

Air quality emission reduction measures for airports and aviation-related activities in general, and PHX in particular, are most effectively developed during the planning and design stages of the project. In this way, air emissions associated with the construction phase of the project can be minimized through the practical application of engineering, construction, and pollution-prevention techniques.

During the construction phases, potential short-term impacts to air quality can be avoided, controlled minimized, and/or compensated for by the adherence to the following measures including but not limited to:

- All construction activities shall be carried out in full compliance with the pollution control provisions and specifications contained in FAA Advisory Circular (AC) 150/5370-10B, *Standards for Specifying Construction of Airports*, the airport's AZPDES Construction General Permit, and/or requirements by Maricopa County dust control rules, and any local guidelines or ordinances.
- Any required air quality permits for land clearing, earth moving, open burning, asphalt and concrete batch plants, etc. would be obtained by the General Contractor or Subcontractor before the commencement of related activities. The City of Phoenix Aviation Department would oversee this activity and has certified in writing that the required permits would be obtained in accordance with state and local regulations.
- Stockpiles of soil, dirt, rocks, and other raw materials shall be covered or stabilized by the General Contractor or Subcontractor to help prevent the generation of wind-blown particles and debris (e.g., fugitive dust), consistent with the airport's AZPDES Permit.
- Heavily used work sites (e.g., construction staging areas, haul roads, loading/unloading platforms) shall be shielded, treated, or otherwise maintained by the General Contractor or Subcontractor, in compliance with Maricopa County dust rules, to help prevent the generation and release of dust.
- To the extent feasible, staged construction schedules would be employed by the General Contractor or Subcontractor that would help reduce the exposure of wind-erodible soils to minimal amounts and time periods.
- Construction equipment (e.g., earthmovers, haul trucks, excavators, etc.) to be properly maintained and cleaned, as necessary, by the General Contractor or Subcontractor to help minimize excess exhaust emissions.

- Temporary degradation in air quality due to emissions from construction equipment, fugitive dust from excavated areas, and earth moving operations will be minimized through the enforcement of the terms and conditions of Dust Control Permit that will be issued to the contractor by Maricopa County prior to approval for construction.

### **5.2.2 FLOODPLAINS**

As required by FAA and Department of Transportation (DOT) orders, FAA will continue to work with state and local officials to finalize the design of the Automated People Mover System (APM) station to minimize potential harm to or within the base floodplain. Under local laws, the final design must be approved by Maricopa County and in the unlikely event that a significant (>1 foot) elevation change is predicted, the City would have to apply for a letter of map revision and design specific pollution reduction measures consistent with County requirements.

The ADP Alternative requires plans for the APM to be reviewed by the Maricopa County Flood Control District (MCFCD) with specific attention to the crossing of the Grand Canal. PHX would be required to show that a bridge design would safely accommodate the design flood, withstand the attendant inundation, and perform satisfactorily. PHX would also need to either demonstrate that the structures will be constructed outside of Zone A or avoid a one-foot change in the base flood elevation of the affected area.

The design of the Stage 2 APM and associated station would include consideration of methods to minimize floodplain impacts. This may include, but not be limited to, designing and placing piers and support infrastructure in a manner to minimize restrictions on the flow of flood waters and impacts to floodplain values; minimizing the amount of fill in the floodplain; and elevating facilities above the base flood elevation. Guidelines and regulations of the MCFCD would be followed in the final design of APM and the associated station. The permitting process required to construct this portion of the ADP Alternative would be initiated with the U.S. Army Corps of Engineers (USACE) and the Maricopa County Flood Control District during the final design phase. In addition, the design of the APM system would be coordinated with design efforts associated with the Valley Metro Light Rail station to be constructed at the intersection of 44th and Washington Streets. As documented in the Central Phoenix/East Valley Light Rail Transit FEIS, the light rail station will require construction in the floodplain. Potential impacts to the floodplain would be evaluated and mitigated in the future as the design of the station is developed.

### **5.2.3 HAZARDOUS SUBSTANCES**

Construction of the ADP Alternative would be conducted in areas of the airport that are known to contain environmental contamination. These include two fuel plumes in the vicinity of the proposed West Terminal complex and crossfield taxiways. It is not anticipated that the existing plumes would substantially interfere with the construction process nor is it expected that the project would impede the clean-up process (Hughto, 2004). Construction plans and activities for the ADP Alternative would be developed, as appropriate, to prevent the spreading or migration of contaminants beyond the existing contaminant zones.

The potential risk to construction workers associated with exposures to petroleum-contaminated soils, groundwater, and fumes would be addressed in the planning and design process and construction

contract documents. During construction, work would be performed in accordance with the requirements of the Occupational Safety and Health Administration (OSHA). Any additional pollution reduction measures considered necessary to further reduce the impacts to the environment would be evaluated as the construction plans are developed.

Demolition of Terminal 2 would be complicated by the presence of large amounts of asbestos-containing materials (ACM). Removal and proper disposal of these materials would be required. Asbestos abatement activities would be performed in compliance with Section 112 of the Clean Air Act, Arizona Administrative Code R18-2-1101, and all other applicable Federal, state, and local regulations.

Should any additional and unexpected contaminated materials be encountered during the construction process, they would be addressed in accordance with Federal and state regulations. The use of hazardous materials (e.g., solvents, cleaners, coatings, paints, etc.) and other regulated substances (fuel, oil, hydraulic fluids, etc.) by the construction contractors could also be handled, stored, and disposed of following appropriate safeguards, guidelines, and work practices. As appropriate, spill prevention control and countermeasure (SPCC) plans would be developed for the handling and cleanup of potentially hazardous materials. Worker safety training would be conducted in accordance with OSHA 29 CFR 1926 requirements.

Any construction activities that involve disturbance of the surface have potential to expose and release previously unknown hazardous materials and wastes that may be located in the vicinity. In the event of a spill or unanticipated release of regulated materials including fuels, contractors will be required to cease work in the immediate area and report the release to the National Response Center (NRC). Special provisions will be included in the construction document to address the potential for encountering hazardous materials. All applicable Federal, state and local regulations will be followed for the cleanup and disposal of hazardous waste during construction activities. In addition, contractors will be required to maintain a "Spill Response Kit" on the project worksite. The kit would include items such as absorbent materials, absorbent pads, skimmer booms, shovels, and storage containers. These kits would be used to mitigate the spread of hazardous materials should a spill occur.

#### **5.2.4 HISTORIC AND ARCHAEOLOGICAL RESOURCES**

The ADP Alternative project planning would continue and final designs would be prepared in accordance with procedures defined in the Section 106 Memorandum of Agreement (MOA) between the FAA, City of Phoenix, Bureau of Reclamation, Salt River Project, and State Historic Preservation Officer (SHPO) to address improvements at the airport (an unsigned copy of the MOA is contained within [Appendix C](#) of this FEIS). The City would arrange to have archaeological testing or monitoring plans prepared and implemented as those final designs provide more details about the components of the ADP Alternative. If archaeological resources are discovered, they would be evaluated and measures to avoid, reduce, or mitigate impacts to National Register-eligible resources would be developed and implemented. Treatment plans would be prepared and are most likely to focus on studies to recover and preserve important archaeological information before significant archaeological resources are disturbed or destroyed by ground-disturbing construction activities. If human remains and funerary objects, sacred objects, or objects of cultural patrimony were encountered in association with archaeological sites, they

would be treated and repatriated in accordance with a 1995 agreement that the City of Phoenix executed in compliance with the Arizona State Museum for tribes having traditional cultural affiliations within the Phoenix area. The agreement was developed to ensure that City of Phoenix projects are implemented in compliance with the Arizona Antiquities Act, which governs treatment of human remains and such objects found on lands owned or controlled by the City of Phoenix.

None of the buildings that would be demolished by implementation of the ADP Alternative are listed in or eligible for the National Register. However, *The Phoenix*, a mural by Paul Coze installed within the Terminal 2 lobby, is considered eligible for the National Register under Criterion C. The ADP Alternative would demolish Terminal 2 and replace it with a new West Terminal. The City would remove and preserve the mural prior to demolition of the terminal. In contrast to a historical building or structure, the mural is an inherently moveable object of art. The FAA, in consultation with the SHPO, has concluded that moving the mural and removing it in another public location at the airport would not adversely affect the historic values that make the mural eligible for the National Register. Before the Paul Coze mural is removed from Terminal 2, the mural would be photo-documented. The airport art curator would ensure that the mural is carefully removed to avoid damage to the multimedia mural. The Phoenix Aviation Department would remount the three panels of the mural together in an appropriate public location on the airport in a timely manner. The history of the mural would be documented and publicly interpreted when it is remounted. The FAA would consult the SHPO and Phoenix City Historic Preservation Officer (CHPO) as detailed plans for removing and remounting the mural are developed and implemented.

To specifically address potential visual effects on the Pueblo Grande Ruin and Irrigation Sites National Historic Landmark within the Pueblo Grande Museum and Archaeological Park, the FAA and Phoenix Aviation Department would work with the Museum Director, Phoenix CHPO, and SHPO in defining design criteria and reviewing developing designs of the Stage 2 - East APM station and maintenance facility. The FAA concluded, in consultation with the SHPO, that a sensitive design of the proposed facilities considering factors such as massing, style, color, texture, glare, and potential for screening with vegetation would have no adverse effect on the park. The project has potential to result in a beneficial effect by enhancing pedestrian access to the museum from the APM and Valley Metro Rail stations.

### **5.2.5 SOCIOECONOMIC**

All acquisitions and relocations would be accomplished in accordance with the Uniform Relocation Assistance Real Property Acquisition Policies Act of 1970. This act establishes a standard process for Federally-approved or supported projects for relocation activities and requires fair market value to be paid for properties acquired plus relocation costs. Fair market values for properties to be acquired for airport expansion purposes would be determined by appraisal of comparable properties, including properties whose selling price would not be affected by ADP Alternative. Currently, as part of their ongoing noise mitigation program, PHX has a volunteer acquisition program working with property owners who currently want to sell their property. This program is being expanded to include properties within the APM Stage 2 right-of-way. In addition, PHX is working with business owners of the affected properties to evaluate means of providing assistance. A Maintenance of Traffic (MOT) plan could be developed during the design phase of the roadway project such that temporary traffic flow impacts would be minimized. During construction of the ADP projects, some lanes of Sky Harbor Boulevard could be closed at night from

approximately 10:00 p.m. to 6:00 a.m. to accommodate construction. All lanes would likely remain open during the day to minimize on-airport traffic impacts during times of normal and peak airport activity. As part of the APM Stage 2 design process, planning would also be initiated to address any street abandonments that may be required as part of the project implementation.

### **5.2.6 WATER RESOURCES**

Temporary degradation of surface water quality from water turbidity that could occur during the construction period when excavated areas are exposed prior to paving would be mitigated by controls implemented prior to construction such as straw or baled hay barriers placed within turbidity curtains. Runoff of stormwater from the construction site will be controlled in accordance with the City of Phoenix Arizona Pollution Discharge Elimination System (AZPDES) Construction General Permit issued by the Arizona Department of Environmental Quality.

### **5.2.7 SOLID WASTE**

The ADP Alternative would be developed in accordance with standards developed by the United States Secretary of Transportation. Minimization/preventative actions that might reduce or eliminate construction impacts (construction and demolition waste) include measures outlined in FAA AC 150/5370-10B, *Standards for Specifying Construction at Airports*. According to the AC, the City's contractor shall submit a plan for disposal of waste materials prior to the start of construction.

## **5.3 POTENTIAL OPERATIONAL POLLUTION REDUCTION MEASURES**

This section contains the potential operational mitigation program for the FAA's preferred alternative. The following sections describe the ADP Alternative's potential operational pollution reduction measures associated with air quality, hazardous materials, water resources, and solid waste environmental impact categories.

### **5.3.1 AIR QUALITY**

As documented in [Chapter 4.0](#), Environmental Consequences, implementation of the ADP Alternative would result in a reduction of aircraft emissions at PHX due to increased operational efficiencies. As a result, mitigation to address air quality impacts associated with the proposed project may not be necessary. In an effort to continue to operate PHX in an environmentally sound manner, the City of Phoenix would however continue to utilize the air quality emission reduction measures currently in place, and those which are inherent to the planning process. The ADP Alternative is intended to optimize the airfield layout consistent with existing and future aviation demand, thereby reducing aircraft emissions. The proposed surface transportation improvements to Sky Harbor Boulevard would improve the efficiency of the on-airport roadway system. Avoidance, or minimization, of areas or structures (e.g., terminal buildings, parking structures, etc.), which contribute to zones of restricted air movement and create localized "hot-spots" of air pollution would be minimized or eliminated. The ADP Alternative would be designed to provide separation and placement of the primary support facilities (e.g., main terminal buildings) in a manner that helps prevent the build-up of pollutants. Creating open-space, or "buffer

zones”, would provide distance between the air emission source locations (e.g., runway ends, taxiways, fuel facilities, parking garages) and any nearby potentially sensitive receptors (e.g., homes, schools, parks, etc.). Utilization of the Stage 2 APM system to access the RCC would reduce the number of passenger vehicles accessing the terminal areas, further reducing air emissions at the airport.

### **5.3.2 HAZARDOUS MATERIALS**

Airport operations following development of the ADP Alternative are not expected to substantially alter the types of hazardous and other regulated materials used at the airport. The use of fuel and other regulated substances necessary for routine operations at the airport would continue and is expected to increase due to the forecasted growth in operations at the airport. The storage and use of these materials are governed by a wide network of Federal and state regulations. Operations at PHX are conducted in full compliance with these regulations. When used in combination with technologies currently in place at the airport and safe work practices, the risks of causing environmental contamination are reduced.

Any construction activities that involve disturbance of the surface have potential to expose and release previously unknown hazardous materials and wastes that may be located in the vicinity. In the event of a spill or unanticipated release of regulated materials including fuels, contractors will be required to cease work in the immediate area and report the release to the National Response Center (NRC). Special provisions will be included in the construction document to address the potential for encountering hazardous materials. All applicable Federal, state and local regulations will be followed for the cleanup and disposal of hazardous waste during construction activities.

### **5.3.3 WATER RESOURCES**

Water quality for the City of Phoenix is regulated by a variety of permits and plans. All activities associated with development of the ADP Alternative would be performed in accordance with the airport’s AZPDES and Multi-Sector General Permit (MSGP) requirements, appropriate state and Federal regulations and standards.

Water conservation can offset the increased water demand from the ADP Alternative. The City can participate in the conservation effort with regard to this project by implementing the following:

- Educate employees and tenants on correcting wasteful habits,
- Install water efficient plumbing fixtures, and
- Maintain plumbing fixtures and pipes to prevent leaks.

These permits, plans and conservation efforts, as described, have the potential to minimize water resource impacts associated with the ADP Alternative.

#### **5.3.4 SOLID WASTE**

PHX would continue with the City of Phoenix recycling efforts, “Phoenix Recycles”, and work with local municipalities, businesses, and waste handlers to develop and implement source reduction strategies, resource recovery facilities, markets for recyclables, and waste to energy facilities to achieve a significant reduction in solid waste disposal volumes entering the landfill. CRInc's Phoenix MRF and the MRF at the 27th Avenue Solid Waste Management Facility could be utilized help reduce the amount of materials collected at PHX.